Carrier VoIP

MG 9000 Performance Management

NN10140-711

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New in this release

The following sections detail what's new in *MG 9000 Performance Management* for release (I)SN09U.

Features

Release (I)SN09U contains no feature updates.

Other changes

See the following section for information about changes that are not feature-related.

Changing OM collection values

A new procedure performed at the CLI allows you to modify the OM Collection latency and thread properties. For details, see "Changing OM collection values on the CLI" (page 87).

Performance management strategy

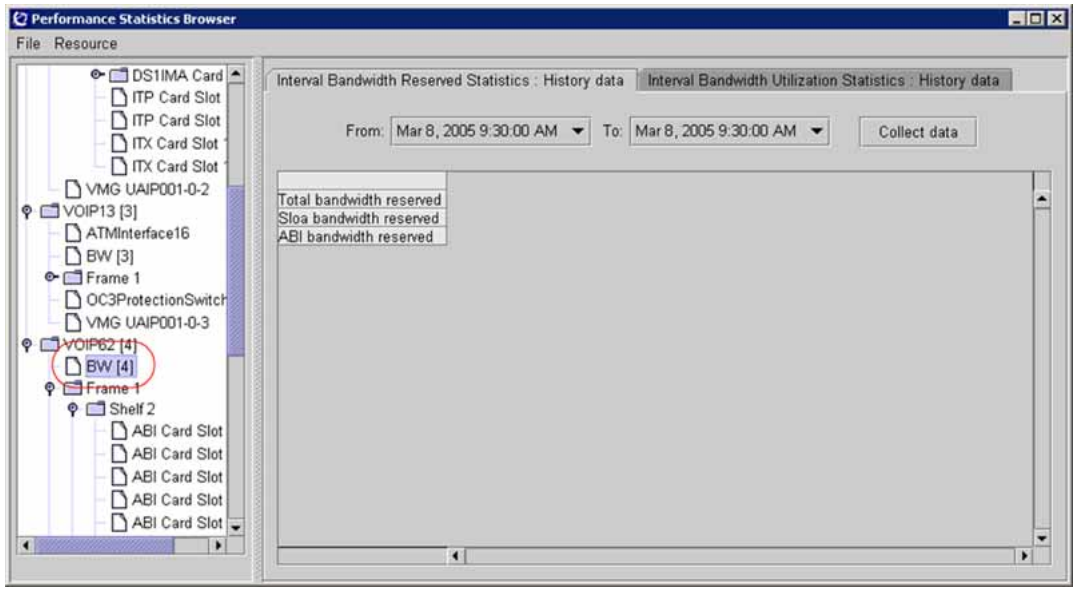
The MG 9000 measures performance management through operational measurement (OM) statistics designed to track performance and activity. These performance and activity statistics are displayed at the MG 9000 Manager at the Performance Statistics Browser. OM statistics are also sent to the Operations Support System (OSS) through the OM Collector for use by network engineers reviewing OMs from the entire network.

OMs reported to the performance browser

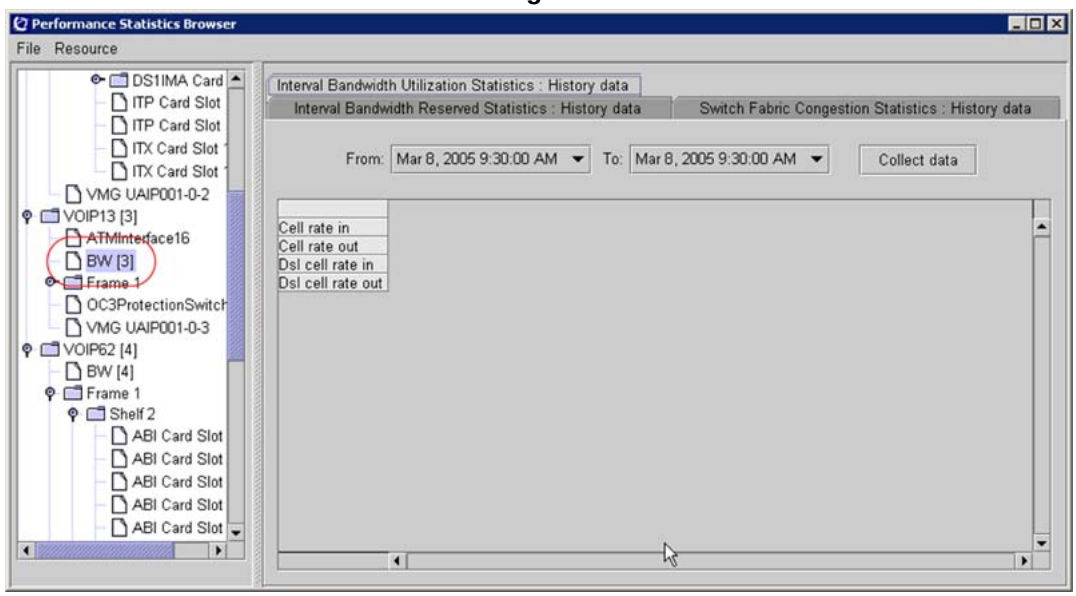
The operational measurements for the MG 9000 are presented through the Performance Browser and are accessed by selecting the statistics tab for each OM category. When a resource is selected in the Performance Statistics Browser, all the statistics that are accumulated for that resource are presented in the various statistics tabs available for selection.

Beginning in SN08, bandwidth-related performance data is not displayed at the root (network element) level. Instead, bandwidth-related performance data is displayed under a BW icon. For an MG 9000 with Gigabit Ethernet (GigE) DCC cards, the BW icon displays the total utilization data input and output statistics in bits/sec. For a non-GigE MG 9000, the BW also displays the switch fabric congestion data. The following figures show the bandwidth-related performance data presented for an MG 9000 with and without GigE DCC cards when the BW icon is selected.

BW icon selected for MG 9000 with GigE DCC cards



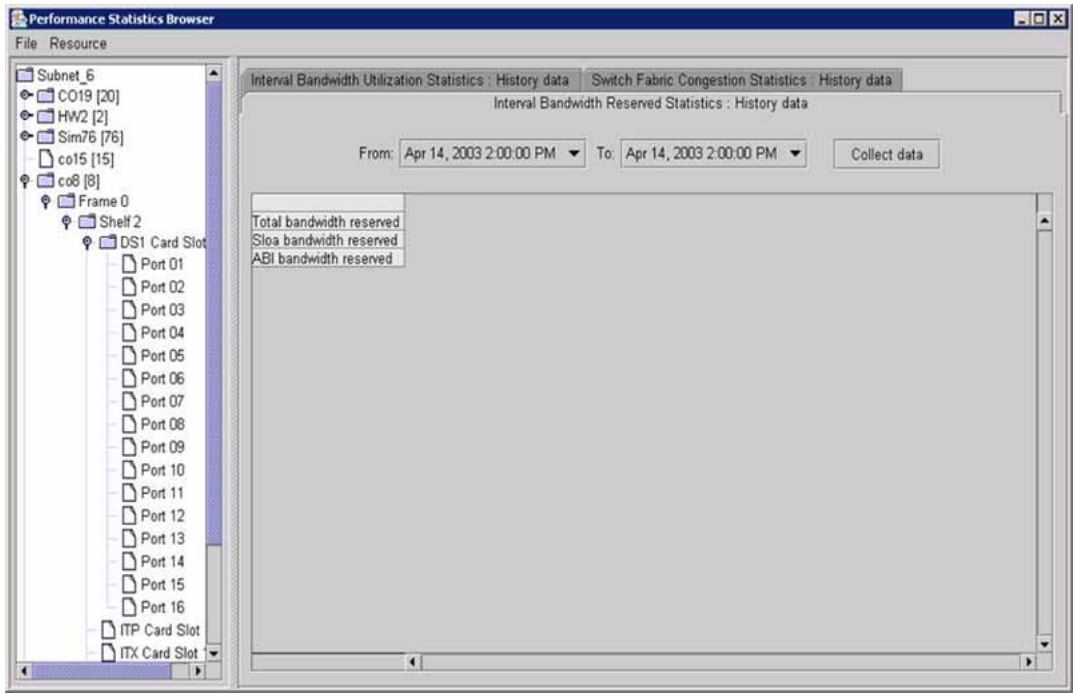
BW icon selected for MG 9000 without GigE DCC cards



Performance management procedures

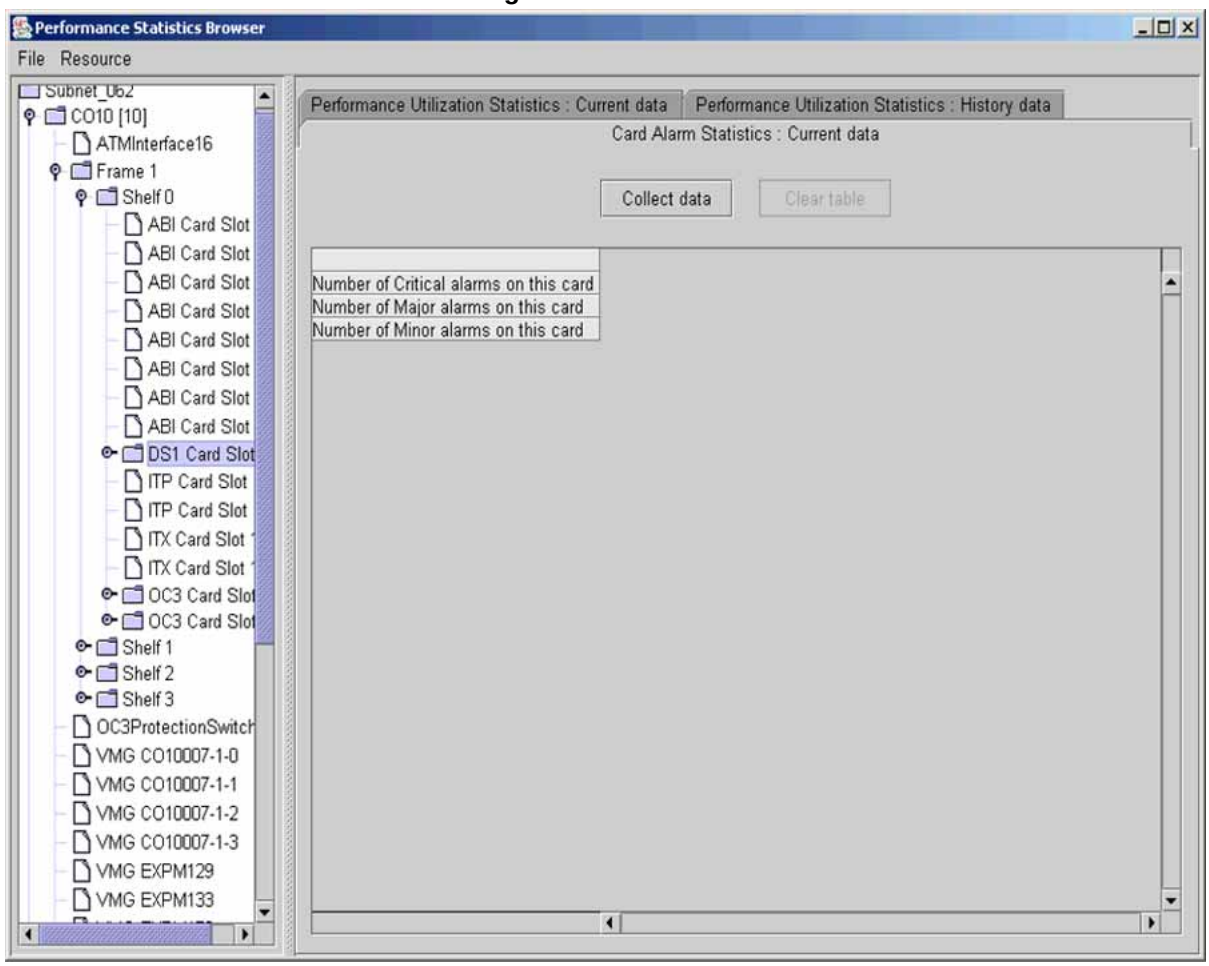
Operational measurements are statistics collected real time on a specific resource and then saved for later viewing. This information may be used to evaluate network performance or identify resource imbalance. OMs for a specific resource are displayed through the Performance Statistics Browser. The following figure shows the Performance Statistics Browser.

Performance Statistics Browser



The following figure shows the Performance Statistics Browser with a resource selected, in this case the DS1 card. The only statistics tab available shows the OM statistics collected for the DS1 card.

Performance Statistics Browser showing DS1 card selected and available OMs



The following procedures describe how to retrieve history and current history performance statistics.

Retrieving current performance data

Use the following procedure to retrieve current performance data. Current data is performance data that is continually being updated on the resource. The data are either reset at the start of each collection period or it continues to increase until either reset or rollover occur.

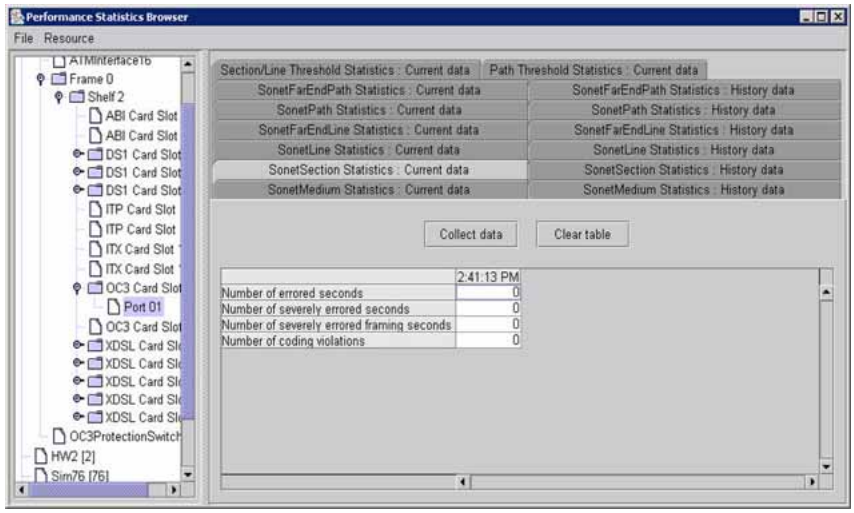
Retrieving current performance data

Step	Action
	At the MG 9000 Manager
1	From the Subnet View, select **Performance->Performance** browser from the menu bar. The Performance Statistics Browser appears.

2 In the Performance Statistics Browser, select the resource to be monitored from the tree in the left frame of the browser.

3 Choose from the Current data tabs that appear at the top of the browser to obtain the current performance statistics. The following figure shows the Performance Statistics Browser with a current data tab selected.

Performance Statistics Browser showing current data



4 Click on the **Collect data** button, and the performance data for the selected statistics tab will appear.

5 This procedure is complete

—End—

Retrieving history performance data

Use the following procedure to retrieve historical performance data. History data is performance data collected over a fixed period of time, such as five minutes or 15 minutes. This data is made available when each collection period ends and remains available for a given length of time, such as 24 hours. At the end of the 24 period, the oldest data interval (15 minutes, or 5 minutes if the collection internal has been set to 5/30 minutes) is dropped and replaced by the most current. When choosing the From and To interval period, the date range shown corresponds to the last 96 sample intervals. The size of each interval is equal to the sample interval.

Retrieving history performance data

Step	Action

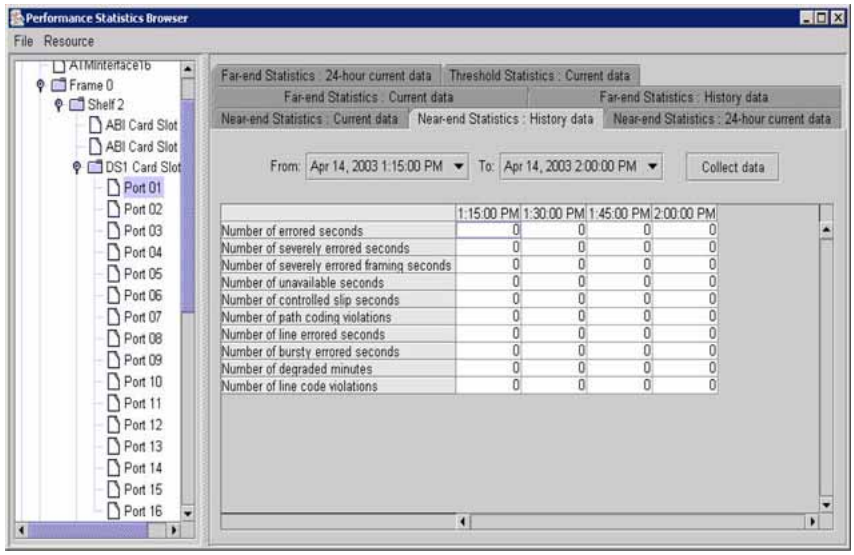
At the MG 9000 Manager

1 From the Subnet View, select **Performance->Performance** Browser from the menu bar. The Performance Statistics Browser appears.

2 In the Performance Statistics Browser, select the resource to be monitored from the tree in the left frame of the browser.

3 Choose from the History data tabs that appear at the top of the browser to obtain the historical performance statistics. The following figure shows the Performance Statistics Browser with a history data tab selected.

Performance Statistics Browser showing history data



4 Enter the time frame to be monitored by choosing the start and end time frame in the From and To fields.

5 Click on the **Collect data** button, and the performance data for the selected statistics tab will appear.

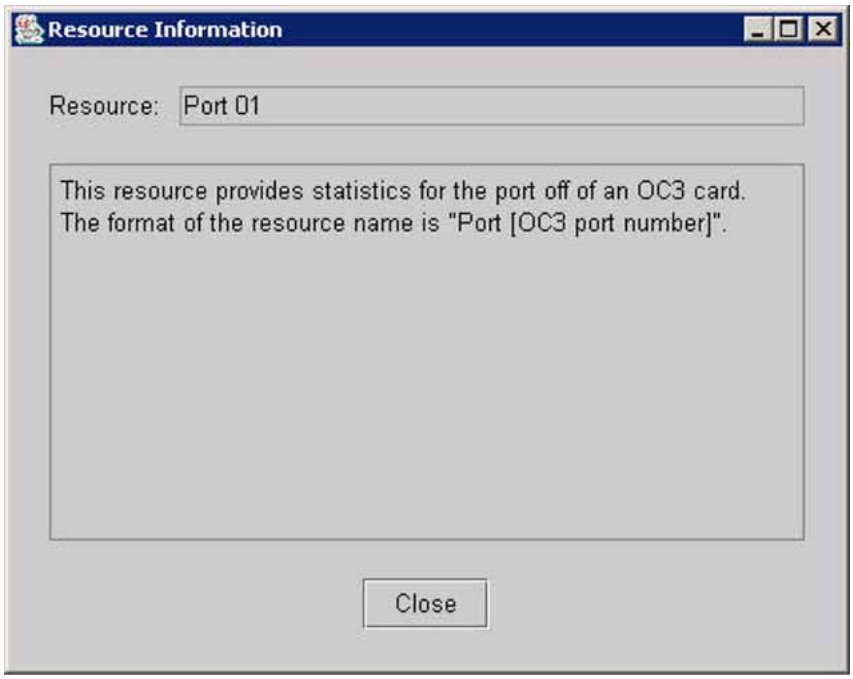
6 This procedure is complete.

—End—

Resource information

To identify what is measured by each performance statistic, click on the resource in the left pane of the Performance Browser. From the menu bar at the top of the Performance Browser, select Resource->Resource Info. The Resource Information view appears. The selected resource is identified and the resource statistic is described. The following figure shows the Resource Information view.

Resource Information view



ABI card OMs

The OM statistics collected and reported for the ABI (DS-512) card are listed in the following table.

ABI card OMs reported by the Performance Browser

Statistics tab	Field name
Bandwidth Reserved Statistics - Current data	Current bandwidth reserved
	Capacity bandwidth reserved
Interval Bandwidth Reserved Statistics - History data	Amount of bandwidth reserved

Statistics tab	Field name
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Circuit Emulation Day Total Statistics - Current data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
Circuit Emulation Statistics - History data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests

Statistics tab	Field name
ABI Overload Interval Statistics - History data	Peak number of received AAL5 PDUs per second
	Average number of received AAL5 PDUs per second
	Peak received connection request messages per second
	Average connection request messages per second
	Peak time in milliseconds a connRequest is pending in its queue
	Average time in milliseconds a connRequest is pending in its queue
	Peak CPU occupancy
ABI Overload Conn Deny Statistics - History data	Number of connection requests denied

DS1 card OMs

The OM statistics collected and reported for the DS1 card are listed in the following table.

Note: The DS1 card is not used in the UA-IP solution.

DS1 card OMs reported by the Performance Browser

Statistics tab	Field name
Card Alarm Statistics - Current data	Number of Critical alarms currently on this node
	Number of Major alarms currently on this node
	Number of Minor alarms currently on this node
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage

Statistics tab	Field name
	Average flash usage
	Peak channel usage
	Average channel usage

DS1 port OMs

The OM statistics collected and reported for the DS1 port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

DS1 port OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Near-end Statistics - Current data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		
	Number of line code violations		
Near-end Statistics - History data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
Note: Near-end Statistics History data will be displayed in red if the data is invalid.	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		
	Number of line code violations		

Statistics tab	Field name	Field value	Description
Near-end Statistics - 24-hour current data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		
	Number of line code violations		
Far-end Statistics - Current data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		
Far-end Statistics - History data ***Note:*** Far-end Statistics history data will be displayed in red if the data is invalid.	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		

Statistics tab	Field name	Field value	Description
Far-end Statistics - 24-hour current data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of line errored seconds		
	Number of path coding violations		
	Number of bursty errored seconds		
	Number of degraded minutes		
Threshold Statistics - Current data	Errored seconds	15M	Threshold to cross for a 15 minute performance measure
	Severely errored seconds		
	Severely errored framing seconds		
	Unavailable seconds		
	Controlled slip seconds	24H	Threshold to cross for a 24 hour performance measure
	Path coding violations		
	Line errored seconds		
	Bursty errored seconds	Notify	Indicates whether a notification should be generated if the thresholds are breached for this performance measurement
	Line code violations		
	Far-end errored seconds		
	Far-end severely errored seconds		
	Far-end severely errored framing seconds		
	Far-end unavailable seconds		
	Far-end controlled slip seconds		
	Far-end path coding violations	Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.
	Far-end line errored seconds		
	Far-end bursty errored seconds		
	Note: The statistics in the Threshold Statistics tab are not OMs, instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.		

DS1-IMA card OMs

The OM statistics collected and reported for the MG 9000 DS1-IMA card are listed in the following table.

Note: The DS1-IMA card OMs appear only if DS1-IMA cards are provisioned in the master shelf.

DS1-IMA card OMs reported by the Performance Browser

Statistics tab	Field name
Card Alarm Statistics - Current data	Number of Critical alarms
	Number of Major alarms
	Number of Minor alarms
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
SNMP Messaging Statistics - Current data	Peak number of SNMP requests
	Average number of SNMP requests
	Peak number of SNMP notifications
	Average number of SNMP notifications
SNMP Messaging Statistics - History data	Peak number of SNMP requests
	Average number of SNMP requests
	Peak number of SNMP notifications
	Average number of SNMP notifications

Statistics tab	Field name
Circuit Emulation Day Total Statistics - Current data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
DCC Overload Interval Statistics - History Data	Peak number of received AAL5 PDUs per second
	Average number of received AAL5 PDUs per second
	Peak received connection request messages per second
	Average connection request messages per second
	Peak time in milliseconds a connection request is pending in its queue
	Average time in milliseconds a connection request is pending in its queue
	Peak CPU occupancy
	Average CPU occupancy
DCC Overload Conn Deny Statistics - History Data	Number of connection requests denied
Circuit Emulation Statistics - History data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests

DS1-IMA group OMs

The OM statistics collected and reported for the DS1-IMA group are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The DS1-IMA OMs appear only if DS1-IMA cards are provisioned in the master shelf.

DS1-IMA group OMs reported by the Performance Browser

Statistics tab	Field name
DS1 IMA Group Statistics - Current data	Group Unavailable seconds
	Group Near end number of failures
	Group Far end number of failures
DS1 IMA Group Statistics - History data	Group Unavailable seconds
	Group Near end number of failures
Note: DS1 IMA Group Statistics History data will be displayed in red if the data is invalid.	Group Far end number of failures
DS1 IMA Group Statistics - 24 hour current data	Group Unavailable seconds
	Group Near end number of failures
	Group Far end number of failures

DS1-IMA port OMs

The OM statistics collected and reported for the DS1-IMA port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The DS1-IMA OMs appear only if DS1-IMA cards are provisioned in the master shelf.

DS1-IMA port OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Near-end Statistics - Current data	Number of errored seconds	N/A	N/A
	Number of severely errored seconds		
	Number of severely errored framing seconds		
	Number of unavailable seconds		
	Number of controlled slip seconds		
	Number of path coding violations		
	Number of line errored seconds		
	Number of bursty errored seconds		
	Number of degraded minutes		
	Number of line code violations		

Statistics tab	Field name	Field value	Description
Near-end Statistics - History data ***Note:*** Near-end Statistics history data will be displayed in red if the data is invalid.	Number of errored seconds Number of severely errored seconds Number of severely errored framing seconds Number of unavailable seconds Number of controlled slip seconds Number of path coding violations Number of line errored seconds Number of bursty errored seconds Number of degraded minutes Number of line code violations	N/A	N/A
Near-end Statistics - 24-hour current data	Number of errored seconds Number of severely errored seconds Number of severely errored framing seconds Number of unavailable seconds Number of controlled slip seconds Number of path coding violations Number of line errored seconds Number of bursty errored seconds Number of degraded minutes Number of line code violations	N/A	N/A
Threshold Statistics - Current data	Errored seconds Severely errored seconds Severely errored framing seconds Unavailable seconds Controlled slip seconds Path coding violations Line errored seconds Bursty errored seconds Line code violations ***Note:*** The statistics in the Threshold Statistics tab are not OMs, instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.	15M 24H Notify	Threshold to cross for a 15 minute performance measure Threshold to cross for a 24 hour performance measure Indicates whether a notification should be generated if the thresholds are breached

Statistics tab	Field name	Field value	Description
			for this performance measurement
		Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.

DS1-IMA link OMs

The OM statistics collected and reported for the DS1-IMA link are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The DS1-IMA OMs only appear if DS1-IMA cards are provisioned in the master shelf.

DS1-IMA link OMs reported by the Performance Browser

Statistics tab	Field name
DS1 IMA Link Statistics - Current data	Link IMA violations
	Link Oif anomalies
	Link NE severe errored seconds
	Link FE severe errored seconds
	Link NE unavailable seconds
	Link FE unavailable seconds
	Link NE transmit unusable seconds
	Link NE receive unusable seconds
	Link FE transmit unusable seconds
	Link FE receive unusable seconds
	Link NE transmit number of failures
	Link NE receive number of failures

Statistics tab	Field name
	Link FE transmit number of failures
	Link FE receive number of failures
	Link transmit stuff events
	Link receive stuff events
DS1 IMA Link Statistics - 24 hour current data	Link IMA violations
	Link Oif anomalies
	Link NE severe errored seconds
	Link FE severe errored seconds
	Link NE unavailable seconds
	Link FE unavailable seconds
	Link NE transmit unusable seconds
	Link NE receive unusable seconds
	Link FE transmit unusable seconds
	Link FE receive unusable seconds
	Link NE transmit number of failures
	Link NE receive number of failure
	Link FE transmit number of failures
	Link FE receive number of failures
	Link transmit stuff events
	Link receive stuff events
DS1 IMA Link Statistics - History data	Link IMA violations
	Link Oif anomalies
	Link NE severe errored seconds
	Link FE severe errored seconds
	Link NE unavailable seconds
	Link FE unavailable seconds
	Link NE transmit unusable seconds
	Link NE receive unusable seconds
	Link FE transmit unusable seconds
	Link FE receive unusable seconds
	Link NE transmit number of failures
	Link NE receive number of failure

Statistics tab	Field name
	Link FE transmit number of failures
	Link FE receive number of failures
	Link transmit stuff events
	Link receive stuff events

OC3, DS1-IMA, and GigE DCC card OMs

The OM statistics collected and reported for the OC-3, DS1-IMA, and GigE DCC card are listed in the following table.

Note: The OC-3, DS1-IMA, or GigE card OMs appear only if OC-3 cards are provisioned in the master shelf.

OC-3, DS1-IMA, and GigE card OMs reported by the Performance Browser

Statistics tab	Field name
Card Alarm Statistics - Current data	Number of Critical alarms currently on this card
	Number of Major alarms currently on this card
	Number of Minor alarms currently on this card
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage

Statistics tab	Field name
SNMP Messaging Statistics - Current data	Peak number of SNMP requests
	Average number of SNMP requests. Precision is in tenths, therefore a value such as 816 is 81.6.
	Peak number of SNMP notifications
	Average number of SNMP notifications. Precision is in tenths, therefore a value such as 816 is 81.6.
SNMP Messaging Statistics - History data	Peak number of SNMP requests
	Average number of SNMP requests. Precision is in tenths, therefore a value such as 816 is 81.6.
	Peak number of SNMP notifications
	Average number of SNMP notifications. Precision is in tenths, therefore a value such as 816 is 81.6.
Circuit Emulation Day Total Statistics - Current data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
Circuit Emulation Statistics - History data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
DCC Overload Interval Statistics - History Data	Peak number of received AAL5 PDUs per second
	Average number of received AAL5 PDUs per second
	Peak received connection request messages per second
	Average connection request messages per second
	Peak time in milliseconds a connection request is pending in its queue
	Average time in milliseconds a connection request is pending in its queue
	Peak CPU occupancy

Statistics tab	Field name
	Average CPU occupancy
DCC Overload Conn Deny Statistics - History Data	Number of connection requests denied

Concatenated OC-3 port OMs

The OM statistics collected and reported for the OC-3 port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The OC-3 port OMs appear only if OC-3 cards are provisioned in the master shelf.

Concatenated OC-3 port OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Sonet Medium Statistics - Current data	Optical Tx Power percentage Laser Bias Current percentage	N/A	Snapshot of current values, interpreted as a percentage
Sonet Medium Statistics - History data	Optical Tx Power percentage Laser Bias Current percentage	15 M	Up to 24 hours of history
Note: Sonet Medium Statistics History data will be displayed in red if the data is invalid.			
Sonet Section Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of severely errored framing seconds Number of coding violations	N/A	Snapshot of current values
Sonet Section Statistics - History data	Number of errored seconds Number of severely errored seconds	15 M	Up to 24 hours of history
Note: Sonet Section Statistics History data will be displayed in red if the data is invalid.	Number of severely errored framing seconds Number of coding violations		

Statistics tab	Field name	Field value	Description
Sonet Line Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Line Statistics - History data ***Note:*** Sonet Line Statistics History data will be displayed in red if the data is invalid.	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	15 M	Up to 24 hours of history
Sonet Far End Line Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Far End Line Statistics - History data ***Note:*** Sonet far end Line Statistics History data will be displayed in red if the data is invalid.	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	15 M	Up to 24 hours of history
Sonet Path Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Path Statistics - History data ***Note:*** Sonet Path Statistics History data will be displayed in red if the data is invalid.	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	15 M	Up to 24 hours of history

Statistics tab	Field name	Field value	Description
Sonet Far End Path Statistics - Current data	Number of errored seconds	N/A	Snapshot of current values
	Number of severely errored seconds		
	Number of coding violations		
	Number of unavailable seconds		
Sonet Far End Path Statistics - History data	Number of errored seconds	N/A	Up to 24 hours of history
Note: Sonet Far-end Path Statistics History data will be displayed in red if the data is invalid.	Number of severely errored seconds		
	Number of coding violations		
	Number of unavailable seconds		
Section / Line Threshold Statistics - Current data	Section errored seconds	15 M	Threshold to cross for a 15 minute performance measure
	Section severely errored seconds		
	Section severely errored framing seconds		
	Section code violations		
	Line errored seconds	24 H	Threshold to cross for a 24 hour performance measure
	Line severely errored seconds		
	Line code violations		
	Line unavailable seconds	Notify	Indicates whether a notification should be generated if the thresholds are breached for this performance measurement
	Line far-end errored seconds		
	Line far-end severely errored seconds		
	Line far-end code violations		
	Line far-end unavailable seconds		
	Note: The statistics in the Threshold Statistics tab are not OMs; instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.	Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.

Statistics tab	Field name	Field value	Description
Path Threshold Statistics - Current data	Path errored seconds Path severely errored seconds Path code violations Path unavailable seconds Path far-end errored seconds Path far-end severely errored seconds Path far-end code violations Path far-end unavailable seconds ***Note:*** The statistics in the Threshold Statistics tab are not OMs; instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.	15 M	Threshold to cross for a 15 minute performance measure
		24 H	Threshold to cross for a 24 hour performance measure
		Notify	Indicates whether a notification should be generated if the thresholds are breached for this performance measurement
		Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.

Channelized OC-3 port OMs

The OM statistics collected and reported for the OC-3 port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The OC-3 port OMs appear only if OC-3 cards are provisioned in the master shelf.

Channelized OC-3 port OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Sonet Medium Statistics - Current data	Optical Tx Power percentage Laser Bias Current percentage	N/A	Snapshot of current values, interpreted as a percentage
Sonet Medium Statistics - History data	Optical Tx Power percentage Laser Bias Current percentage	15 M	Up to 24 hours of history
Note: Sonet Medium Statistics History data will be displayed in red if the data is invalid.			
Sonet Section Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of severely errored framing seconds Number of coding violations	N/A	Snapshot of current values
Sonet Section Statistics - History data	Number of errored seconds Number of severely errored seconds	15 M	Up to 24 hours of history
Note: Sonet Section Statistics History data will be displayed in red if the data is invalid.	Number of severely errored framing seconds Number of coding violations		
Sonet Line Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Line Statistics - History data	Number of errored seconds Number of severely errored seconds	15 M	Up to 24 hours of history

Statistics tab	Field name	Field value	Description
Note: Sonet Line Statistics History data will be displayed in red if the data is invalid.	Number of coding violations Number of unavailable seconds		
Sonet Far End Line Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Far End Line Statistics - History data	Number of errored seconds Number of severely errored seconds	15 M	Up to 24 hours of history
Note: Sonet far end Line Statistics History data will be displayed in red if the data is invalid.	Number of coding violations Number of unavailable seconds		
Section / Line Threshold Statistics - Current data	Section errored seconds Section severely errored seconds Section severely errored framing seconds	15 M	Threshold to cross for a 15 minute performance measure
	Section code violations Line errored seconds Line severely errored seconds	24 H	Threshold to cross for a 24 hour performance measure
	Line code violations Line unavailable seconds Line far-end errored seconds Line far-end severely errored seconds Line far-end code violations	Notify	Indicates whether a notification should be generated if the thresholds are breached for this performance measurement
	Line far-end unavailable seconds ***Note:*** The statistics in the Threshold Statistics tab are not OMs, instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values	Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues

	are not alterable.	resets the 15 m, 24 h, and Notify fields to agent defaults.

Channelized OC-3 port (STS1 Path) OMs

The OM statistics collected and reported for the OC-3 port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The OC-3 port OMs appear only if OC-3 cards are provisioned in the master shelf.

Channelized OC-3 port (STS1 Path) OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Sonet Path Statistics - Current data	Number of errored seconds	N/A	Snapshot of current values
	Number of severely errored seconds		
	Number of coding violations		
	Number of unavailable seconds		
Sonet Path Statistics - History data	Number of errored seconds	15 M	Up to 24 hours of history
	Number of severely errored seconds		
Note: Sonet Path Statistics History data will be displayed in red if the data is invalid.	Number of coding violations		
	Number of unavailable seconds		
Sonet Far End Path Statistics - Current data	Number of errored seconds	N/A	Snapshot of current values
	Number of severely errored seconds		
	Number of coding violations		
	Number of unavailable seconds		
Sonet Far End Path Statistics - History data	Number of errored seconds	N/A	Up to 24 hours of history
	Number of severely errored seconds		
Note: Sonet Far-end Path Statistics History data will be displayed in red if the data is invalid.	Number of coding violations		
	Number of unavailable seconds		

Statistics tab	Field name	Field value	Description
Path Threshold Statistics - Current data	Path errored seconds	15 M	Threshold to cross for a 15 minute performance measure
	Path severely errored seconds		
	Path code violations	24 H	Threshold to cross for a 24 hour performance measure
	Path unavailable seconds		
	Path far-end errored seconds	Notify	Indicates whether a notification should be generated if the thresholds are breached for this performance measurement
	Path far-end severely errored seconds		
	Path far-end code violations		
	Path far-end unavailable seconds		
	Note: The statistics in the Threshold Statistics tab are not OMs; instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.	Default	Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.

Channelized OC-3 port (STS1-DS3 Path) OMs

The OM statistics collected and reported for the OC-3 port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The OC-3 port OMs appear only if OC-3 cards are provisioned in the master shelf.

Channelized OC-3 port (STS1-DS3) OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
Sonet Path Statistics - Current data	Number of errored seconds	N/A	Snapshot of current values
	Number of severely errored seconds		
	Number of coding violations		
	Number of unavailable seconds		
Sonet Path Statistics - History data	Number of errored seconds	15 M	Up to 24 hours of history
	Number of severely errored seconds		

Statistics tab	Field name	Field value	Description
Note: Sonet Path Statistics History data will be displayed in red if the data is invalid.	Number of coding violations Number of unavailable seconds		
Sonet Far End Path Statistics - Current data	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
Sonet Far End Path Statistics - History data	Number of errored seconds Number of severely errored seconds	N/A	Up to 24 hours of history
Note: Sonet Far-end Path Statistics History data will be displayed in red if the data is invalid.	Number of coding violations Number of unavailable seconds		
DS3 Path Statistics - Current data ***Note:*** This tab appears if the OC3 carrier is channelized and the path is set to support a DS3 payload.	P - bit number of errored seconds P - bit number of severely errored seconds Severely errored seconds Number of unavailable seconds P - bit number of coding violations C - bit number of coding violations C - bit number of errored seconds C - bit number of severely errored seconds	N/A	Snapshot of current values
DS3 Path Statistics - History data ***Note:*** This tab appears if the OC3 carrier is channelized and the path is set to support a DS3 payload.	P - bit number of errored seconds P - bit number of severely errored seconds Severely errored seconds Number of unavailable seconds P - bit number of coding violations C - bit number of coding violations C - bit number of errored seconds	15 M	Up to 24 hours of history

Statistics tab	Field name	Field value	Description
	C - bit number of severely errored seconds		
DS3 Far End Path Statistics - Current data ***Note:*** This tab appears if the OC3 carrier is channelized and the path is set to support a DS3 payload.	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	N/A	Snapshot of current values
DS3 Far End Path Statistics - History data ***Note:*** This tab appears if the OC3 carrier is channelized and the path is set to support a DS3 payload.	Number of errored seconds Number of severely errored seconds Number of coding violations Number of unavailable seconds	15 M	Up to 24 hours of history
Path Threshold Statistics - Current data	Path errored seconds Path severely errored seconds Path code violations Path unavailable seconds Path far-end errored seconds Path far-end severely errored seconds Path far-end code violations Path far-end unavailable seconds ***Note:*** The statistics in the Threshold Statistics tab are not OMs; instead they are high water marks used to gauge OMs. If the threshold value is exceeded, an action or notification occurs. The threshold values are not alterable.	15 M 24 H Notify Default	Threshold to cross for a 15 minute performance measure Threshold to cross for a 24 hour performance measure Indicates whether a notification should be generated if the thresholds are breached for this performance measurement Indicates whether default values for this threshold are set or not. It also acts as a trigger, setting this field to defaultValues resets the 15 m, 24 h, and Notify fields to agent defaults.

OC-3 APS OMs

The OM statistics collected and reported for the OC-3 automatic protection switch (APS) are listed in the following table.

Note: The OC-3 APS OMs appear only if OC-3 cards are provisioned in the master shelf.

OC-3 APS OMs reported by the Performance Browser

Statistics tab	Field name
APS Status Statistics - Current data	A count of Mode Mismatch conditions
Active APS Channel Status Statistics - Current data	Number of Signal Degrade conditions
	Number of Signal Failure conditions
	Number of times this channel was switched to the protection line
Inactive APS Channel Status Statistics - Current data	Number of Signal Degrade conditions
	Number of Signal Failure conditions
	Number of times this channel was switched to the protection line

GigE port OMs

The OM statistics collected and reported for the GigE port are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The GigE port OMs appear only if GigE DCC cards are provisioned in the master shelf.

GigE port OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
OM Statistics - History data	Number of errored seconds	N/A	Snapshot of current values
	Number of severely errored seconds		
	Number of unavailable seconds		
	Optical Power Transmitted		
	Optical Power Received		
	Transmit Bias Current		
	Voltage		
	Temperature		
	Number of Tx FIFO Overruns		

Statistics tab	Field name	Field value	Description
	Number of Tx FIFO Underruns		
	Number of Tx Bytes Overflow		
	Number of Tx Bytes		
	Number of Rx FCS Fail		
	Number of Rx LEN Type Fail		
	Number Rx Good Pause		
	Number of Rx Bad OpCntl Frames		
	Number of Rx Control Frames		
OM Statistics - Current data	Number of errored seconds	15 M	Up to 24 hours of history
	Number of severely errored seconds		
	Number of unavailable seconds		
	Optical Power Transmitted		
	Optical Power Received		
	Transmit Bias Current		
	Voltage		
	Temperature		
	Number of Tx FIFO Overruns		
	Number of Tx FIFO Underruns		
	Number of Tx Bytes Overflow		
	Number of Tx Bytes		
	Number of Rx FCS Fail		
	Number of Rx LEN Type Fail		
	Number Rx Good Pause		
	Number of Rx Bad OpCntl Frames		
	Number of Rx Control Frames		
OM Threshold Statistics - Current data	Errored seconds	N/A	Snapshot of current values
	Severely errored seconds		
	Unavailable seconds		

Statistics tab	Field name	Field value	Description
Ethernet OM Statistics - Current data	Number of alignment errors	N/A	Snapshot of current values
	Number of FCS errors		
	Number of internal MAC transmit errors		
	Number of frame too longs		
	Number of internal receive errors		
	Number of symbol errors		
	Number of in pause errors		
	Number of out pause errors		
RMON Statistics - Current data	Number of drop events	N/A	Snapshot of current values
	Number of broadcast packets		
	Number of multicast packets		
	Number of CRC alignment errors		
	Number of undersized packets		
	Number of oversize packets		
	Number of fragments		
	Number of jabbers		
	Number of collisions		
RMON Statistics - History data	Number of drop events	15 M	Up to 24 hours of history
	Number of broadcast packets		
	Number of multicast packets		
	Number of CRC alignment errors		
	Number of undersized packets		
	Number of oversize packets		
	Number of fragments		
	Number of jabbers		
	Number of collisions		

Statistics tab	Field name	Field value	Description
HC RMON Statistics - Current data	Number of HC overflow packets	N/A	Snapshot of current values
	Number of packets received		
	Number of overflow octets		
	Number of octets of data received		
HC RMON Statistics - History data	Number of HC overflow packets	15 M	Up to 24 hours of history
	Number of packets received		
	Number of overflow octets		
	Number of octets of data received		

VLAN OMs

The OM statistics collected and reported for the VLAN are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Note: The VLAN OMs appear only if GigE DCC cards are provisioned in the master shelf.

VLAN OMs reported by the Performance Browser

Statistics tab	Field name	Field value	Description
SMON VLAN Statistics - Current data	Total Number of packets	N/A	Snapshot of current values
	Total Number of HC packets		
	Total Number of octets		
	Total Number of HC octets		
	Total Number of non-unicast packets		
	Total Number of non-unicast HC packets		
	Total Number of non-unicast octets		
	Total Number of non-unicast overflow octets		
	Total number of non-unicast HC octets		

ITP card OMs

The OM statistics collected and reported for the ITP card are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

ITP card OMs reported by the Performance Browser

Statistics tabs	Field name
Card Alarm Statistics - Current data	Number of Critical alarms currently on this node
	Number of Major alarms currently on this node
	Number of Minor alarms currently on this node
Class Modem Statistics - History data	Maximum simultaneous number of CND requests
	Total number of CND requests
	Number of CND requests that completed
	Maximum simultaneous number of ADSI requests
	Total number of ADSI requests
	Number of ADSI requests that completed
	Maximum simultaneous number of BCLID request
	Total number of BCLID requests
	Number of BCLID requests that completed
	Maximum simultaneous number of SCWID requests
	Total number of SCWID requests
	Number of SCWID requests that completed
Class Modem Day Total Statistics - Current data	Maximum simultaneous number of CND requests
	Total number of CND requests
	Number of CND requests that completed
	Maximum simultaneous number of ADSI request
	Total number of ADSI requests
	Number of ADSI requests that completed
	Maximum simultaneous number of BCLID requests
	Total number of BCLID requests
	Number of BCLID requests that completed
	Maximum simultaneous number of SCWID requests
	Total number of SCWID requests
	Number of SCWID requests that completed

Statistics tabs	Field name
Digital Signal Statistics - History data	Maximum simultaneous number of tone receivers in use
	Number of tone receiver requests
	Number of tone receiver requests which failed
	Maximum simultaneous number of tone generators in use
	Number of tone generators requests
	Number of tone generator requests which failed
	Maximum simultaneous number of CMR modems in use
	Number of CMR modem requests
	Number of CMR modem requests which failed
Digital Signal Day Total Statistics - Current data	Maximum simultaneous number of tone receivers in use
	Number of tone receiver requests
	Number of tone receiver requests which failed
	Maximum simultaneous number of tone generators in use
	Number of tone generator requests
	Number of tone generator requests which failed
	Maximum simultaneous number of CMR modems in use
	Number of CMR modem requests
	Number of CMR modem requests which failed
Circuit Emulation Statistics - History data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
Circuit Emulation Day Total Statistics - Current data	Intra maximum simultaneous number of channels in use
	Intra total number of channel allocation requests
	Intra total number of failed channel allocation requests
	Inter maximum simultaneous number of channels in use
	Inter total number of channel allocation requests
	Inter total number of failed channel allocation requests
Echo Cancellation Statistics - History data	Maximum simultaneous number of ECAN resources in use
	Total number of ECAN resource request attempts
	Total number of ECAN resource request attempts that failed

Statistics tabs	Field name
Echo Cancellation Day Total Statistics - Current data	Maximum simultaneous number of ECAN resources in use
	Total number of ECAN resource request attempts
	Total number of ECAN resource request attempts that failed
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
ITP Overload Interval Statistics - History data	Peak number of received AAL5 PDUs per second
	Average number of received AAL5 PDUs per second
	Peak received connection request messages per second
	Average connection request messages per second
	Peak time in milliseconds a connRequest is pending in its queue
	Average time in milliseconds a connRequest is pending in its queue
	Peak CPU occupancy
	Average CPU occupancy
ITP Overload Conn Deny Statistics - History data	Number of connection requests denied

Statistics tabs	Field name
Clock Sync Left ITX Reference Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Clock Sync Right ITX Reference Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Clock Sync Left OC3 Reference Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Clock Sync Right OC3 Reference Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage

ITX card OMs

The OM statistics collected and reported for the MG 9000 ITX card are listed in the following table.

ITX card OMs reported by the Performance Browser

Statistics tab	Field name
Card Alarm Statistics - Current data	Number of Critical alarms on this card
	Number of Major alarms on this card
	Number of Minor alarms on this card
Performance Utilization Statistics - Current data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage
Performance Utilization Statistics - History data	Peak CPU occupancy
	Average CPU occupancy
	Peak RAM usage
	Average RAM usage
	Peak flash usage
	Average flash usage
	Peak channel usage
	Average channel usage

VMG OMs

The OM statistics collected and reported for the MG 9000 virtual media gateway (VMG) are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

VMG OMs reported by the Performance Browser

Statistics tab	Field name
VMG Statistics - History data	Total number of messages received on the link
	Total number of octets received on the link
	Average message rate for received messages

Statistics tab	Field name
VMG Day Total Statistics - Current data	Total number of messages sent on the link
	Total number of octets sent on the link
	Average message rate for sent messages
	Total number of messages received on the link
	Total number of octets received on the link
	Average message rate for received messages
VMG QoS Interval Statistics - Current Interval QoS data	Total number of messages sent on the link
	Total number of octets sent on the link
	Average message rate for sent messages
	Number of calls
	Number of bad calls
	Number of packets sent
	Number of packets lost
	Percentage of packets lost. (Precision is in 10000ths, therefore a value such as 95 is .0095.)
	Average jitter
	Average latency
	Note: This OM applies to VMGs in the UA-IP solution only.
VMG Total Day QoS - Current Day Total QoS data	Number of calls
	Number of bad calls
	Number of packets sent
	Number of packets lost
	Percentage of packets lost. (Precision is in 10000ths, therefore a value such as 95 is .0095.)
	Average jitter
	Average latency
	Note: This OM applies to VMGs in the UA-IP solution only.

Shelf OMs

The OM statistics collected and reported for the MG 9000 shelf are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Shelf OMs reported by the Performance Browser

Statistics tab	Field name
Bandwidth Reserved Statistics - Current data	Current bandwidth reserved
	Capacity bandwidth reserved
Interval Bandwidth Reserved Statistics - History data	Amount of bandwidth reserved

Bandwidth OMs

The OM statistics collected and reported for the MG 9000 network element (NE) bandwidth-related performance data are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

Bandwidth-related network element OMs reported by the Performance Browser

Statistics tab	Field name
Interval Bandwidth Reserved Statistics - History data ***Note:*** Displayed in both GigE and non-GigE configurations.	Total bandwidth reserved
	SLoA bandwidth reserved
	ABI bandwidth reserved
Interval Bandwidth Utilization Statistics - History data ***Note:*** Displayed only in non-GigE configuration.	Cell rate in
	Cell rate out
	DSL cell rate in
	DSL cell rate out
Interval Bandwidth Utilization Statistics - History data ***Note:*** Displayed only in GigE configuration.	Bit rate in
	Bit rate out
Switch Fabric Congestion Statistics - History data ***Note:*** Displayed only in non-GigE configuration.	Fill percentage of the input cell queue
	Fill percentage of the CBR VCs input queue
	Fill percentage of the rt-VBR VCs input queue
	Fill percentage of the nrt-VBR VCs input queue
	Fill percentage of the UBR VCs input queue
	Fill percentage of the UBR+ VCs input queue
	Fill percentage of all Control VCs input queue

XDSL data OMs

The OM statistics collected and reported for XDSL are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

XDSL data OMs reported by the Performance Browser

Statistics tab	Field name
ATUC Performance - Current data	Count of seconds in the current 15 minute interval when there was Loss of Framing.
	Count of seconds in the current 15 minute interval when there was Loss of Signal.
	Count of seconds in the current 15 minute interval when there was Loss of Link.
	Count of seconds in the current 15 minute interval when there was Loss of Power.
	Count of Errored Seconds in the current 15 minute interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies or one or more LOS or SEF defects.
	Count of the line initialization attempts in the current 15 minute interval. Includes both successful and failed attempts.
ATUR Performance - Current data	Count of seconds in the current 15 minute interval when there was Loss of Framing.
	Count of seconds in the current 15 minute interval when there was Loss of Signal.
	Count of seconds in the current 15 minute interval when there was Loss of Power.
	Count of Errored Seconds in the current 15 minute interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies, or one or more LOS or SEF defects.
ATUC Interval - History data	Count of seconds in the interval when there was Loss of Framing.
	Count of seconds in the interval when there was Loss of Signal.
	Count of seconds in the interval when there was Loss of Link.
	Count of seconds in the interval when there was Loss of Power.

Statistics tab	Field name
	Count of Errored Seconds in the interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies or one or more LOS or SEF defects.
	Count of the line initialization attempts during the interval. Includes both successful and failed attempts.
ATUR Interval - History data	Count of seconds in the interval when there was Loss of Framing.
	Count of seconds in the interval when there was Loss of Signal.
	Count of seconds in the interval when there was Loss of Power.
	Count of Errored Seconds in the interval. The errored second parameter is a count of one-second intervals containing one or more CRC anomalies, or one or more LOS or SEF defects.
ATUC Channel Performance - Current data	Count of all encoded blocks received on this channel within the current 15 minute interval.
	Count of all encoded blocks transmitted on this channel within the current 15 minute interval.
	Count of all blocks received with errors that were corrected on this channel within the current 15 minute interval.
	Count of all blocks received with uncorrectable errors on this channel within the current 15 minute interval.
ATUR Channel Performance - Current data	Count of all encoded blocks received on this channel within the current 15 minute interval.
	Count of all encoded blocks transmitted on this channel within the current 15 minute interval.
	Count of all blocks received with errors that were corrected on this channel within the current 15 minute interval.
	Count of all blocks received with uncorrectable errors on this channel within the current 15 minute interval.
ATUC Channel Interval - History data	Count of all encoded blocks received on this channel during this interval.
	Count of all encoded blocks transmitted on this channel during this interval.
	Count of all blocks received with errors that were corrected on this channel during this interval.
	Count of all blocks received with uncorrectable errors on this channel during this interval.

Statistics tab	Field name
ATUR Channel Interval - History data	Count of all encoded blocks received on this channel during this interval.
	Count of all encoded blocks transmitted on this channel during this interval.
	Count of all blocks received with errors that were corrected on this channel during this interval.
	Count of all blocks received with uncorrectable errors on this channel during this interval.
nnATUC Performance - Current data	Number of Forward Error Correction anomalies on the ATUC channel in the current 15 min interval.
	Number of Cyclical Redundancy Check anomalies on the ATUC channel in the current 15 min interval.
	Number of No Cell Delineation anomalies on the ATUC channel in the current 15 min interval.
	Number of Out of Cell Delineation anomalies on the ATUC channel in the current 15 min interval.
	Number of Header Error Check anomalies which on the ATUC channel in the current 15 min interval.
	Number of Loss of Cell Delineation anomalies on the ATUC channel in the current 15 min interval.
nnATUR Performance - Current data	Number of Forward Error Correction anomalies on the ATUR channel in the current 15 min interval.
	Number of Block Error anomalies which occurred on the ATUR channel in the current 15 min interval.
	Number of No Cell Delineation anomalies on the ATUR channel in the current 15 min interval.
	Number of Out of Cell Delineation anomalies on the ATUR channel in the current 15 min interval.
	Number of Header Error Check anomalies which on the ATUR channel in the current 15 min interval.
	Number of Loss of Cell Delineation anomalies on the ATUR channel in the current 15 min interval.

Statistics tab	Field name
nnATUC Interval - History data	Number of Forward Error Correction anomalies on the ATUC channel during this interval.
	Number of Cyclical Redundancy Check anomalies on the ATUC channel during this interval.
	Number of No Cell Delineation anomalies which on the ATUC channel during this interval.
	Number of Out of Cell Delineation anomalies which on the ATUC channel during this interval.
	Number of Header Error Check anomalies which on the ATUC channel during this interval.
	Number of Loss of Cell Delineation anomalies on the ATUC channel during this interval.
nnATUR Interval - History data	Number of Forward Error Correction anomalies on the ATUC channel during this interval.
	Number of Block Error anomalies which occurred on the ATUC channel during this interval.
	Number of No Cell Delineation anomalies which on the ATUC channel during this interval.
	Number of Out of Cell Delineation anomalies which on the ATUC channel during this interval.
	Number of Header Error Check anomalies which on the ATUC channel during this interval.
	Number of Loss of Cell Delineation anomalies on the ATUC channel during this interval.

ATM interface OMs

The OM statistics collected and reported for the ATM interface are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

ATM interface OMs reported by the Performance Browser

Statistics tab	Field name or description
Interface Statistics - Current data	Incoming total cells X 53
	Outgoing total cells X 53
	Uncorrectable HEC errors
	Outbound discarded
	Invalid cell headers
	Incoming OAM cells

Statistics tab	Field name or description
	Outgoing OAM cells
	Cumulative out of cell delineation (OCD) anomalies
Interface Statistics - History data	Incoming total cells X 53
	Outgoing total cells X 53
	Uncorrectable HEC errors
	Outbound discarded
	Invalid cell headers
	Incoming OAM cells
	Outgoing OAM cells
	Cumulative OCD anomalies
Signaling statistics - Current data	SSCOP connection events counter which counts the sum of the following errors 1. SSCOP connection disconnect counter The abnormal occurrence of this event is characterized by the expiry of timer_NO_RESPONSE. 2. SSCOP connection initiation failure This condition indicates the inability to establish an SSCOP connection. This event occurs whenever the number of expiries of the connection control timer (timer_CC) equals or exceeds the MaxCC, or upon receipt of a connection reject message BGREJ PDU. 3. SSCOP connection Re-establ/Resynch
	SSCOP errored PDUs counter. This counter counts the sum of the following errors 1. Invalid PDUs These are defined in SSCOP and consist of PDUs with an incorrect length (MAA-ERROR code U), an undefined PDU type code, or that are not 32-bit aligned. 2. PDUs that result in MAA-ERROR codes and are not discarded.
	Incoming call/connection attempts
	Outgoing call/connection attempts
	Unavailable outgoing routes

Statistics tab	Field name or description
	This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received • Cause code value 1 - unallocated (unassigned number). • Cause code value 2 - no route to specified transit network. • Cause code value 3 - no route to destination. ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause value, are redundant (for counting purposes) and should not be counted. Unavailable incoming routes This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received • Cause code value 1 - unallocated (unassigned number). • Cause code value 2 - no route to specified transit network. • Cause code value 3 - no route to destination. ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause value, are redundant (for counting purposes) and should not be counted. Resources unavailable messages received This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received: • Cause code value 35 - requested VPI/VCI not available • Cause code value 37 - user cell rate not available • Cause code value 38 - network out of order

Statistics tab	Field name or description
	• Cause code value 41 - temporary failure • Cause code value 45 - no VPI/VCI available • Cause code value 47 - resource unavailable, unspecified • Cause code value 49 - Quality of Service unavailable • Cause code value 51 - user cell rate not available • Cause code value 58 - bearer capability not presently available • Cause code value 63 - Service or option not available, unspecified • Cause code value 92 - too many pending add party requests ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Resources unavailable messages transmitted This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted: • Cause code value 35 - requested VPI/VCI not available • Cause code value 37 - user cell rate not available • Cause code value 38 - network out of order • Cause code value 41 - temporary failure • Cause code value 45 - no VPI/VCI available • Cause code value 47 - resource unavailable, unspecified • Cause code value 49 - Quality of Service unavailable • Cause code value 51 - user cell rate not available • Cause code value 58 - bearer capability not presently available • Cause code value 63 - Service or option not available, unspecified

Statistics tab	Field name or description
	• Cause code value 92 - too many pending add party requests ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Called party events received This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received: • Cause code value 17 - user busy • Cause code value 18 - no user responding • Cause code value 21 - call rejected • Cause code value 22 - number changed • Cause code value 23 - user rejects all calls with calling line identification restriction (CLIR) • Cause code value 27 - destination out of order • Cause code value 31 - normal, unspecified • Cause code value 88 - incompatible destination ***Note 1:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause value, are redundant (for counting purposes) and should not be counted. ***Note 2:*** Cause code value 30 is not included here since it does not apply to a hard failure. Called party events transmitted This counter is increased incrementally when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted: • Cause code value 17 - user busy • Cause code value 18 - no user responding • Cause code value 21 - call rejected

Statistics tab	Field name or description
	• Cause code value 22 - number changed • Cause code value 23 - user rejects all calls with calling line identification restriction (CLIR) • Cause code value 27 - destination out of order • Cause code value 31 - normal, unspecified • Cause code value 88 - incompatible destination ***Note 1:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause value, are redundant (for counting purposes) and should not be counted. ***Note 2:*** Cause code value 30 is not included here since it does not apply to a hard failure. Incorrect messages received This counter increments when any incorrect information is received in a message, including: • Ignored messages which are dropped because the message was so damaged that it could not be further processed. A list of dropped messages includes: — RELEASE, RELEASE COMPLETE, ADD PARTY REJECT, and STATUS messages transmit, that contain any of the Cause code values listed. — Message with invalid protocol discriminator — Message with errors in the call reference, such as – bits 5-8 of the first octet not equal to ’0000’ – bits 1-4 of the first octet indicating a length other than 3 octets – RELEASE COMPLETE message received with a call reference that does not relate to a call that is active or in progress – SETUP message received with call reference flag incorrectly set to 1 – SETUP message received with a call reference for a call that is already active or in progress — Message too short

Statistics tab	Field name or description
	The following cause code values are monitored by this counter: • Cause code value 10 - VPI/VCI unacceptable • Cause code value 36 - VPI/VCI assignment failure • Cause code value 81 - invalid call reference value • Cause code value 82 - identified channel does not exist • Cause code value 89 - invalid channel does not exists • Cause code value 96 - mandatory information element missing • Cause code value 97 - message type nonexistent or not implemented • Cause code value 99 - information element nonexistent or not implemented • Cause code value 100 - invalid information element contents • Cause code value 101 - message not compatible will call state • Cause code value 104 - incorrect message length • Cause code value 111 - protocol error, unspecified ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Incorrect messages transmitted This counter increments when any incorrect information is transmitted in a message, including: • Ignored messages which are dropped because the message was so damaged that it could not be further processed. A list of dropped messages includes: — RELEASE, RELEASE COMPLETE, ADD PARTY REJECT, and STATUS messages transmitted, that contain any of the Cause code values listed. — Message with invalid protocol discriminator — Message with errors in the call reference, such as – bits 5-8 of the first octet not equal to ’0000’

Statistics tab	Field name or description
	– bits 1-4 of the first octet indicating a length other than 3 octets – RELEASE COMPLETE message received with a call reference that does not relate to a call that is active or in progress – SETUP message received with call reference flag incorrectly set to 1 – SETUP message received with a call reference for a call that is already active or in progress — Message too short The following cause code values are monitored by this counter: • Cause code value 10 - VPI/VCI unacceptable • Cause code value 36 - VPI/VCI assignment failure • Cause code value 81 - invalid call reference value • Cause code value 82 - identified channel does not exist • Cause code value 89 - invalid channel does not exists • Cause code value 96 - mandatory information element missing • Cause code value 97 - message type nonexistent or not implemented • Cause code value 99 - information element nonexistent or not implemented • Cause code value 100 - invalid information element contents • Cause code value 101 - message not compatible will call state • Cause code value 104 - incorrect message length • Cause code value 111 - protocol error, unspecified ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Calling party events received

Statistics tab	Field name or description
	This counter monitors error events that occur due to the originating user doing something wrong. This counter increments when a RELEASE, RELEASE COMPLETE, (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted: • Cause code value 28 - invalid number format (address incomplete) • Cause code value 43 - access information discarded • Cause code value 57 - bearer capability not authorized • Cause code value 65 - bearer capability not implemented • Cause code value 73 - unsupported combination of traffic parameters • Cause code value 78 - AAL parameters cannot be supported • Cause code value 91 - invalid transit network selection • Cause code value 93 - AAL parameters cannot be supported ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Calling party events transmitted This counter monitors error events that occur due to the originating user doing something wrong. This counter increments when a RELEASE, RELEASE COMPLETE, (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted: • Cause code value 28 - invalid number format (address incomplete) • Cause code value 43 - access information discarded • Cause code value 57 - bearer capability not authorized • Cause code value 65 - bearer capability not implemented

Statistics tab	Field name or description
	• Cause code value 73 - unsupported combination of traffic parameters • Cause code value 78 - AAL parameters cannot be supported • Cause code value 91 - invalid transit network selection • Cause code value 93 - AAL parameters cannot be supported ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Timer expiry events received The timer expiries counter provides a count of network timer expiries, and to some extent, host or switch timer expiries. The conditions for incrementing this counter are: • expiry of any network timer • receipt of a RELEASE or RELEASE COMPLETE message with cause code value 102 (recovery on timer expiry) ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. Timer expiry events transmitted The timer expiries counter provides a count of network timer expiries, and to some extent, host or switch timer expiries. The conditions for incrementing this counter are: • expiry of any network timer • receipt of a RELEASE or RELEASE COMPLETE message with cause code value 102 (recovery on timer expiry) ***Note:*** For this counter, RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause code value, are redundant (for counting purposes) and should not be counted. DSS2 restarts received

Statistics tab	Field name or description
	This counter counts the number of Restart Activity errors detected on this interface. This counter provides a count of host, switch, or network restart activity. This counter is increased incrementally when receiving a RESTART message. DSS2 restarts transmitted This counter counts the number of Restart Activity errors transmitted from this interface. This counter provides a count of host, switch, or network restart activity. This counter is increased incrementally when receiving a RESTART message. InEstabls Number of SVC VCCs established at this signalling entity for incoming connections. OutEstabls Number of SVC VCCs established at this signaling entity for outgoing connections.

Private lines over ATM services AAL1 OMs

The OM statistics collected and reported for private lines over ATM services AAL1 are listed in the following table. Each statistics tab selected from the Performance Browser lists the various statistics collected for the current or 24 hour period.

AAL1 OMs reported by the Performance Browser

Statistics tab	Field name
AAL1 Statistics - Current data	Number of header errors Number of lost cells Number of misinserted cells Number of reassembly buffer underflows Number of reassembly buffer overflows Number of parity check failures Number of SDT pointer errors

Statistics tab	Field name
ATM VCL Statistics - History data	Total incoming cells
	Total incoming cells discarded
	Total outgoing cells
	Total outgoing cells tagged
	Total incoming CLP0 cells
	Total incoming CLP0 cells discarded
	Total outgoing CLP0 cells
ATM VCL Statistics - Current data	Total incoming cells
	Total incoming cells discarded
	Total outgoing cells
	Total outgoing cells tagged
	Total incoming CLP0 cells
	Total incoming CLP0 cells discarded
	Total outgoing CLP0 cells

OMs sent to OSS

Certain OMs sent to the Performance Browser are also sent to the operations support system (OSS) using an OM collection tool. The OMs are collected in comma separated value (CSV) format in an MG 9000 repository (MG 9000 mid-tier [on T1400 configuration] or mid-tier/server [on N240 configuration]). The OMs are forwarded to a network level repository called the OM Collector and retrieved by the OSS. The collected MG 9000 OMs, along with others from throughout the network, are used for network engineering.

OMs sent to the OSS

Hardware	OM table name	OM name	Description
Network element	nnBwIntervalBandwUtilTable	nnBwBandwUtilIntervalInCellRate	The ith 15 minute measure of the inbound bandwidth utilization.
Network element	nnBwIntervalBandwUtilTable	nnBwBandwUtilIntervalOutCellRate	The ith 15 minute measure of the outBound bandwidth utilization.

Hardware	OM table name	OM name	Description
Network element	nnBwIntervalBandwUtilTable	nnBwBandwUtilIntervalInDslCellRate	The ith 15 minute measure of the inbound DSL bandwidth utilization.
Network element	nnBwIntervalBandwUtilTable	nnBwBandwUtilIntervalOutDslCellRate	The ith 15 minute measure of the outBound DSL bandwidth utilization.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalTotal	ith 15 minute value % fill of the entire input cell queue associated with the central switching fabric.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalCbr	ith 15 minute value % fill of the entire input queue associated with the aggregate of all CBR VCs.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalRtVbr	ith 15 minute value % fill of the entire input queue associated with the aggregate of all rt-VBR VCs.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalNrtVbr	ith 15 minute value % fill of the entire input queue associated with the aggregate of all nrt-VBR VCs.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalUbr	ith 15 minute value % fill of the entire input queue associated with the aggregate of all UBR VCs.

Hardware	OM table name	OM name	Description
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalUbrPlus	ith 15 minute value % fill of the entire input queue associated with the aggregate of all UBR+ VCs.
Network element	nnBwIntervalQueueFillTable	nnBwQueueFillIntervalControl	ith 15 minute value % fill of the entire input queue associated with the aggregate of all Control VCs.
Shelf	nnBwShelfCurrentSloaBandwResrvdTable	nnBwShelfCapacitySloaBandwReserved	Current amount of reserved bandwidth Capacity for the aggregate of all Switched Lines over ATM VCs on This UEMG shelf.
Shelf	nnBwShelfIntervalSloaBandwResrvdTable	nnBwShelfIntervalSloaBandwReserved	The ith 15 minute measure amount of reserved band width allocated for the aggregate of all Switched Lines over ATM VCs on This UEMG shelf.
Node	SNMP Table	snmpInvalidMsgs	The total number of packets received by the SNMP engine which were dropped because there were invalid or inconsistent components in the SNMP message.

Hardware	OM table name	OM name	Description
Node	NnClkSyncRefTable	SourcennClkSyncRefId	Identifies reference timing resource. The possible values for this field are: • itx0_bits = 1 • itx1_bits = 2 • netw0 = 3 • netw1 = 4 • host0 = 5 • host1 = 6 • dcc0_bits = 7 • dcc1_bits = 8
Node	NnClkSyncRefTable	nnClkSyncRefLossOfSignalCount	Contains the count of the number of onsets of timing source signal loss. Range is from 0 to 255.
Node	NnClkSyncRefTable	nnClkSyncRefLossOfFrameCount	Contains the count of the number of frames. Range is from 0 to 255.
Node	NnClkSyncSignalTable	nnClkSyncSignalId	Identifies signal source. The possible values for this field are: • itxbitsA_0 = 1 • itxbitsB_0 = 2 • itxbitsA_1 = 3 • itxbitsB_1 = 4 • network_0 = 5 • network_1 = 6 • dccbitsA_0 = 7 • dccbitsB_0 = 8 • dccbitsA_1 = 9 • dccbitsB_1 = 10

Hardware	OM table name	OM name	Description
Node	NnClkSyncSignalTable	nnClkSyncSignalLossOfFrameCount	Contains the count of the number of loss of frames.
Node	NnClkSyncSignalTable	nnClkSyncSignalLossOfSignalCount	Contains the count of the number of onsets of timing source signal loss.
ABI Card	nnBwAbiCurrentBandwResrvdTable	nnBwAbiCapacityBandwReserved ***Note:*** Appears only if DS-512 cards are provisioned in the master shelf.	Current amount of reserved bandwidth capacity for the aggregate of all ABI VCs on this ABI interface.
ABI Card	nnBwAbiIntervalBandwResrvdEntry	nnBwAbiIntervalBandwReserved ***Note:*** Appears only if DS-512 cards are provisioned in the master shelf.	ith 15 minute measure amount of reserved bandwidth allocated for the aggregate of all VCs on this ABI interface.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumToneRcvrReq	The number of tone receiver requests during this interval.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumToneRcvrReqFail	The number of tone receiver requests that failed during this interval.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumToneGenReq	The number of tone generator requests during this interval.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumToneGenReqFail	The number of tone generator requests that failed during this interval.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumCMRmodemReq	The number of CMR modem requests during this interval.
ITP Card	nnMegacoOMDSPIntervalTable	nnMegacoOMDSPnumCMRmodemReqFail	The number of CMR modem requests that failed during this interval.

Hardware	OM table name	OM name	Description
ITP Card	nnMegacoOMECANIntervalTable	nnMegacoOMECANnumResrceReq	The total number of ECAN resource request attempts during this interval.
ITP Card	nnMegacoOMECANIntervalTable	nnMegacoOMECANnumResrceReqFail	The total number of ECAN resource request attempts that failed during this interval.
ITP card	NnClkSyncRefTable	nnClkSyncRefId	ITX 0 (1), reference coming from the left ITX. ITX 1 (2), reference coming from the right ITX. DCC-0 (3), reference coming from the left DCC (DCC-0). DCC-1 (4), reference coming from the right DCC (DCC-1). Host 0 (5), reference cabled into the ITP ATM-25 phy 0 Host 1 (6), reference cabled into the ITP ATM-25 phy 1
ITP card	NnClkSyncSignalTable	nnClkSyncSignalId	bits A-0 (1), BITS A signal coming into the left ITX of the BITS ITX connected pair. bits B-0 (2), BITS B signal coming into the left ITX of the BITS ITX connected pair.

Hardware	OM table name	OM name	Description
			bits A-1 (3), BITS A signal coming into the right ITX of the BITS ITX connected pair. bits B-1 (4), BITS B signal coming into the right ITX of the BITS ITX connected pair. DCC-0 (5), Network traffic signal coming into DCC-0. DCC-1 (6), Network traffic signal coming into DCC-1.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyNumInMessages	Number of messages received from the Gateway Controller (GWC) during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyNumInOctets	Number of octets received from the GWC during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyAvrgInMsgRate	Average message rate (per minute) for messages received from the GWC during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyMaxInMsgRate	Maximum message rate (per minute) for messages received from the GWC during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyNumOutMessages	Number of messages sent to the GWC during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyNumOutOctets	Number of octets sent to the GWC during this interval.

Hardware	OM table name	OM name	Description
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyAvrgOutMsgRate	Average message rate (per minute) for messages sent to the GWC during this interval.
ITP card (VMG)	nnMegacoOMMedGwyIntervalTable	nnMegacoOMMedGwyMaxOutMsgRate	Maximum message rate (per minute) for messages sent to the GWC during this interval.
ITP, OC-3, DS1-IMA, and ABI cards	nnMegacoOMCESIntervalTable	nnMegacoOMCESnumChnlAllocIntra	The total number of channel allocation requests for inter-switched calls during this interval.
ITP, OC-3, DS1-IMA, and ABI cards	nnMegacoOMCESIntervalTable	nnMegacoOMCESnumChnlAllocIntraFail	The total number of channel allocation requests for inter-switched calls that failed during this interval.
ITP, OC-3, DS1-IMA, and ABI cards	nnMegacoOMCESIntervalTable	nnMegacoOMCESnumChnlAllocInter	The total number of channel allocation requests for inter-switched calls during this interval.
ITP, OC-3, DS1-IMA, and ABI cards	nnMegacoOMCESIntervalTable	nnMegacoOMCESnumChnlAllocInterFail	The total number of channel allocation requests for inter-switched calls that failed during this interval.
ITP, ITX, OC-3, DS1-IMA,DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervCpuPeak	Peak CPU occupancy, as a percentage of usage/Peak CPU occupancy in most recent 15 minutes. These are accumulated on 1 minute cycles.

Hardware	OM table name	OM name	Description
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervCpuAvg	Average CPU occupancy, as a percentage of usage/Average CPU occupancy in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles.
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervRamPeak	Peak RAM usage, as a percentage of usage/Peak RAM usage in most recent 15 minutes. These are accumulated on 1 minute cycles.
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervRamAvg	Average RAM usage, as a percentage of usage/Average RAM usage in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles.
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervFlashPeak	Peak flash memory usage, as a percentage of usage/Peak flash usage in most recent 15 minutes. These are accumulated on 1 minute cycles.

Hardware	OM table name	OM name	Description
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervFlashAvg	Average flash memory usage, as a percentage of usage/Average flash usage in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles.
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervChanPeak	Peak number of channels used in most recent 15 minutes. These are accumulated on 1 minute cycles.
ITP, ITX, OC-3, DS1-IMA, DS1, and ABI cards	nnPmUtilOmIntervTable	nnPmUtilIntervChanAvg	Average channel usage, as a percentage of usage/Average number of channels used in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles.
OC3 protection switch	apsChanStatusTable	apsChanSignalDegrades ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	A count of Signal Degrade conditions. This condition occurs when the line Bit Error Rate exceeds the currently configured threshold.

Hardware	OM table name	OM name	Description
OC3 protection switch	apsChanStatusTable	apsChanSignalFailures ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	A count of Signal Failure conditions that have been detected on the incoming signal. This condition occurs when a loss of signal, loss of frame, AIS-L or a Line bit error rate exceeding 10^-3 is detected on an incoming line.
OC3 protection switch	apsChanStatusTable	apsChanSwitchovers ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The number of times this channel has switched to the protection line. When queried with index value apsChanNumber set to 0, which is the protection line, this object will return 0.
OC3 port	norCarrSonetMediumIntervalTable	norCarrSonetMedIntervalOpt ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	Optical Power Transmitted. This is interpreted as a percentage.
OC3 port	norCarrSonetMediumIntervalTable	norCarrSonetMedIntervalLBC ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	Laser Bias Current.
OC3 port, STS1	sonetSectionIntervalTable	sonetSectionIntervalESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Section in a particular 15 minute interval in the past 24 hours.

Hardware	OM table name	OM name	Description
OC3 port, STS1	sonetSectionInterval Table	sonetSectionIntervalSESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Section in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetSectionInterval Table	sonetSectionIntervalSEFSs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Coding Violations encountered by a SONET/SDH Section in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetSectionInterval Table	sonetSectionIntervalCVs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Coding Violations encountered by a SONET/SDH Section in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetLineIntervalTab le	sonetLineIntervalESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Line in a particular 15 minute interval in the past 24 hours.

Hardware	OM table name	OM name	Description
OC3 port, STS1	sonetLineIntervalTable	sonetLineIntervalSESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Line in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetLineIntervalTable	sonetLineIntervalCVs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Coding Violations encountered by a SONET/SDH Line in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetLineIntervalTable	sonetLineIntervalUASs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Una vailable Seconds encountered by a SONET/SDH Line in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetPathIntervalTable	sonetPathIntervalESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Errored Seconds encountered by a SONET/SDH Path in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetPathIntervalTable	sonetPathIntervalSESs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Severely Errored Seconds encountered by a SONET/SDH Path in a particular 15 minute interval in the past 24 hours.

Hardware	OM table name	OM name	Description
OC3 port, STS1	sonetPathIntervalTable	sonetPathIntervalCVs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Coding Violations encountered by a SONET/SDH Path in a particular 15 minute interval in the past 24 hours.
OC3 port, STS1	sonetPathIntervalTable	sonetPathIntervalUASs ***Note:*** Appears only if OC-3 cards are provisioned in the master shelf.	The counter associated with the number of Unavailable Seconds encountered by a Path in a particular 15 minute interval in the past 24 hours.
OC-3, DS1-IMA, or GigE cards	nnPmSnmpOmIntervTable	nnPmSnmpIntervReqPeak	The peak number of SNMP requests/PDUs in the most recent 15 minutes. These are accumulated on 1 minute cycles.
OC-3, DS1-IMA, or GigE cards	nnPmSnmpOmIntervTable	nnPmSnmpIntervReqAvg	The average number of SNMP requests/PDUs in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles. Precision is in tenths, thus 816 is 81.6.
OC-3, DS1-IMA, or GigE cards	nnPmSnmpOmIntervTable	nnPmSnmpIntervNotifPeak	The peak number of SNMP notifications in the most recent 15 minutes. These are accumulated on 1 minute cycles.

Hardware	OM table name	OM name	Description
OC-3, DS1-IMA, or GigE cards	nnPmSnmpOmIntervTable	nnPmSnmpIntervNotifAvg	The average number of SNMP notifications in the most recent 15 minutes. These are accumulated on 1 minute cycles. Therefore, the average is the average of the last 15x 1 minute cycles. Precision is in tenths, thus 816 is 81.6.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervPduRatePeak	Peak number of received AAL5 PDUs per second for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervPduRateAvg	Average number of received AAL5 PDUs per second for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervCbvMsgRPeak	Peak number of received connection request messages per second for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervCbvMsgRAvg	Average number of received connection request messages per second for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervConQDelPeak	Peak time in milliseconds a connRequest is pending in its queue for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervConQDelAvg	Average time in milliseconds a connRequest is pending in its queue for this 15 minute interval.

Hardware	OM table name	OM name	Description
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervCpuUtilPeak	Peak CPU occupancy for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldRscDccIntervTable	nnPmOvldRscDccIntervCpuUtilAvg	Average CPU occupancy for this 15 minute interval.
OC-3, DS1-IMA, or GigE cards	nnPmOvldConnDenyIntervConn	nnPmOvldConnDenyIntervConn	Count of the number of connection requests denied for this 15 minute interval.
DS1-IMA group	imaGroupIntervalTable	imaGroupIntervalUnavailSecs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Count of one second intervals where the IMA Group Traffic Stat Machine is down in one of the previous 96, individual 15 minute intervals
DS1-IMA group	imaGroupIntervalTable	imaGroupIntervalNeNumFailures ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	The number of times a near-end group failure (Config-Aborted, Insufficient-Links) has been reported in one of the previous 96, individual 15 minute, intervals.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalImaViolations ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	ICP violations: count of errored, invalid, or missing ICP cells, except during SES-IMA or UAS-IMA conditions, in one of the previous 96, individual 15 minute, intervals.

Hardware	OM table name	OM name	Description
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalOifAnomalies ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	The number of OIF anomalies, except during SES-IMA or UAS-IMA conditions, at the near-end in one of the previous 96 individual, 15 minute intervals. This is an optional attribute.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeSevErroredSecs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Count of one second intervals containing = 30 % of the ICP calls counted as IV-IMAs, or one or more link defects (for example, LOS, OOF/LOF, AIS, or LCD), LIF defects, or LODS defects, except during UAS-IMA condition, in one of the previous 96, individual 15 minute, intervals.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeUnavailSecs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Count of unavail able seconds at near-end in one of the previous 96, individual 15 minute, intervals; unavailability begins at the onset of 10 contiguous SES-IMA and ends at the onset of 10 contiguous seconds with no SES-IMA.

Hardware	OM table name	OM name	Description
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeTxUnusableSecs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Tx Unusable seconds; count of Unusable seconds at the near-end Tx LSM in one of the previous 96, individual 15 minute intervals.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeRxUnusableSecs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Rx Unusable seconds; count of Unusable seconds at the near-end Rx LSM in one of the previous 96, individual 15 minute intervals.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeTxNumFailures ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	The number of times a near-end transmit failure alarm condition has been entered on this link (that is, some from of implementation specific transmit fault) in one of the previous 96, individual, 15 minute, intervals.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalNeRxNumFailures ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	The number of times a near-end receive failure alarm condition has been entered on this link (that is, LIF, LODS, RFI-IMA, Mis-connected, or some form of implementation specific receive fault) in one of the previous 96, individual 15 minute intervals.

Hardware	OM table name	OM name	Description
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalTxStuffs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Count of stuff events inserted in the transmit direction in one of the previous 96, individual 15 minute, intervals. This is an optional attribute.
DS1-IMA link	imaLinkIntervalTable	imaLinkIntervalRxStuffs ***Note:*** Appears only if DS1-IMA cards are provisioned in the master shelf.	Count of stuff events inserted in the receive direction in one of the previous 96, individual 15 minute, intervals. This is an optional attribute.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrClosed	Counts the number of times that this association closed (both aborts and shutdowns).
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrAbort	Counts the number of times that this association aborted.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrOutPacks	Counts the number of packets transmitted.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrInPacks	Counts the number of packets received, this association.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrDiscPacks	Counts the number of packets discarded by this association.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrRetranPacks	Counts the number of packets retransmitted by this association, this interval.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrT1expires	Counts the number of T1 expires.

Hardware	OM table name	OM name	Description
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrT2expires	Counts the number of T2 expires.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrT3expires	Counts the number of T3 expires.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrCongCount	Counts the number of times this assoc entered congestion.
ABI cards	nnRelMsgSctpAssocOmCurrTable	nnRelMsgSctpAscCurrCongCleared	Counts the number of times congestion cleared by audit.

OMs reported to the CS 2000

The OMs in the following table record information on MG 9000, but report the information to the Gateway Controller (GWC) which then forwards the reports to the Call Server 2000 (CS 2000). To retrieve these OM statistics on the MG 9000, refer to *ATM/IP Performance Management*, NN10401-700.

Operational measurements reported to the CS 2000

OM name	OM register	Purpose
DTSRPM (Dial tone speed recording - peripheral module)	DTMF originations	Pegged when a DTMF line goes off hook
	DTMF delays	Pegged when dial tone is applied more than 3 seconds after the off hook
	DP originations	Not supported
	DP delays	Not supported
	Keyset originations	Pegged when a P-phone line goes off hook
	Keyset delays	Pegged when dial tone is applied more than 3 seconds after the off hook
GWOVLOM	OVERLOAD	Pegged when connections are denied because the MG 9000 is in overload.
LMD (line traffic)		Is provided per shelf. If an MG 9000 frame contains one master shelf and three subtending shelves, LMD has three entries, one for each shelf based on the ADMIN number of the shelf.
XPMLNK (XMS-based peripheral module link)		Is supported on the XPM that are subtending the ABI DS-512 interface on the MG 9000.

OM name	OM register	Purpose
SITE (traffic and DTSR for remote sites)		Is provided on an MG 9000 node basis and provides intrasite call attempts, line originations leaving the site, line terminations coming into the site, along with DTSR information on the MG 9000 node. This does not displace DTSRPM but can be used to supplement it.
SITE2 (traffic and DTSR for remote sites 2)		Provides DTSR information on the remote digital terminals (RDT) subtending from an ESMA on the ABI DS-512 interface.

OC-3 laser performance

The values for optical transmission and laser bias show the health of the transmit laser on the OC-3 card. When the OC-3 carrier administration status is Unlocked and the operational status is Up, the readings show the optical transmit power and the laser bias current as a percentage of nominal measurements captured during manufacturing. The readings indicate the laser health compared to the initial readings and indicate a degradation of transmit power if they are out of range. The following are the acceptable values for laser bias seen at the LCI or reported to the element manager using OMs

- typical reading for Optical Tx is 100% 25%
- typical reading for Laser bias is 0 to 150%

Readings outside these ranges may indicate a degradation of the transmit laser strength. These readings are also captured by carrier performance monitoring statistics at the element manager to track carrier performance. Any carrier degradation is reported to the element manager.

Note: If the carrier is Locked or Offline, both readings will be 0%.

The receive optical statistics are covered by carrier maintenance performance monitoring and defect monitoring (for example, ES, SES, LOS, LOF, BERSF, BERSD). The laser bias current of the receive signal cannot be tracked since that is a parameter of the transmit laser diode from the far end. The optical Rx signal is tracked by the local optical transceiver and detects when the optical Rx signal falls below a certain threshold and reports a loss of signal (LOS). These signal fail parameters are reported through carrier maintenance at the LCI and the element manager.

The technician must monitor the transceiver parameters directly and look for a degradation to determine if the transmit laser health is beginning to fail.

In performance monitoring, if these values fall outside of the ranges listed earlier, a threshold crossing alert is raised to the MG 9000 Manager.

If the OC-3 carriers are offline, the transmit laser will be disabled and the readings will read 0% or close to 0%. If both readings read 0% or close to 0%, then the technician should check to make sure the carriers are unlocked.

With the OC-3 carriers unlocked, these values should read within the above ranges. If they fall outside of the ranges, the transmit laser may be defective or other hardware problems may exist. At this point the technician should

- Check for OC-3 carrier alarms such as RDI-L (which indicates far end is having trouble with this signal).
- Consider replacing the OC-3 card. To replace the DCC card, refer to "Replacing a DCC card" in *MG 9000 Fault Management* (NN10074-911).

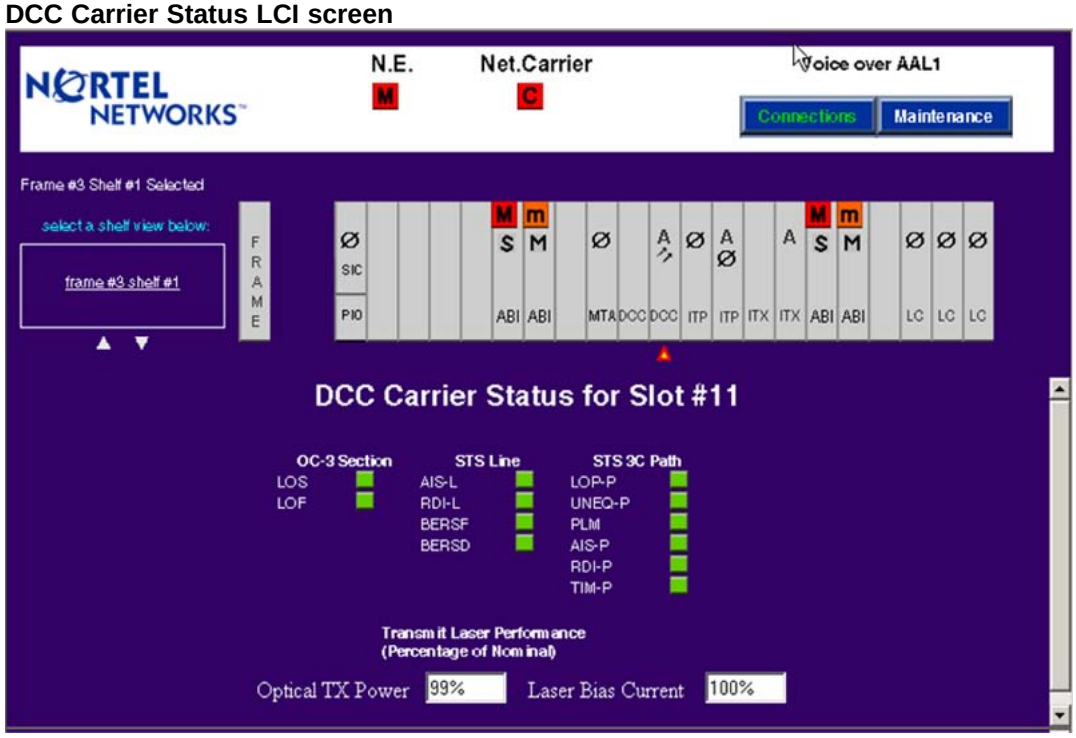
  Note: Checking or replacing the optical fiber has no effect on this problem.

If the receive optical signals are out of range, the MG 9000 Manager shows the carrier alarms and failed receive signals.

Obtaining laser health data from the LCI

The following figure shows the DCC Carrier Status LCI screen. From this screen the technician can obtain the Optical TX and Laser Bias values. When the screen is displayed, a query is issued and the screen is updated every 5 seconds.

DCC Carrier Status LCI screen

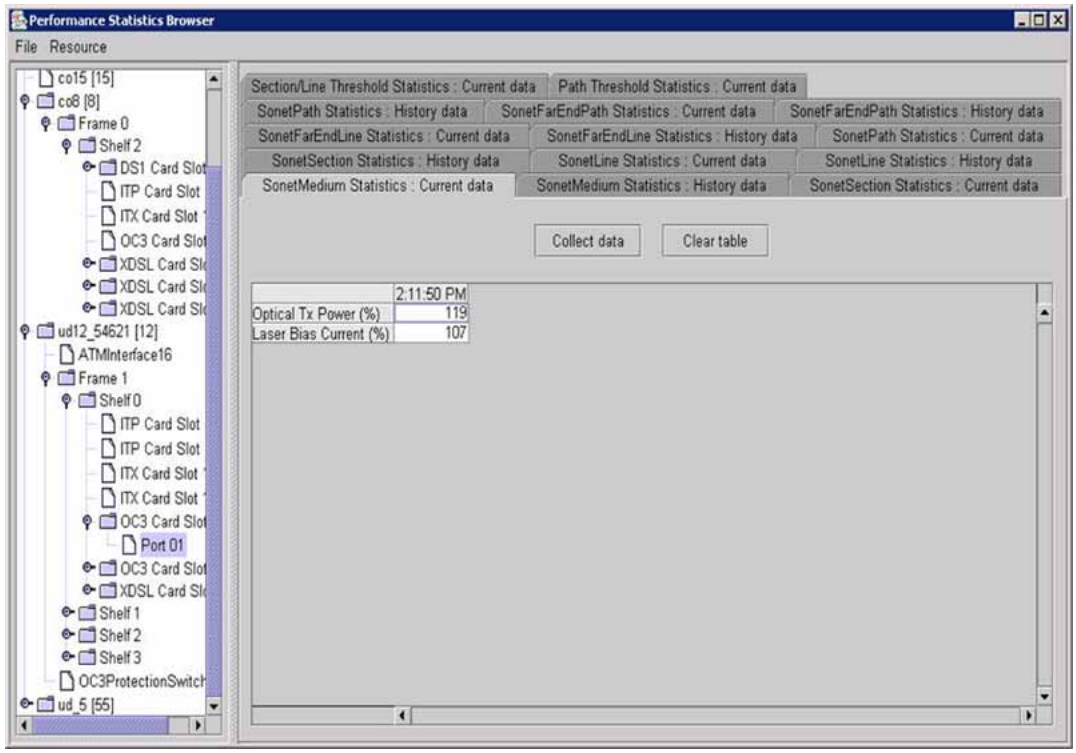


Obtaining laser health information from the MG 9000 Manager

The following figure shows the Performance Statistics Browser at the MG 9000 Manager. From the Sonet Medium Statistics tab, the technician can obtain the Optical TX and Laser Bias values. The screen is updated when the Collect Data button is clicked.

Note: The following example depicts a concatenated carrier. The tabs for a channelized carrier differ from those of a concatenated carrier.

Performance Statistics Browser showing Sonet Medium Statistics tab



Tools and utilities

Operational measurements are available from the MG 9000 Manager, using the Performance Statistics Browser which is accessed from the Subnet View.

Operational measurements forwarded to the OSS are collected and formatted into comma separated value (CSV) format using the Operational Measurement Collector (OM Collector). The OM Collector is described next.

OM Collector

The OM Collector is a CSV OM collection application. The collection frequency for OSS data retrieval is configurable from every 15 minutes or 5/30 minutes. An OMC600 log is output every sample interval giving a summary report of OM data collected. The sample intervals are 15 minutes,

or if 5/30 minutes is the collection interval, the OMC600 log is output every 5th minute. The sample interval can be reduced to five minutes. In addition, a 30 minute summary interval is available, which is an aggregation of six five-minute sample intervals. The 30 minute summary interval is only possible when the sample interval is 5 minutes.

Note: The system collects all 5 minute OM files before collecting the 30 minute OM files.

The following is a sample OMC600 log report

```
OMC600 Oct 24 14:15:00 0001 INFO OMCollectionSummary
   ***OM Collection Summary***
   Total number of OM data collections 5
   OM data collection succeeded:      5
   OM data collection failures:       0
   General comment : <none>
```

If the OM collector fails to collect an OM file from an MG 9000, a minor alarm is output and an OMC300 log report is output. When the condition clears, another alarm and OMC300 log report is output reporting that the condition has cleared. These alarms are generated one for each MG 9000 for each collection interval.

Collected OM Data files are available in the following directories:

- /data/oms/1
- /data/oms/2
- /data/oms/3
- /data/oms/4
- /data/oms/5
- /data/oms/6
- /data/oms/7

Note: The Collected OM Data files are located in the server where the MG 9000 Manager server application is installed. New files are always stored into the '1' directory. Files are rotated to the next directory every 24 hours.

The OM Collector software is installed, started, stopped, and configured with the MG 9000 Manager server software.

Central user Id and password configuration requirements for the OM Collector

The following user Id and password interactions apply during a request for OM data from the EM to the MG 9000.

Systems running SN08 use the local (NE specific) user Id and password.

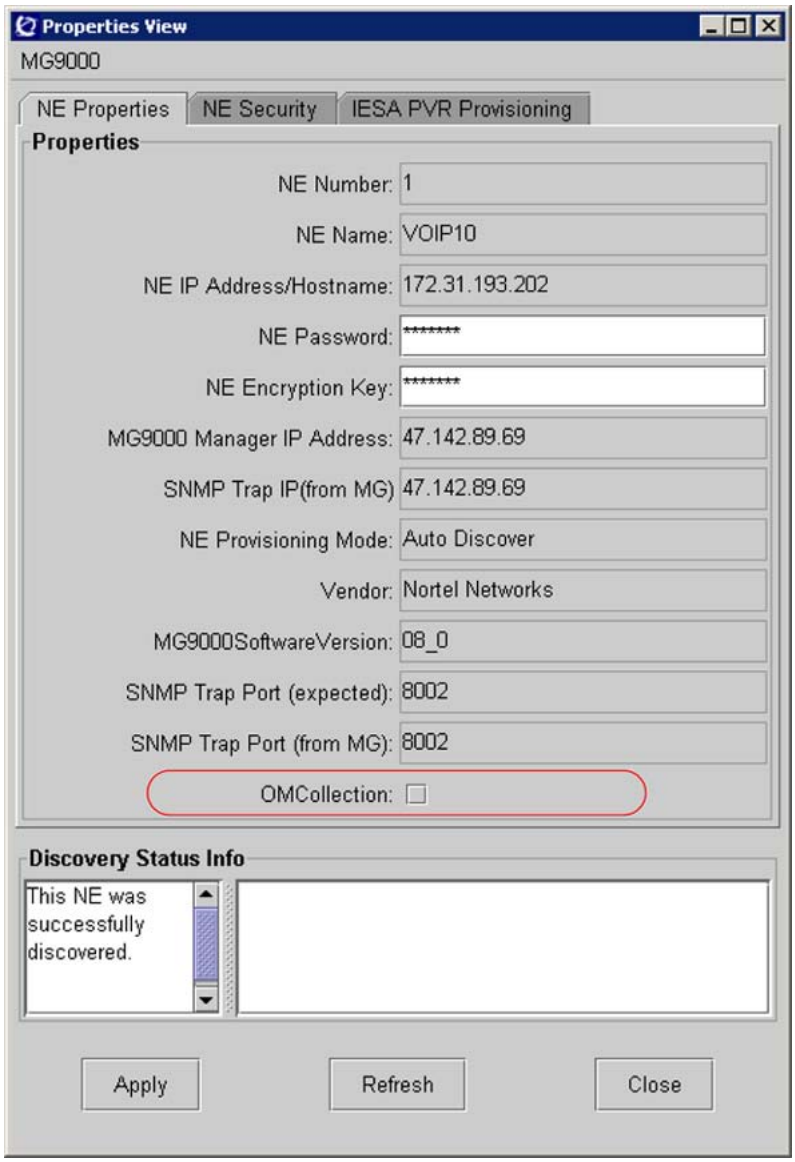
For systems running SN09 or later, if the central user Id and password has been configured, the system sends an SFTP request using the central user Id and password. Otherwise, the local user Id and password will be used.

> ***Note:*** The central user Id and password for the Radius server must not be the same as the default EM central user Id and password that is hard coded in the EM application. For details on configuring authentication methods, see *MG 9000 Security and Administration*, NN10162-611.

Enabling and disabling OM collection for individual NEs

To enable or disable OM collection for individual NEs by checking/unchecking the NE OMCollection checkbox, use the Properties View in the MG 9000 Manager. The Properties View, which is accessed from **Configuration->View/Modify** NE Properties from the menu bar of the Subnet View after the NE is provisioned. The OM Collection checkbox is greyed out if the NE is not discovered. The following figure shows the Properties View and the OMCollection field.

Properties View showing OM Collection checkbox



Viewing OM Collector status

To view the status of the OM Collector for a specific NE, enabled or disabled, select the Properties View by selecting **Configuration->View/Modify** NE Properties from the menu bar of the Subnet View. The Properties View is shown in the "Properties View, showing OM Collection checkbox" (page 85).

The following describe the behavior of the OM Collection checkbox. If the OM Collection checkbox

- is not checked, then OM collection is not occurring for that NE
- is checked and not greyed out, then OM collection is occurring for the NE

- is checked and greyed out, OM collection is temporarily stopped for the NE which indicates re-discovery of the NE is occurring

Configuration of collection intervals

The Configure Collection Interval GUI allows the user to configure sample and summary intervals uniformly for all SN08 MG 9000s in a Subnet. If there are no MG 9000s in a subnet, the configured collection interval will just be stored in database. To access the Configure Collection Interval GUI, from the Subnet View, select **Performance->Configure** Collection Interval from the menu bar.

Sample and summary intervals are specified in terms of minutes. For MG 9000 network elements at SN08, the user can select from the following combinations of Sample and Summary intervals:

- sample interval of 5 minutes and summary interval of 30 minutes
- sample interval of 15 minutes and no summary interval

If collection intervals are not configured, the default time of 15 minutes is set.

Note: If the database is inoperative, the system displays the default value of "15 minutes". In this case, the value displayed in this view may not be correct.

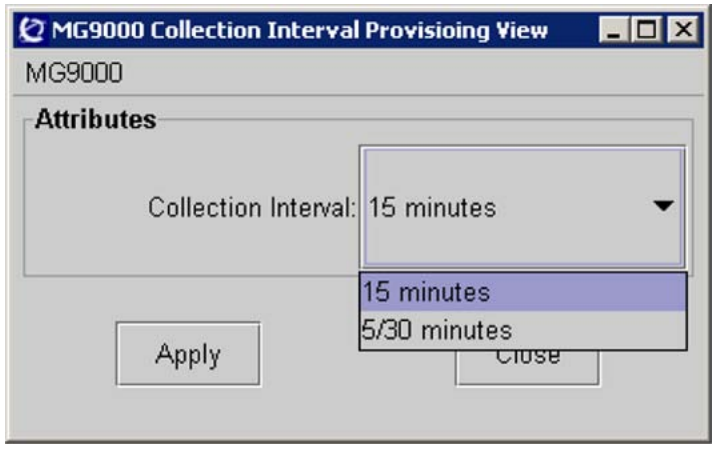
Configuring OM collection intervals

Step	Action

At the MG 9000 Manager

1 From the Subnet View, select **Performance->Configure** Collection Interval from the menu bar. The MG 9000 Collection Interval Provisioning View appears as shown in the following figure.

MG 9000 Collection Interval Provisioning View



2 Determine the collection interval to be used for the MG 9000 network elements in the subnet. Use the information in the following table to determine the collection interval.

Field	Entry	Explanation
Collection Interval	15 minutes	Specifies the sample and summary collection intervals of 15 minutes and none respectively.
	5/30 minutes	Specifies the sample and summary collection intervals of 5 and 30 minutes respectively.

3 Select the collection interval from the pull down list. Click on Apply.

Note: When the interval is changed, any data collected by the OM collector and/or the Performance Browser until the end of the current collection interval after the MG 9000 Manager changes collection intervals may not be accurate.

4 Click **Close**.

5 This procedure is complete.

—End—

Changing OM collection values on the CLI

The following procedure allows you to modify the OM Collection latency and thread properties by using the CLI.

Changing OM collection latency and thread properties on the CLI

Step Action

At the MG 9000 Manager server

1 Telnet into the MG 9000 Manager server.

2 To change directory, type

```
# cd /opt/nortel/mg9ksrv_NN/bin
```

where **NN** is the number of your software release. For example, In SN09, the directory path is # cd /opt/nortel/mg9ksrv_09/bin. In SN09.1 (SN09FF) and later, the path is # cd /opt/nortel/mg9ksrv_09_1/bin

3 To configure the server, type

```
# ./mg9kserver config
```

The system responds

```
Main Configuration Menu
1) Change Distribution Policy
2) Change CS2M IP Address
3) Change Oracle IP Address
4) Change Debug Level for logs
5) Change Persistence settings
6) Change ESA data download settings
7) Change Imaging Server settings
8) Change EM Factory Sleep
9) Change OMC Settings
10) Display current settings
11) Exit from Main Menu
Please make a selection =>
```

4 Select 9.

The system responds:

```
ESA Configuration Menu
1) Enter new OMC Download Directory Path
2) Enter Latency for OMC in seconds
3) Enter Max number of Threads
4) Exit to Main Menu
Please make a selection =>
```

Note: Changes can take up to 60 seconds to take effect.

5 Do one of the following:

If you wish to	Do
change latency values	Step 6
change the thread properties	Step 9

6 Select 2 to change the latency settings.

The system responds:

```
Please enter the Latency for OMC in seconds
Default:  [5] =>
```

7 Enter a latency value, or select enter to accept the default value, then go to Step 10.

8 Select 3 to change the thread properties.

The system responds:

```
Please enter the MAX number of threads
Default:  [40] =>
```

9 Enter a number for the maximum number of threads, or select enter to accept the default value of 40. The recommended maximum is 40.

Note: If you configure this option, you must restart the MG 9000 Manager server. The system displays the following message: "MG9KEM server needs to be restarted for Thread Property Changes to take effect".

10 This procedure is complete.

—End—

OM Push application

The OM Push application (OMPUSH) is a tool that runs in SPFS and transfers MG 9000 OM files generated by the OM Collector to predefined remote servers using FTP or SSH FTP (SFTP). OMPUSH runs in SPFS on the same server as that running the MG 9000 OM Collector. The OM Push application supports 5 minute and 15 minute intervals.

OMPUSH supports up to six file push sessions. Each session is responsible for sending OM files to one destination periodically. Each session has its own destination server, destination directory, login user, password, push interval, source of OM files, and file transfer mode. Information on the OMPUSH application is available from the following documents:

- to obtain basic information on the OMPUSH application is available in *UA-AAL1 Solutions Basics*, NN10443-100 or *UA-IP Solution-level Basics*, NN10446-100
- to configure and use the OMPUSH application, refer to *ATM/IP Configuration Management*, NN10409-500
- to start and stop the OMPUSH application, refer to *ATM/IP Security and Administration*, NN10402-600
- to view OMPUSH logs in Syslog, refer to *ATM/IP Fault Management*, NN10408-900

Note: When referring to these documents, remember that when installation, configuring and using OMPUSH, references to the CS 2000 Management Tools server must be replaced with MG 9000 Manager server on which the OMPUSH application is installed.

Carrier VoIP

MG 9000 Performance Management

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