



Change Card Settings

This chapter explains how to change transmission settings on cards in a Cisco ONS 15600.

Before You Begin

As necessary, complete the [“NTP-E57 Document Existing Provisioning” procedure on page 7-2](#).

Before performing the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15600 Troubleshooting Guide* as necessary.

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

1. [NTP-E157 Provision a Multirate PPM, page 11-2](#)—Complete this procedure to provision a multirate pluggable port module (PPM), for the ASAP card. If a multirate PPM was preprovisioned, this procedure is unnecessary.
2. [NTP-E151 Provision an Optical Line Rate, page 11-3](#)—Complete this procedure to provision the optical line rate on a multirate PPM for the ASAP card. Single-rate PPMs do not need to be provisioned.
3. [NTP-E150 Change the Optical Line Rate, page 11-4](#)—As needed, complete this procedure to edit optical line rates for multirate PPMs on the ASAP card.
4. [NTP-E149 Delete Pluggable Port Modules, page 11-5](#)—As needed, complete this procedure to delete PPMs for the ASAP card.
5. [NTP-E66 Modify Line and Status Thresholds for Optical Ports, page 11-6](#)—As needed, complete this procedure to change line (drop) and threshold settings for all OC-N cards.
6. [NTP-E105 Change an Optical Port to SDH, page 11-12](#)—As needed, complete this procedure to change an optical port from SONET to SDH.
7. [NTP-E125 Change Card Service State, page 11-13](#)—As needed, complete this procedure to change card service state.

NTP-E157 Provision a Multirate PPM

Purpose	This procedure provisions a multirate pluggable port modules (PPMs) in CTC.
Tools/Equipment	None
Prerequisite Procedures	NTP-E147 Install the ASAP Card, page 2-5 DLP-E211 Install the ASAP 4PIO Modules, page 18-12 , as needed DLP-E215 Install an SFP, page 18-14 , as needed
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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- Step 1** Complete the “[DLP-E26 Log into CTC](#)” task on page 16-39 to log into an ONS 15600 on the network.
- Step 2** Click the **Alarms** tab:
- Verify that the alarm filter is not turned on. See the “[DLP-E157 Disable Alarm Filtering](#)” task on page 17-50 as necessary.
 - Verify that no unexplained conditions appear on the network. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15600 SONET Troubleshooting Guide*.
 - Complete the “[DLP-E76 Export CTC Data](#)” task on page 16-98 to export alarm and condition information.
- Step 3** In node view, double-click the ASAP card where you want to provision PPM settings.
- Step 4** Click the **Provisioning > Pluggable Port Modules** tabs.
- Step 5** In the Pluggable Port Modules pane, click **Create**. The Create PPM dialog box appears.
- Step 6** In the Create PPM dialog box, complete the following:
- PPM—Click the slot number where the SFP is installed from the drop-down list.
 - PPM Type—Click the number of ports supported by your SFP from the drop-down list. If only one port is supported, **PPM (1 port)** is the only menu option.
- Step 7** Click **OK**. The newly created port appears on the Pluggable Port Modules pane. The row on the Pluggable Port Modules pane turns light blue and the Actual Equipment Type column lists the equipment name.
- Step 8** Verify that the PPM appears in the list on the Pluggable Port Modules pane. If it does not, repeat Steps 5 through 8.
- Step 9** Repeat the task to provision a second PPM.
- Step 10** Click **OK**.
- Step 11** Continue with the “[NTP-E151 Provision an Optical Line Rate](#)” procedure on page 11-3 to provision the line rate.
- Stop. You have completed this procedure.**
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NTP-E151 Provision an Optical Line Rate

Purpose	This procedure provisions the line rate on a multirate pluggable port module (PPM). Single-rate small-form factor pluggables (SFPs) or 4-port I/O modules (4PIOs) do not need line rate provisioning.
Tools/Equipment	None
Prerequisite Procedures	NTP-E148 Preprovision an SFP Slot, page 2-8 or NTP-E157 Provision a Multirate PPM, page 11-2
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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- Step 1** Complete the “[DLP-E26 Log into CTC](#)” task on page 16-39 to log into an ONS 15600 on the network.
- Step 2** Click the **Alarms** tab:
- Verify that the alarm filter is not turned on. See the “[DLP-E157 Disable Alarm Filtering](#)” task on page 17-50 as necessary.
 - Verify that no unexplained conditions appear on the network. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15600 SONET Troubleshooting Guide*.
 - Complete the “[DLP-E76 Export CTC Data](#)” task on page 16-98 to export alarm and condition information.
- Step 3** In node view, double-click the ASAP card where you want to provision the line rate.
- Step 4** Click the **Provisioning > Pluggable Port Modules** tabs.
- Step 5** In the Pluggable Ports pane, click **Create**. The Create Port dialog box appears.
- Step 6** In the Create Port dialog box, complete the following:
- Port—Click the PPM number and port number from the drop-down list. The first number indicates the PPM and the second number indicates the port number on the PPM. For example, the first PPM with one port displays as 1-1 and the second PPM with one port displays as 2-1. When a 4PIO is present on an ASAP card, the port is identified as 4PIO#-PPM#-Port# (for example 4-4-1). The 4PIO number can be 1 to 4, the PPM number can be 1 to 4, but the port number is always 1.
 - Port Type—Click the type of port from the drop-down list. The port type menu displays the supported port rates on your PPM. See [Table 11-1](#) for definitions of the supported rates on the ASAP card.
- Step 7** Click **OK**.
- Step 8** Repeat Steps 5 through 7 to configure the port rates as needed.

Table 11-1 PPM Port Types

Card	Port Type
ASAP	<ul style="list-style-type: none"> OC-3—155 Mbps OC-12—622 Mbps OC-48—2.48 Gbps ETHER—10 Gbps Ethernet

Step 9 Click **OK**. The row on the Pluggable Ports pane turns light blue until the actual SFP is installed and then the row turns white.

Stop. You have completed this procedure.

NTP-E150 Change the Optical Line Rate

Purpose	This procedure changes PPM port rates for the ASAP card. Perform this procedure if you want to change the port rate on a multi-rate SFP that is already provisioned.
Tools/Equipment	None
Prerequisite Procedures	NTP-E157 Provision a Multirate PPM, page 11-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the “[DLP-E26 Log into CTC](#)” task on page 16-39 to log into an ONS 15600 on the network.

Step 2 Click the **Alarms** tab:

- a. Verify that the alarm filter is not turned on. See the “[DLP-E157 Disable Alarm Filtering](#)” task on page 17-50 as necessary.
- b. Verify that no unexplained conditions appear on the network. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15600 SONET Troubleshooting Guide*.
- c. Complete the “[DLP-E76 Export CTC Data](#)” task on page 16-98 to export alarm and condition information.

Step 3 In node view, double-click the ASAP card where you want to edit the PPM port rate.

Step 4 Click the **Provisioning > Pluggable Port Modules** tabs.

Step 5 Click the port with the port rate you want to change in the Pluggable Ports pane. The highlight changes to dark blue.

Step 6 Click **Edit**. The Edit Port Rate dialog box appears.

Step 7 In the Change To field, use the drop-down menu to select the new port rate and click **OK**.

Step 8 Click **Yes** on the Confirm Port Rate Change dialog box.

Stop. You have completed this procedure.

NTP-E149 Delete Pluggable Port Modules

Purpose	This procedure deletes PPM provisioning for SFPs on the ASAP card.
Tools/Equipment	None
Prerequisite Procedures	NTP-E157 Provision a Multirate PPM, page 11-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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- Step 1** Complete the [“DLP-E26 Log into CTC” task on page 16-39](#) to log into an ONS 15600 on the network.
- Step 2** Click the **Alarms** tab:
- Verify that the alarm filter is not turned on. See the [“DLP-E157 Disable Alarm Filtering” task on page 17-50](#) as necessary.
 - Verify that no unexplained conditions appear on the network. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15600 SONET Troubleshooting Guide*.
 - Complete the [“DLP-E76 Export CTC Data” task on page 16-98](#) to export alarm and condition information.
- Step 3** You cannot delete a port on a PPM: if it is in service, part of a protection group, has a communications channel termination in use, is used as a timing source, has circuits, or has overhead circuits. As needed, complete the following procedures and task:
- [NTP-E61 Modify or Delete Optical 1+1 Port Protection Settings, page 10-4](#)
 - [NTP-E62 Change Node Timing, page 10-4](#)
 - [NTP-E128 Modify or Delete Communications Channel Terminations and Provisionable Patchcords, page 10-7](#)
 - [NTP-E52 Modify and Delete Circuits, page 9-2](#)
 - [NTP-E134 Modify and Delete Overhead Circuits, page 9-3](#)
 - [DLP-E115 Change the Service State for a Port, page 17-14](#)
- Step 4** In node view, double-click the ASAP card where you want to delete PPM settings.
- Step 5** Click the **Provisioning > Pluggable Port Modules** tabs.
- Step 6** To delete a PPM and the associated ports:
- Click the PPM line that appears in the Pluggable Port Modules pane. The highlight changes to dark blue.
 - Click **Delete**. The Delete PPM dialog box appears.
 - Click **Yes**. The PPM provisioning is removed from the Pluggable Port Modules pane and the Pluggable Ports pane.
- Step 7** Verify that the PPM provisioning is deleted:
- If the PPM was pre-provisioned, CTC shows an empty slot in CTC after it is deleted.
 - If the SFP or 4PIO is physically present when you delete the PPM provisioning, CTC transitions to the deleted state, the ports (if any) are deleted, and the PPM is represented as a gray graphic in CTC. The SFP or 4PIO can be provisioned again in CTC, or the equipment can be removed, in which case the removal causes the graphic to disappear.



Note If you need to remove the SFP, see the “[DLP-E216 Remove an SFP](#)” procedure on page 18-15. If you need to remove the 4PIO, see the “[DLP-E217 Remove a 4PIO Module](#)” procedure on page 18-16.”

Stop. You have completed this procedure.

NTP-E66 Modify Line and Status Thresholds for Optical Ports

Purpose	This procedure changes line settings (line type, coding, and length), line status (in service or out of service), and performance monitoring thresholds for OC-48, OC-192 cards, and OC-N ports on ASAP cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-E157 Provision a Multirate PPM , page 11-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security	Provisioning or higher

- Step 1** Complete the “[DLP-E26 Log into CTC](#)” task on page 16-39 at the node where you want to change the settings. If you are already logged in, continue with Step 2.
- Step 2** Complete the “[NTP-E69 Back Up the Database](#)” procedure on page 14-4.
- Step 3** On the shelf graphic, double-click the OC-N card that you want to provision. The card view appears.
- Step 4** Click the **Provisioning > Line** tabs. (Click **Provisioning > Optical > Line** tabs for the ASAP card).
- Step 5** As needed, provision the options in [Table 11-2](#) for each OC-N port.

Table 11-2 OC-N Card Line Settings

Heading	Description	Options
Port #	Identifies the port number	<ul style="list-style-type: none"> For an OC-48 card: 1 – 16 For an OC-192 card: 1 – 4 For an ASAP card: up to 16 ports, denoted by 4PIO module followed by port number. (Example: 1-3-1 denotes the third port on 4PIO Module 1.)
Port Name	Provides the ability to assign the specified port a name	User-defined; name can be up to 32 alphanumeric/special characters (blank by default)
SF BER	Sets the signal fail bit error rate	<ul style="list-style-type: none"> 1E-3 1E-4 (default) 1E-5

Table 11-2 OC-N Card Line Settings (continued)

Heading	Description	Options
SD BER	Sets the signal degrade bit error rate	<ul style="list-style-type: none"> • 1E-5 • 1E-6 • 1E-7 (default) • 1E-8 • 1E-9
Provides Sync	Indicates that the port has been provisioned as a network element timing reference on another node (ONS 15600, ONS 15454, or ONS 15327)	Read-only <ul style="list-style-type: none"> • Yes (checked) • No (unchecked)
Send Do Not Use	When checked, sends a DUS (do not use) message on the S1 byte	<ul style="list-style-type: none"> • Yes (checked) • No (unchecked; default)
BLSR Ext. Byte	Chosen extended byte carries information that governs BLSR protection switches.	<ul style="list-style-type: none"> • K3 • Z2 • E2 • F1
Admin State	Sets the port service state unless network conditions prevent the change.	<ul style="list-style-type: none"> • IS—Puts the port in-service. The port service state changes to IS-NR. • IS,AINS (default)—Puts the port in automatic in-service. The port service state changes to OOS-AU,AINS. • OOS,DSBLD—Removes the port from service and disables it. The port service state changes to OOS-MA,DSBLD. • OOS,MT—Removes the port from service for maintenance. The port service state changes to OOS-MA,MT.
AINS Soak	Sets the automatic in-service soak period.	Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically (0 to 48 hours, in 15-minute increments).
Type	Defines the port as SONET or SDH. Enable Sync Msg and Send Do Not Use must be disabled before the port can be set to SDH.	<ul style="list-style-type: none"> • SONET (default) • SDH

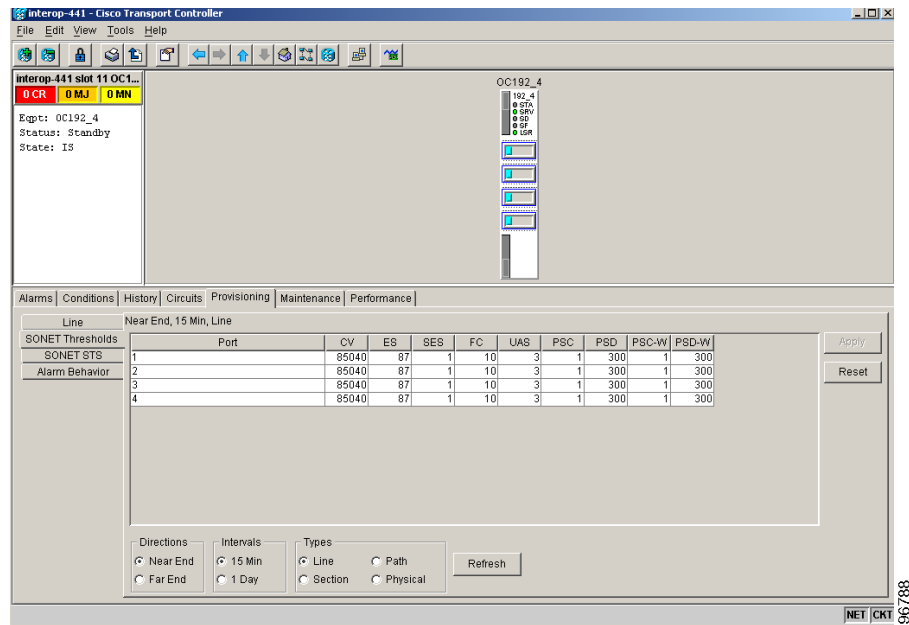
Table 11-2 OC-N Card Line Settings (continued)

Heading	Description	Options
Service State	Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State.	<ul style="list-style-type: none"> • IS-NR—(In-Service and Normal) The port is fully operational and performing as provisioned. • OOS-AU,AINS—(Out-Of-Service and Autonomous, Automatic In-Service) The port is out-of-service, but traffic is carried. Alarm reporting is suppressed. The ONS node monitors the ports for an error-free signal. After an error-free signal is detected, the port stays in OOS-AU,AINS state for the duration of the soak period. After the soak period ends, the port service state changes to IS-NR. • OOS-MA,DSBLD—(Out-of-Service and Management, Disabled) The port is out-of-service and unable to carry traffic. • OOS-MA,MT—(Out-of-Service and Management, Maintenance) The port is out-of-service for maintenance. Alarm reporting is suppressed, but traffic is carried and loopbacks are allowed.
SyncStatusMsg	Allows you to view the incoming synchronization status message by clicking Show .	<ul style="list-style-type: none"> • PRS (Primary reference source – Stratum 1) • STU (Sync traceability unknown) • ST2 (Stratum 2) • ST3 (Stratum 3) • ST3E (Stratum 3E) • SMC (SONET minimum clock) • ST4 (Stratum 4) • TNC (Transit node clock) • DUS (Do not use for timing synchronization) • RES (Reserved; quality level set by user)
Enable Sync Messages	Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source	<ul style="list-style-type: none"> • Yes (checked, default) • No (unchecked)

Step 6 Click **Apply**.

Step 7 Click the **Thresholds** subtab. The default selection is Near End, 15 Min, and Line (Figure 11-1).

Figure 11-1 Provisioning Thresholds for the OC-48 Card



Step 8 As needed, complete the following:

- Click **Line**, **Section**, **Path**, or **Physical** to provision the line, section, path, and physical options in Table 11-3 for each OC-N port.
- Change the selection to Near End/Far End, 15 Min/1Day as necessary.
- Click **Refresh** to view or modify the thresholds for each selection.

Table 11-3 OC-N Threshold Options (Line, Section, and Path)

Heading	Description	Options
Port	Port number	1 – 16 for an OC-48 card, 1 – 4 for an OC-192 card
CV	Coding violations	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 21260/212600 (OC-48 Near and Far End) • 85040/850400 (OC-192 Near and Far End) Section <ul style="list-style-type: none"> • 10000/100000 (Near End); 0/0 (Far End) • 10000/500 (OC-192 Near and Far End) Path <ul style="list-style-type: none"> • 15/125 (OC-48/OC-192 Near and Far End)
ES	Errored seconds	Numeric. Default (15 min/1 day): Line <ul style="list-style-type: none"> • 87/864 (Near and Far End) Section <ul style="list-style-type: none"> • 500/5000 (Near End); 0/0 (Far End) Path <ul style="list-style-type: none"> • 12/100 (OC-48/OC-192 Near and Far End)
SES	Severely errored seconds	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 1/4 (Near and Far End) Section <ul style="list-style-type: none"> • 500/5000 (Near End); 0/0 (Far End) Path <ul style="list-style-type: none"> • 3/7 (OC-48/OC-192 Near and Far End)
SEFS	Severely errored framing seconds	Numeric. Defaults (15 min/1 day): Section <ul style="list-style-type: none"> • 500/5000 (Near End); 0/0 (Far End)

Table 11-3 OC-N Threshold Options (Line, Section, and Path) (continued)

Heading	Description	Options
FC	Failure count	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 10/40 (OC-48/OC-192 Near and Far End) Path <ul style="list-style-type: none"> • 10/10 (OC-48/OC-192 Near and Far End)
UAS	Unavailable seconds	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 3/10 (OC-48/OC-192 Near and Far End) Path <ul style="list-style-type: none"> • 10/10 (Near and Far End)
PSC	Protection Switching Count (Line)	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 1/5 (Near End) • 0/0 (Far End)
PSD	Protection Switch Duration (Line)	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 300/600 (Near End) • 0/0 (OC-48/OC-192 Far End)
PSC-W	Protection Switching Count (Working Line)	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 1/5 (Near End)
PSD-W	Protection Switch Duration (Working Line)	Numeric. Defaults (15 min/1 day): Line <ul style="list-style-type: none"> • 300/600 (Near End)

Step 9 As needed, complete the following:

- Click **Physical** to provision the physical options in [Table 11-4](#) for each OC-N port.
- Change the selection to 15 Min or 1 Day as necessary.
- Click **Refresh** to view or modify the thresholds for each selection.

Table 11-4 OC-N Threshold Options (Physical)

Heading	Description	Options
Port	Port number	1 – 16 for an OC-48 card, 1 – 4 for an OC-192 card
LBC-HIGH	Laser bias current–maximum	Default (15 min/1 day): 150 percent
LBC-LOW	Laser bias current–minimum	Default (15 min/1 day): 50 percent
OPT-HIGH	Optical power transmitted–maximum	Default (15 min/1 day): 120 percent
OPT-LOW	Optical power transmitted–minimum	Default (15 min/1 day): 80 percent
OPR-HIGH	Optical power received–maximum	Default (15 min/1 day): 200 percent
OPR-LOW	Optical power received–minimum	Default (15 min/1 day): 50 percent
Set OPR	Setting the optical power received (OPR) establishes the received power level as 100%. If the receiver power decreases, then the OPR percentage decreases to reflect the loss in receiver power. For example, if the receiver power decreases 3 dBm, the OPR decreases 50%.	

Step 10 Click **Apply**.



Note See [Chapter 7, “Manage Alarms,”](#) for information about the Alarm Behavior tab, including alarm profiles and alarm suppression.

Stop. You have completed this procedure.

NTP-E105 Change an Optical Port to SDH

Purpose	This procedure provisions a port on an OC-N card for SDH.
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-E26 Log into CTC](#)” task on [page 16-39](#) at the node where you want to change the settings. If you are already logged in, continue with Step 2.
- Step 2** Double-click the OC-N card where you want to provision a port for SDH.
- Step 3** Click the **Provisioning > Line** tabs.
- Step 4** In the Type field, specify the port and choose SDH.
- Step 5** Click **Apply**.

- Step 6** You can repeat Steps 4 and 5 for any other ports on that card.
Stop. You have completed this procedure.

NTP-E125 Change Card Service State

Purpose	This procedure changes card service state.
Tools/Equipment	None
Prerequisite Procedures	Chapter 2, “Install Cards and Fiber-Optic Cable”
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

- Step 1** Complete the “[DLP-E26 Log into CTC](#)” task on page 16-39 at the node where you want to change the card service state.
- Step 2** Click the **Inventory** tab.
- Step 3** Click **Admin State** for the card you want to change, and choose an Admin state from the drop-down list: **IS** (In-Service) or **OOS,MT** (Out-of-Service,Maintenance).
- Step 4** Click **Apply**.
- Step 5** If an error message opens indicating that the card state cannot be changed from its current state, click **OK**.

Table 11-5 lists possible card service state transitions based on the Admin State chosen. For more information about the enhanced state model and card state transitions, refer to the “Administrative and Service States” appendix of the *Cisco ONS 15600 Reference Manual*.

Table 11-5 Cisco ONS 15600 Card State Transitions

Admin State	Original Service State	Next Service State
IS	OOS-AUMA,MT & UEQ (Out-of-Service and Autonomous Management,Maintenance and Unequipped)	OOS-AU,UEQ (Out-of-Service & Autonomous,Unequipped)
IS	OOS-AUMA,MEA & MT (Out-of-Service and Autonomous Management,Mismatched Equipment and Maintenance)	OOS-AU,MEA (Out-of-Service and Autonomous,Mismatched Equipment)
IS	OOS-MA,MT (Out-of-Service and Management,Maintenance)	IS-NR (In-Service and Normal)
OOS,MT	OOS-AU,MEA (Out-of-Service and Autonomous,Mismatched Equipment)	OOS-AUMA,MT & UEQ (Out-of-Service and Autonomous Management,Maintenance and Unequipped)

Table 11-5 Cisco ONS 15600 Card State Transitions (continued)

Admin State	Original Service State	Next Service State
OOS,MT	OOS-AU,AINS & UEQ (Out-of-Service and Autonomous,Auto In-Service and Unequipped)	OOS-AUMA,MT & UEQ (Out-of-Service and Autonomous Management,Maintenance and Unequipped)
OOS,MT	OOS-AU,AINS & MEA (Out-of-Service and Autonomous,Auto In-Service and Mismatched Equipment)	OOS-AUMA,MEA & MT (Out-of-Service and Autonomous Management,Mismatched Equipment and Maintenance)
OOS,MT	OOS-AU,UEQ (Out-of-Service and Autonomous,Unequipped)	OOS-AUMA,MT & UEQ (Out-of-Service and Autonomous Management,Maintenance and Unequipped)
OOS,MT	IS-NR (In-Service and Normal)	OOS-MA,MT (Out-of-Service and Management,Maintenance)

Stop. You have completed this procedure.

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