



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 Reference Manual*.

Before You Begin

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

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

1. [NTP-A253 Change the PM Display, page 10-2](#)—Complete as needed to change the displayed PM counts.
2. [NTP-A195 Monitor Electrical Performance, page 10-10](#)—Complete as needed to monitor electrical performance.
3. [NTP-A198 Monitor Ethernet Performance, page 10-12](#)—Complete as needed to monitor Ethernet performance.
4. [NTP-A279 Create or Delete Ethernet RMON Thresholds, page 10-20](#)—Complete as needed to monitor Ethernet performance.
5. [NTP-A250 Monitor OC-N Performance, page 10-26](#)—Complete as needed to monitor optical (OC-N) performance.
6. [NTP-A251 Monitor Multirate Transport Performance, page 10-32](#)—Complete as needed to monitor multirate transport performance.
7. [NTP-A252 Monitor DWDM Performance, page 10-40](#)—Complete as needed to monitor DWDM performance.
8. [NTP-A285 Monitor FC_MR-4 Performance, page 10-48](#)—Complete as needed to monitor FC_MR-4 performance.
9. [NTP-A289 Create or Delete FC_MR-4 RMON Thresholds, page 10-51](#)—Complete as needed to monitor FC_MR-4 performance.

**Note**

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

NTP-A253 Change the PM Display

Purpose	This procedure enables you to change the display of PM counts by selecting drop-down menu 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 8, "Create Circuits and VT Tunnels" and Chapter 13, "Change Card Settings."
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** Complete the ["DLP-A60 Log into CTC" task on page 3-24](#) 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 electrical, Ethernet, optical (OC-N), multirate transport, or DWDM cards 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-A124 Refresh PM Counts at 15-Minute Intervals, page 10-3](#)
 - [DLP-A125 Refresh PM Counts at One-Day Intervals, page 10-3](#)
 - [DLP-A347 Refresh E-Series and G-Series Ethernet PM Counts, page 10-4](#)
 - [DLP-A126 View Near-End PM Counts, page 10-5](#)
 - [DLP-A127 View Far-End PM Counts, page 10-6](#)
 - [DLP-A348 Monitor PM Counts for a Selected Signal, page 10-6](#)
 - [DLP-A129 Reset Current PM Counts, page 10-8](#)
 - [DLP-A349 Clear Selected PM Counts, page 10-8](#)
 - [DLP-A260 Set Auto-Refresh Interval for Displayed PM Counts, page 10-9](#)
 - [DLP-A261 Refresh PM Counts for a Different Port, page 10-10](#)

Stop. You have completed this procedure.

DLP-A124 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-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- 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 node timing settings, changing the time zone settings, replacing a card, resetting a card, or changing port states. When the problem is corrected, the subsequent 15-minute interval appears with a white background.

- Step 7** Return to your originating procedure (NTP).
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DLP-A125 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-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- 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 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 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 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-A347 Refresh E-Series and G-Series Ethernet PM Counts

Purpose	This task changes the window view to display E-Series and G-Series Ethernet PM parameters intervals.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
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 > History** tabs.
- Step 3** From the Interval drop-down menu click one of the following:
- 1 min
 - 15 min
 - 1 hour
 - 1 day
- Step 4** Click **Refresh**. Performance monitoring appears in the interval selected synchronized with the time of day.
- Step 5** View the Prev column to find PM counts for the latest selected interval.

Each monitored performance parameter has corresponding threshold values for the latest time period. If the value of the counter exceeds the threshold value for a particular selected 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 intervals.



Note If a complete count over the selected interval is not possible, the value appears with a yellow background. For example, if you selected the 1-day interval, 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 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-A126 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-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- 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 Reference Manual*.
- 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).
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DLP-A127 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-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- 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 Reference Manual*.
- 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).
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DLP-A348 Monitor PM Counts for a Selected Signal

Purpose	This task enables you to view near-end or far-end PM counts for a specific signal (STS <i>n</i>), path (VT <i>n</i>) and port (DS <i>n</i>) on a selected card.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
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.



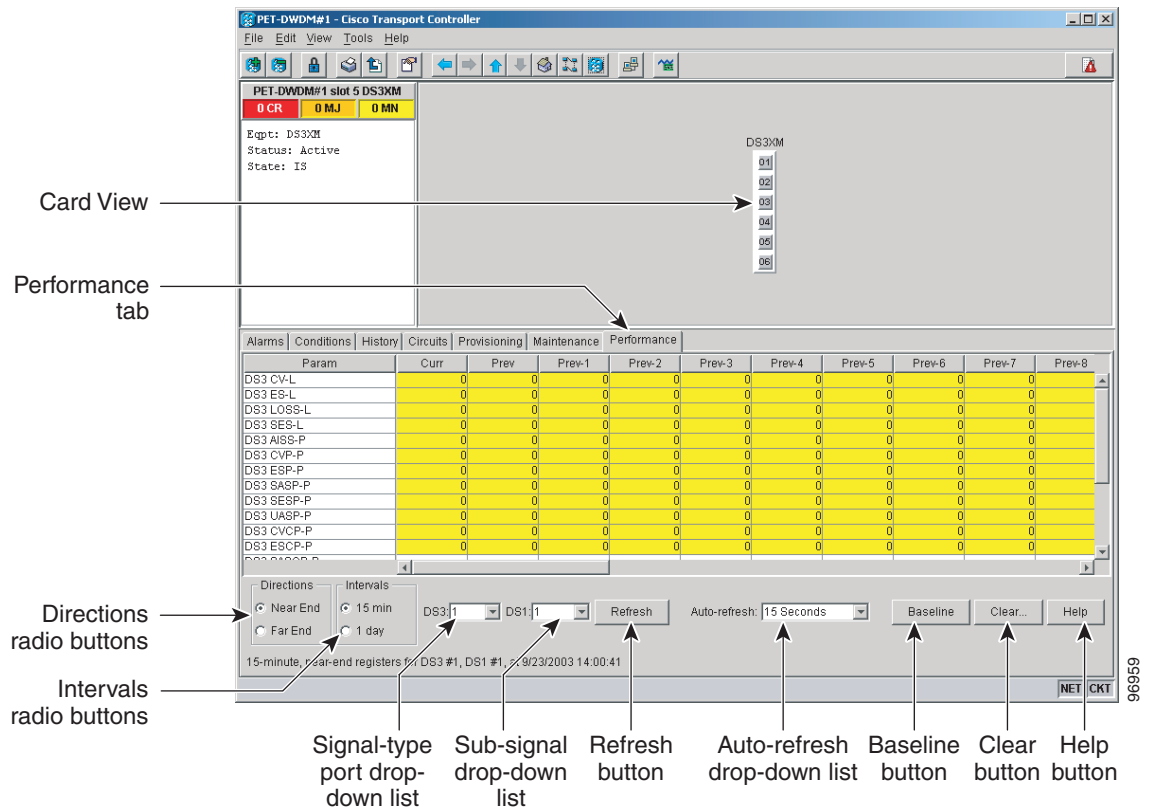
Note Different port and signal-type menus appear depending on the card type and the circuit type. The appropriate types (DS1, DS3, VT path, STS path) appear based on the card. For example, the DS3XM card lists DS3, DS1, VT path, and STS path PM parameters as signal-types. This enables you to select both the DS-3 port and the DS-1 within the specified DS-3.

- Step 3** In the signal type drop-down menus, click the following options as appropriate:
- DS: *n* or Port: *n* (card port number)

- VT: n (VT path number)
- STS: n (STS number within the VT path)

Figure 10-1 shows the Port and Signal-type menus on the Performance window for a DS3XM-6 card.

Figure 10-1 Signal-Type Menus for a DS3XM-6 Card



- Step 4** Click **Refresh**. All PM counts recorded by the near-end or far-end node for the specified outgoing signal type on the selected card and port appear. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.
- 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 Reference Manual*.
- Step 6** Return to your originating procedure (NTP).

DLP-A129 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-A60 Log into CTC, page 3-24
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 appear 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-A349 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-A60 Log into CTC, page 3-24
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 UAS state is not cleared if you were counting UAS; therefore, this count could be unreliable when UAS is no longer counting.

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 menu, choose one of three options:
- **Displayed statistics:** Clearing displayed statistics erases from the card and the window all PM counts associated with the current combination of statistics on the selected port. This means 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 from the card and the window all PM counts associated with all combinations of the statistics on the selected port. This means 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 from the card and the window all PM counts for all ports.
- Step 5** From the Clear Statistics menu, choose **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).
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DLP-A260 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-A60 Log into CTC, page 3-24
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 menu, choose one of six 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).
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DLP-A261 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-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

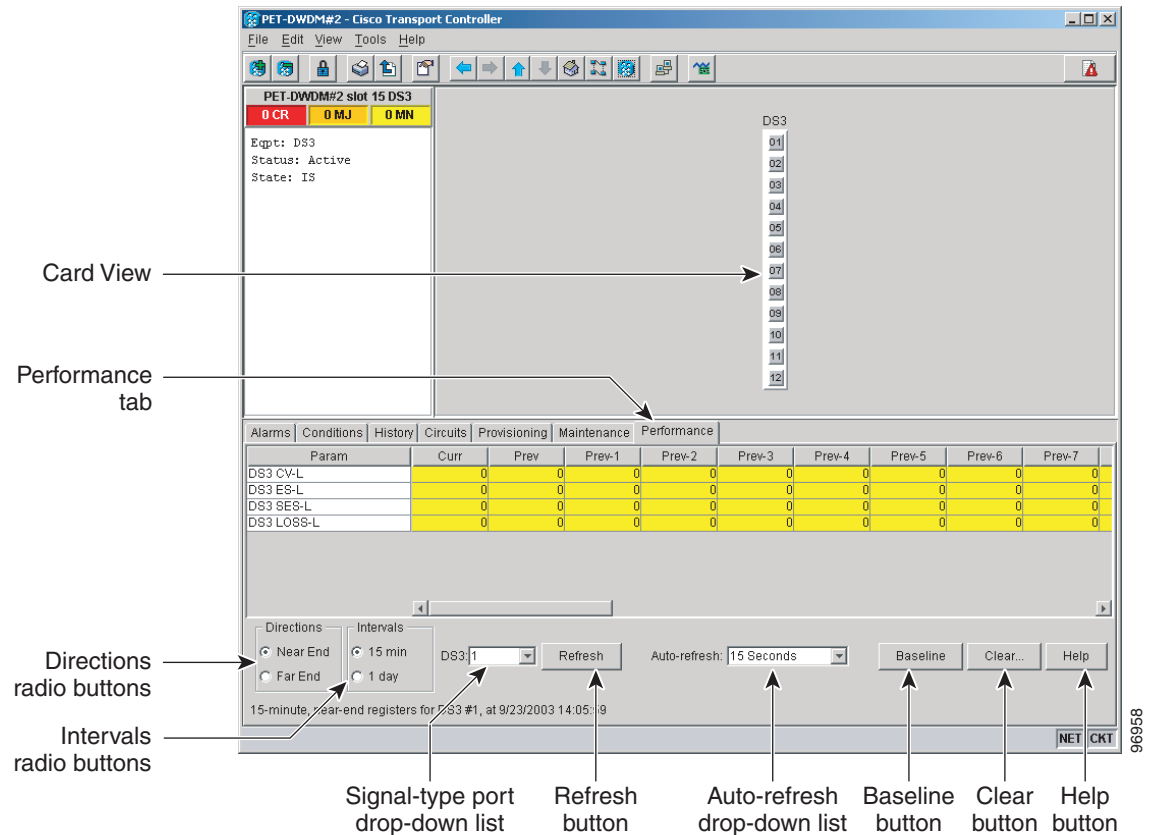
-
- Step 1** In node view, double-click the card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance** tab.
- Step 3** In the Port drop-down menu, choose a port.
- Step 4** Click **Refresh**. The PM counts for the newly-selected port appear.
- Step 5** Return to your originating procedure (NTP).
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NTP-A195 Monitor Electrical Performance

Purpose	This procedure enables you to view node near-end or far-end performance during selected time intervals on an electrical 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 8, “Create Circuits and VT Tunnels” and Chapter 13, “Change Card Settings.”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

-
- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on [page 3-24](#) 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 electrical card where you want to view PM counts. The card view appears.
- Step 3** Click the **Performance** tab ([Figure 10-2](#)).

Figure 10-2 Viewing Electrical Card Performance Monitoring Information



Step 4 In the signal type drop-down menus, click one of the following options:

- DSn (card port)
- VTn (VT path)
- STSn (STS within the VT path)

Step 5 Click **Refresh**.

Step 6 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 Reference Manual*.

To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

Stop. You have completed this procedure.

NTP-A198 Monitor Ethernet Performance

Purpose	This procedure enables you to view node transmit and receive performance during selected time intervals on an Ethernet 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 8, “Create Circuits and VT Tunnels” and Chapter 13, “Change Card Settings.”
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Retrieve or higher

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- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24 at the node that you want to monitor. If you are already logged in, continue with [Step 2](#).
- Step 2** Complete the “[DLP-A256 View Ethernet Statistics PM Parameters](#)” task on page 10-12.
- Step 3** Complete the “[DLP-A257 View Ethernet Utilization PM Parameters](#)” task on page 10-14.
- Step 4** Complete the “[DLP-A258 View Ethernet History PM Parameters](#)” task on page 10-15.
- Step 5** Complete the “[DLP-A320 View ML-Series Ether Ports PM Parameters](#)” task on page 10-17.
- Step 6** Complete the “[DLP-A321 View ML-Series POS Ports PM Parameters](#)” task on page 10-18.
- Stop. You have completed this procedure.**
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DLP-A256 View Ethernet Statistics PM Parameters

Purpose	This task enables you to view current statistical PM counts on an Ethernet card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC , page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- Step 1** In node view, double-click the E-Series or G-Series Ethernet card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Statistics** tabs ([Figure 10-3](#)).

Figure 10-3 G-Series Statistics on the Card View Performance Window

Card View

Performance tab

Statistics tab

Refresh button

Auto-refresh menu

Baseline button

Clear button

Help button

History	Retrieval	September 23, 2003 2:08:03 PM PDT (NE T...	9/23/2003 14:08:03)	Port 1	Port 2	Port 3	Port 4
Time Last	Cleared			09/11/03 18:36 PDT	09/11/03 18:36 PDT	09/11/03 18:36 PDT	09/11/03 18:36 PDT
Link Status				Down	Down	Down	Down
Rx Packets				0	0	0	0
Rx Bytes				0	0	0	0
Tx Packets				0	0	0	0
Tx Bytes				0	0	0	0
Rx Total Errors				0	0	0	0
Rx FCS				0	0	0	0
Rx Alignment				0	0	0	0
Rx Runts				0	0	0	0
Rx Shorts				0	0	0	0
Rx Jabbers				0	0	0	0
Rx Giants				0	0	0	0
Rx Pause Frames				0	0	0	0
Tx Pause Frames				0	0	0	0
Rx Pkts Dropped Internal Congestion				0	0	0	0
Tx Pkts Dropped Internal Congestion				0	0	0	0
HDLC Errors				0	0	0	0

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

Step 4 View the PM parameter names 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 Reference Manual*.



Note To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

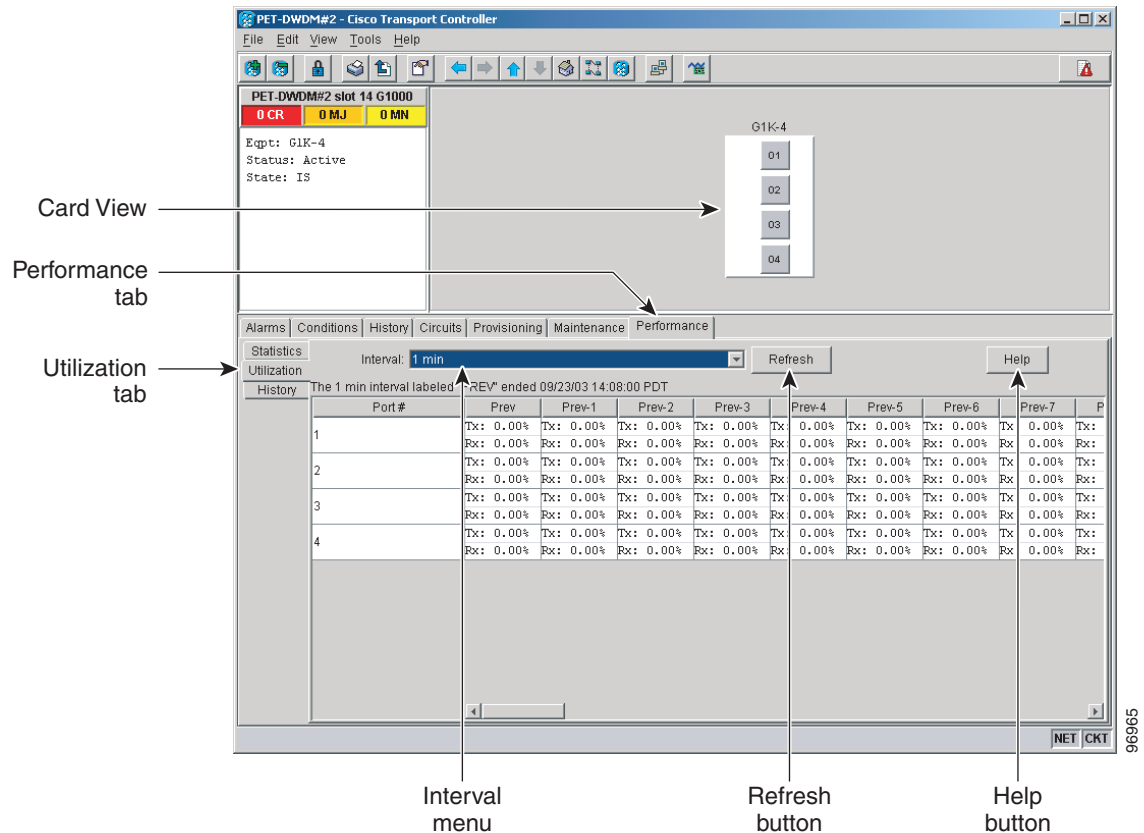
Step 5 Return to your originating procedure (NTP).

DLP-A257 View Ethernet Utilization PM Parameters

Purpose	This task enables you to view line utilization PM counts on an Ethernet card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the E-Series or G-Series Ethernet card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Utilization** tabs ([Figure 10-4](#)).

Figure 10-4 G-Series Utilization on the Card View Performance Window



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



Note

To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

Step 6 Return to your originating procedure (NTP).

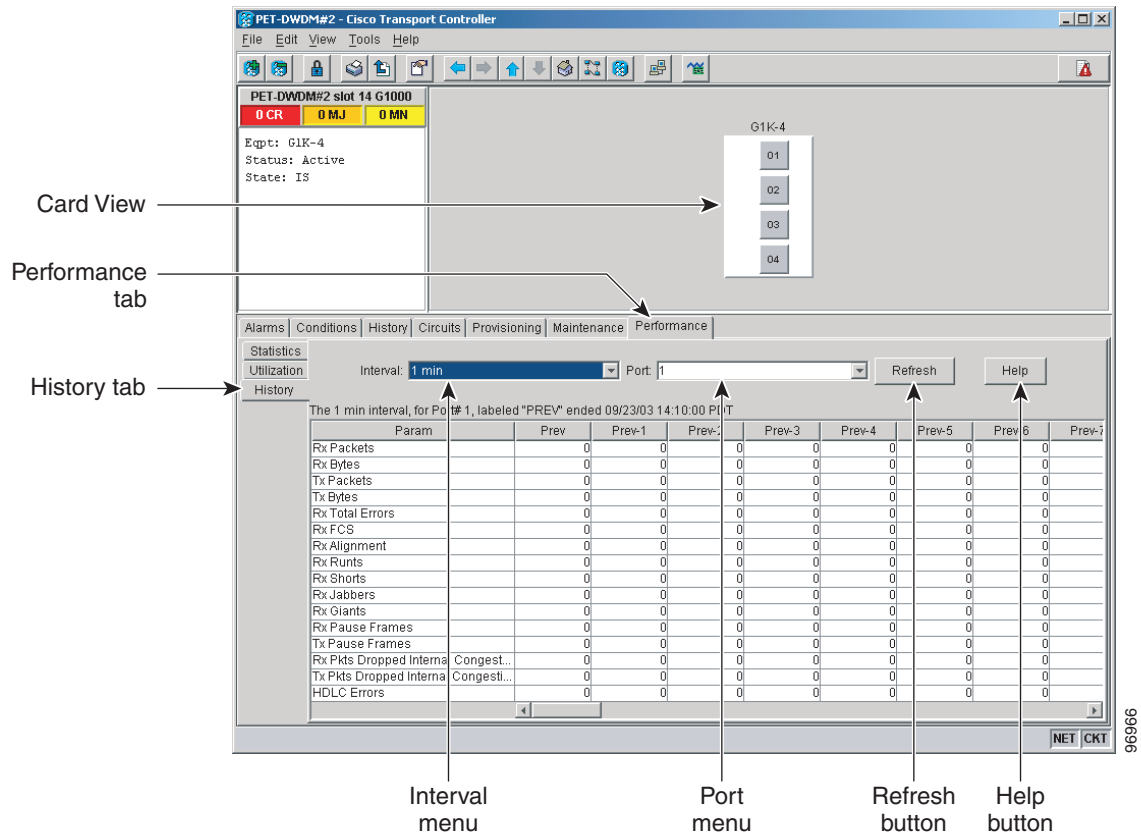
DLP-A258 View Ethernet History PM Parameters

Purpose	This task enables you to view historical PM counts at selected time intervals on an Ethernet card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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

Step 2 Click the **Performance > History** tabs ([Figure 10-5](#)).

Figure 10-5 Ethernet History on the Card View Performance Window



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

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 Reference Manual*.



Note To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

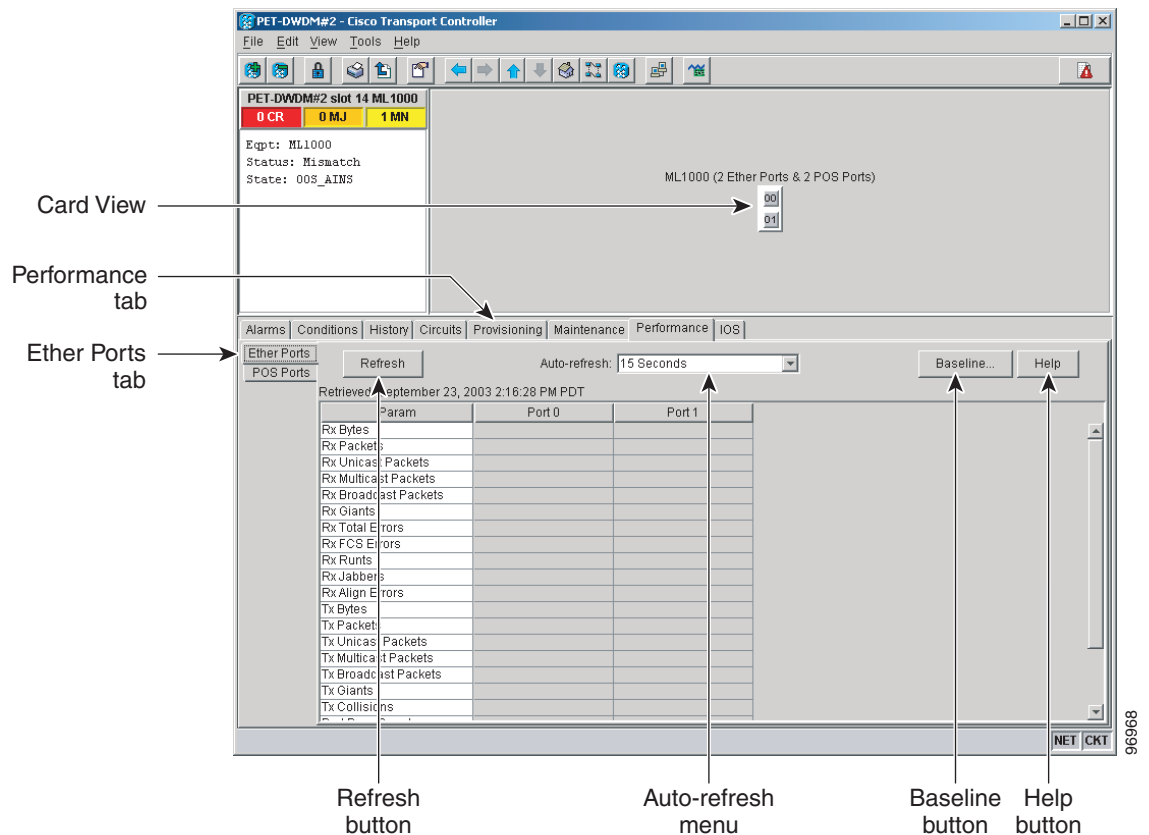
Step 5 Return to your originating procedure (NTP).

DLP-A320 View ML-Series Ether Ports PM Parameters

Purpose	This task enables you to view ML-Series Ethernet port PM counts at selected time intervals to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the ML-Series Ethernet card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Ether Ports** tabs ([Figure 10-6](#)).

Figure 10-6 Ether Ports on the Card View Performance Window



- Step 3** Click **Refresh**. Performance monitoring statistics for each port on the card appear.
- Step 4** View the PM parameter names that appear in the Param column. The PM parameter values appear in the Port # columns. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.

**Note**

To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

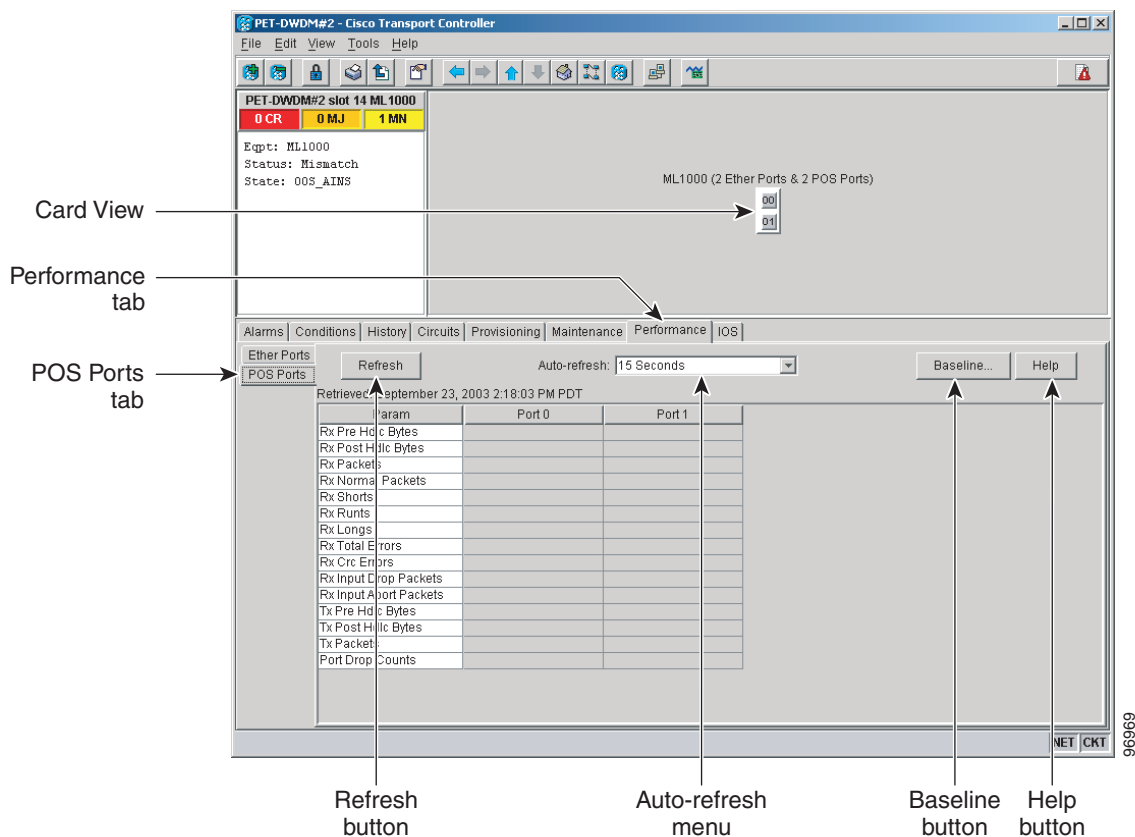
Step 5 Return to your originating procedure (NTP).

DLP-A321 View ML-Series POS Ports PM Parameters

Purpose	This task enables you to view Packet Over SONET (POS) port PM counts at selected time intervals on an ML-Series Ethernet card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- Step 1** In node view, double-click the ML-Series Ethernet card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > POS Ports** tabs ([Figure 10-7](#)).

Figure 10-7 POS Ports on the Card View Performance Window



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

Step 4 View the PM parameter names that appear in the Param column. The PM parameter values appear in the Port # columns. For PM parameter definitions refer to the *Cisco ONS 15454 Reference Manual*.



Note To refresh, reset, or clear PM counts, see the [“NTP-A253 Change the PM Display” procedure on page 10-2](#).

Step 5 Return to your originating procedure (NTP).

DLP-A259 Refresh Ethernet PM Counts at a Different Time Interval

Purpose	This task changes the window view to display specified PM counts in time intervals depending on the interval option selected.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- Step 1** In node view, double-click the Ethernet card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance** tab.
- Step 3** Click the **Utilization** tab or the **History** tab.
- Step 4** From the Interval drop-down menu, choose one of four options:
- 1 min: This option appears the specified PM counts in one-minute time intervals.
 - 15 min: This option appears the specified PM counts in 15-minute time intervals.
 - 1 hour: This option appears the specified PM counts in one-hour time intervals.
 - 1 day: This option appears the specified PM counts in one-day (24 hours) time intervals.
- Step 5** Click **Refresh**. The PM counts refresh with values based on the selected time interval.
- Step 6** Return to your originating procedure (NTP).
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NTP-A279 Create or Delete Ethernet RMON Thresholds

Purpose	This procedure creates or deletes Ethernet remote monitoring (RMON) thresholds for the ONS 15454.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



Note The ONS 15454 ML-Series card uses the Cisco IOS CLI for managing RMON.

- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24. If you are already logged in, continue with Step 2.
- Step 2** Perform any of the following tasks as needed:
- [DLP-A533 Create Ethernet RMON Alarm Thresholds, page 10-21](#)
 - [DLP-A529 Delete Ethernet RMON Alarm Thresholds, page 10-26](#)

Stop. You have completed this procedure.

DLP-A533 Create Ethernet RMON Alarm Thresholds

Purpose	This procedure sets up remote monitoring (RMON) to allow network management systems to monitor Ethernet ports.
Tools/Equipment	None
Prerequisite Procedures	NTP-A24 Verify Card Installation, page 4-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



Note The ONS 15454 ML-Series card uses the Cisco IOS CLI for managing RMON.

-
- Step 1** Complete the [“DLP-A60 Log into CTC” task on page 3-24](#) at the node where you want to set up RMON. If you are already logged in, continue with Step 2.
- Step 2** Double-click the Ethernet card where you want to create the RMON alarm thresholds.
- Step 3** In card view, click the **Provisioning > Ether Thresholds** tabs.
- Step 4** Click **Create**.
The Create Ether Threshold dialog box appears ([Figure 10-8](#)).

Figure 10-8 *Creating RMON Thresholds*

- Step 5** From the Slot menu, choose the appropriate Ethernet card.
- Step 6** From the Port drop-down menu, choose the applicable port on the Ethernet card you selected.
- Step 7** From the Variable drop-down menu, choose the variable. See [Table 10-1](#) for a list of the Ethernet threshold variables available in this field.

- Step 8** From the Alarm Type drop-down menu, indicate whether the event will be triggered by the rising threshold, falling threshold, or both the rising and falling thresholds.
- Step 9** From the Sample Type drop-down menu, 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 10** Type in an appropriate number of seconds for the Sample Period.
- Step 11** Type in 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 falling threshold of 400 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

- Step 12** Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

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 13** Click **OK** to complete the procedure.

Table 10-1 Ethernet Threshold Variables (MIBs)

Variable	Definition
ifInOctets	Total number of octets received on the interface, including framing octets
ifInUcastPkts	Total number of unicast packets delivered to an appropriate protocol
ifInMulticastPkts (G-Series only)	Number of multicast frames received error free
ifInBroadcastPkts (G-Series only)	The number of packets, delivered by this sublayer to a higher (sub)layer, which were addressed to a broadcast address at this sublayer
ifInDiscards (G-Series only)	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
ifInErrors	Number of inbound packets discarded because they contain errors
ifOutOctets	Total number of transmitted octets, including framing packets
ifOutUcastPkts	Total number of unicast packets requested to transmit to a single address
ifOutMulticastPkts (G-Series only)	Number of multicast frames transmitted error free

Table 10-1 Ethernet Threshold Variables (MIBs) (continued)

Variable	Definition
ifOutBroadcastPkts (G-Series only)	The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a broadcast address at this sublayer, including those that were discarded or not sent
ifOutDiscards (G-Series only)	The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted
dot3StatsAlignmentErrors	Number of frames with an alignment error, that is, the length is not an integral number of octets and the frame cannot pass the frame check sequence (FCS) test
dot3StatsFCSErrors	Number of frames with framecheck errors, that is, there is an integral number of octets, but an incorrect FCS
dot3StatsSingleCollisionFrames (not supported by E-Series or G-Series)	Number of successfully transmitted frames that had exactly one collision
dot3StatsMutlipleCollisionFrames (not supported by E-Series or G-Series)	Number of successfully transmitted frames that had multiple collisions
dot3StatsDeferredTransmissions (not supported by E-Series or G-Series)	Number of times the first transmission was delayed because the medium was busy
dot3StatsLateCollisions (not supported by E-Series or G-Series)	Number of times that a collision was detected later than 64 octets into the transmission (also added into collision count)
dot3StatsExcessiveCollisions (not supported by E-Series or G-Series)	Number of frames where transmissions failed because of excessive collisions
dot3StatsCarrierSenseErrors (G-Series only)	The number of transmission errors on a particular interface that are not otherwise counted
dot3StatsSQETestErrors (G-Series only)	A count of times that the SQE TEST ERROR message is generated by the PLS sublayer for a particular interface
etherStatsBroadcastPkts	The total number of good packets received that were directed to the broadcast address. This does not include multicast packets.

Table 10-1 Ethernet Threshold Variables (MIBs) (continued)

Variable	Definition
etherStatsCollisions	An estimate of the total number of collisions on this Ethernet segment. The value returned will depend on the location of the RMON probe. Section 8.2.1.3 (10BASE-5) and section 10.3.1.3 (10BASE-2) of IEEE standard 802.3 states that a station must detect a collision, in the receive mode, if three or more stations are transmitting simultaneously. A repeater port must detect a collision when two or more stations are transmitting simultaneously. Thus a probe placed on a repeater port could record more collisions than a probe connected to a station on the same segment. Probe location plays a much smaller role when considering 10BASE-T. Section 14.2.1.4 (10BASE-T) of the IEEE standard 802.3 defines a collision as the simultaneous presence of signals on the DO and RD circuits (transmitting and receiving at the same time). A 10BASE-T station can only detect collisions when it is transmitting. Thus probes placed on a station and a repeater, should report the same number of collisions. An RMON probe inside a repeater should report collisions between the repeater and one or more other hosts (transmit collisions as defined by IEEE 802.3k) plus receiver collisions observed on any coax segments to which the repeater is connected.
etherStatsCollisionFrames	An estimate of the total number of collisions on this Ethernet segment. The value returned will depend on the location of the RMON probe. Section 8.2.1.3 (10BASE-5) and section 10.3.1.3 (10BASE-2) of IEEE standard 802.3 states that a station must detect a collision, in the receive mode, if three or more stations are transmitting simultaneously. A repeater port must detect a collision when two or more stations are transmitting simultaneously. Thus a probe placed on a repeater port could record more collisions than a probe connected to a station on the same segment. Probe location plays a much smaller role when considering 10BASE-T. Section 14.2.1.4 (10BASE-T) of the IEEE standard 802.3 defines a collision as the simultaneous presence of signals on the DO and RD circuits (transmitting and receiving at the same time). A 10BASE-T station can only detect collisions when it is transmitting. Thus probes placed on a station and a repeater, should report the same number of collisions. An RMON probe inside a repeater should report collisions between the repeater and one or more other hosts (transmit collisions as defined by IEEE 802.3k) plus receiver collisions observed on any coax segments to which the repeater is connected.

Table 10-1 Ethernet Threshold Variables (MIBs) (continued)

Variable	Definition
etherStatsDropEvents	The total number of events in which packets were dropped by the probe due to lack of resources. This number is not necessarily the number of packets dropped; it is just the number of times this condition has been detected.
etherStatsJabbers	Total number of octets of data (including bad packets) received on the network
etherStatsMulticastPkts	The total number of good packets received that were directed to a multicast address. This number does not include packets directed to the broadcast.
etherStatsUndersizePkts	Number of packets received with a length less than 64 octets
etherStatsFragments	Total number of packets that are not an integral number of octets or have a bad FCS, and that are less than 64 octets long
etherStatsPkts64Octets	Total number of packets received (including error packets) that were 64 octets in length
etherStatsPkts65to127Octets	Total number of packets received (including error packets) that were 65 to 172 octets in length
etherStatsPkts128to255Octets	Total number of packets received (including error packets) that were 128 to 255 octets in length
etherStatsPkts256to511Octets	Total number of packets received (including error packets) that were 256 to 511 octets in length
etherStatsPkts512to1023Octets	Total number of packets received (including error packets) that were 512 to 1023 octets in length
etherStatsPkts1024to1518Octets	Total number of packets received (including error packets) that were 1024 to 1518 octets in length
etherStatsJabbers	Total number of packets longer than 1518 octets that were not an integral number of octets or had a bad FCS
etherStatsCollisions	Best estimate of the total number of collisions on this segment
etherStatsCollisionFrames	Best estimate of the total number of frame collisions on this segment
etherStatsCRCAlignErrors	Total number of packets with a length between 64 and 1518 octets, inclusive, that had a bad FCS or were not an integral number of octets in length
receivePauseFrames (G series only)	The number of received IEEE 802.x pause frames
transmitPauseFrames (G series only)	The number of transmitted IEEE 802.x pause frames
receivePktsDroppedInternalCongestion (G series only)	The number of received frames dropped due to frame buffer overflow as well as other reasons
transmitPktsDroppedInternalCongestion (G series only)	The number of frames dropped in the transmit direction due to frame buffer overflow as well as other reasons
txTotalPkts	Total number of transmit packets
rxTotalPkts	Total number of receive packets

Stop. You have completed this procedure.

DLP-A529 Delete Ethernet RMON Alarm Thresholds

Purpose	This task deletes remote monitoring (RMON) threshold crossing alarms for Ethernet ports.
Tools/Equipment	None
Prerequisite Procedures	DLP-A533 Create Ethernet RMON Alarm Thresholds, page 10-21 DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



Note The ONS 15454 ML-Series card uses the Cisco IOS CLI for managing RMON.

- Step 1** Double-click the Ethernet card where you want to delete the RMON alarm thresholds.
 - Step 2** In card view, click the **Provisioning > Ether Thresholds** tabs.
 - Step 3** Click the RMON alarm threshold you want to delete.
 - Step 4** Click **Delete**. The Delete Threshold dialog box opens.
 - Step 5** Click **Yes** to delete that threshold.
 - Step 6** Return to your originating procedure (NTP).
-

NTP-A250 Monitor OC-N Performance

Purpose	This procedure enables you to view node near-end or far-end performance during selected time intervals on an OC-N 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 8, “Create Circuits and VT Tunnels” and Chapter 13, “Change Card Settings.”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on [page 3-24](#) at the node that you want to monitor. If you are already logged in, continue with [Step 2](#)
-

- Step 2** Complete the “[DLP-A121 Enable/Disable Pointer Justification Count Performance Monitoring](#)” task on [page 10-27](#) as needed to enable or disable clock synchronization monitoring.
- Step 3** Complete the “[DLP-A122 Enable/Disable Intermediate Path Performance Monitoring](#)” task on [page 10-29](#) as needed to enable or disable monitoring of STS traffic through intermediate nodes.
- Step 4** Complete the “[DLP-A507 View OC-N PM Parameters](#)” task on [page 10-31](#).
To refresh, reset, or clear PM counts, see the “[NTP-A253 Change the PM Display](#)” procedure on [page 10-2](#).
- Stop. You have completed this procedure.**

DLP-A121 Enable/Disable Pointer Justification Count Performance Monitoring

Purpose	This task enables or disables pointer justification counts, which provide a way to align the phase variations in STS payloads and to monitor the clock synchronization between nodes. A consistently large pointer justification count indicates clock synchronization problems between nodes.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC , page 3-24
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.
See [Table 10-2](#) for a list of LTE cards.

Table 10-2 OC-N Cards that Terminate the Line, Called LTEs

Line Terminating Equipment
EC1-12
OC3 IR 4/STM1 SH 1310
OC3 IR4/STM1 SH 1310-8
OC12 LR/STM4 LH 1310
OC12 IR/STM4 SH 1310
OC12 IR/STM4 SH 1310-4
OC12 LR/STM4 LH 1550
OC48 LR 1550
OC48 IR 1310
OC48 LR/STM16 LH AS 1550
OC48 IR/STM16 SH AS 1310
OC48 ELR 200 GHz

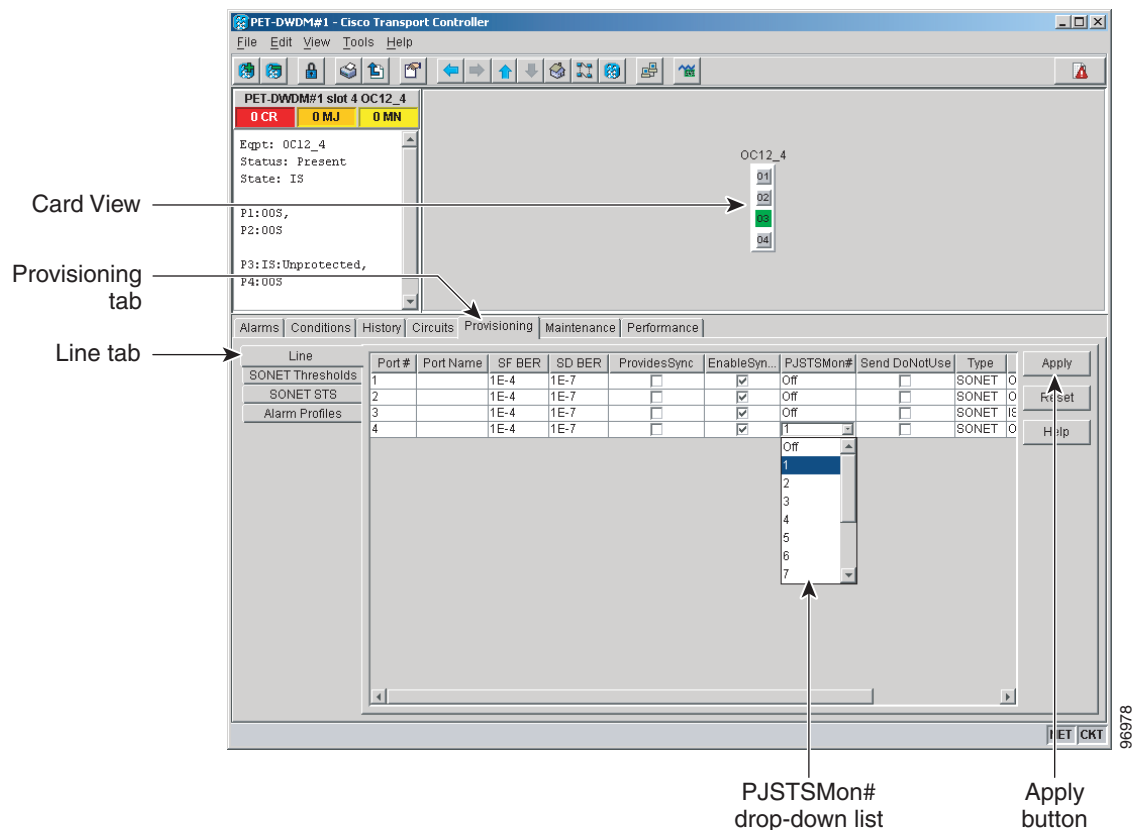
Table 10-2 OC-N Cards that Terminate the Line, Called LTEs (continued)

Line Terminating Equipment
OC48 ELR/STM16 EH 100 GHz
OC192 SR/STM64 IO 1310
OC192 IR/STM64 SH 1550
OC192 LR/STM64 LH 1550
OC192 ELR/STM64 LH ITU 15xx.xx

Step 2 Click the **Provisioning > Line** tabs.

Step 3 From the PJSTSMon# drop-down menu, make a selection based on the following rules (Figure 10-9):

- Off means pointer justification monitoring is disabled (default).
- 1 to *n* are the number of STSs on the port. One STS per port can be enabled from the PJSTSMon# card menu.

Figure 10-9 Enabling or Disabling Pointer Justification Count Parameters

Step 4 In the State field, confirm that the port is in service (IS).

Step 5 If the port is IS, click **Apply**. If the port is out of service (OOS, OOS_MT, OOS_AINS), select **IS** in the State field and click **Apply**.

- Step 6** Click the **Performance** tab to view PM parameters. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.



Note The count fields for PPJC and NPJC PM parameters appear white and blank unless pointer justification count performance monitoring is enabled.

- Step 7** Return to your originating procedure (NTP).

DLP-A122 Enable/Disable Intermediate Path Performance Monitoring

Purpose	This task enables or disables intermediate path performance monitoring, which allows you to monitor large amounts of STS traffic through intermediate nodes.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



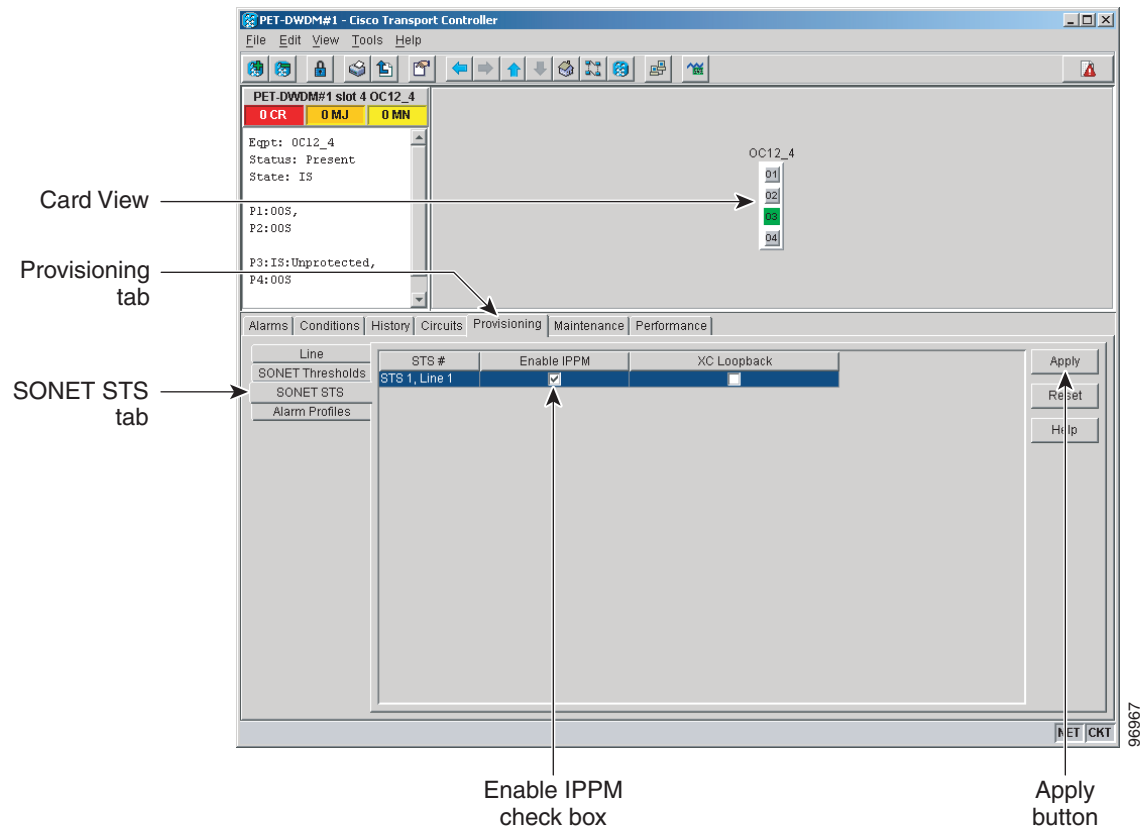
Note The monitored IPPM parameters are STS CV-P, STS ES-P, STS SES-P, STS UAS-P, and STS FC-P. Far-end path monitoring can be performed on the OC3-4 and EC1 cards. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.



Note An OC-48 IR card used in a BLSR does not support IPPM during a protection switch.

- Step 1** In node view, double-click the OC-*N* card you want to monitor. The card view appears. See [Table 10-2 on page 10-27](#) for a list of OC-*N* LTE cards.
- Step 2** Click the **Provisioning > SONET STS** tabs ([Figure 10-10](#)).

Figure 10-10 SONET STS Tab for Enabling or Disabling IPPM



- Step 3** Click the check box in the Enable IPPM column and make a selection based on the following rules:
- Unchecked means IPPM is disabled for that STS (default)
 - Checked means IPPM is enabled for that STS
- Step 4** Click **Apply**.
- Step 5** Click the **Performance** tab to view PM parameters. For IPPM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.
- Step 6** Return to your originating procedure (NTP).

DLP-A507 View OC-N PM Parameters

Purpose	This task enables you to view PM counts on an OC-N card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the OC-N card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance** tab ([Figure 10-11](#)).

Figure 10-11 Viewing OC-N Card Performance Monitoring Information

The screenshot shows the Cisco Transport Controller (CTC) interface. The main window is titled "PET-DWDM#1 - Cisco Transport Controller". The interface includes a menu bar (File, Edit, View, Tools, Help) and a toolbar. The main display area is divided into several sections. On the left, there is a "Card View" section showing details for "PET-DWDM#1 slot 4 OC12_4", including "Eqpt: OC12_4", "Status: Present", and "State: IS". Below this, there is a "Performance tab" section showing a table of performance parameters. The table has columns for "Param", "Curr", "Prev", "Prev-1", "Prev-2", "Prev-3", "Prev-4", "Prev-5", "Prev-6", and "Prev-7". The table lists various parameters such as CV-S, ES-S, BE-S, BEFS-S, CV-L, ES-L, BE-L, UAS-L, FC-L, PSC, PSD, PSC-W, PSD-W, CV-P, and ES-P. The "Performance" tab is selected, and the table displays data for OC12_4. The interface also includes a "Directions" section with radio buttons for "Near End" and "Far End", and an "Intervals" section with radio buttons for "15 min" and "1 day". A "Refresh" button and an "Auto-refresh" dropdown menu are also visible. The bottom status bar shows the current time and date.

- Step 3** In the Port drop-down menu, click the port you want to monitor.
- Step 4** Click **Refresh**.
- 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 Reference Manual*.

- Step 6** To monitor another port on a multiport card, choose another port from the Port drop-down menu and click **Refresh**.
- Step 7** Return to your originating procedure (NTP).
-

NTP-A251 Monitor Multirate Transport 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), or muxponder (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 8, “Create Circuits and VT Tunnels” and Chapter 13, “Change Card Settings.”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24 at the node that you want to monitor. If you are already logged in, continue with Step 2.
- Step 2** Complete the “[DLP-A500 Enable/Disable OTN G.709 Performance Monitoring](#)” task on page 10-33 as needed to enable or disable optical transport network (OTN) G.709 monitoring.
- Step 3** Complete the “[DLP-A501 Enable/Disable OTN FEC Performance Monitoring](#)” task on page 10-34 as needed to enable or disable optical transport network (OTN) forward error correction (FEC) monitoring.
- Step 4** Complete the “[DLP-A317 View Optics PM Parameters](#)” task on page 10-36 as needed.
- Step 5** Complete the “[DLP-A318 View Payload PM Parameters](#)” task on page 10-37 as needed.
- Step 6** Complete the “[DLP-A319 View Optical Transport Network PM Parameters](#)” task on page 10-39 as needed.

To refresh, reset, or clear PM counts, see the “[NTP-A253 Change the PM Display](#)” procedure on page 10-2.

Stop. You have completed this procedure.

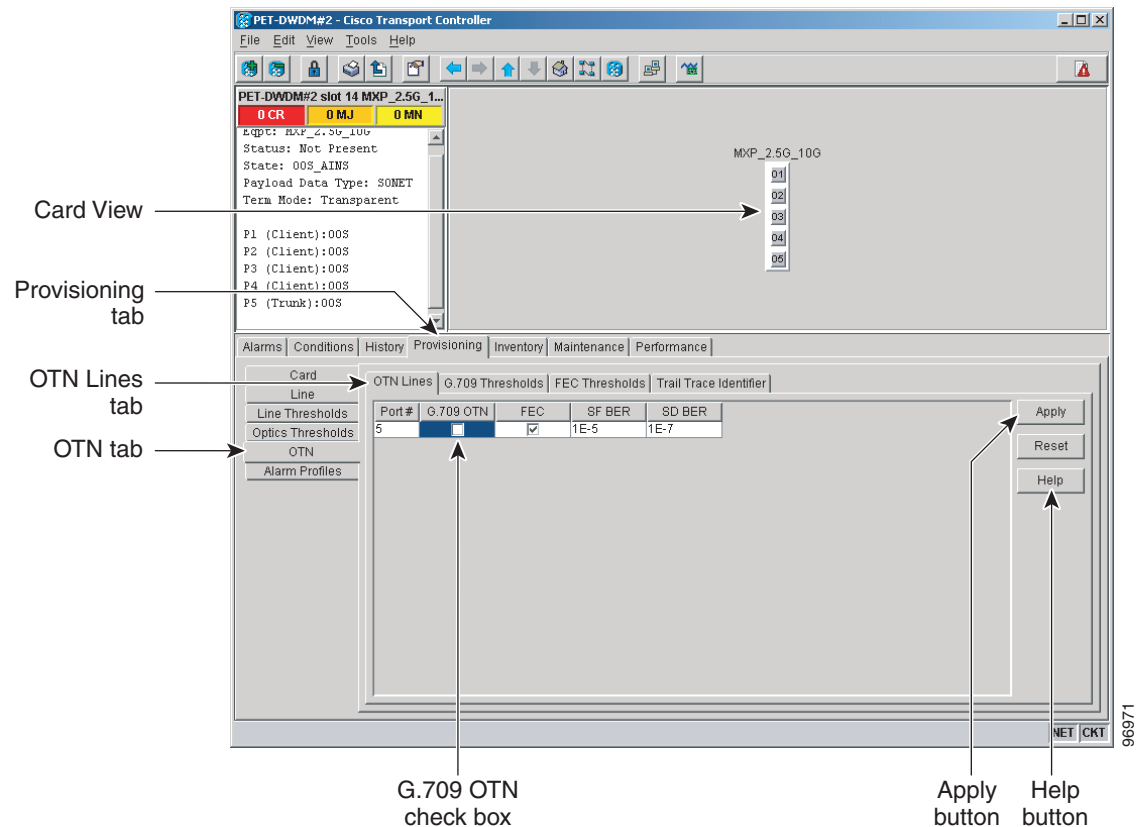
DLP-A500 Enable/Disable OTN G.709 Performance Monitoring

Purpose	This task enables or disables optical transport network (OTN) 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-A60 Log into CTC , page 3-24
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 10-12](#)).

Figure 10-12 OTN Lines Tab for Enabling/Disabling OTN G.709 Performance Monitoring



Step 3 Make a G.709 selection based on the following rules:

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

Step 4 Click **Apply**.

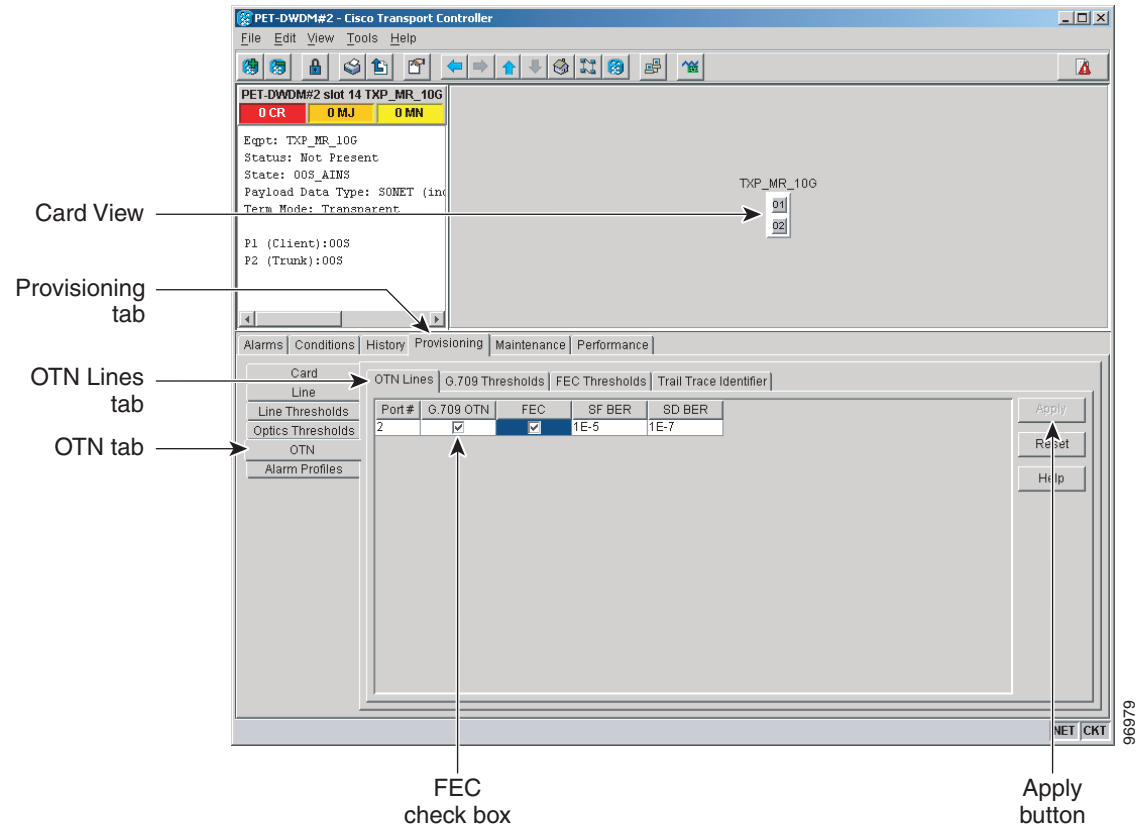
- Step 5** Click the **Performance** tab to view PM parameters. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.
- Step 6** Return to your originating procedure (NTP).
-

DLP-A501 Enable/Disable OTN FEC Performance Monitoring

Purpose	This task enables or disables optical transport network (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-A60 Log into CTC, page 3-24
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 10-13](#)).

Figure 10-13 OTN Lines Tab for Enabling/Disabling OTN FEC Performance Monitoring



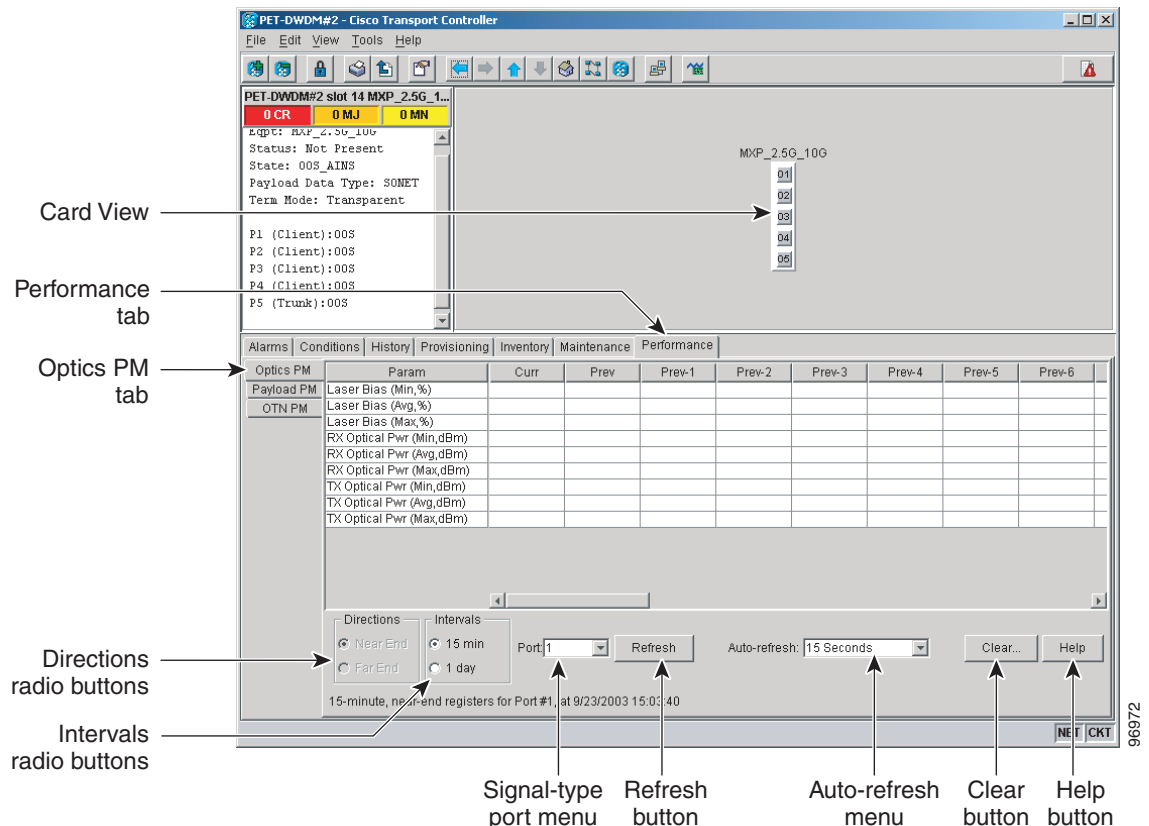
- Step 3** Make an FEC selection based on the following rules:
- Unchecked disables FEC for that port (default)
 - Checked enables FEC for that port
- Step 4** Click **Apply**.
- Step 5** Click the **Performance** tab to view PM parameters. For PM parameter definitions, refer to the *Cisco ONS 15454 Reference Manual*.
- Step 6** Return to your originating procedure (NTP).

DLP-A317 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), or muxponder (MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
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 10-14](#)).

Figure 10-14 Viewing Optics 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 Reference Manual*.

Step 4 Return to your originating procedure (NTP).

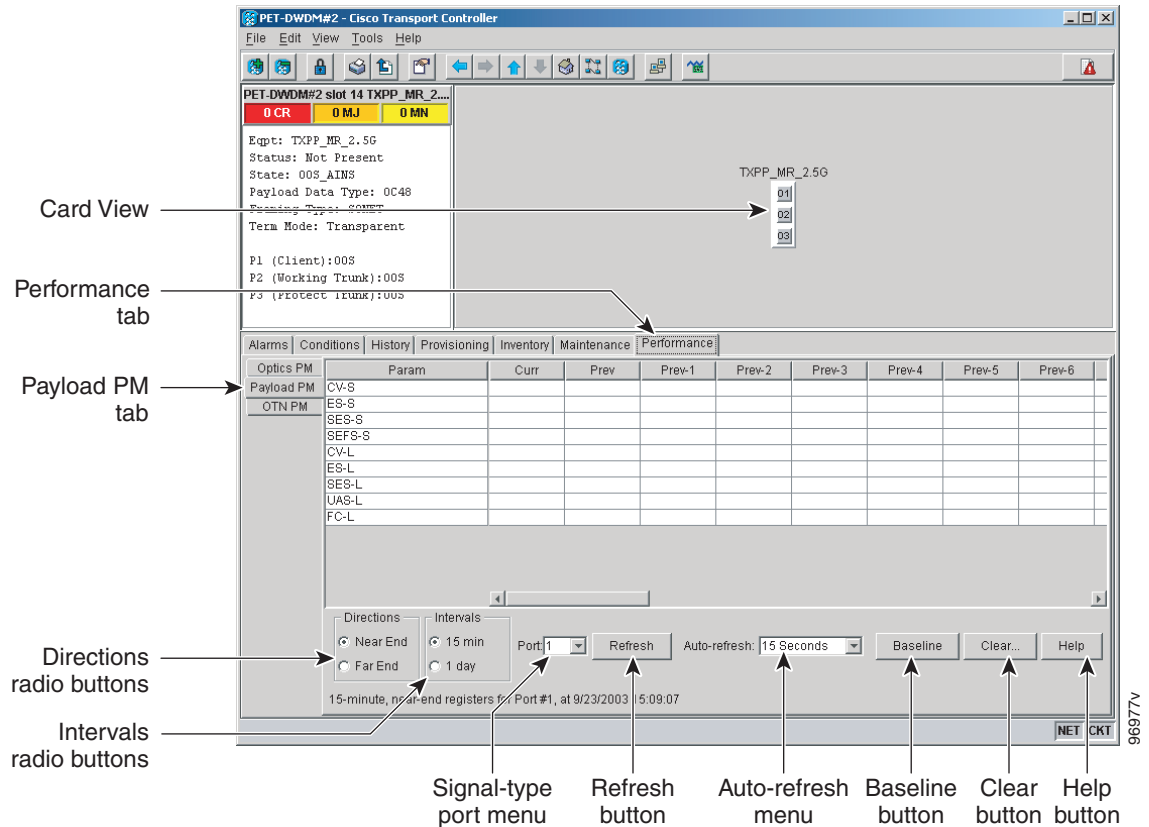
DLP-A318 View Payload PM Parameters

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), or muxponder (MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
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 10-15](#)).

Figure 10-15 Viewing Payload 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 Reference Manual*.



Note The PM parameters that appear depend on the data payload and framing type provisioned on the port. Unframed data payloads such as ESCON, DV6000, DSI/D1 video, and HDTV do not provide payload performance monitoring information.

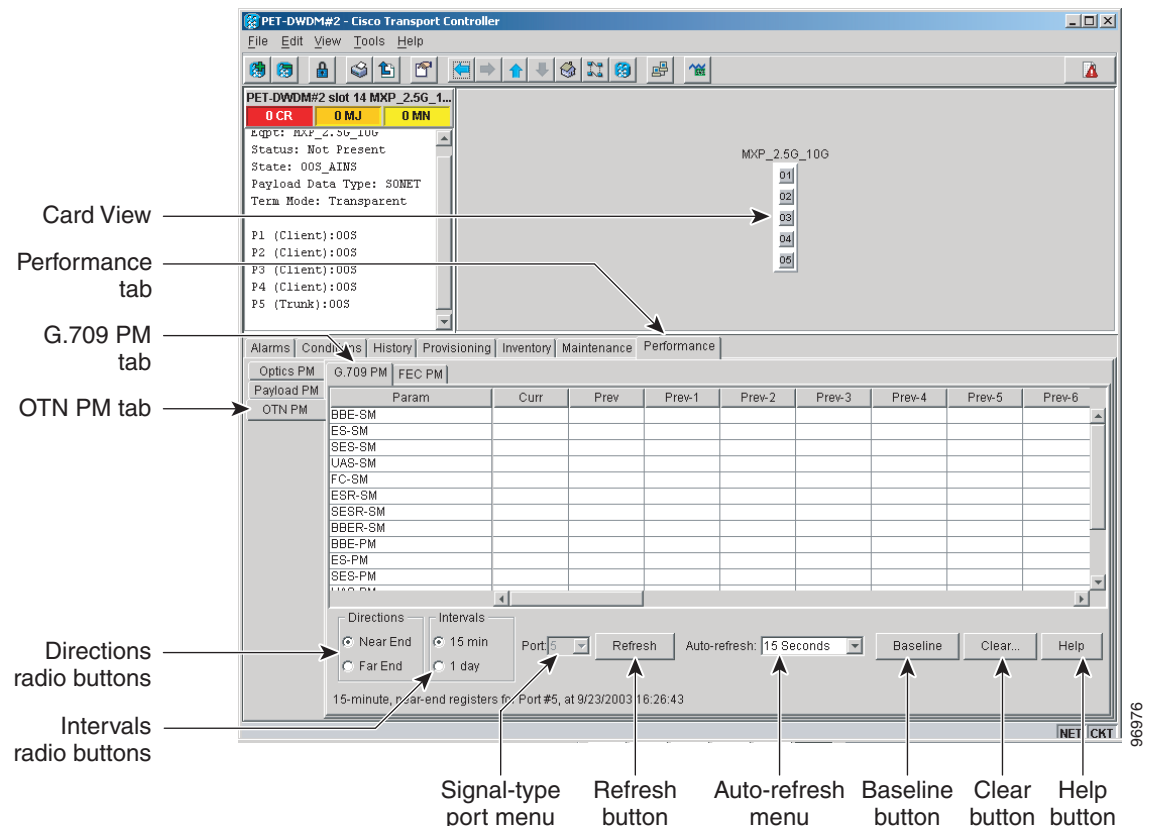
Step 4 Return to your originating procedure (NTP).

DLP-A319 View Optical Transport Network PM Parameters

Purpose	This task enables you to view the optical transport network (OTN) PM counts on a transponder (TXP_MR_10G, TXP_MR_2.5G, TXPP_MR_2.5G), or muxponder (MXP_2.5G_10G) card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

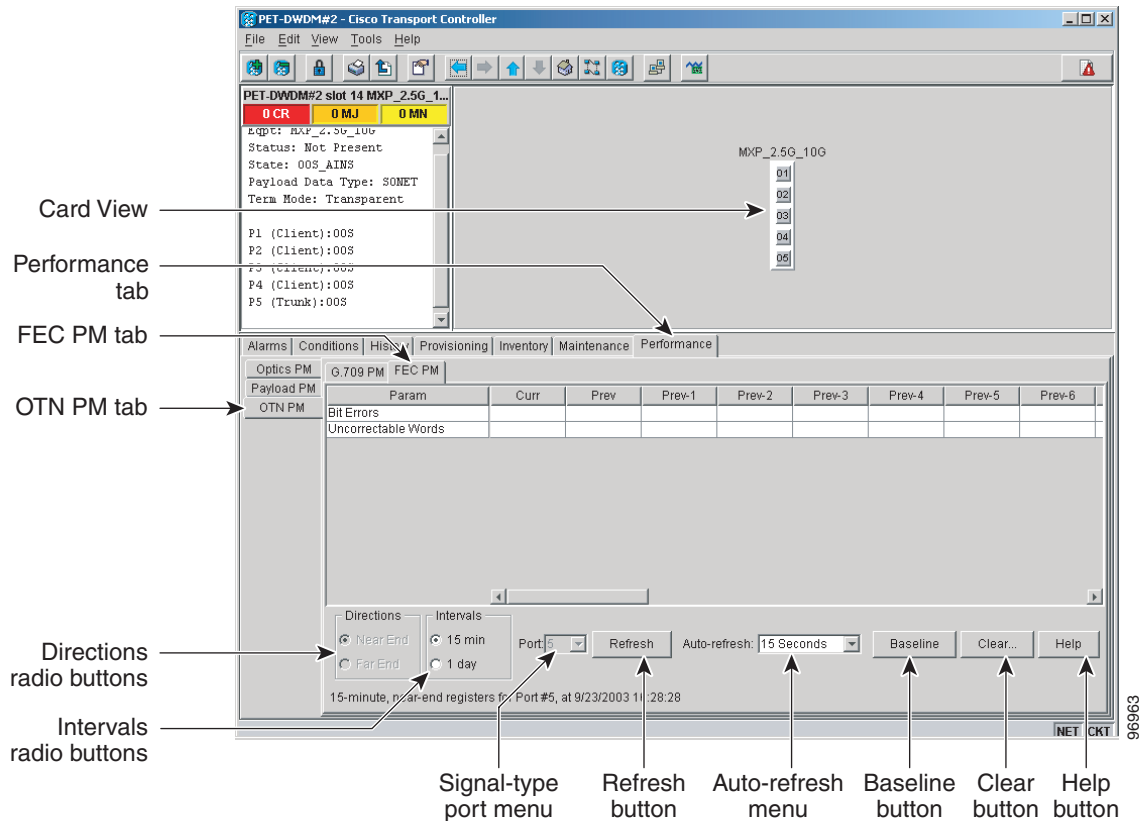
- Step 1** In node view, double-click the transponder or muxponder card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > OTN PM > G.709** tabs ([Figure 10-16](#)).

Figure 10-16 Viewing OTN 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 Reference Manual*.
- Step 4** Click the **FEC PM** tab ([Figure 10-17](#)).

Figure 10-17 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 Reference Manual*.

Step 6 Return to your originating procedure (NTP).

NTP-A252 Monitor DWDM Performance

Purpose

This procedure enables you to view transmit and receive performance during selected time intervals on a DWDM 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 8, “Create Circuits and VT Tunnels”](#) and [Chapter 13, “Change Card Settings.”](#)

Required/As Needed

As needed

Onsite/Remote

Onsite or remote

Security Level

Retrieve or higher

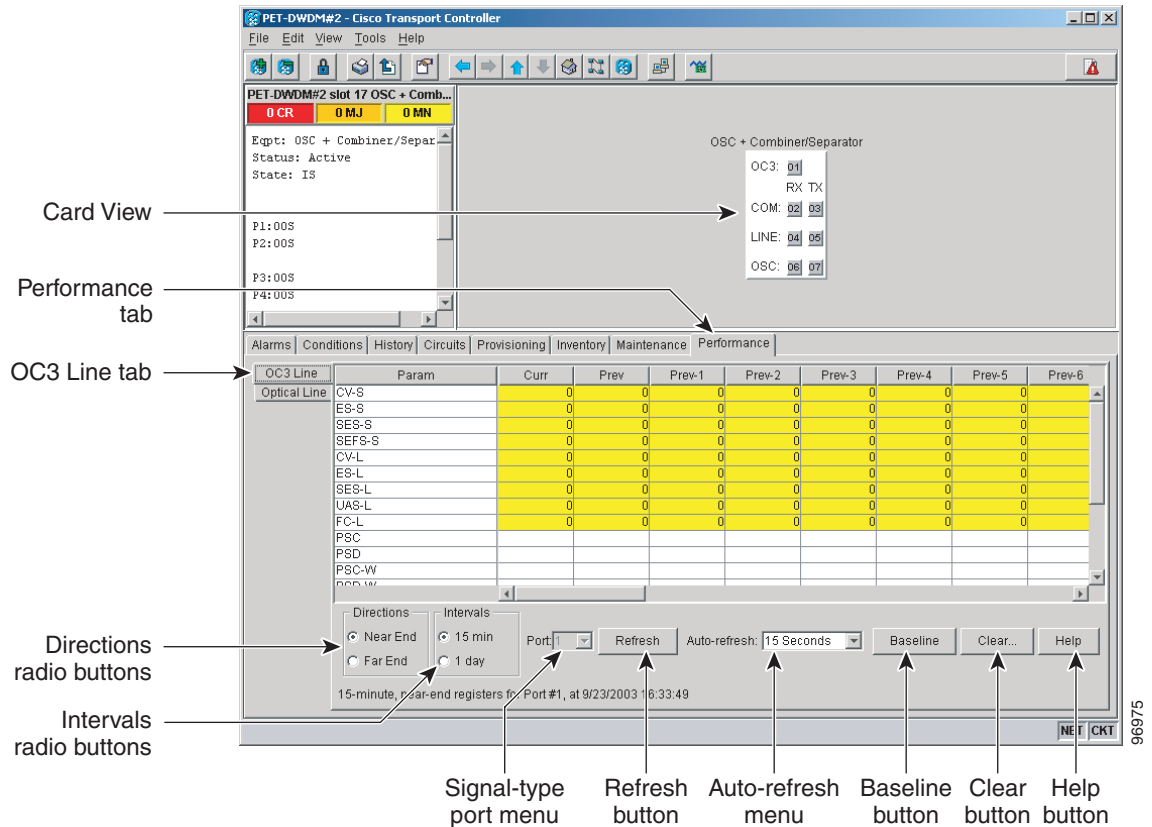
-
- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24 at the node that you want to monitor. If you are already logged in, continue with Step 2.
- Step 2** Complete the “[DLP-A502 View Optical Service Channel PM Parameters](#)” task on page 10-41.
- Step 3** Complete the “[DLP-A503 View Optical Amplifier PM Parameters](#)” task on page 10-42.
- Step 4** Complete the “[DLP-A504 View Optical Multiplexer and Demultiplexer PM Parameters](#)” task on page 10-44.
- Step 5** Complete the “[DLP-A505 View Channel Filter Optical Add/Drop Multiplexer PM Parameters](#)” task on page 10-45.
- Step 6** Complete the “[DLP-A506 View Band Filter Optical Add/Drop Multiplexer PM Parameters](#)” task on page 10-46.
- To refresh, reset, or clear PM counts, see the “[NTP-A253 Change the PM Display](#)” procedure on page 10-2.
- Stop. You have completed this procedure.**
-

DLP-A502 View Optical Service Channel PM Parameters

Purpose	This task enables you to view optical service channel PM counts at selected time intervals on an OSCM or OSC-CSM card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC , page 3-24
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 10-18](#)).

Figure 10-18 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-A503 View Optical Amplifier PM Parameters

Purpose

This task enables you to view optical amplifier PM counts at selected time intervals on an OPT PRE or OPT BST card and port to detect possible performance problems.

Tools/Equipment

None

Prerequisite Procedures

[DLP-A60 Log into CTC, page 3-24](#)

Required/As Needed

As needed

Onsite/Remote

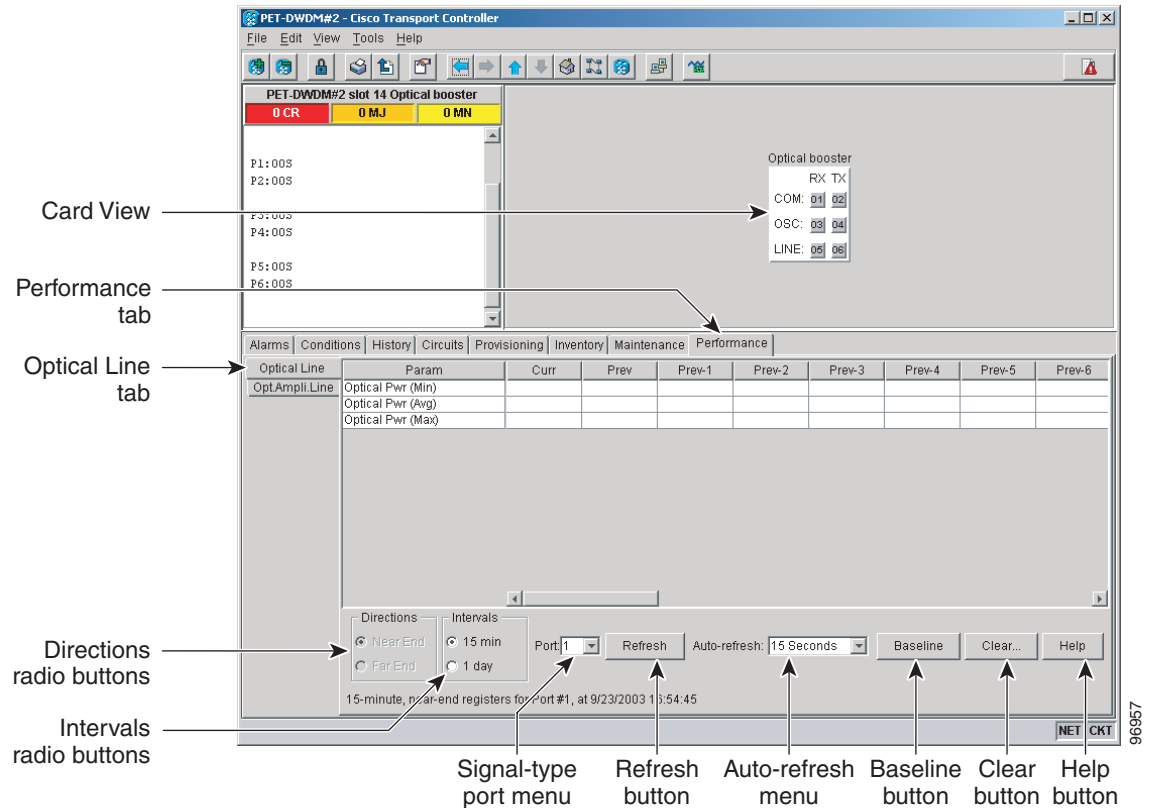
Onsite or remote

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 10-19).

Figure 10-19 Optical Line Tab in the Optical Amplifier Card View Performance Window



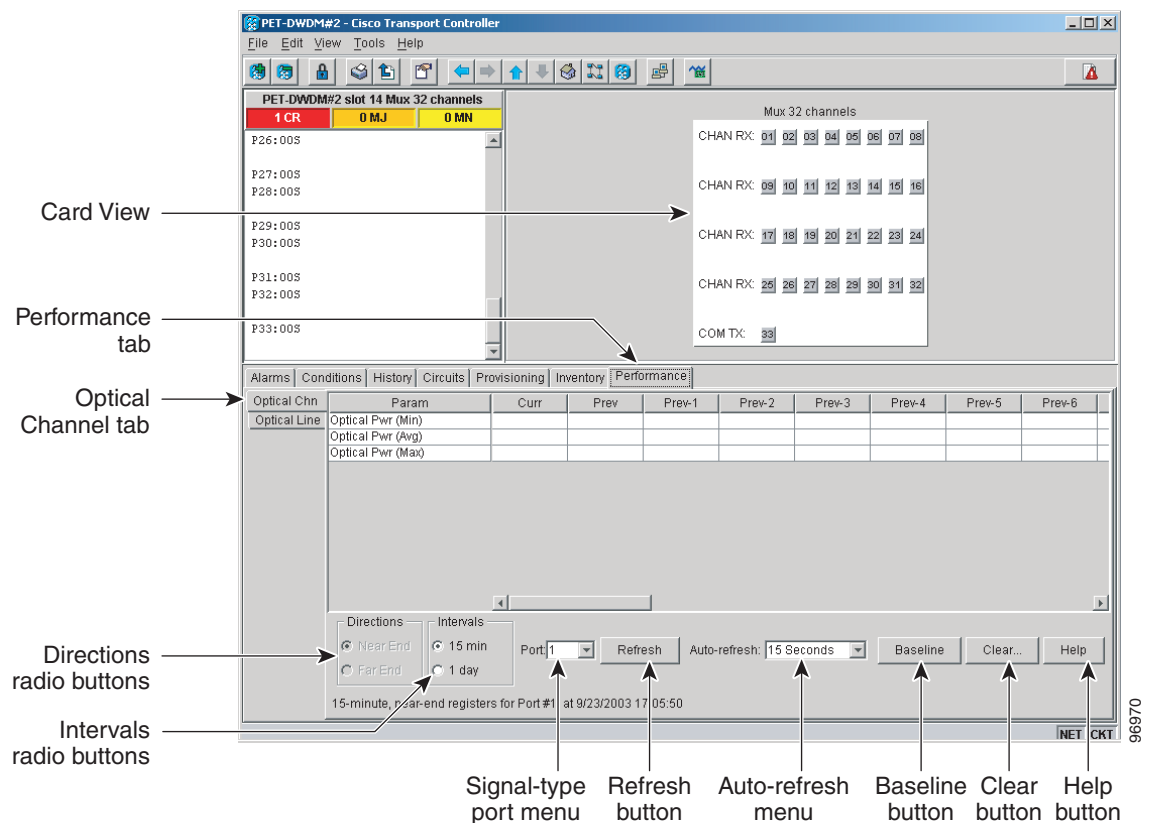
- Step 3** Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.
- Step 4** Click the **Opt. Ampli. Line** tab.
- Step 5** Click **Refresh**. Optical amplifier line performance monitoring statistics for the selected port appear.
- Step 6** Return to your originating procedure (NTP).

DLP-A504 View Optical Multiplexer and Demultiplexer PM Parameters

Purpose	This task enables you to view multiplexer or demultiplexer PM counts at selected time intervals on a 32MUX or 32DMX card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the 32MUX or 32DMX card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Optical Chn** tabs ([Figure 10-20](#)).

Figure 10-20 Optical Channel Tab in the Mux/Demux 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.

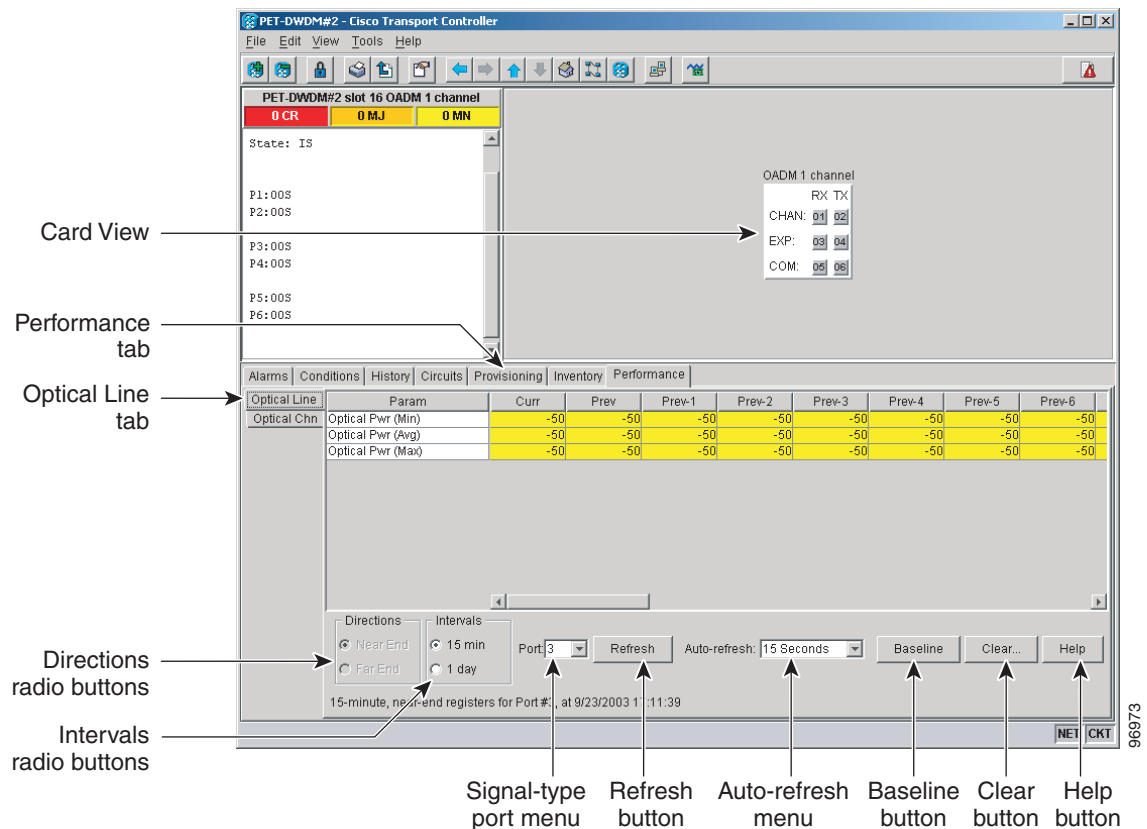
Step 6 Return to your originating procedure (NTP).

DLP-A505 View Channel Filter Optical Add/Drop Multiplexer PM Parameters

Purpose	This task enables you to view optical add/drop channel multiplexer PM counts at selected time intervals on an AD1C, AD2C, or AD4C card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the optical add/drop channel multiplexer card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Optical Line** tabs ([Figure 10-21](#)).

Figure 10-21 Optical Line Tab in the Channel Filter OADM Card View Performance Window



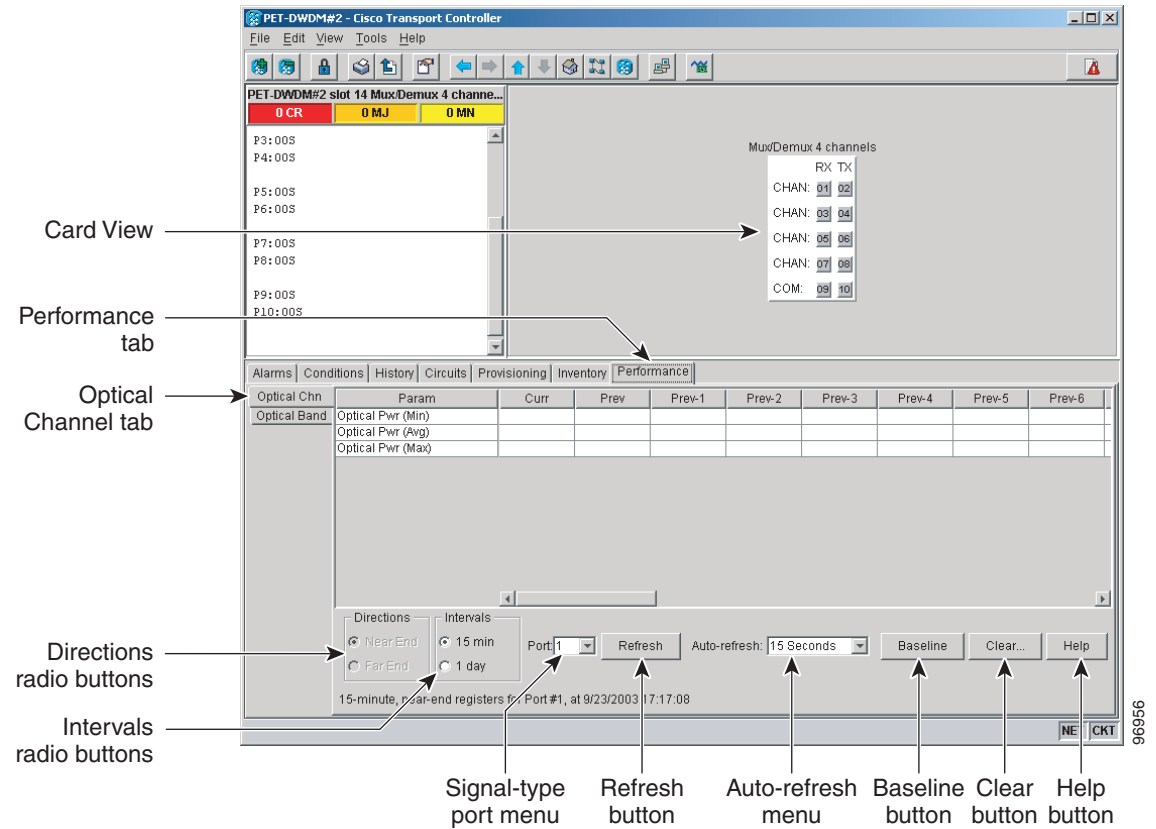
- Step 3** Click **Refresh**. Optical line performance monitoring statistics for the selected port appear.
- Step 4** Click the **Optical Chn** tab.
- Step 5** Click **Refresh**. Optical channel performance monitoring statistics for the selected port appear.
- Step 6** Return to your originating procedure (NTP).
-

DLP-A506 View Band Filter Optical Add/Drop Multiplexer PM Parameters

Purpose	This task enables you to view optical add/drop band multiplexer PM counts at selected time intervals on an AD1B, AD4B, or 4MD card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the optical add/drop band multiplexer card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Optical Chn** tabs ([Figure 10-22](#)).

Figure 10-22 Optical Channel Tab in the 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-A285 Monitor FC_MR-4 Performance

Purpose	This procedure enables you to view node transmit and receive performance during selected time intervals on a FC_MR-4 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 8, “Create Circuits and VT Tunnels” and Chapter 13, “Change Card Settings.”
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Retrieve or higher

-
- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24 at the node that you want to monitor. If you are already logged in, continue with [Step 2](#).
- Step 2** Complete the “[DLP-A350 View FC_MR-4 Statistics PM Parameters](#)” task on page 10-48.
- Step 3** Complete the “[DLP-A351 View FC_MR-4 Utilization PM Parameters](#)” task on page 10-49.
- Step 4** Complete the “[DLP-A352 View FC_MR-4 History PM Parameters](#)” task on page 10-50.
- Stop. You have completed this procedure.**
-

DLP-A350 View FC_MR-4 Statistics PM Parameters

Purpose	This task enables you to view current statistical PM counts on an FC_MR-4 card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC , page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

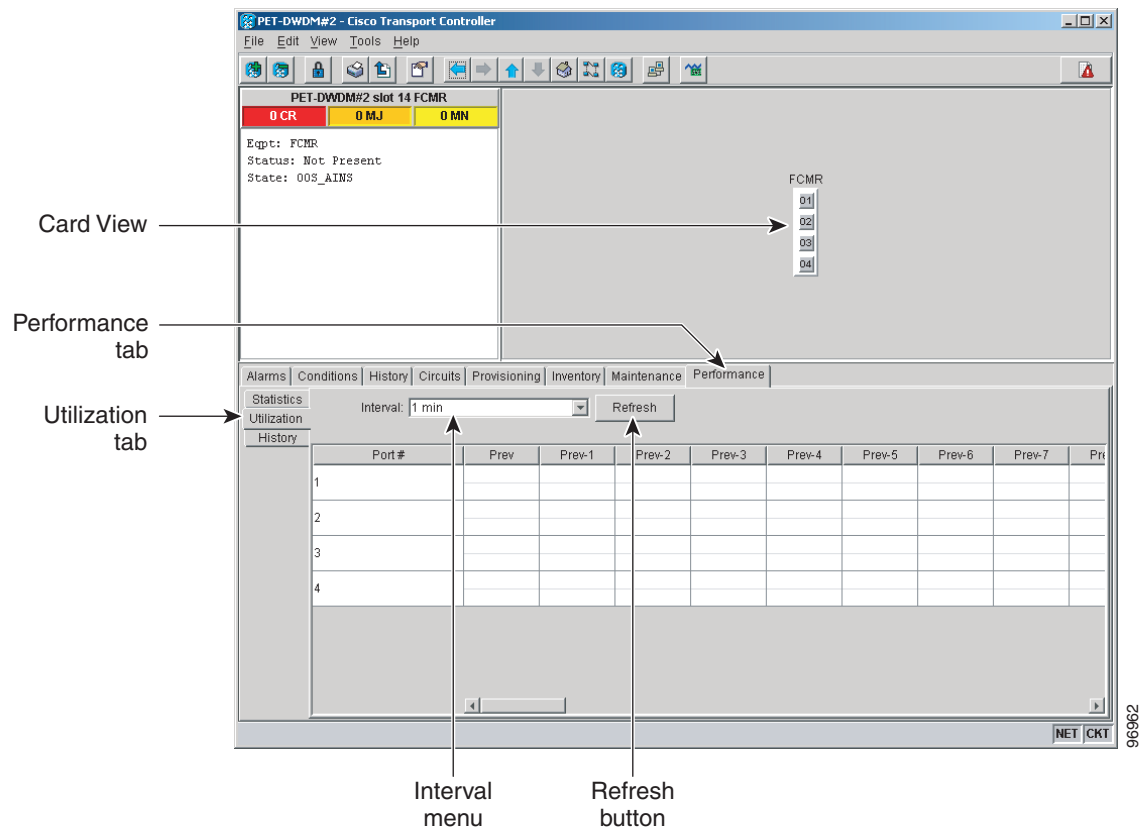
-
- Step 1** In node view, double-click the FC_MR-4 card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Statistics** tabs.
- Step 3** Click **Refresh**. Performance monitoring statistics for each port on the card appear.
- Step 4** View the PM parameter names 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 Reference Manual*.
- Step 5** Return to your originating procedure (NTP).
-

DLP-A351 View FC_MR-4 Utilization PM Parameters

Purpose	This task enables you to view line utilization PM counts on an FC_MR-4 card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the FC_MR-4 card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance > Utilization** tabs ([Figure 10-23](#)).

Figure 10-23 FC_MR-4 Utilization on the Card View Performance Window



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

Step 6 Return to your originating procedure (NTP).

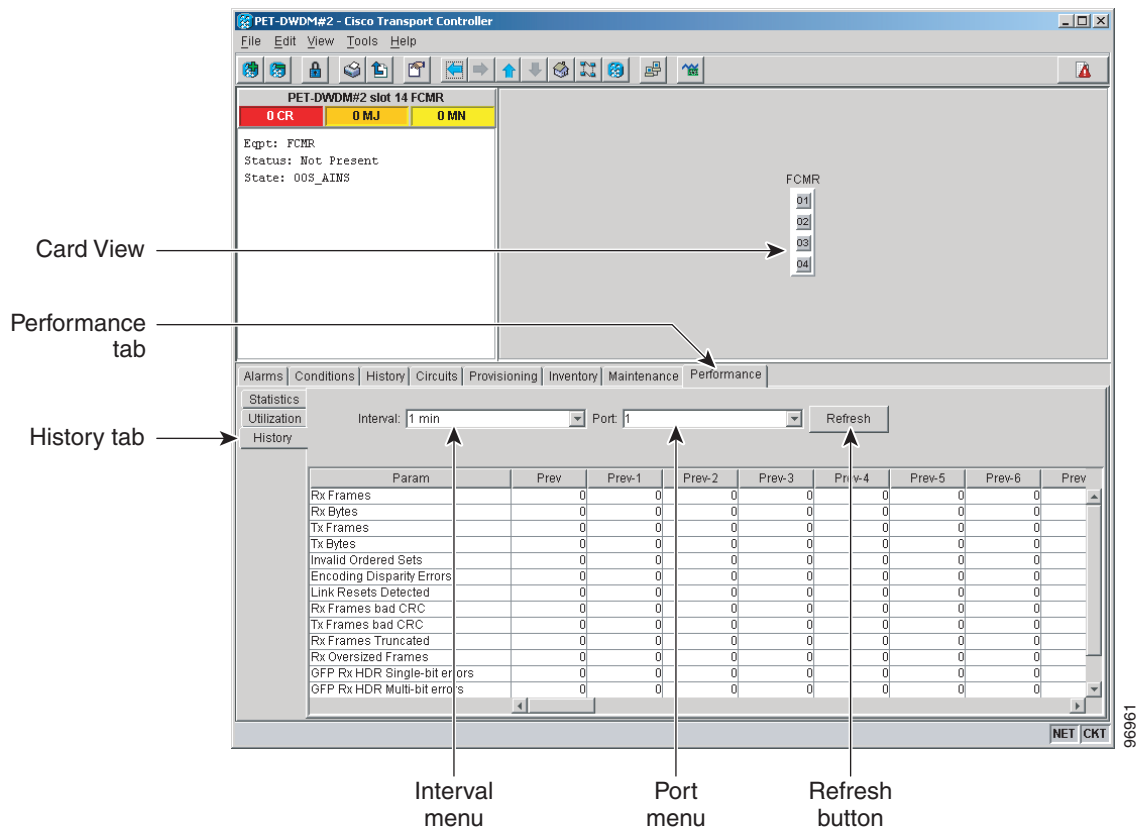
DLP-A352 View FC_MR-4 History PM Parameters

Purpose	This task enables you to view historical PM counts at selected time intervals on an FC_MR-4 card and port to detect possible performance problems.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

Step 1 In node view, double-click the FC_MR-4 card where you want to view PM counts. The card view appears.

Step 2 Click the **Performance > History** tabs ([Figure 10-24](#)).

Figure 10-24 FC_MR-4 History on the Card View Performance Window



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

- 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 Reference Manual*.
- Step 5** Return to your originating procedure (NTP).

DLP-A353 Refresh FC_MR-4 PM Counts at a Different Time Interval

Purpose	This task changes the window view to display specified PM counts in time intervals depending on the interval option selected.
Tools/Equipment	None
Prerequisite Procedures	DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** In node view, double-click the FC_MR-4 card where you want to view PM counts. The card view appears.
- Step 2** Click the **Performance** tab.
- Step 3** Click the **Utilization** or the **History** tab.
- Step 4** From the Interval drop-down menu, choose one of four options:
- 1 min: This option appears the specified PM counts in one-minute time intervals.
 - 15 min: This option appears the specified PM counts in 15-minute time intervals.
 - 1 hour: This option appears the specified PM counts in one-hour time intervals.
 - 1 day: This option appears the specified PM counts in one-day (24 hours) time intervals.
- Step 5** Click **Refresh**. The PM counts refresh with values based on the selected time interval.
- Step 6** Return to your originating procedure (NTP).

NTP-A289 Create or Delete FC_MR-4 RMON Thresholds

Purpose	Use this procedure to create or delete FC_MR-4 remote monitoring (RMON) thresholds for the ONS 15454.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

-
- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24. If you are already logged in, continue with Step 2.
- Step 2** Perform any of the following tasks as needed:
- [DLP-A357 Create FC_MR-4 RMON Alarm Thresholds](#), page 10-52
 - [DLP-A358 Delete FC_MR-4 RMON Alarm Thresholds](#), page 10-54
- Stop. You have completed this procedure.**
-

DLP-A357 Create FC_MR-4 RMON Alarm Thresholds

Purpose	This procedure sets up remote monitoring (RMON) to allow network management systems to monitor FC_MR-4 ports. This procedure does not apply to DWDM nodes.
Tools/Equipment	None
Prerequisite Procedures	NTP-A24 Verify Card Installation , page 4-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

-
- Step 1** Complete the “[DLP-A60 Log into CTC](#)” task on page 3-24 at the node where you want to set up RMON. If you are already logged in, continue with Step 2.
- Step 2** Double-click the FC_MR-4 card where you want to create the RMON alarm thresholds.
- Step 3** In card view, click the **Provisioning > Line Thresholds** tabs.
- Step 4** Click **Create**. The Create FCMR Threshold dialog box appears.
- Step 5** From the Slot menu, choose the appropriate FC_MR-4 card.
- Step 6** From the Port drop-down menu, choose the applicable port on the FC_MR-4 card you selected.
- Step 7** From the Variable drop-down menu, choose the variable. See [Table 10-3](#) for a list of the FC_MR-4 threshold variables available in this field.

Table 10-3 FC_MR-4 Threshold Variables (MIBs)

Variable	Definition
fibreStatsInvalidOrderedSets	Received ordered sets that are not recognized as part of the defined fibre channel control words.
fibreStatsEncodingDispErrors	Received control words that cannot be decoded due to invalid disparity.
fibreStatsRxFramesTooLong	Received oversize fibre channel frames > 2148 including CRC.
fibreStatsRxFramesBadCRC	Received fibre channel frames with bad CRC.
fibreStatsRxFrames	Received total fibre channel frames.
fibreStatsRxOctets	Received total fibre channel data bytes within a frame.
fibreStatsTxFramesBadCRC	Transmitted fibre channel frames with bad CRC.

Table 10-3 FC_MR-4 Threshold Variables (MIBs) (continued)

Variable	Definition
fibreStatsTxFrames	Transmitted total fibre channel frames.
fibreStatsTxOctets	Transmitted total fibre channel data bytes within a frame.
fibreStatsLinkResets	Total number of link resets initiated by FCMR port when link recovery port setting is enabled.
gfpStatsRxSBitErrors	Received GFP (generic framing protocol) frames with single bit errors in the core header (these errors are correctable).
gfpStatsRxMBitErrors	Received GFP frames with multiple bit errors in the core header (these errors are not correctable).
gfpStatsRxTypeInvalid	Received GFP frames with invalid type (these are discarded). For example, receiving GFP frames that contain Ethernet data when we expect fibre channel data.
gfpStatsRxSblkCRCErrors	Total number of superblock CRC errors with the receive transparent GFP frame. A transparent GFP frame has multiple superblocks which each contain fibre channel data.

- Step 8** From the Alarm Type drop-down menu, indicate whether the event will be triggered by the rising threshold, falling threshold, or both the rising and falling thresholds.
- Step 9** From the Sample Type drop-down menu, 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 10** Type in an appropriate number of seconds for the Sample Period.
- Step 11** Type in 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 falling threshold of 400 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

- Step 12** Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.
- 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 13** Click **OK** to complete the procedure.
- Step 14** Return to your originating procedure (NTP).

DLP-A358 Delete FC_MR-4 RMON Alarm Thresholds

Purpose	This task deletes remote monitoring (RMON) threshold crossing alarms for FC_MR-4 ports.
Tools/Equipment	None
Prerequisite Procedures	DLP-A357 Create FC_MR-4 RMON Alarm Thresholds, page 10-52 DLP-A60 Log into CTC, page 3-24
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

-
- Step 1** Double-click the FC_MR-4 card where you want to delete the RMON alarm thresholds.
- Step 2** In card view, click the **Provisioning > Line Thresholds** tabs.
- Step 3** Click the RMON alarm threshold you want to delete.
- Step 4** Click **Delete**. The Delete Threshold dialog box opens.
- Step 5** Click **Yes** to delete that threshold.
- Step 6** Return to your originating procedure (NTP).
-