Monitor Performance

This chapter explains how to enable and view performance monitoring statistics for the Cisco ONS 15454. Performance monitoring (PM) parameters are used by service providers to gather, store, and set thresholds and report performance data for early detection of problems. For more PM information, details, and definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note Unless otherwise specified, "ONS 15454" refers to both ANSI and ETSI shelf assemblies.

Before You Begin

Before performing any of the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide* as necessary.

This section lists the chapter procedures (NTPs). Turn to a procedure for applicable tasks (DLPs).

1. NTP-G73 Change the PM Display, page 8-2—Complete as needed to change the displayed PM counts.
2. NTP-G74 Monitor DWDM Card Performance, page 8-8—Complete as needed to monitor dense wavelength division multiplexing (DWDM) performance.
3. NTP-G75 Monitor Transponder and Muxponder Performance, page 8-15—Complete as needed to monitor multirate transport performance.

Note For additional information regarding PM parameters, refer to Telcordia's GR-1230-CORE, GR-499-CORE, and GR-253-CORE documents and GR-820-CORE document titled Generic Digital Transmission Surveillance, and in the ANSI T1.231 document entitled *Digital Hierarchy - Layer 1 In-Service Digital Transmission Performance Monitoring*.

NTP-G73 Change the PM Display

Purpose	This procedure enables you to change the display of PM counts by selecting drop-down list or radio button options in the Performance window.
Tools/Equipment	None
Prerequisite Procedures	Before you monitor performance, be sure you have created the appropriate circuits and provisioned the card according to your specifications. For more information, see Chapter 6, "Create Channels and Circuits" and Chapter 10, "Change Card Settings."
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-25 at the node that you want to monitor. If you are already logged in, continue with Step 2.

Step 2 In node view, double-click the DWDM or multirate card where you want to view PM counts. The card view appears.

Step 3 As needed, use the following tasks to change the display of PM counts:

- DLP-G131 Refresh PM Counts at 15-Minute Intervals, page 8-2
- DLP-G132 Refresh PM Counts at One-Day Intervals, page 8-3
- DLP-G133 View Near-End PM Counts, page 8-4
- DLP-G134 View Far-End PM Counts, page 8-4
- DLP-G135 Reset Current PM Counts, page 8-5
- DLP-G136 Clear Selected PM Counts, page 8-6
- DLP-G137 Set Auto-Refresh Interval for Displayed PM Counts, page 8-6
- DLP-G138 Refresh PM Counts for a Different Port, page 8-7

Stop. You have completed this procedure.

DLP-G131 Refresh PM Counts at 15-Minute Intervals

Purpose	This task changes the window view to display PM counts in 15-minute intervals.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click the **15 min** radio button.

Step 4 Click **Refresh**. Performance monitoring parameters appear in 15-minute intervals synchronized with the time of day.

Step 5 View the Curr column to find PM counts for the current 15-minute interval.

Each monitored performance parameter has corresponding threshold values for the current time period. If the value of the counter exceeds the threshold value for a particular 15-minute interval, a threshold crossing alert (TCA) is raised. The number represents the counter value for each specific performance monitoring parameter.

Step 6 View the Prev-*n* columns to find PM counts for the previous 15-minute intervals.

Note If a complete 15-minute interval count is not possible, the value appears with a yellow background. An incomplete or incorrect count can be caused by monitoring for less than 15 minutes after the counter started, changing the node timing settings, changing the time zone settings, replacing a card, resetting a card, or changing port service states. When the problem is corrected, the subsequent 15-minute interval appears with a white background.

Step 7 Return to your originating procedure (NTP).

DLP-G132 Refresh PM Counts at One-Day Intervals

Purpose	This task changes the window view to display PM parameters in 1-day intervals.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click the **1 day** radio button.

Step 4 Click **Refresh**. Performance monitoring appears in 1-day intervals synchronized with the time of day.

Step 5 View the Curr column to find PM counts for the current 1-day interval.

Each monitored performance parameter has corresponding threshold values for the current time period. If the value of the counter exceeds the threshold value for a particular 1-day interval, a TCA is raised. The number represents the counter value for each specific performance monitoring parameter.

Step 6 View the Prev-*n* columns to find PM counts for the previous 1-day intervals.

Note If a complete count over a 1-day interval is not possible, the value appears with a yellow background. An incomplete or incorrect count can be caused by monitoring for less than 24 hours after the counter started, changing node timing settings, changing the time zone settings, replacing a card, resetting a card, or changing port service states. When the problem is corrected, the subsequent 1-day interval appears with a white background.

Step 7 Return to your originating procedure (NTP).

DLP-G133 View Near-End PM Counts

Purpose	This task enables you to view near-end PM counts for the selected card and port.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click the **Near End** radio button.

Step 4 Click **Refresh**. All PM parameters occurring for the selected card on the incoming signal appear. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 5 View the Curr column to find PM counts for the current time interval.

Step 6 View the Prev-*n* columns to find PM counts for the previous time intervals.

Step 7 Return to your originating procedure (NTP).

DLP-G134 View Far-End PM Counts

Purpose	This task enables you to view far-end PM parameters for the selected card and port.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click the **Far End** radio button.

Step 4 Click **Refresh**. All PM parameters recorded by the far-end node for the selected card on the outgoing signal appear. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 5 View the Curr column to find PM counts for the current time interval.

Step 6 View the Prev-*n* columns to find PM counts for the previous time intervals.

Step 7 Return to your originating procedure (NTP).

DLP-G135 Reset Current PM Counts

Purpose	This task clears the current PM count, but it does not clear the cumulative PM count. This task allows you to see how quickly PM counts rise.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click **Baseline**.

Note The Baseline button clears the PM counts displayed in the current time interval but does not clear the PM counts on the card. When the current time interval expires or the window view changes, the total number of PM counts on the card and on the window appears in the appropriate column. The baseline values are discarded if you change views to a different window and then return to the Performance window.

Step 4 View the current statistics columns to observe changes to PM counts for the current time interval.

Step 5 Return to your originating procedure (NTP).

DLP-G136 Clear Selected PM Counts

Purpose	This task uses the Clear button to clear specified PM counts depending on the option selected.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser

Caution Pressing the Clear button can mask problems if used incorrectly. This button is commonly used for testing purposes. After pressing this button, the current bin is marked invalid. Also note that the unavailable seconds (UAS) count is not cleared if you were counting UAS; therefore, this count could be unreliable when you press Clear.

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 Click **Clear**.

Step 4 From the Clear Statistics dialog box, click one of the following radio buttons:

- **Displayed statistics**: Clearing displayed statistics erases all PM counts associated with the current combination of statistics on the selected port from the card and the window. This means that the selected time interval, direction, and signal type counts are erased from the card and the window.
- **All statistics for port** *x*: Clearing all statistics for port *x* erases all PM counts associated with all combinations of the statistics on the selected port from the card and the window. This means that all time intervals, directions, and signal type counts are erased from the card and the window.
- **All statistics for card**: Clearing all statistics for card erases all PM counts for all ports from the card and the window.

Step 5 From the Clear Statistics dialog box, click **OK** to clear the selected statistics.

Step 6 Verify that the selected PM counts have been cleared.

Step 7 Return to your originating procedure (NTP).

DLP-G137 Set Auto-Refresh Interval for Displayed PM Counts

Purpose	This task changes the window auto-refresh intervals for updating the displayed PM counts.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 From the Auto-refresh drop-down list, choose one of the following options:

- **None**: This option disables the auto-refresh feature.
- **15 Seconds**: This option sets the window auto-refresh to 15-second time intervals.
- **30 Seconds**: This option sets the window auto-refresh to 30-second time intervals.
- **1 Minute**: This option sets the window auto-refresh to 1-minute time intervals.
- **3 Minutes**: This option sets the window auto-refresh to 3-minute time intervals.
- **5 Minutes**: This option sets the window auto-refresh to 5-minute time intervals.

Step 4 Click **Refresh**. The PM counts for the newly selected auto-refresh time interval appear.

Depending on the selected auto-refresh interval, the displayed PM counts automatically update when each refresh interval completes. If the auto-refresh interval is set to None, the PM counts that appear are not updated unless you click Refresh.

Step 5 Return to your originating procedure (NTP).

DLP-G138 Refresh PM Counts for a Different Port

Purpose	This task changes the window view to display PM counts for another port on a multiport card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** tab.

Step 3 In the Port drop-down list, choose a port.

Step 4 Click **Refresh**. The PM counts for the newly selected port appear.

Step 5 Return to your originating procedure (NTP).

NTP-G74 Monitor DWDM Card Performance

Purpose	This procedure enables you to view, transmit, and receive performance information about an Optical Service Channel, Multiplexer/Demultiplexer, Amplifier, and OADM card and port during selected time intervals to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	Before you monitor performance, be sure you have created the appropriate circuits and provisioned the card according to your specifications. For more information, see Chapter 6, "Create Channels and Circuits" and Chapter 10, "Change Card Settings."
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 Complete the "DLP-G46 Log into CTC" procedure on page 2-25 at the node that you want to monitor. If you are already logged in, continue with Step 2.

Step 2 Complete the following tasks as needed:

- DLP-G139 View Optical Service Channel PM Parameters, page 8-8.
- DLP-G140 View Optical Amplifier PM Parameters, page 8-10.
- DLP-G141 View PMs for 32MUX-O, 32-WSS, 32-DMX-O, and 32DMX Cards, page 8-11.
- DLP-G142 View Channel Filter Optical Add/Drop Multiplexer PM Parameters, page 8-12.
- DLP-G143 View Band Filter Optical Add/Drop Multiplexer PM Parameters, page 8-14.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" procedure on page 8-2.

Stop. You have completed this procedure.

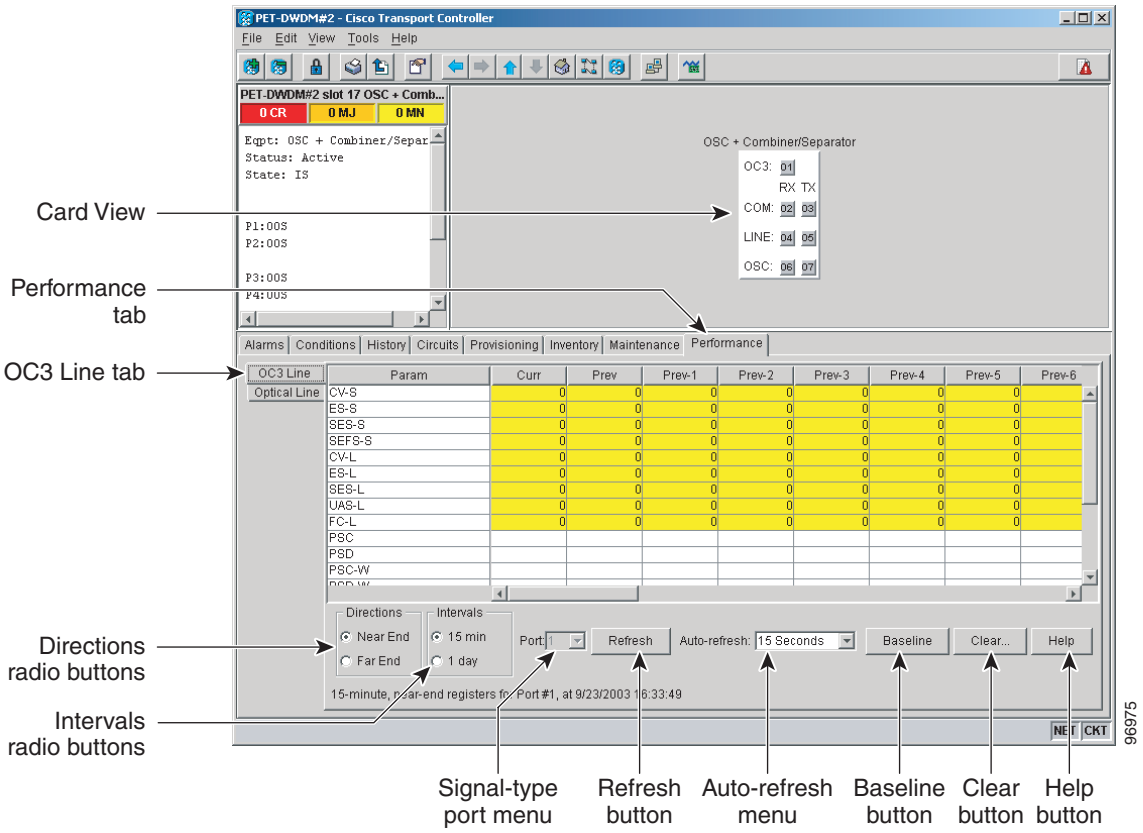
DLP-G139 View Optical Service Channel PM Parameters

Purpose	This task enables you to view optical service channel (OSC) PM counts at selected time intervals on an Optical Service Channel Module (OSCM) or Optical Service Channel and Combiner/Separator Module (OSC-CSM) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the OSCM or OSC-CSM card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **OC3 Line** tabs (Figure 8-1).

Figure 8-1 OC3 Line Tab in the Optical Service Channel Card View Performance Window



Step 3 Click **Refresh**. OC3 line performance monitoring statistics for the selected port appear.

Step 4 Click the **Optical Line** tab.

Step 5 Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.

Step 6 Return to your originating procedure (NTP).

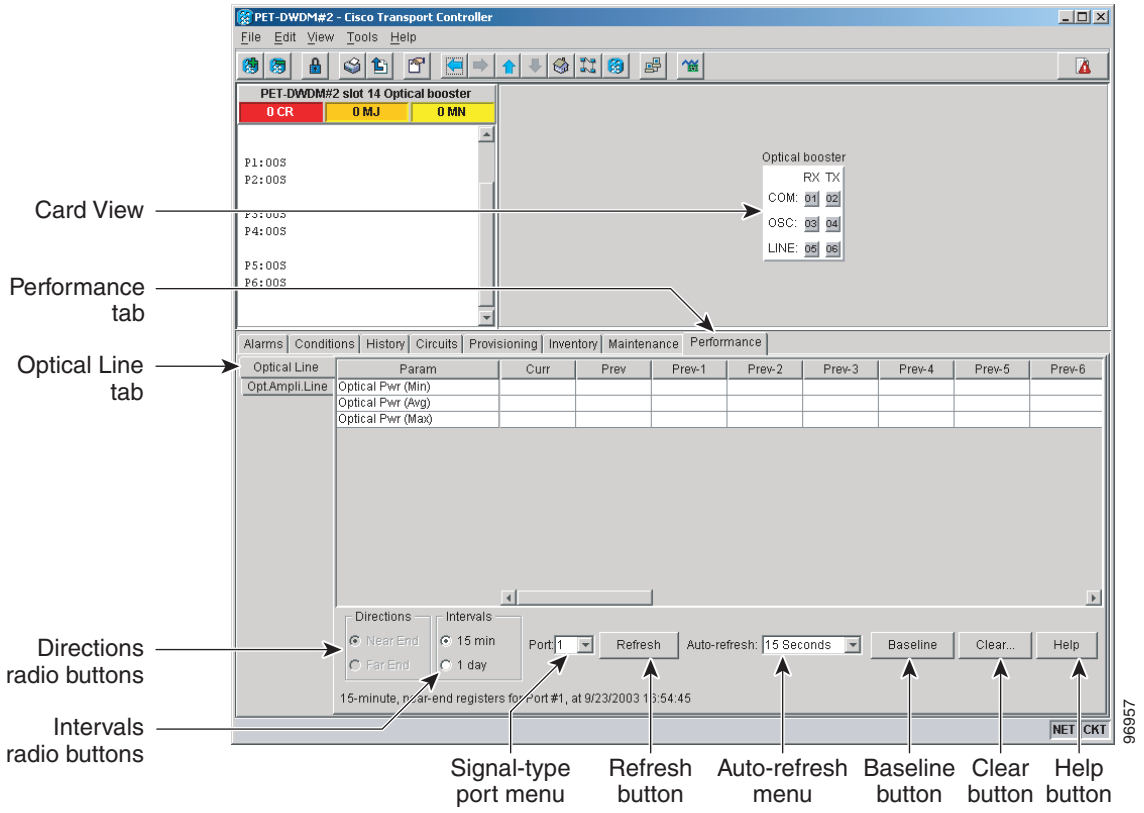
DLP-G140 View Optical Amplifier PM Parameters

Purpose	This task enables you to view optical amplifier PM counts at selected time intervals on an Optical Preamplifier (OPT-PRE) or Optical Booster (OPT-BST) amplifier card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the optical amplifier card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Optical Line** tabs (Figure 8-2).

Figure 8-2 Optical Line Tab in the Optical Amplifier Card View Performance Window



Step 3 Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.

Step 4 Click the **Opt. Ampli. Line** tab.

Step 5 Click **Refresh**. Optical amplifier line performance monitoring statistics for the selected port appear.

Step 6 Return to your originating procedure (NTP).

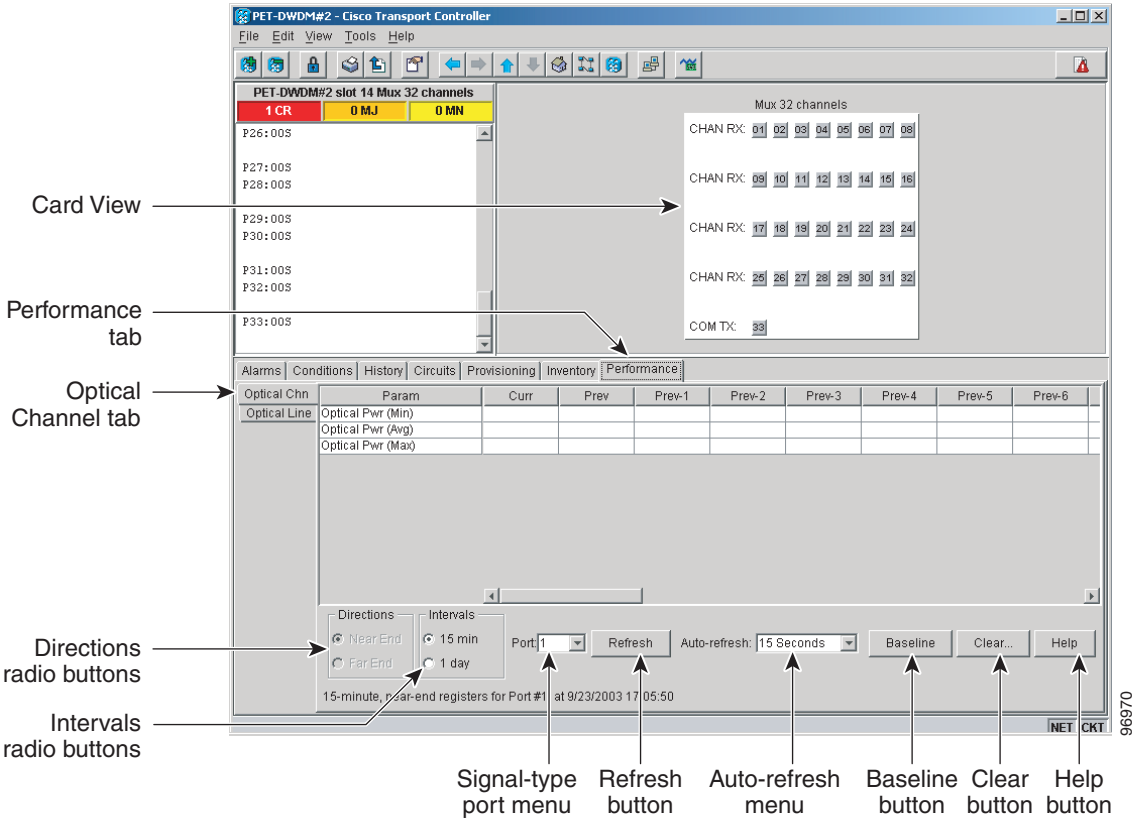
DLP-G141 View PMs for 32MUX-O, 32-WSS, 32-DMX-O, and 32DMX Cards

Purpose	This task enables you to view multiplexer or demultiplexer PM counts at selected time intervals on a 32MUX-O (32-Channel Multiplexer), 32-WSS (32-Channel Wavelength Selective Switch), 32-DMX-O, and 32DMX (32-Channel Demultiplexer) cards and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the 32MUX-O, 32-WSS, 32-DMX-O, or 32DMX card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Optical Chn** tabs (Figure 8-3).

Figure 8-3 Optical Channel Tab in the Multiplexer/Demultiplexer Card View Performance Window



Step 3 Click **Refresh**. Optical channel performance monitoring statistics for the selected port appear.

Step 4 Click the **Optical Line** tab.

Step 5 Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.

Step 6 Return to your originating procedure (NTP).

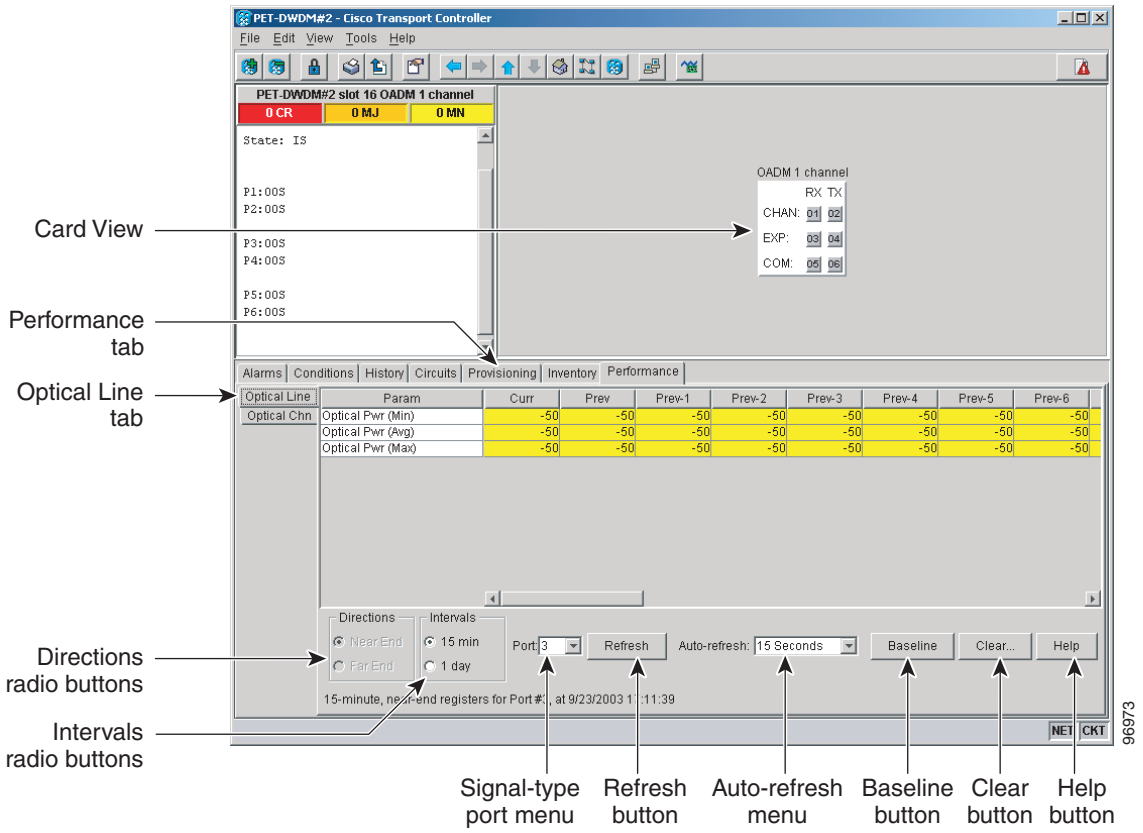
DLP-G142 View Channel Filter Optical Add/Drop Multiplexer PM Parameters

Purpose	This task enables you to view channel filter optical add/drop channel multiplexer (OADM) PM counts at selected time intervals on an 1-Channel OADM (AD-1C-xx.x), 2-Channel OADM (AD-2C-xx.x), or 4-Channel OADM (AD-4C-xx.x) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the optical AD-xC-xx.x card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Optical Line** tabs (Figure 8-4).

Figure 8-4 Optical Line Tab in the Channel Filter OADM Card View Performance Window



Step 3 Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.

Step 4 Click the **Optical Chn** tab.

Step 5 Click **Refresh**. Optical channel performance monitoring statistics for the selected port appear.

Step 6 Return to your originating procedure (NTP).

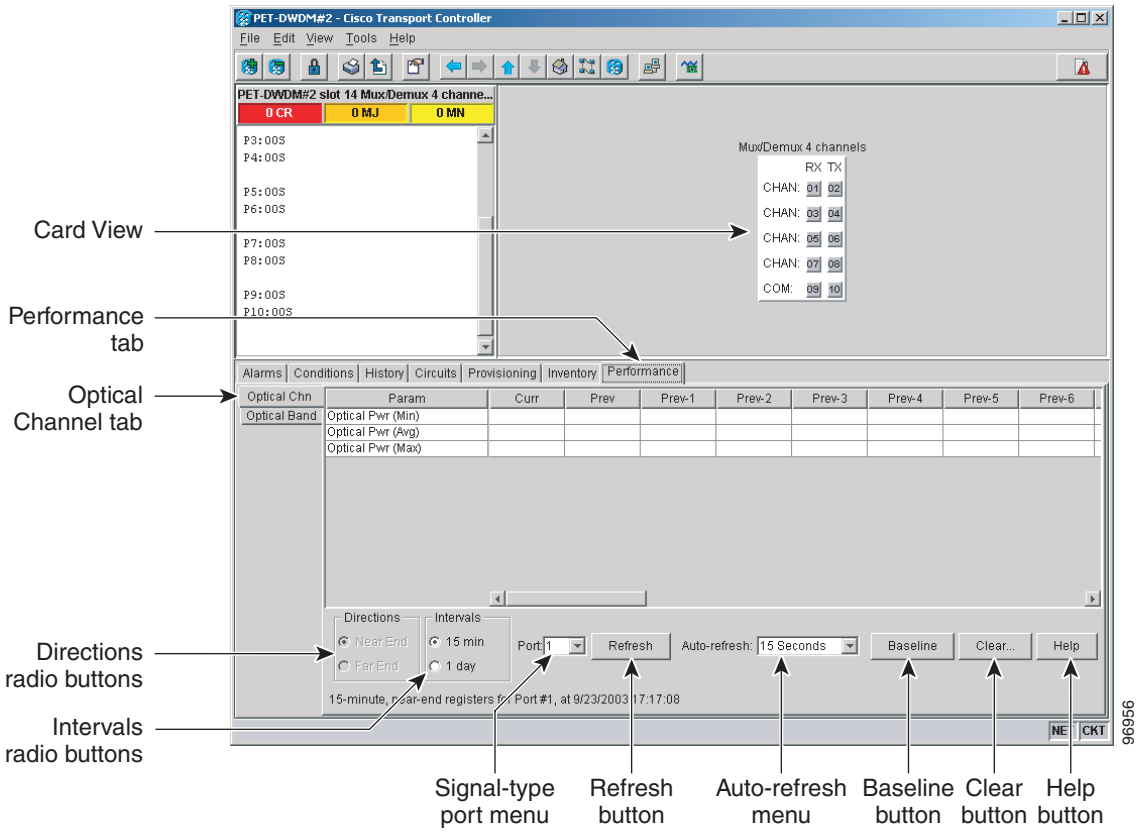
DLP-G143 View Band Filter Optical Add/Drop Multiplexer PM Parameters

Purpose	This task enables you to view band filter OADM PM counts at selected time intervals on an 1-Band OADM (AD-1B-xx.x), 4-Band OADM (AD-4B-xx.x), or 4-Channel Multiplexer/Demultiplexer (4MD-xx.x) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the AD-xB-xx.x or the 4MD-xxx card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Optical Chn** tabs (Figure 8-5).

Figure 8-5 Optical Channel Tab in the Band Filter OADM Card View Performance Window



Step 3 Click **Refresh**. Optical channel performance monitoring statistics for the selected port appear.

Step 4 Click the **Optical Band** tab.

Step 5 Click **Refresh**. Optical band performance monitoring statistics for the selected port appear.

Step 6 Return to your originating procedure (NTP).

NTP-G75 Monitor Transponder and Muxponder Performance

Purpose	This procedure enables you to view node near-end or far-end performance during selected time intervals on a transponder (TXP_MR_10G, TXP_MR_2.5G, TXPP_MR_2.5G, TXP_MR_10E), or a muxponder (MXP_2.5G_10E, MXP_MR_2.5G, MXPP_MR_2.5G, MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	Before you monitor performance, be sure you have created the appropriate circuits and provisioned the card according to your specifications. For more information, see Chapter 6, "Create Channels and Circuits" and Chapter 10, "Change Card Settings."
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-25 at the node that you want to monitor. If you are already logged in, continue with Step 2.

Step 2 Complete the "DLP-G144 Enable/Disable OTN ITU-T G.709 Performance Monitoring" task on page 8-16 as needed to enable or disable optical transport network (OTN) ITU-T G.709 monitoring.

Step 3 Complete the "DLP-G145 Enable/Disable OTN FEC Performance Monitoring" task on page 8-17 as needed to enable or disable OTN forward error correction (FEC) monitoring.

Step 4 Complete the following tasks as needed to view PM parameters:

- DLP-G146 View Optics PM Parameters, page 8-18.
- DLP-G147 View Payload PM Parameters, page 8-19.
- DLP-G148 View OTN PM Parameters, page 8-21.
- DLP-G149 View Payload Statistics PM Parameters, page 8-22.
- DLP-G150 View Payload Utilization PM Parameters, page 8-24.
- DLP-G151 View Payload History PM Parameters, page 8-25.
- DLP-G152 View Payload SONET PM Parameters, page 8-26.
- DLP-G153 Create RMON Alarm Thresholds, page 8-28.
- DLP-G154 Delete RMON Alarm Thresholds, page 8-30.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" task on page 8-2.

Stop. You have completed this procedure.

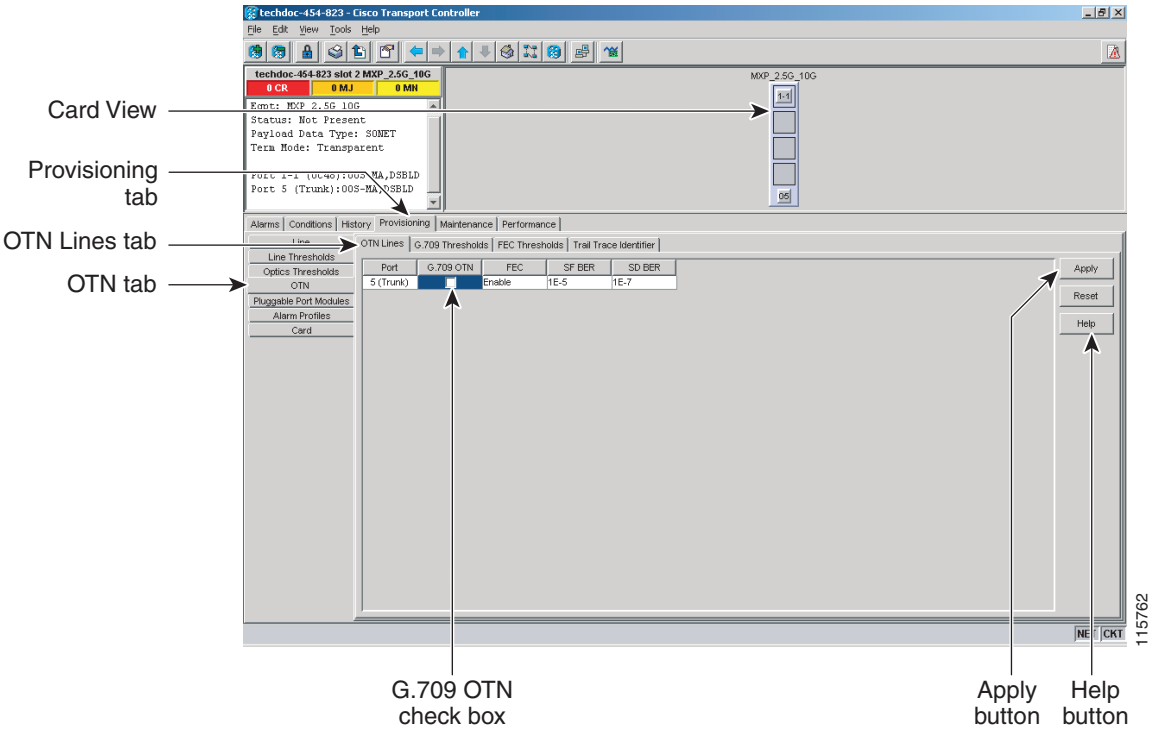
DLP-G144 Enable/Disable OTN ITU-T G.709 Performance Monitoring

Purpose	This task enables or disables OTN ITU-T G.709 monitoring of near-end or far-end performance on a card and port during selected time intervals to detect possible problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view, double-click the card you want to monitor. The card view appears.

Step 2 Click the **Provisioning** > **OTN** > **OTN Lines** tabs (Figure 8-6).

Figure 8-6 OTN Lines Tab for Enabling/Disabling OTN ITU-T G.709 Performance Monitoring



Step 3 Make an ITU-T G.709 selection based on the following rules:

- Unchecked disables ITU-T G.709 for that port (default).
- Checked enables ITU-T G.709 for that port.

Step 4 Click **Apply**.

Step 5 Click the **Performance** tab to view PM parameters. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 6 Return to your originating procedure (NTP).

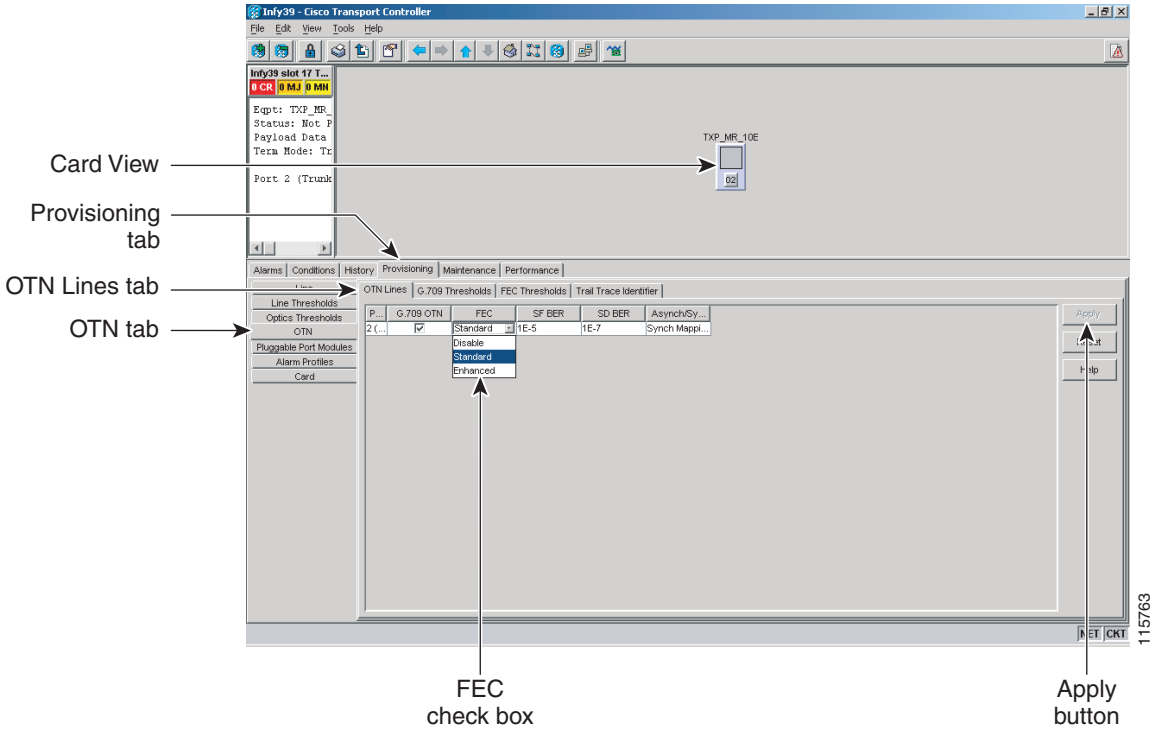
DLP-G145 Enable/Disable OTN FEC Performance Monitoring

Purpose	This task enables or disables OTN FEC monitoring of node near-end or far-end performance on a selected card and port during selected time intervals.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view, double-click the card you want to monitor. The card view appears.

Step 2 Click the **Provisioning > OTN > OTN Lines** tabs (Figure 8-7).

Figure 8-7 OTN Lines Tab for Enabling/Disabling OTN FEC Performance Monitoring for TXP_MR_10E Cards



Step 3 Make an FEC selection based on the following rules:

- Choose **Disable** to disable the OTN FEC monitoring.
- Choose **Standard** to enable standard FEC monitoring for that port (default).
- Choose **Enhanced** to enable enhanced FEC monitoring for that port.

Note For TXP_MR_10E and MXP_MR_10E cards the FEC selection options available are Disable, Standard, and Enhanced. For all the remaining transponder and muxponder cards the options available are Enable and Disable.

Step 4 Click **Apply**.

Step 5 Click the **Performance** tab to view PM parameters. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 6 Return to your originating procedure (NTP).

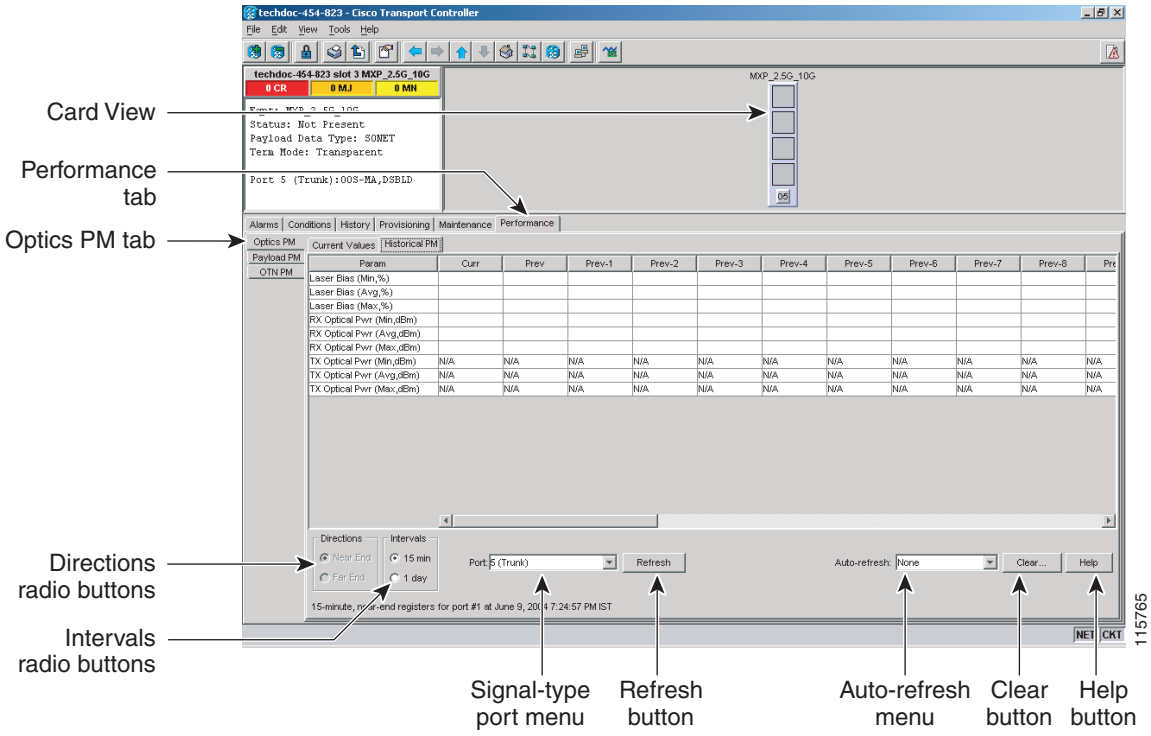
DLP-G146 View Optics PM Parameters

Purpose	This task enables you to view the optics PM counts on a transponder (TXP_MR_10G, TXP_MR_2.5G, TXPP_MR_2.5G, TXP_MR_10E), or a muxponder (MXP_2.5G_10E, MXP_MR_2.5G, MXPP_MR_2.5G, MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the transponder or muxponder card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Optics PM** tabs (Figure 8-8).

Figure 8-8 Viewing Optics Performance Monitoring Information



Step 3 View the PM parameter names that appear in the Param column of Current Values and History PM tabs. The PM parameter values appear in the Curr (current) and Prev-*n* (previous) columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 4 Return to your originating procedure (NTP).

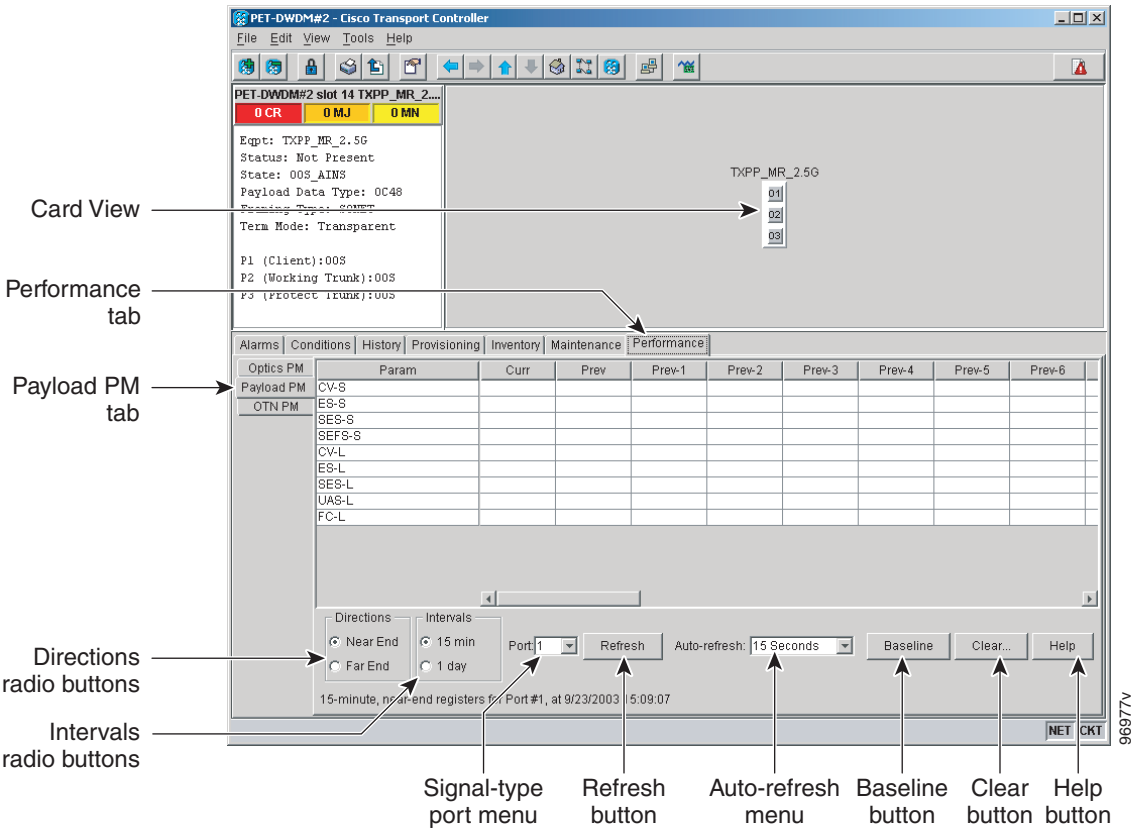
DLP-G147 View Payload PM Parameters

Purpose	This task enables you to view the payload PM counts on a transponder (TXP_MR_10G, TXP_MR_2.5G, TXPP_MR_2.5G, TXP_MR_10E), or a muxponder (MXP_2.5G_10E, MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the transponder or muxponder card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Payload PM** tabs (Figure 8-9).

Figure 8-9 Viewing Payload Performance Monitoring Information



Step 3 View the PM parameter names that appear in the Param column of Current Values and History PM tabs The PM parameter values appear in the Curr (current), and Prev-*n* (previous) columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note The Payload PMs for data parameters can be viewed only after creating a pluggable port module.

Note The PM parameters that appear depend on the data payload and framing type provisioned on the port. Unframed data payloads such as Enterprise System Connection (ESCON), DV6000, DSI/D1 video, and HDTV do not provide payload performance monitoring information. The PM parameters that appear also depend on the PPM payload configured. The TXP_MR_10E card supports three payloads, MXP_2.5G_10G and MXP_2.5G_10E cards support OC48/STM16 payload, MXP_MR_2.5G and MXPP_MR_2.5G support 1G FC, 2G FC, 1G FICON, 2G FICON, and 1GE payloads.

Step 4 Return to your originating procedure (NTP).

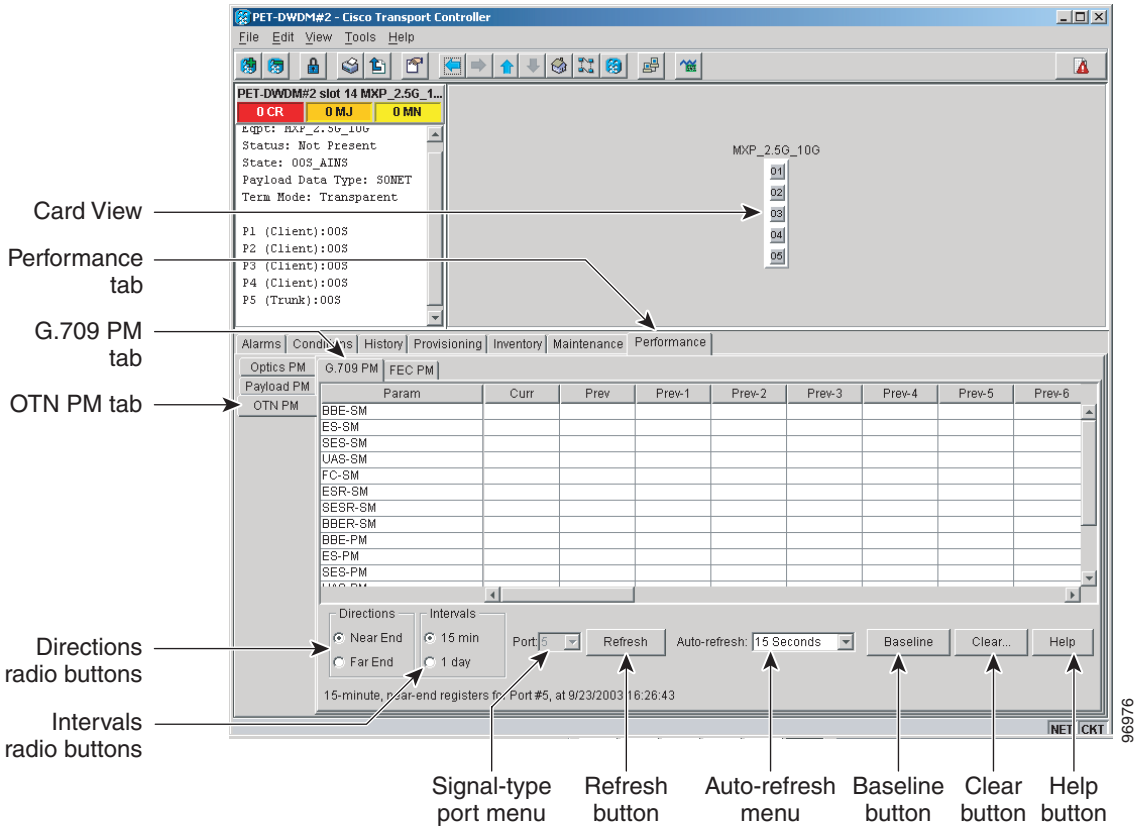
DLP-G148 View OTN PM Parameters

Purpose	This task enables you to view the OTN PM counts on a transponder (TXP_MR_10G, TXP_MR_2.5G, TXPP_MR_2.5G, TXP_MR_10E), or muxponder (MXP_2.5G_10E, MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the transponder or muxponder card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **OTN PM** > **G.709** tabs (Figure 8-10).

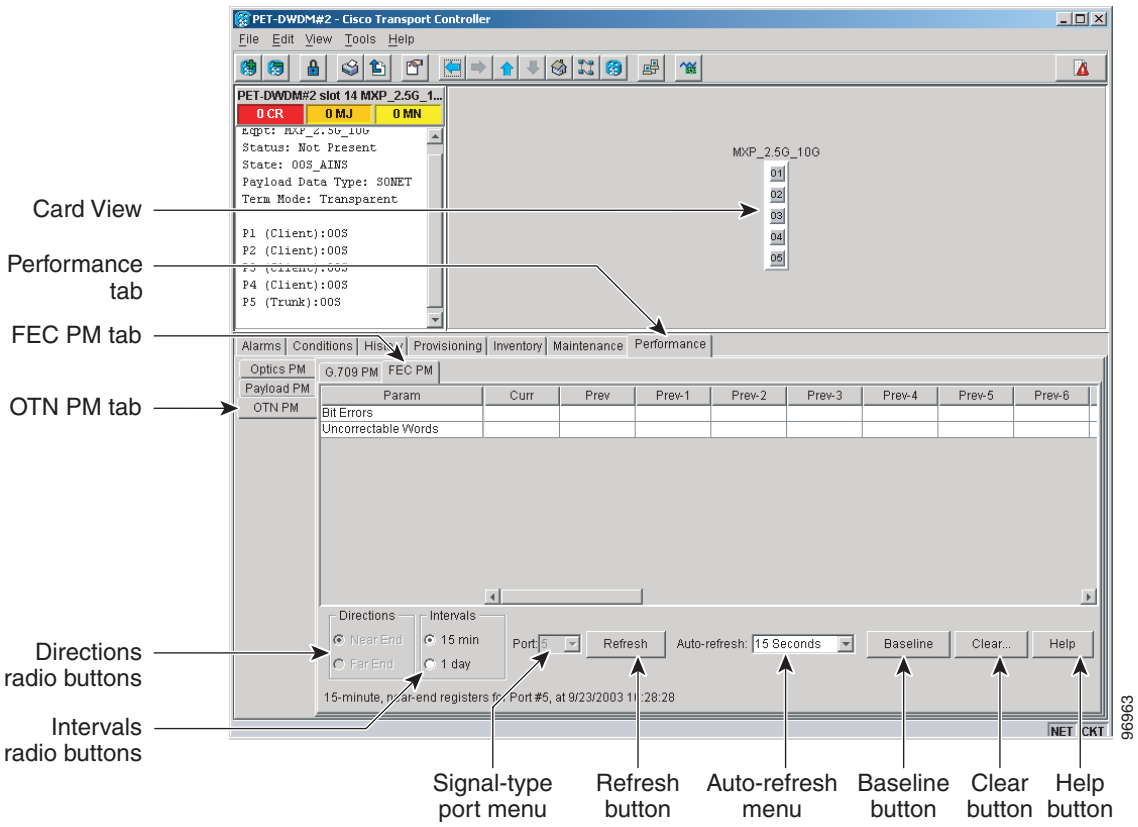
Figure 8-10 Viewing OTN ITU-T G.709 Performance Monitoring Information



Step 3 View the PM parameter names that appear in the Param column. The PM parameter values appear in the Curr (current) and Prev-*n* (previous) columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 4 Click the **FEC PM** tab (Figure 8-11).

Figure 8-11 Viewing OTN FEC Performance Monitoring Information



Step 5 View the PM parameter names that appear in the Param column. The PM parameter values appear in the Curr (current) and Prev-*n* (previous) columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 6 Return to your originating procedure (NTP).

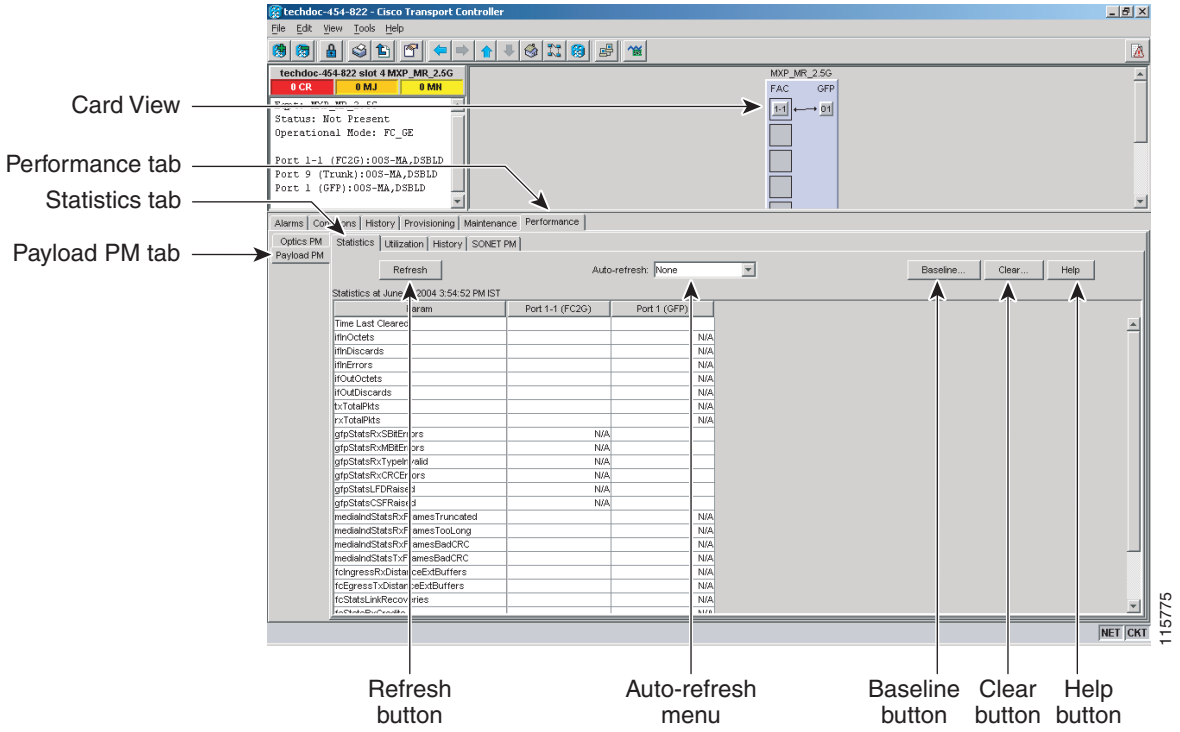
DLP-G149 View Payload Statistics PM Parameters

Purpose	This task enables you to view current statistical PM counts on an MXP_MR_2.5G or MXPP_MR_2.5G card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Payload PM** > **Statistics** tabs (Figure 8-12).

Figure 8-12 Statistics Tab on the Card View Performance Window



Step 3 Click **Refresh**. Performance monitoring statistics appear for each port on the card.

Step 4 View the PM parameter names that appear in the Param column. The current PM parameter values appear in the Port # columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" procedure on page 8-2.

Step 5 Return to your originating procedure (NTP).

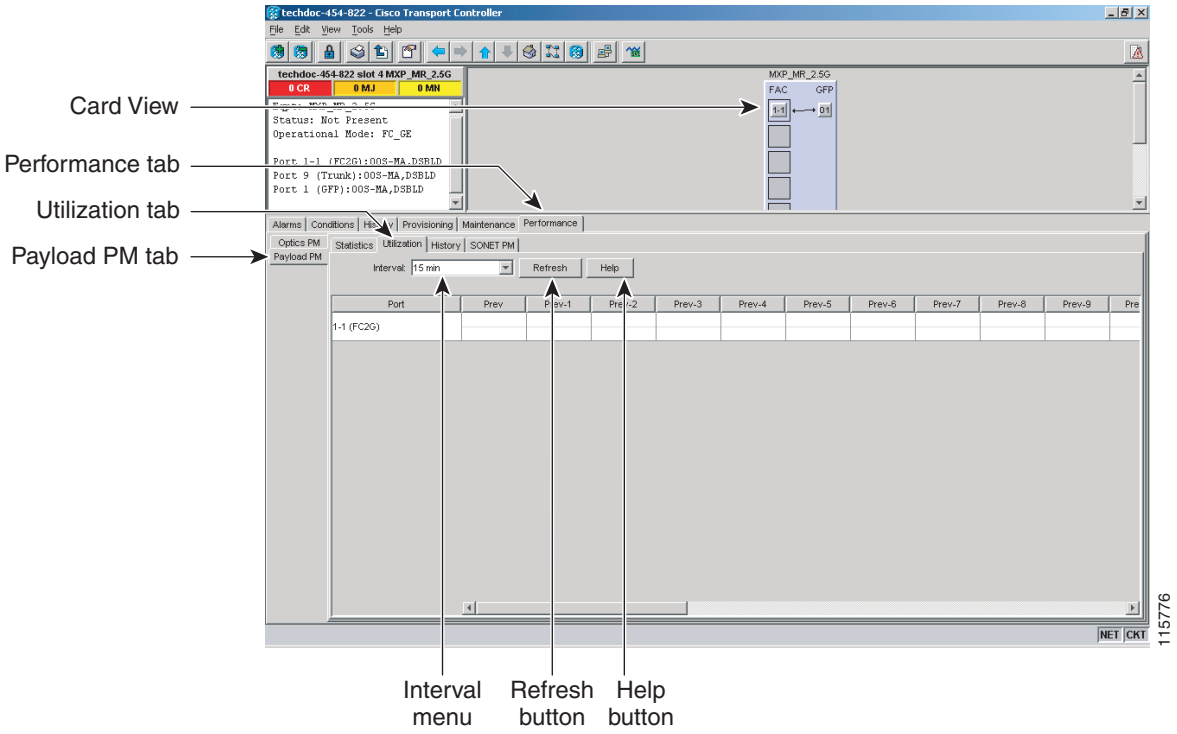
DLP-G150 View Payload Utilization PM Parameters

Purpose	This task enables you to view line utilization PM counts on an MXP_MR_2.5G or MXPP_MR_2.5G card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click theMXP_MR_2.5G or MXPP_MR_2.5G card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance > Payload PM > Utilization** tabs (Figure 8-13).

Figure 8-13 Utilization Tab on the Card View Performance Window



Step 3 Click **Refresh**. Performance monitoring utilization values appear for each port on the card.

Step 4 View the Port # column to find the port you want to monitor.

Step 5 The transmit (Tx) and receive (Rx) bandwidth utilization values for the previous time intervals appear in the Prev-*n* columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" procedure on page 8-2.

Step 6 Return to your originating procedure (NTP).

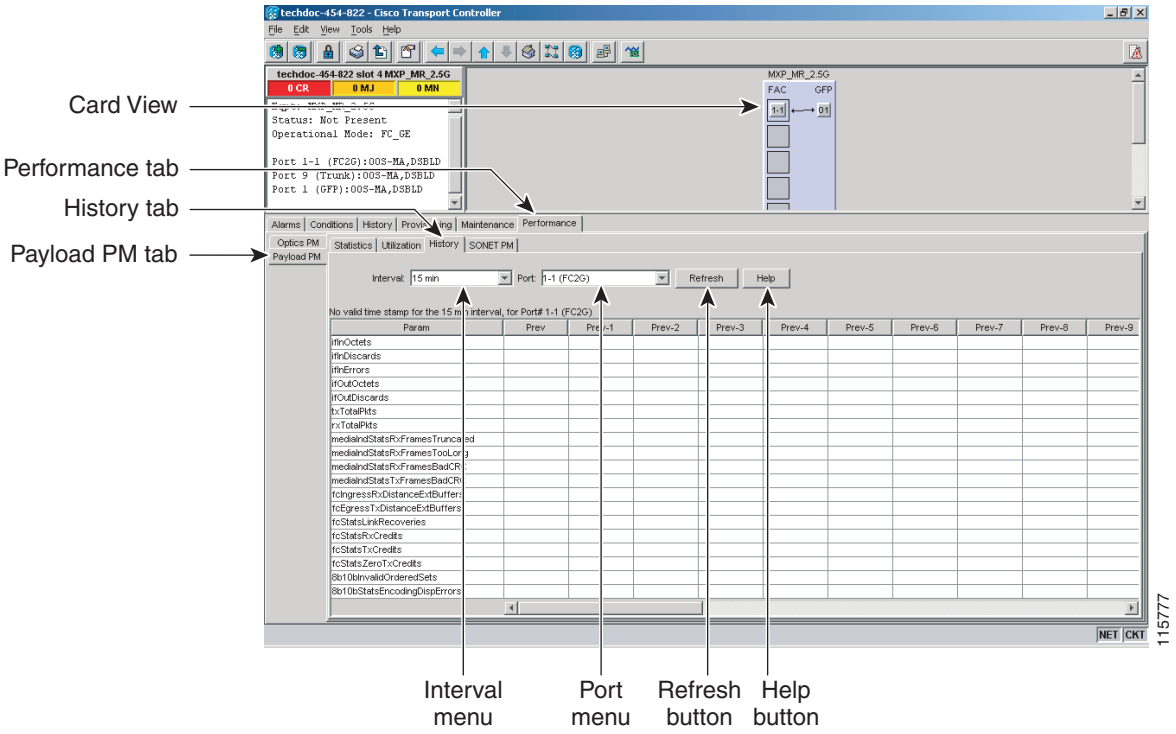
DLP-G151 View Payload History PM Parameters

Purpose	This task enables you to view historical PM counts at selected time intervals on an MXP_MR_2.5G or MXPP_MR_2.5G card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Payload PM** > **History** tabs (Figure 8-14).

Figure 8-14 History Tab on the Card View Performance Window



Step 3 Click **Refresh**. Performance monitoring statistics appear for each port on the card.

Step 4 View the PM parameter names that appear in the Param column. The PM parameter values appear in the Prev-*n* columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" procedure on page 8-2.

Step 5 Return to your originating procedure (NTP).

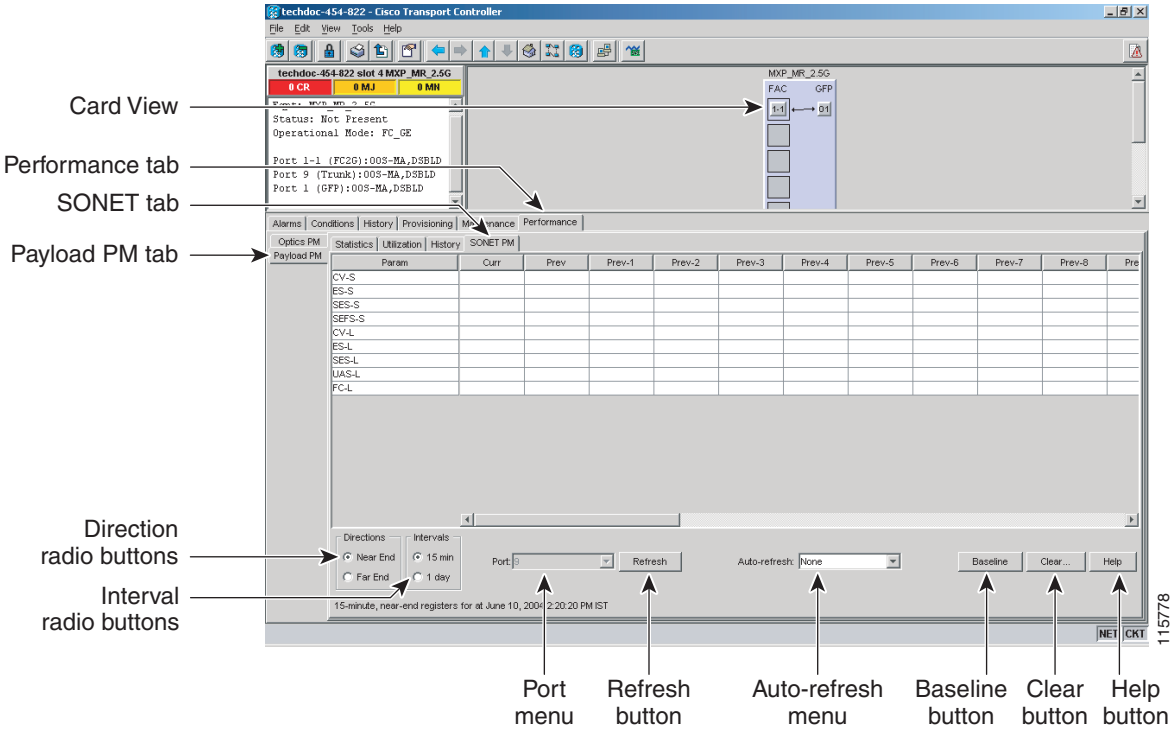
DLP-G152 View Payload SONET PM Parameters

Purpose	This task enables you to view SONET PM counts at selected time intervals on an MXP_MR_2.5G or MXPP_MR_2.5G card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance** > **Payload PM** > **SONET PM** tabs (Figure 8-15).

Figure 8-15 SONET PM Tab on the Card View Performance Window



Step 3 Click **Refresh**. Performance monitoring statistics appear for each port on the card.

Step 4 View the PM parameter names that appear in the Param column. The PM parameter values appear in the Prev-*n* columns. For PM parameter definitions, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Note The MXP_MR_2.5G and MXPP_MR_2.5G cards support only OC48/STM16 payload. Each payload has a set of PM parameters.

Note To refresh, reset, or clear PM counts, see the "NTP-G73 Change the PM Display" procedure on page 8-2.

Step 5 Return to your originating procedure (NTP).

DLP-G153 Create RMON Alarm Thresholds

Purpose	This procedure sets up remote monitoring (RMON) to allow network management systems to monitor Ethernet and Fibre Channel ports. This procedure applies to MXP_MR_2.5G, MXPP_MR_2.5G, TXP_MR_2.5G, and TXPP_MR_2.5G cards in GE/FC/FICON/ISC compact mode, and MXP_2.5G_10G, TXP_MR_10G, MXP_2.5G_10E, and TXP_MR_10E cards in Gigabit Ethernet (10GE) mode.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view, double-click the card where you want to create the RMON alarm thresholds.

Step 2 In card view, click the **Provisioning** > **Line Thresholds** > **RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Slot menu, choose the appropriate card.

Step 5 From the Port drop-down list, choose the applicable port on the card you selected.

Step 6 From the Variable drop-down list, choose the variable. See Table 8-1 for a list of the MXP_MR_2.5G/MXPP_MR_2.5G threshold variables available in this field.

Table 8-1 MXP_MR_2.5G/MXPP_MR_2.5G Threshold Variables (MIBs)

Variable	Definition
iflnOctets	Total number of octets received on the interface, including framing octets
ifInDiscards	The number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol
iflnErrors	Number of inbound packets discarded because they contain errors
ifOutOctets	Total number of transmitted octets, including framing packets
ifOutDiscards	The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted
txTotalPkts	Total number of transmit packets
rxTotalPkts	Total number of receive packets
mediaIndStatsRxFramesTooLong	Number of packets transmitted that are greater than 1548 bytes
mediaIndStatsRxFramesTruncated	Total number of frames received that are less than 5 bytes
mediaIndStatsRxFramesBadCRC	Total number of frames received with a cyclic redundancy check (CRC) error
mediaIndStatsTxFramesBadCRC	Total number of frames transmitted with a CRC error

Table 8-1 MXP_MR_2.5G/MXPP_MR_2.5G Threshold Variables (MIBs) (continued)

Variable	Definition
8b10bInvalidOrderedSets	Total number of ordered sets not complaint to GE/FC (Gigabit Ethernet/Fibre Channel) standard
8b10bStatsEncodingDispErrors	Total number of code groups that violate GE/FC disparity errors

Step 7 From the Alarm Type drop-down list, indicate whether the rising threshold, falling threshold, or both the rising and falling thresholds will trigger the event.

Step 8 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 9 Enter the appropriate number of seconds for the Sample Period.

Step 10 Enter the appropriate number of occurrences for the Rising Threshold.

Note For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 11 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases, a falling threshold is set lower than the rising threshold.

Note A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 minutes subsides and creates only 799 collisions in 15 minutes, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-minute period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 12 Click **OK** to complete the procedure.

Step 13 Return to your originating procedure (NTP).

DLP-G154 Delete RMON Alarm Thresholds

Purpose	This task deletes RMON threshold crossing alarms for Ethernet and Fibre Channel ports.
Tools/Equipment	None
Prerequisite Procedures	DLP-G153 Create RMON Alarm Thresholds, page 8-28 DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view, double-click the card where you want to delete the RMON alarm thresholds.

Step 2 In card view, click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click the RMON alarm threshold you want to delete.

Step 4 Click **Delete**. The Delete Threshold dialog box appears.

Step 5 Click **Yes** to delete that threshold.

Step 6 Return to your originating procedure (NTP).