CHAPTER 13

Upgrade, Add, and Remove Cards and Nodes

Note The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

This chapter provides procedures for adding and removing dense wavelength division multiplexing (DWDM) cards and nodes.

Note The procedures and tasks described in this chapter for the Cisco ONS 15454 platform is applicable to the Cisco ONS 15454 M2 and Cisco ONS 15454 M6 platforms, unless noted otherwise.

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

Before You Begin

Before performing any of the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide* as necessary for general troubleshooting information and alarm or error descriptions.

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

1. NTP-G107 Remove Permanently or Remove and Replace DWDM Cards, page 13-2—Complete as needed.
2. NTP-G127 Add an AD-xC-xx.x Card to an OADM Node, page 13-6—Complete as needed.
3. NTP-G129 Add a DWDM Node, page 13-9—Complete as needed.
4. NTP-G130 Remove a DWDM Node, page 13-11—Complete as needed.
5. NTP-G146 Add a Rack, Passive Unit, or Shelf to a Multishelf Node, page 13-13—Complete as needed.
6. NTP-G147 Delete a Passive Unit, Shelf, or Rack from a Multishelf Node, page 13-16—Complete as needed.
7. NTP-G173 Convert an OADM Node to a ROADM Node, page 13-18—Complete as needed.

8. NTP-G176 Convert an Line Amplifier Node to an OADM Node, page 13-21—Complete as needed.
9. NTP-G182 Convert a Line Amplifier Node to a ROADM Node, page 13-23—Complete as needed.
10. NTP-G195 Convert a Protected ROADM Node from two Separate Nodes to a Single Multishelf Node, page 13-25—Complete as needed.
11. NTP-G177 Upgrade ANS Parameters on a DWDM Node, page 13-32—Complete as needed.
12. NTP-G242 Modify the CD setting of TDC-CC and TDC-FC Cards, page 13-33.
13. NTP-G278 Upgrade the TSC Card to the TNC Card, page 13-35

NTP-G107 Remove Permanently or Remove and Replace DWDM Cards

Purpose	This procedure permanently removes or removes and replaces DWDM cards installed in the ONS 15454 shelf and rack.
Tools/Equipment	None
Prerequisite Procedures	NTP-G30 Install the DWDM Cards, page 4-64 NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, ADM-10G, and OTU2_XP Cards, page 4-69
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution Removing and replacing cards can be traffic affecting.

Caution Do not use this procedure to replace a TCC2/TCC2P/TCC3/TNC/TSC card.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30.

Note If you cannot log into Cisco Transport Controller (CTC) and you need to remove a card, remove the card as described in Step 6. After you log into CTC, troubleshoot the mismatched equipment alarm (MEA) with the *Cisco ONS 15454 DWDM Troubleshooting Guide*.

Step 2 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the DLP-G128 Disable Alarm Filtering, page 10-26 as necessary.

b. Verify that no unexplained alarms appear on the network. If alarms appear, investigate and resolve them before continuing. Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide* for procedures.

Step 3 If you are removing and replacing a card, go to Step 5.

Step 4 If you are permanently removing a card, go to Step 11.

Step 5 To remove and replace a card, complete the following tasks, as needed:

- The circuits traversing through the card that needs to be replaced (for example, an amplifier) need to be protection switched. For instance, if the card you want to replace is an active transponder (TXP) or muxponder (MXP) in a Y-cable protection group, complete the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45 to force traffic away from the TXP or MXP that you will remove. If the card you want to replace is the standby TXP or MXP in a Y-cable protection group, complete the "DLP-G182 Apply a Lockout" task on page 11-47 to prevent traffic from switching to the TXP or MXP that you will remove. See the *Cisco ONS 15454 Procedure Guide* or the *Cisco ONS 15454 SDH Procedure Guide* for other types of protection switching (path protection, BLSR, optical, and electrical).
- If the card is used as a node timing reference, complete the "NTP-G112 Change the Node Timing Reference" procedure on page 14-18 to change the timing reference to a card that will not be removed.
- If the card is an OSCM or OSC-CSM with an optical service channel (OSC) or TXP, MXP, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, ADM-10G, and OTU2_XP cards with generic communications channel (GCC) termination, complete the "NTP-G85 Modify or Delete OSC Terminations, DCC/GCC Terminations, and Provisionable Patchcords" procedure on page 11-48 to delete the termination and recreate it on a card that will not be removed.

Step 6 Physically remove the card:

a. Disconnect any cables.

b. Open the card latches/ejectors.

c. Use the latches/ejectors to pull the card forward and away from the shelf.

Step 7 Insert the new card using one of the following procedures as applicable:

- NTP-G30 Install the DWDM Cards, page 4-64
- NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, ADM-10G, and OTU2_XP Cards, page 4-69

Step 8 Complete the "NTP-G34 Install Fiber-Optic Cables on DWDM Cards and DCUs" procedure on page 4-78.

Step 9 Complete the following tasks or procedures, as needed:

- If you switched a Y-cable protection group in Step 5, complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45.
- If you deleted circuits in Step 5, complete the "DLP-G105 Provision Optical Channel Network Connections" task on page 8-23.
- If you switched the timing reference in Step 5, complete the "NTP-G112 Change the Node Timing Reference" procedure on page 14-18 to change the reference back to the new card.
- If you deleted an OSC or GCC termination in Step 5, complete the "NTP-G38 Provision OSC Terminations" procedure on page 4-126 or the "DLP-G76 Provision DCC/GCC Terminations" task on page 8-61.

Step 10 Go to Step 13.

Step 11 To permanently remove a card, complete the following tasks:

- Delete the circuits associated with the card being removed. Complete the "DLP-G106 Delete Optical Channel Network Connections" task on page 8-26, the "DLP-G347 Delete Optical Channel Client Connections" task on page 8-11, or the "DLP-G418 Delete an Optical Channel Trail" task on page 8-19 as needed.

- Delete the DWDM patchcords and optical side associated with the card being removed. Complete the "DLP-Gxxx Delete DWDM Patchcords in CTC" procedure on page yy-yy and the "NTP-G209 Create, Edit, and Delete Optical Sides" procedure on page 4-123.
- If there are pluggable port modules (PPMs) that terminate on the card, complete the "DLP-G280 Delete a PPM" procedure on page 6-19 to delete these PPMs.
- Physically remove the card:
  - Disconnect and remove any cables, patchcords, and attenuators attached to the card.
  - Open the card latches/ejectors.
  - Use the latches/ejectors to pull the card forward and away from the shelf.

Step 12 If the card you are removing is an OSCM, OSC-CSM, DWDM Amplifier, or Filter card, complete the following tasks; otherwise, go to Step 13.

- Reconfigure the circuits (OCHCC, OCHNC, Trails) as needed. Complete the "DLP-G105 Provision Optical Channel Network Connections" task on page 8-23, the "DLP-G346 Provision Optical Channel Client Connections" task on page 8-4, or the "DLP-G395 Create an Optical Channel Trail" task on page 8-17.
- Reload ANS provisioning. Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.
- Relaunch ANS. Complete the "NTP-G37 Run Automatic Node Setup" task on page 4-127.

Step 13 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-G128 Disable Alarm Filtering" task on page 10-26 as necessary.

b. Verify that no unexplained alarms appear on the network. If alarms appear, investigate and resolve them. Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide* for procedures.

Stop. You have completed this procedure.

DLP-G254 Place Amplifier Ports Out of Service

Purpose	This task places OPT-BST, OPT-BST-E, OPT-BST-L, OPT-PRE, OPT-AMP-L, or OPT-AMP-17-C card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 3-30
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the OPT-BST, OPT-BST-E, OPT-BST-L, OPT-PRE, OPT-AMP-L, or OPT-AMP-17-C card with the ports that you want to put out of service.

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

Step 3 In the Admin State column for the card's ports, choose **OOS,MT** (ANSI) or **Locked,disabled** (ETSI) for each port that does not have an OOS-MA,DSBLD or Locked-enabled,disabled service state.

Step 4 Click **Apply**.

Step 5 In the confirmation dialog box, click **Yes**.

Step 6 Click the **Provisioning > Opt Apli Line > Parameters** tabs.

Step 7 In the Admin State column for the card's ports, choose **OOS,MT** or **IS,AINS (ANSI)** or **Locked,maintenance** or **unlocked,automaticinservice** (ETSI) for each port that does not have an OOS-MA,DSBLD **or** Locked,disabled service state.

Step 8 Click **Apply**.

Step 9 In the confirmation dialog box, click **Yes**.

Step 10 Return to your originating procedure (NTP).

DLP-G318 Place Amplifier Ports In Service

Purpose	This task places OPT-BST, OPT-BST-E, OPT-BST-L, OPT-PRE, OPT-AMP-L or OPT-AMP-17-C card ports in service.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 3-30
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the OPT-BST, OPT-BST-E, OPT-BST-L, OPT-PRE, OPT-AMP-L, or OPT-AMP-17-C card with the ports that you want to put in service.

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

Step 3 In the Admin State column for the card's ports, choose **IS,AINS** (ANSI) or **Unlocked-automaticInService** (ETSI) for Port 1 (COM-RX) of the OPT-PRE card (or OPT-AMP-L or OPT-AMP-17-C cards provisioned in OPT-PRE mode), or Port 2 (OSC-RX) and Port 3 (COM-TX) of the OPT-BST, OPT-BST-E, or OPT-BST-L cards (or OPT-AMP-L or OPT-AMP-17-C cards provisioned in OPT-LINE mode).

Step 4 Click **Apply**.

Step 5 In the confirmation dialog box, click **Yes**.

Step 6 Return to your originating procedure (NTP).

NTP-G127 Add an AD-xC-xx.x Card to an OADM Node

Purpose	This procedure adds an AD-xC-xx.x card to an optical add/drop multiplexing (OADM) node.
Tools/Equipment	None
Prerequisite Procedures	Chapter 7, "Turn Up a Network" A Cisco TransportPlanner OADM site plan recalculated for the new OADM card
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Do not begin this procedure until the Cisco TransportPlanner site plan has been recalculated with the new AD-xC-xx.x card added to the OADM node.

Caution This procedure will affect the service of unprotected circuits that pass through the OADM node.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30 at a node in the OADM network.

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), display the OADM node where you will add the card.

Step 3 Click the **Circuits** tab.

Step 4 Make a list of all optical channel network connections (OCHNCs) and/or optical channel client connections (OCHCCs) that are carried on the express path for both the Side B-to-Side A and Side A-to-Side B directions.

Step 5 For OCHNCs and/or OCHCCs identified in Step 4 that are routed on the active path of a splitter or Y-cable protection group, force the traffic to the protect path in the opposite side of the ring using the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45.

Step 6 Click the **Circuits** tab.

Step 7 Complete the following steps for all OCHNCs and/or OCHCCs carried on the express path that were identified in Step 4:

- **a.** Choose the OCHNC or OCHCC circuit(s) and click **Edit**. (To choose multiple circuits, press the Shift key while you click the circuits.)
- **b.** In the Edit Circuit dialog box, click the **State** tab.
- **c.** In the State field on the right, choose **OOS,DSBLD** (ANSI) or **Locked,disabled** (ETSI) from the drop-down list.
- **d.** Click **Apply**.
- **e.** Repeat Steps a through d for each OCHNC or OCHCC circuit.

Step 8 From the Tools menu, choose **Open TL1 Connection**.

Step 9 In the Select Node dialog box, choose the OADM node where you will add the AD-xC-xx.x card and click **OK**.

Step 10 In the TL1 dialog box, use the **DLT-OCHNC** command to delete the OCHNC cross-connects for the express path OCHNC listed in Step 4, using the following format:

DLT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>:::[CKTID=<CKTID>],[CMDMDE=<CMDMDE>];

where:

- <SRC> is the access identifier from the Channel section in a two-way wavelength.
- <DST> is the destination access identifier from the LINEWL section in a two-way wavelength.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

Step 11 In the TL1 dialog box, use the **DLT-OCHCC** command to delete the OCHCC cross-connects for the express path OCHCC listed in Step 4, using the following format:

DLT-OCHCC:[<TID>]:<AID>:<CTAG>[:::CKTID=<CKTID>],[CMDMDE=<CMDMDE>];

where:

- <AID> is the access identifier from the Channel section i in a two-way wavelength.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

Step 12 Click **Close** to close the TL1 dialog box.

Step 13 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > WDM-ANS > Internal Patchcords** tabs.

Step 14 Highlight the two express connections that carry the deleted circuits passing through the node. (The express connections are the only ones connecting an EXP_TX port on the last Side A OADM card, with an EXP_RX port on the first Side B OADM card.)

Step 15 Click **Delete**.

Step 16 Remove the physical express cables between the EXP_TX and EXP_RX ports specified in Step 14.

Step 17 Insert the new AD-xC-xx.x card in the slot identified by your Cisco TransportPlanner site plan.

Step 18 Complete the "NTP-G34 Install Fiber-Optic Cables on DWDM Cards and DCUs" procedure on page 4-78 for the OADM node, following the new internal connections table generated by Cisco TransportPlanner.

Step 19 Complete the "NTP-G152 Create and Verify Internal Patchcords" procedure on page 4-113.

Step 20 Import the recalculated OADM site parameters. See the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" task on page 4-49.

Step 21 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > WDM-ANS > Port Status** tabs.

Step 22 Click **Launch ANS**.

Step 23 From the Tools menu, choose **Open TL1 Connection**.

Step 24 In the Select Node dialog box, choose the OADM node and click **OK**.

Step 25 In the TL1 dialog box, use the **DLT-OCHNC** command to delete the OCHNC cross-connects for the express path OCHNC listed in Step 14, using the following format:

DLT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>:::[CKTID=<CKTID>],[CMDMDE=<CMDMDE>];

where:

- <SRC> is the access identifier from the Channel section in a two-way wavelength.
- <DST> is the destination access identifier from the LINEWL section in a two-way wavelength.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide.*

Step 26 In the TL1 dialog box, use the **DLT-OCHCC** command to delete the OCHCC cross-connects for the express path OCHCC listed in Step 14, using the following format:

DLT-OCHCC:[<TID>]:<AID>:<CTAG>[:::CKTID=<CKTID>], [CMDMDE=<CMDMDE>]

where:

- <AID> is the access identifier from the Channel section.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.
- <PST> is the Primary state, which indicates the current overall service condition of an entity. The default is IS (in service).
- <SST> s the Secondary state, which provides additional information pertaining to PST and PSTQ. The default is AINS.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide.*

Step 27 Click **Close** to close the TL1 dialog box.

Step 28 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Circuits** tab.

Step 29 Complete the following steps for all OCHNCs and/or OCHCCs set to OOS,DSBLD (ANSI) or Locked,disabled (ETSI) in Step 7:

a. Choose the OCHNC or OCHCC circuit(s) and click **Edit**. To choose multiple circuits, press the Shift key while you click the circuits.

b. In the Edit Circuit dialog box, click the **State** tab.

c. In the State field on the right, choose **IS,AINS** (ANSI) or **Unlocked,automaticInService** (ETSI) from the drop-down list.

d. Click **Apply**, and then click **OK**.

Step 30 Complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45 for OCHNCs and/or OCHCCs that were switched to the opposite side of the ring as part of a splitter or Y-cable protection group to return the traffic to its condition before the card was added.

Stop. **You have completed this procedure**.

NTP-G129 Add a DWDM Node

Purpose	This procedure adds a DWDM node to an existing DWDM network.
Tools/Equipment	None
Prerequisite Procedures	• "DLP-G46 Log into CTC" task on page 3-30 • Complete the turn up procedures in Chapter 4, "Turn Up a Node" for the node to be added • An updated Cisco Transport Planner network plan recalculated with the new node
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution During this procedure, spans will be disconnected in the network at the point where the new node is added. This is traffic affecting for any unprotected circuits that pass through these spans.

Step 1 If the Cisco Transport Planner network design has not been updated and recalculated for the new node and client services, update and recalculate it now, using the procedures in the *Cisco Transport Planner DWDM Operations Guide*.

Step 2 Complete the "NTP-G51 Verify DWDM Node Turn Up" procedure on page 7-2 for the node to be added. If the node has not been turned up, do not continue. Complete the relevant procedures in Chapter 4, "Turn Up a Node" and Chapter 5, "Perform Node Acceptance Tests," before you begin this procedure again.

Step 3 Identify the spans that must be disconnected to insert the new node.

Step 4 From the View menu, choose **Go to Network View**.

Step 5 In network view, click the **Circuits** tab.

Step 6 Identify the OCHCC, OCHNC, or OCHTRAIL circuits on the fiber spans identified in Step 3 on both the Side B-to-Side A and Side A-to-Side B directions.

Step 7 If the OCHCC, OCHNC, or OCHTRAIL circuit is on the active path and is protected by a splitter or Y-cable protection group, complete the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45 to divert traffic away from the span where the node will be added and continue with Step 9. If the circuit is unprotected, go to Step 8.

Step 8 (Optional) Place the unprotected circuits in OOS,DSBLD (ANSI) or Locked,disabled (ETSI) state by completing the following steps:

a. In the network view, select the OCHNC, OCHCC, or OCHTRAIL circuit and click **Edit**.

b. In the Edit Circuit dialog box, click the **State** tab.

c. In the State field, choose the **OOS,DSBLD** (ANSI) or **Locked,disabled** (ETSI) option from the drop-down list.

d. Click **Apply**, then click **OK**.

Step 9 Remove the fibers from the cards at the adjacent nodes that will connect to the new node.

Step 10 Install the fibers from the adjacent nodes to the new node using the "NTP-G34 Install Fiber-Optic Cables on DWDM Cards and DCUs" procedure on page 4-78.

Step 11 Update the ANS parameters for the adjacent nodes by completing the following steps:

a. Display an adjacent node in the node view.

b. Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49 to load the new NE Update file to the node.

c. Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127 to recalculate the ANS parameters of the node.

d. Repeat the above two substeps for the second adjacent node.

Step 12 Display the new node in the node view.

Step 13 Log out of CTC and log back in.

Step 14 From the **View** menu, choose the **Go to Network View** option to display the nodes. The new node must appear on the network map. Wait for a few minutes to allow all the nodes to appear.

Step 15 Click the **Circuits** tab and wait for all the circuits to appear, including spans. Count the number of incomplete circuits.

Step 16 In the network view, right-click the new node and choose the **Update Circuits With New Node** option from the shortcut menu. Wait for the confirmation dialog box to appear. Verify that the number of updated circuits that appear in the dialog box is correct.

Step 17 If the circuits take more than a minute to appear, log out of CTC, and log back in.

Step 18 Click the **Circuits** tab and verify there are no incomplete circuits.

Step 19 Put the circuits placed in OOS,DSBLD (ANSI) or Locked,disabled (ETSI) in Step 8 back in service by completing the following steps:

a. In the network view, select the OCHNC, OCHCC, or OCHTRAIL circuit and click **Edit**.

b. In the Edit Circuit dialog box, click the **State** tab.

c. In the State field, choose the **IS-AINS** (ANSI) or **Unlocked,automaticInService** (ETSI) option from the drop-down list.

d. Click **Apply**, then click **OK**.

Step 20 Complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45 for the circuits that were switched in Step 7 to return the traffic to its original paths.

Step 21 Complete the "DLP-G105 Provision Optical Channel Network Connections" task on page 8-23 to create new circuits.

Stop. **You have completed this procedure**.

NTP-G130 Remove a DWDM Node

Purpose	This procedure removes a node from a DWDM network.
Tools/Equipment	None
Prerequisite Procedures	A Cisco TransportPlanner network plan recalculated for the new topology.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note During this procedure, you will use TL1 commands to delete and recreate OCHNC or OCHCC cross-connects. You might need to refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

Caution This procedure will affect the service of unprotected circuits that pass through the span where the node will be removed.

Step 1 If the Cisco TransportPlanner network design has not been updated and recalculated with the node removed, update and recalculate the design now by following the procedures in the Cisco TransportPlanner documentation.

Step 2 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the DWDM target node that will be removed.

Step 3 Click the **Circuits** tab.

Step 4 Identify all the OCHNCs and OCHCCs that are passing through or are added and dropped at the node that will be removed.

Step 5 Delete the OCHNCs and OCHCCs identified in Step 4 that terminate (add/drop) on the target DWDM node. See the "DLP-G347 Delete Optical Channel Client Connections" task on page 8-11 and the "DLP-G106 Delete Optical Channel Network Connections" task on page 8-26 to delete OCHCCs and OCHNCs, respectively.

Step 6 For the protected pass through circuits on the target node, perform Step 7. Else, go to Step 10.

Note Non-protected pass through circuits need not be modified or deleted.

Step 7 If the OCHNC and OCHCC circuits pass through the target node on the active path and are protected by a splitter or Y-cable protection group, navigate to an adjacent node connected to the target node and complete the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45 to force the traffic away from the node that will be deleted. Otherwise, continue with Step 8.

Step 8 Complete the following steps for the protected pass through circuits:

a. Select the OCHNCs or OCHCCs and click **Edit**.

b. In the Edit Circuit dialog box, click the **State** tab.

c. In the State field, choose **OOS,DSBLD** (ANSI) or **Locked,disabled** (ETSI) from the drop-down list.

d. Click **Apply**, then click **OK**.

Step 9 Complete the following steps to delete the cross-connects on the target node for each circuit placed in the OOS,DSBLD (ANSI) or Locked,disabled (ETSI) state in Step 8:

a. From the Tools menu, choose **Open TL1 Connection**.

b. In the Select Node dialog box, select the new node and click **OK**.

c. In the TL1 dialog box, use the **DLT-OCHNC** command to delete the OCHNC cross-connects for each unprotected pass-through circuit as follows:

DLT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>:::[CKTID=<CKTID>], [CMDMDE=<CMDMDE>];

where:

- <SRC> is the source access identifier from the Channel section in a two-way wavelength.
- <DST> is the destination access identifier from the LINEWL section in a two-way wavelength.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

d. Click **Close** to close the TL1 dialog box.

Step 10 Remove the fibers from the target node, and reconnect the fibers to the adjacent nodes. Note that once the fibers are rerouted, the non-protected pass through circuits will go to OOS-PARTIAL (ANSI) or Locked-partial (ETSI) state.

Step 11 Complete the following steps to update the ANS parameters at the adjacent nodes:

a. Display an adjacent node in node view.

b. Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49 to load the new NE Update file onto the node.

c. Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127 to recalculate the ANS parameters at the node.

d. Display the next adjacent node in node view.

e. Repeat Steps b and c for the second adjacent node.

Step 12 Repeat Step 8 to change the circuits placed in OOS,DSBLD (ANSI) or Locked,disabled (ETSI) back in service by changing the Target Circuit Admin State field to **IS-AINS** (ANSI) or **Unlocked,AutomaticInService** (ETSI).

Step 13 Complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45 for the OCHNCs and OCHCCs that were switched in Step 7.

Step 14 To discover the non-protected pass though circuits that are in the OOS-PARTIAL (ANSI) or Locked-partial (ETSI) state after completing Step 10, select the circuit and choose **Tools > Circuits > Reconfigure Circuits** from the menu bar. The Reconfigure Circuits dialog box is displayed; click **Yes**.

Stop. **You have completed this procedure**.

NTP-G146 Add a Rack, Passive Unit, or Shelf to a Multishelf Node

Purpose	This procedure adds a rack, passive unit, or subtending shelf to a multishelf node.
Tools/Equipment	None
Prerequisite Procedures	One of the following: • "NTP-G301 Connect the ONS 15454 Multishelf Node and Subtending Shelves to an MS-ISC-100T Card" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G302 Connect the ONS 15454 Multishelf Node and Subtending Shelves to a Catalyst 2950" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G295 Connect the ONS 15454 Multishelf Node and Subtending Shelves to a Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G296 Upgrade the ONS 15454 Multishelf with MS-ISC Card Configuration Using the Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G297 Upgrade the ONS 15454 Multishelf with Catalyst 2950 Configuration Using the Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G308 Connect the ONS 15454 M6 Multishelf Node and the ONS 15454 M6 Subtending Shelves" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G309 Connect the ONS 15454 M6 and the ONS 15454 in a Mixed Multishelf Configuration" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G310 Upgrade the ONS 15454 Multishelf Configuration using the ONS 15454 M6" in the *Cisco ONS 15454 Hardware Installation Guide* • Chapter 4, "Turn Up a Node"
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Each shelf you want to add to a multishelf configuration must have network connectivity. For more information, see Chapter 3, "Connect the PC and Log into the GUI."

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the multishelf DWDM node where you want to add a shelf.

Step 2 To add a rack, in the multishelf view right-click the gray area and choose **Add Rack**. If you do not need to add a rack, continue with Step 3.

Step 3 To add a passive unit, in the multishelf view right-click the gray space inside the rack and choose the passive unit from the **Add Shelf > PASSIVE CHASSIS** options. The passive unit is added to the rack.

Note To add a passive DCU, you need to choose a slot number from the Slot Number Selection dialog box and click **OK**.

Step 4 To add a shelf, in the multishelf view right-click the gray space inside the rack and choose **Add Shelf > CHASSIS_454SDH**(ETSI) or **CHASSIS_454**(ANSI) or **15454 M6 ANSI or 15454 M6 ETSI**.

Step 5 In the Shelf ID Selection dialog box, choose a shelf ID from the drop-down list.

Step 6 Click **OK**. The shelf appears in the multishelf view.

Step 7 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the new shelf that has to be configured as a subtending shelf.

Step 8 In multishelf view, click the **Provisioning > General > Multishelf Config** tabs.

Step 9 Click **Enable as Subtended Shelf**.

Step 10 From the Shelf ID drop-down list, choose the shelf ID that you created in Step 5.

Step 11 Click **Apply**.

Step 12 In the confirmation dialog box, click **Yes** to reboot the shelf. The CTC view changes to network view and the node icon changes to gray. (This might take several minutes.)

Step 13 If you are connecting the new ONS 15454 subtending shelf to the Ethernet Adapter Panel (EAP), complete the following steps. If not, continue with Step 16.

- **a.** Using a cross-over (CAT 5) LAN cable, plug one connector into the RJ-45 front panel port of the subtending shelf TCC2/TCC2P/TCC3 card in Slot 7 and plug the other end into the SSC port on the left patch panel.
- **b.** Using a cross-over (CAT 5) LAN cable, plug one connector into the RJ-45 front panel port of the subtending shelf TCC2/TCC2P/TCC3 card in Slot 11 and plug the other end into the SSC port on the right patch panel.

Step 14 If you are connecting the ONS 15454 subtending shelf to the Catalyst 2950 or the Catalyst 3560 switch, complete the following steps. If not, continue with Step 16.

- **a.** Plug one end of a cross-over (CAT-5) LAN cable into the RJ-45 front panel port of the subtending shelf TCC2/TCC2P/TCC3 card in Slot 7 and plug the other end into Port 2 of the active Catalyst 2950 or Catalyst 3560.
- **b.** Plug one end of a cross-over (CAT-5) LAN cable into the RJ-45 front panel port of the subtending shelf TCC2/TCC2P/TCC3 card in Slot 11 and plug the other end into Port 2 of the standby Catalyst 2950 or Catalyst 3560.

Step 15 To connect an ONS 15454 M6 subtending shelf to the Catalyst 3560 switches, complete the following:

- **a.** Using a cross-over (CAT-5) LAN cable, plug one connector into the MSM port that corresponds to the TNC/TSC card in Slot 1 of the subtending ONS 15454 M6 shelf and plug the other end into Port 2 of the active Catalyst 3560.
- **b.** Using a cross-over (CAT-5) LAN cable, plug one connector into the MSM port that corresponds to the TNC/TSC card in Slot 8 and plug the other end into Port 2 of the standby Catalyst 3560.
- **c.** Repeat Steps a and b for each subtending shelf in the multishelf configuration using Ports 3 through 21 on the Catalyst 3560 switches.

Note In order to connect the ONS 15454 M6 subtending shelves to the ONS 15454 M6 node controller without using a catalyst, follow the steps described in "NTP-G308 Connect the ONS 15454 M6 Multishelf Node and the ONS 15454 M6 Subtending Shelves" in the *Cisco ONS 15454 Hardware Installation Guide*. To connect an ONS 15454 subtending shelf to the ONS 15454 M6 node controller without using a catalyst switch, connect the MSM ports that correspond to the TNC/TSC cards in Slot 1 and Slot 8 of the ONS 15454 M6 node controller to the ONS 15454 subtending shelf TCC2/TCC2P/TCC3 cards in Slot 7 and Slot 11.

Step 16 Repeat Steps 4 through 16 for each subtending shelf in the multishelf configuration.

Stop. **You have completed this procedure**.

NTP-G147 Delete a Passive Unit, Shelf, or Rack from a Multishelf Node

Purpose	This procedure deletes a passive unit, shelf, or rack from a multishelf node.
Tools/Equipment	None
Prerequisite Procedures	One of the following: • "NTP-G301 Connect the ONS 15454 Multishelf Node and Subtending Shelves to an MS-ISC-100T Card" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G302 Connect the ONS 15454 Multishelf Node and Subtending Shelves to a Catalyst 2950" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G295 Connect the ONS 15454 Multishelf Node and Subtending Shelves to a Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G296 Upgrade the ONS 15454 Multishelf with MS-ISC Card Configuration Using the Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G297 Upgrade the ONS 15454 Multishelf with Catalyst 2950 Configuration Using the Catalyst 3560" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G308 Connect the ONS 15454 M6 Multishelf Node and the ONS 15454 M6 Subtending Shelves" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G309 Connect the ONS 15454 M6 and the ONS 15454 in a Mixed Multishelf Configuration" in the *Cisco ONS 15454 Hardware Installation Guide* • "NTP-G310 Upgrade the ONS 15454 Multishelf Configuration using the ONS 15454 M6" in the *Cisco ONS 15454 Hardware Installation Guide* • Chapter 4, "Turn Up a Node"
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note You cannot delete a node controller shelf from a multishelf node configuration.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the multishelf DWDM node where you want to delete a passive unit, shelf, or rack. If you want to delete a passive unit, continue with Step 2. If you want to delete a shelf, continue with Step 5. If you want to delete only a rack, go to Step 12.

Step 2 Complete the following tasks, as needed:

- If passive units on the shelf carry unprotected circuits, you must delete the circuits. Complete the "DLP-G106 Delete Optical Channel Network Connections" task on page 8-26 and the "DLP-G347 Delete Optical Channel Client Connections" task on page 8-11.
- If passive units use internal patchcords, complete the "DLP-G355 Delete an Internal Patchcord" task on page 4-123.

Step 3 From the View menu, choose **Go to Parent View** to return to multishelf view.

Step 4 Right-click the passive unit you want to delete and choose **Delete Unit**. The shelf is automatically deleted.

Step 5 Complete the following tasks, as needed:

- If cards on the shelf carry unprotected circuits, you must delete the circuits. Complete the "DLP-G106 Delete Optical Channel Network Connections" task on page 8-26 and the "DLP-G347 Delete Optical Channel Client Connections" task on page 8-11.
- If cards use internal patchcords, complete the "DLP-G355 Delete an Internal Patchcord" task on page 4-123.
- If OSCM or OSC-CSM cards with OSC or GCC terminations are on the shelf, complete the "NTP-G85 Modify or Delete OSC Terminations, DCC/GCC Terminations, and Provisionable Patchcords" procedure on page 11-48 to delete the terminations.
- Put all ports in the Out-of-Service and Management, Disabled (OOS-MA,DSBLD) (ANSI) or Locked-enabled,disabled (ETSI) service state. For more information, see Chapter 12, "Change DWDM Card Settings."

Note It is not necessary to delete the cards from the shelf before deleting a shelf.

- If the shelf receives the timing signals from any client or trunk port, complete the "DLP-G95 Set Up External or Line Timing" task on page 7-22, to receive timing signals from an external source.

Step 6 From the View menu, choose **Go to Parent View** to return to multishelf view.

Step 7 Right-click the subtending shelf you want to delete and choose **Delete Shelf**.

Step 8 In the confirmation dialog box, click **Yes**.

Step 9 To return the deleted shelf to a single-shelf node, you must use the LCD panel:

a. Repeatedly press the **Status** button until Shelf Status appears.

b. Repeatedly press the **Port** button until Controller Status=MS Config appears.

c. Press **Status** again and press **Port** to set multishelf mode to MS=N.

d. Press **Status** again and press **Port** until ID is set to ID=1.

e. Press **Status** again and press **Port** to set VLAN=N.

f. Press **Status** to choose **Done**.

g. Repeatedly press **Status** until "Save and Reboot?" appears, and then press **Slot** to choose Apply. This reboots the shelf. A "Saving changes; TCC may reboot" message appears on the LCD.

Step 10 After the TCC2/TCC2P/TCC3/TNC/TSC reboot is complete, complete the following steps to disconnect the removed subtending shelf from the patch panel or Catalyst 2950 or Catalyst 3560:

a. Remove the cross-over (CAT 5) LAN cable from the RJ-45 front panel port of the TCC2/TCC2P/TCC3 card in Slot 7 of the ONS 15454 or from the MSM port that corresponds to TNC/TSC card in Slot 1 of the ONS 15454 M6.

b. Remove the cross-over (CAT 5) LAN cable from the RJ-45 front panel port of the TCC2/TCC2P/TCC3 card in Slot 11 of the ONS 15454 or from the MSM port that corresponds to TNC/TSC card in Slot 8 of the ONS 15454 M6.

Step 11 Reconnect the shelf to the LAN through either the backplane or one of the RJ-45 front panel ports of the TCC2/TCC2P/TCC3 cards of the ONS 15454, or the EMS port or one of the RJ-45 front panel ports of the TNC/TSC cards of the ONS 15454 M6. For more information, see Chapter 3, "Connect the PC and Log into the GUI."

Step 12 To delete an empty rack from the CTC window, right-click the gray area on the rack graphic and choose **Delete Rack**.

Stop. **You have completed this procedure**.

NTP-G173 Convert an OADM Node to a ROADM Node

Purpose	This procedure converts an OADM node to a ROADM node.
Tools/Equipment	None
Prerequisite Procedures	Chapter 7, "Turn Up a Network" A Cisco TransportPlanner site plan recalculated for the new ROADM node.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Do not begin this procedure until the Cisco TransportPlanner site plan has been recalculated with the new ROADM node. You will import the new NE Update file and run ANS to recalculate the ANS parameters. In addition, you will run ANS at the two adjacent nodes to recalculate the ANS parameters at those nodes.

Note During this procedure, you will use TL1 commands to delete and recreate OCHNC or OCHCC cross-connects. You might need to refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

Caution This procedure will affect the service of unprotected circuits that pass through the OADM node.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30 at a node in the OADM network.

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), display the OADM node that you will convert to a ROADM node.

Step 3 Click the **Circuits** tab.

Step 4 Make a list of the following OCHNCs and/or optical channel client connections (OCHCCs) that:

- Terminate (add/drop) at the node.

- Pass through the node on the express path for both the Side B-to-Side A and Side A-to-Side B directions.

Step 5 If OCHNCs and/or OCHCCs identified in Step 4 are routed on the active path of a splitter or Y-cable protection group, complete the following steps. If not, continue with Step 6.

a. Display the node containing the TXP, MXP, ADM-10G, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, or ITU-T line card with the Y-cable or splitter protection.

a. Force the traffic to the protect path in the opposite side of the ring using the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45.

Step 6 In node view, display node that will be converted.

Step 7 Complete the "DLP-G347 Delete Optical Channel Client Connections" task on page 8-11 and/or the "DLP-G106 Delete Optical Channel Network Connections" task on page 8-26 to delete OCHCCs and/or OCHNCs identified in Step 4 that:

- Terminate (add/drop) at the node.
- Pass through the node on an unprotected express path for both the Side B-to-Side A and Side A-to-Side B directions.

Step 8 From the Tools menu, choose **Open TL1 Connection**.

Step 9 In the Select Node dialog box, choose the OADM node and click **OK**.

Step 10 In the TL1 dialog box, use the **DLT-OCHNC** command to delete the OCHNC cross-connects for the express path OCHNCs listed in Step 4, using the following format:

DLT-OCHNC:[<TID>]:<SRC>,<DST>:<CTAG>:::[CKTID=<CKTID>],[CMDMDE=<CMDMDE>];

where:

- <SRC> is the source access identifier from the Channel section in a two-way wavelength.
- <DST> is the destination access identifier from the LINEWL section in a two-way wavelength.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide.*

Step 11 In the TL1 dialog box, use the **DLT-OCHCC** command to delete the OCHCC cross-connects for the express path OCHCCs listed in Step 4, using the following format:

DLT-OCHCC:[<TID>]:<AID>:<CTAG>[:::CKTID=<CKTID>],[CMDMDE=<CMDMDE>];

where:

- <AID> is the access identifier from the Facility section.
- <CKTID> is the cross-connect ID. The default is Blank or None. CKTD is a string of ASCII characters. The maximum length is 48. If CKTID is empty or null, the CKTID field will not be displayed.
- <CMDMDE> is the command execution mode. NORM mode is the default behavior for all commands but you can specify FRCD to force the system to override a state in which the command would normally be denied.

For additional information, including valid command values, refer to the *Cisco ONS SONET TL1 Command Guide* or the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Command Guide*.

Step 12 Click **Close** to close the TL1 dialog box.

Step 13 Delete the internal patchcords:

a. In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > WDM-ANS > Internal Patchcords** tabs.

b. Highlight all of the internal patchcords.

c. Click **Delete**.

d. Click **Yes** on the confirmation dialog box.

Step 14 Delete the OSC terminations:

a. Click the **Provisioning > Comm Channels > OSC** tabs.

b. Highlight all of the OSC terminations.

c. Click **Delete**.

d. Click **Yes** on the confirmation dialog box.

Step 15 Remove the cables from all the AD-xC-xx.x and/or AD-xB-xx.x cards.

Step 16 Remove the AD-xC-xx.x and/or AD-xB-xx.x cards from the shelf.

Step 17 Remove any amplifier cards (OPT-BST, OPT-PRE) that are installed but not required in the ROADM node.

Step 18 Install the new ROADM cards in the slots identified by your Cisco TransportPlanner site plan using the "NTP-G30 Install the DWDM Cards" procedure on page 4-64.

Step 19 Complete the "NTP-G34 Install Fiber-Optic Cables on DWDM Cards and DCUs" procedure on page 4-78 for the ROADM node, following the new internal connections table generated by Cisco TransportPlanner.

Step 20 Complete the "NTP-G152 Create and Verify Internal Patchcords" procedure on page 4-113 to recreate the internal patchcords deleted in Step 13.

Step 21 Complete the "NTP-G38 Provision OSC Terminations" procedure on page 4-126 to recreate the OSC terminations deleted in Step 14.

Step 22 Import the recalculated ROADM site parameters using the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.

Step 23 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127.

Step 24 Update the ANS parameters at the adjacent nodes:

a. Display an adjacent node in node view.

b. Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49 to load the new NE Update file onto the node.

c. Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127 to recalculate the ANS parameters at the node.

d. Display the next adjacent node in node view.

e. Repeat Steps b and c for the second adjacent node.

Step 25 Display the new ROADM node in node view.

Step 26 Recreate the OCHNCs and/or OCHCCs deleted in Step 7 using the following tasks:

- DLP-G346 Provision Optical Channel Client Connections, page 8-4

- DLP-G105 Provision Optical Channel Network Connections, page 8-23

Step 27 Complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45 for OCHNCs and/or OCHCCs that were switched to the opposite side of the ring as part of a splitter or Y-cable protection group to return the traffic to its condition before the card was added.

Stop. **You have completed this procedure**.

NTP-G176 Convert an Line Amplifier Node to an OADM Node

Purpose	This procedure converts a full line amplifier node with OPT-PRE and OPT-BST cards installed on each side of the shelf to an OADM node.
Tools/Equipment	Cisco TransportPlanner reports and NE Update file for the new OADM node.
Prerequisite Procedures	Chapter 7, "Turn Up a Network" A Cisco TransportPlanner site plan recalculated for the new ROADM node.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution This procedure will affect the service of unprotected circuits that pass through the OADM node.

Caution This procedure applies to line amplifier nodes with OPT-BST and OPT-PRE cards installed on both sides of the shelf. If the line amplifier node has a different configuration, the upgrade might affect the adjacent nodes and require an update of their ANS parameters. If the line amplifier node is not a full line amplifier, contact your next level of support.

Step 1 Complete the "NTP-G139 Verify Cisco TransportPlanner Reports and Files" procedure on page 4-3 procedure to verify that you have the files and reports prepared by Cisco TransportPlanner for the OADM node.

Step 2 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the line amplifier node.

Step 3 Click the **Circuits** tab.

Step 4 Make a list of the OCHNCs, OCH trails, and OCHCCs that pass through the node on the express path for both the Side B-to-Side A and Side A-to-Side B directions.

Caution You will delete the optical channel circuits in the next step and use the list to recreate the circuits later. Do not proceed until you complete the circuit list.

Step 5 Delete the circuits identified in Step 4 using one or more of the following tasks:

- DLP-G347 Delete Optical Channel Client Connections, page 8-11
- DLP-G418 Delete an Optical Channel Trail, page 8-19
- DLP-G106 Delete Optical Channel Network Connections, page 8-26

Step 6 Click the **Provisioning > WDM-ANS > Internal Patchcords** tabs.

Step 7 In the internal patchcords table, click the OPT-PRE COM-TX to OPT-BST COM-RX internal patchcord.

Step 8 Click **Delete**.

Step 9 On the confirmation dialog, click **OK**.

Step 10 Remove the physical fiber and attenuators, if present, that connect the COM-TX to COM-RX ports and COM-RX to COM-TX ports between the OPT-BST and OPT-PRE cards installed in Side B.

Step 11 Referring to the Cisco TransportPlanner Shelf Layout report, install the AD-xC-xx-x and/or AD-xB-xx.x cards on both Side B and Side A of the node.

Step 12 Referring to the Cisco TransportPlanner Internal Connections report, connect the fibers to the new AD-xC-xx-x and/or AD-xB-xx.x cards.

Step 13 Click **Default Patchcords**.

Step 14 Verify that the new internal patchcords are created for the physical cables connected to the new AD-xC-xx.x and AD-xB-xx.x card(s) in Step 12. If not, complete the "NTP-G242 Create an Internal Patchcord Manually" task on page 4-114 to manually create the internal patchcords.

Step 15 Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.

Step 16 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127.

Step 17 In node view, click the **Circuits** tab.

Step 18 Complete one or more of the following procedures to recreate circuits identified in Step 4 that will pass through the OADM node:

- DLP-G105 Provision Optical Channel Network Connections, page 8-23
- DLP-G346 Provision Optical Channel Client Connections, page 8-4
- DLP-G395 Create an Optical Channel Trail, page 8-17

Note Cisco recommends that you recreate the circuits one at a time.

Step 19 Verify that each circuit appears on the Circuits table with a DISCOVERED status and an IS/Unlocked state. If not, complete Steps 17 and 18.

If the circuits still do not appear with a DISCOVERED status and IS/Unlocked state, contact your next level of support.

Step 20 Referring to the Cisco TransportPlanner Traffic Matrix report, repeat Steps 18 and 19 to create the new add/drop circuits at the node, as needed.

Stop. **You have completed this procedure**.

NTP-G182 Convert a Line Amplifier Node to a ROADM Node

Purpose	This procedure converts a line amplifier node with OPT-PRE and OPT-BST cards installed on each side of the shelf to an ROADM node.
Tools/Equipment	Cisco TransportPlanner reports and NE Update file for the new ROADM node.
Prerequisite Procedures	Chapter 7, "Turn Up a Network" A Cisco TransportPlanner site plan recalculated for the new ROADM node.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution This procedure will affect the service of unprotected circuits that pass through the ROADM node.

Caution This procedure applies to line amplifier nodes with OPT-BST and OPT-PRE cards installed on both sides of the shelf. If the line amplifier node has a different configuration, the upgrade might affect the adjacent nodes and require an update of their ANS parameters. If the line amplifier node is not a full line amplifier, contact your next level of support.

Step 1 Complete the "NTP-G139 Verify Cisco TransportPlanner Reports and Files" procedure on page 4-3 to verify that you have the files and reports prepared by Cisco TransportPlanner for the ROADM node.

Step 2 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the line amplifier node.

Step 3 Click the **Circuits** tab.

Step 4 Make a list of the following OCHNCs, OCH trails, and OCHCCs that pass through the node on the express path for both the Side B-to-Side A and Side A-to-Side B directions.

Caution You will delete the optical channel circuits in the next step and use the list to recreate the circuits later. Do not proceed until you complete the circuit list.

Step 5 Delete the circuits identified in Step 4 using one or more of the following tasks:

- DLP-G347 Delete Optical Channel Client Connections, page 8-11
- DLP-G418 Delete an Optical Channel Trail, page 8-19
- DLP-G106 Delete Optical Channel Network Connections, page 8-26

Step 6 Click the **Provisioning > WDM-ANS > Internal Patchcords** tabs.

Step 7 In the internal patchcords table, click the OPT-PRE COM-TX to OPT-BST COM-RX internal patchcord.

Step 8 Click **Delete**.

Step 9 In the confirmation dialog box, click **OK**.

Step 10 Remove the physical fiber and attenuators, if present, that connect the COM-TX to COM-RX ports and COM-RX to COM-TX ports between the OPT-BST and OPT-PRE cards installed in Side B.

Step 11 Referring to the Cisco TransportPlanner Shelf Layout report, install one of the following sets of cards on both Side B and Side A of the node as described by the Cisco TransportPlanner NE Update file:

- 32WSS and 32DMX cards
- 32WSS-L and 32DMX-L cards
- 40-WSS-C/40-WSS-CE and 40-DMX-C/40-DMX-CE cards

Step 12 Referring to the Cisco TransportPlanner Internal Connections report, connect the fibers to the new wavelength selective switch and demultiplexer cards.

Step 13 Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.

Step 14 Verify that the new internal patchcords are created for the physical cables connected to the new wavelength selective switch and demultiplexer cards in Step 12. If not, complete the "NTP-G242 Create an Internal Patchcord Manually" task on page 4-114 to manually create the internal patchcords.

Step 15 Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.

Step 16 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127.

Step 17 In node view, click the **Circuits** tab.

Step 18 Complete one or more of the following procedures to recreate circuits identified in Step 4 that will pass through the ROADM node:

- DLP-G105 Provision Optical Channel Network Connections, page 8-23
- DLP-G346 Provision Optical Channel Client Connections, page 8-4
- DLP-G395 Create an Optical Channel Trail, page 8-17

Note Cisco recommends that you recreate the circuits one at a time.

Step 19 Verify that each circuit appears on the Circuits table with a DISCOVERED status and an IS/Unlocked state. If not, repeat Steps 17 and 18.

If the circuits still do not appear with a DISCOVERED status and IS/Unlocked state, contact your next level of support.

Step 20 Referring to the Cisco TransportPlanner Traffic Matrix report, repeat Steps 17 and 18 to create the new add/drop circuits at the node, as needed.

Stop. **You have completed this procedure**.

NTP-G195 Convert a Protected ROADM Node from two Separate Nodes to a Single Multishelf Node

Purpose	This procedure converts a protected ROADM node from two separate nodes to a single multishelf node.
Tools/Equipment	None.
Prerequisite Procedures	Chapter 7, "Turn Up a Network" A Cisco TransportPlanner site plan recalculated for the new node.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution This procedure will affect the service of unprotected circuits that pass through the ROADM node.

Caution This procedure applies to two ROADM nodes, where ROADM Node 1 has amplifier cards (such as, OPT-BST and OPT-PRE) or optical service channel cards (OSCM or OSC-CSM) installed on both the sides of the shelf and 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) installed in Side A (Slots 1 through 6) and the ROADM Node 2 has amplifier cards (such as, OPT-BST and OPT-PRE) or optical service channel cards (OSCM or OSC-CSM) installed on both the sides of the shelf and 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) installed in Side B (Slots 12 through 17).

Note In this procedure, ROADM Node 1 will be used as node controller and ROADM Node 2 will be added to the multishelf configuration as a subtending shelf.

Step 1 Complete the "NTP-G139 Verify Cisco TransportPlanner Reports and Files" procedure on page 4-3 to verify that you have the files and reports prepared by Cisco TransportPlanner for the ROADM nodes.

Step 2 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the ROADM Node 1. Figure 13-1 shows the shelf view of ROADM Node 1 and Figure 13-2 shows the functional view of ROADM Node 1.

Figure 13-1 ROADM Node 1 Shelf View

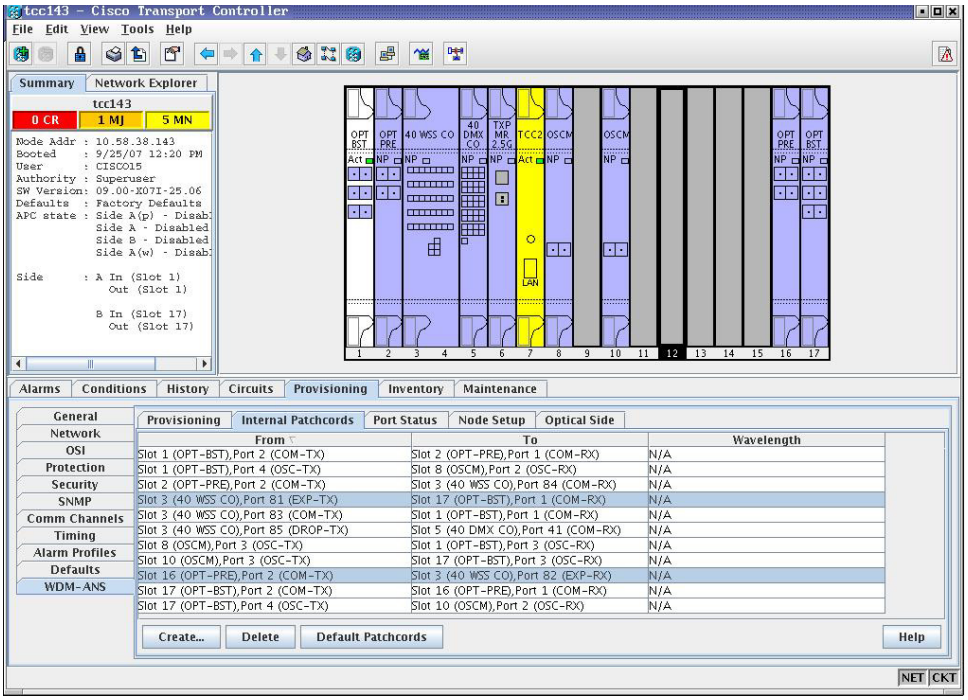
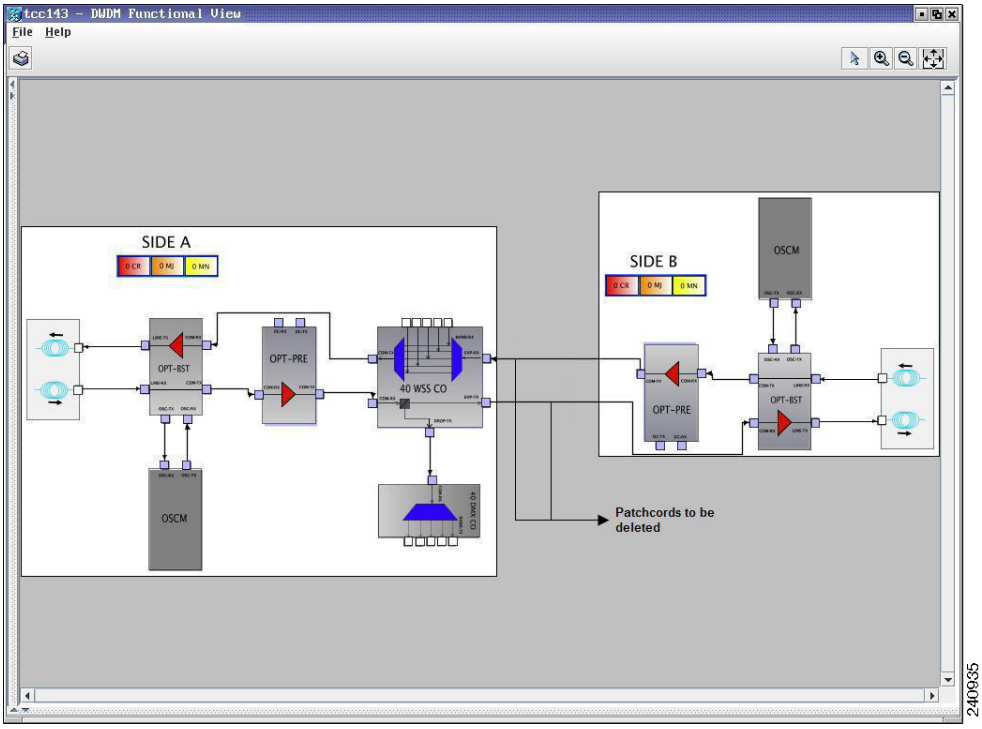


Figure 13-2 ROADM Node 1 Functional View



Step 3 Click the **Circuits** tab.

Step 4 Make a list of all the OCHNCs, OCH trails, and OCHCCs that pass through or terminate (add/drop) at the amplifier or optical service channel cards installed in Side B of ROADM Node 1.

Caution You will delete only the pass-through circuits in the next step and use the list to recreate the circuits later. Do not proceed until you complete the circuit list. The add/drop circuits will not be deleted and continues to transport traffic.

Step 5 If OCHNCs and/or OCHCCs identified in Step 4 are routed on the active path of a splitter or Y-cable protection group, complete the following steps. If not, continue with Step 6.

a. Display the node containing the amplifier or optical service channel cards with the Y-cable or splitter protection.

b. Force the traffic to the protect path in the opposite side of the ring using the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45.

Step 6 Delete the circuits identified in Step 4 using one or more of the following tasks:

- DLP-G347 Delete Optical Channel Client Connections, page 8-11
- DLP-G418 Delete an Optical Channel Trail, page 8-19
- DLP-G106 Delete Optical Channel Network Connections, page 8-26

Step 7 Click the **Provisioning > WDM-ANS > Optical Side** tab.

Step 8 In the optical sides table, click the optical side corresponding to the amplifier or optical service channel cards installed in Side B of ROADM Node 1.

Step 9 Click **Delete**.

Step 10 In the confirmation dialog box, click **Yes**.

Step 11 Click the **Provisioning > WDM-ANS > Internal Patchcords** tab.

Step 12 Look in the To column of the internal patchcords table and make a list of internal patchcords that connect the amplifier or optical service channel cards in Side B to the 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) in Side A of ROADM Node 1.

Step 13 Click **Delete**.

Step 14 In the confirmation dialog box, click **Yes**.

Step 15 Remove the physical fiber and attenuators, if present, that connect the amplifier or optical service channel cards in Side B to the 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) in Side A of ROADM Node 1.

Step 16 Complete the NTP-G107 Remove Permanently or Remove and Replace DWDM Cards, page 13-2 to delete the amplifier or optical service channel cards installed in Side B of ROADM Node 1.

Step 17 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the ROADM Node 2. Figure 13-3 shows the ROADM Node 2 shelf view and Figure 13-4 shows the functional view of ROADM Node 1.

Figure 13-3 ROADM Node 2 Shelf View

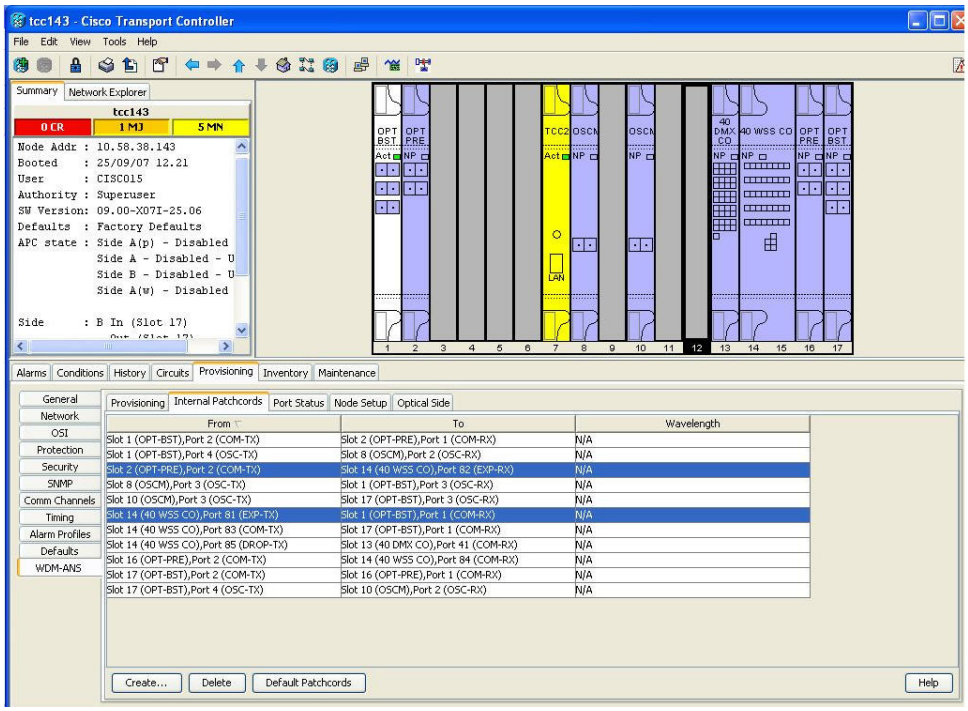
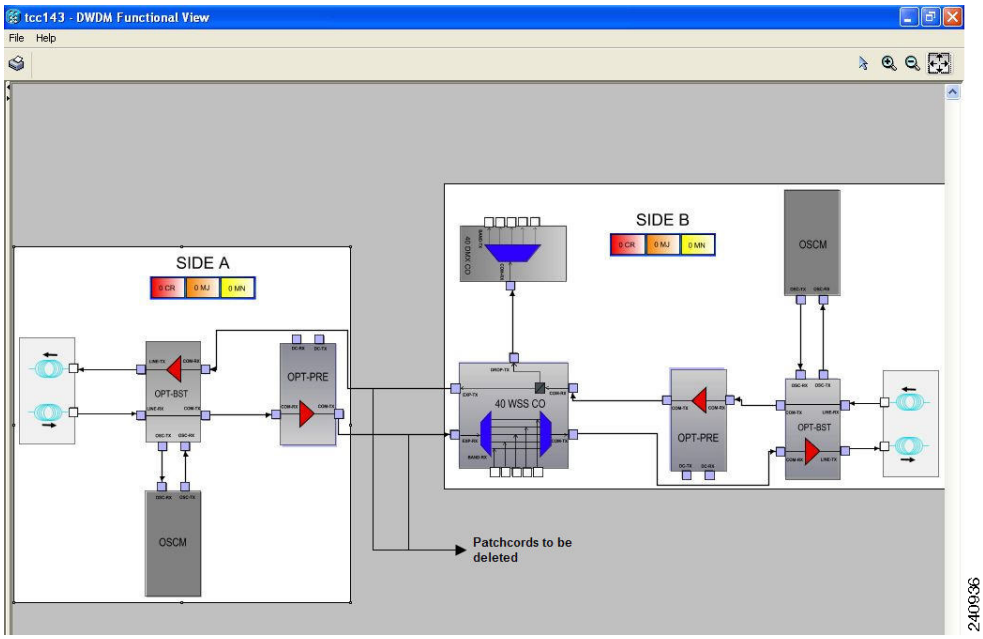


Figure 13-4 ROADM Node 2 Functional View



Step 18 Click the **Circuits** tab.

Step 19 Make a list of all the OCHNCs, OCH trails, and OCHCCs that pass through or terminate (add/drop) at the amplifier or optical service channel cards installed in Side A of ROADM Node 2.

Caution You will delete all the pass-through and add/drop circuits in the next step and use the list to recreate the circuits later. Do not proceed until you complete the circuit list.

Step 20 If OCHNCs and/or OCHCCs identified in Step 19 are routed on the active path of a splitter or Y-cable protection group, complete the following steps. If not, continue with Step 21.

a. Display the node containing the amplifier or optical service channel cards with the Y-cable or splitter protection.

b. Force the traffic to the protect path in the opposite side of the ring using the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45.

Step 21 Delete the circuits identified in Step 19 using one or more of the following tasks:

- DLP-G347 Delete Optical Channel Client Connections, page 8-11
- DLP-G418 Delete an Optical Channel Trail, page 8-19
- DLP-G106 Delete Optical Channel Network Connections, page 8-26

Step 22 If overhead circuits exist in the amplifier or optical service channel cards installed in Side A of ROADM Node 2, complete "DLP-G112 Delete Overhead Circuits" task on page 8-68 to delete these overhead circuits.

Step 23 Click the **Provisioning > WDM-ANS > Optical Side** tab.

Step 24 In the optical sides table, click the optical side corresponding to the amplifier or optical service channel cards installed in Side A of ROADM Node 2.

Step 25 Click **Delete**.

Step 26 In the confirmation dialog box, click **Yes**.

Step 27 Click the **Provisioning > WDM-ANS > Internal Patchcords** tab.

Step 28 Look in the To column of the internal patchcords table and make a list of internal patchcords that connect the amplifier or optical service channel cards in Side A to the 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) in Side B of ROADM Node 2.

Step 29 Click **Delete**.

Step 30 In the confirmation dialog box, click **Yes**.

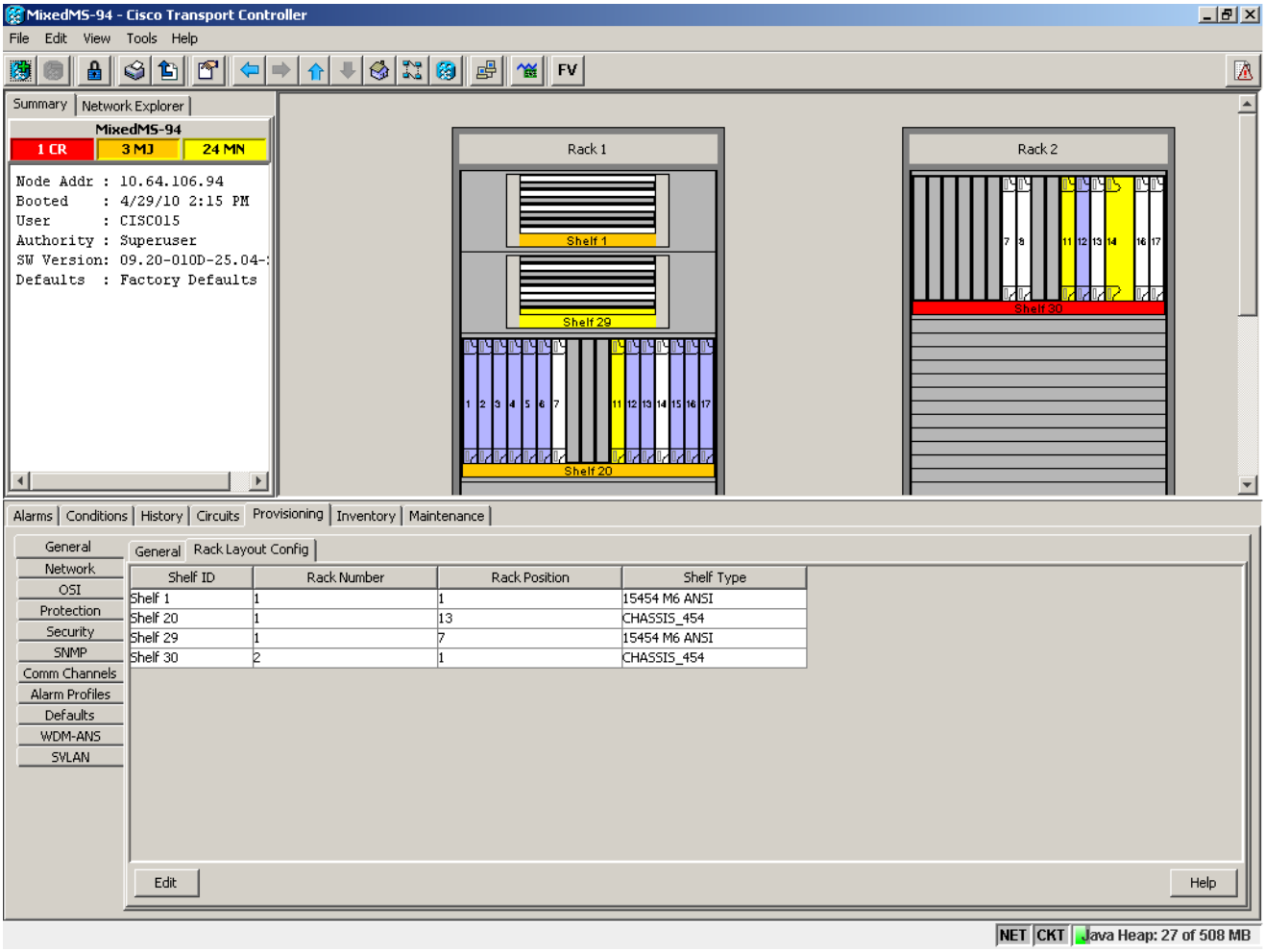
Step 31 Remove the physical fiber and attenuators, if present, that connect the amplifier or optical service channel cards in Side A to the 40-WSS-C/40-DMX-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) in Side B of ROADM Node 2.

Step 32 If there are pluggable port modules (PPMs) that terminate on the ROADM Node 2, complete the "DLP-G280 Delete a PPM" task on page 6-19 to delete these PPMs.

Step 33 Complete the NTP-G107 Remove Permanently or Remove and Replace DWDM Cards, page 13-2 to delete the amplifier or optical service channel cards installed in Side A of ROADM Node 2.

Step 34 Complete the NTP-G163 Upgrade Nodes in Single-Shelf Mode to Multishelf Mode, page 4-131 to upgrade ROADM Node 1 to a multishelf configuration and add ROADM Node 2 as a subtending shelf. Figure 13-5 shows the final multishelf view of the node.

Figure 13-5 Final Multishelf View of the Node



Step 35 In the multishelf view, click the **Provisioning > WDM-ANS > Internal Patchcords** tab.

Step 36 Click **Create**. The Internal Patchcord Creation wizard appears.

Step 37 In the Internal Patchcord Attributes page, choose OTS/OCH to OTS/OCH option and select the Bidirectional checkbox.

Step 38 Click **Next**.

Step 39 In the Internal Patchcord Origination page, provision the internal patchcord origination parameters.

- Shelf—Choose the shelf where the internal patchcord originates.
- Slot—Choose one of the two 40-WSS-C cards (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) where the internal patchcord originates.
- Tx Port—Choose the EXP TX port were the internal patchcord originates.

Step 40 Click **Next**.

Step 41 In the Internal Patchcord Termination page, provision the internal patchcord origination parameters.

- Shelf—Choose the shelf where the internal patchcord terminates.
- Slot—Choose the other 40-WSS-C card (or the 32WSS/32DMX and 32WSS-L/32DMX-L cards) where the internal patchcord terminates.

- Rx Port—Choose the EXP RX port were the internal patchcord terminates.

Step 42 Click **Next**.

Step 43 Review the display-only information on the Internal Patchcord Origination Reverse page. This page shows the shelf, slot, and port that CTC will use for the opposite internal patchcord origination route.

Step 44 Click **Next**.

Step 45 Review the information displayed on the Internal Patchcord Termination Reverse page. This display-only page shows the shelf, slot, and port that CTC will use for the reverse internal patchcord termination route.

Step 46 Click **Finish**. The new internal patchcord appears on the Internal Patchcord table.

Step 47 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127.

Step 48 In node view, click the **Circuits** tab.

Step 49 Complete one or more of the following procedures to recreate circuits identified in Steps 4 and 19:

- DLP-G105 Provision Optical Channel Network Connections, page 8-23
- DLP-G346 Provision Optical Channel Client Connections, page 8-4
- DLP-G395 Create an Optical Channel Trail, page 8-17

Note Cisco recommends that you recreate the circuits one at a time.

Step 50 Complete the "NTP-G60 Create and Delete Overhead Circuits" procedure on page 8-61 to recreate circuits deleted in Step 22.

Step 51 Verify that each circuit appears on the Circuits table with a DISCOVERED status and an IS/Unlocked state. If not, repeat Steps 48 and 49.

If the circuits still do not appear with a DISCOVERED status and IS/Unlocked state, contact your next level of support.

Step 52 Click the **Provisioning > Pluggable Port Module > Pluggable Port Module** tab and click **Create** to recreate the PPMs deleted in Step 32.

Step 53 Complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 11-45 for OCHNCs and/or OCHCCs that were switched to the opposite side of the ring as part of a splitter or Y-cable protection group to return the traffic to its original condition.

Stop. **You have completed this procedure**.

NTP-G177 Upgrade ANS Parameters on a DWDM Node

Purpose	This procedure upgrades the ANS parameters on a DWDM node.
Tools/Equipment	None
Prerequisite Procedures	Chapter 4, "Turn Up a Node" An updated Cisco TransportPlanner NE Update file recalculated for the node.
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Note Do not begin this procedure until the Cisco TransportPlanner NE Update file is prepared for the node. You will import the new NE Update file and run ANS to recalculate the ANS parameters for the node.

Caution Upgrading ANS parameters on one node requires ANS upgrades on all the other nodes within the network. Do not begin this procedure until you are prepared to complete the upgrade on all network nodes.

Caution This procedure will affect the service of unprotected circuits that pass through the node.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30 at the node you want to update.

Step 2 Click the **Circuits** tab.

Step 3 Make a list of the OCHCCs, OCHNCs, and OCH trails that:

- Terminate (add/drop) at the node.
- Pass through the node on the express path for both the Side B-to-Side A and Side A-to-Side B directions.

Step 4 If OCHNCs, OCH trails, and/or OCHCCs identified in Step 3 are routed on the active path of a splitter or Y-cable protection group, complete the following steps. If not, continue with Step 5.

a. Display the node containing the TXP, MXP, ADM-10G, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, or ITU-T line card with the Y-cable or splitter protection.

a. Force the traffic to the protect path in the opposite side of the ring using the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 11-45.

Step 5 For each circuit identified in Step 3 that was not switched in Step 4, place the circuit out of service using one or more of the following tasks.

- DLP-G394 Change an OCHCC Administrative State, page 8-13
- DLP-G419 Change an OCH Trail Administrative State, page 8-21
- DLP-G420 Change an OCHNC Administrative State, page 8-28

Step 6 Complete the "NTP-G143 Import the Cisco TransportPlanner NE Update Configuration File" procedure on page 4-49.

Step 7 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 4-127.

Step 8 In node view, click the **Circuits** tab.

Step 9 If you placed circuits out of service in Step 5, complete one or more of the following tasks to put them in service.

- DLP-G394 Change an OCHCC Administrative State, page 8-13
- DLP-G419 Change an OCH Trail Administrative State, page 8-21
- DLP-G420 Change an OCHNC Administrative State, page 8-28

Step 10 Verify that each circuit appears on the Circuits table with a DISCOVERED status and an IS/Unlocked state. If not, complete one or more of the following tasks to recreate the circuits.

- "DLP-G105 Provision Optical Channel Network Connections" task on page 8-23
- "DLP-G346 Provision Optical Channel Client Connections" task on page 8-4
- "DLP-G395 Create an Optical Channel Trail" task on page 8-17

Note Cisco recommends that you recreate the circuits one at a time.

If the circuits still do not appear with a DISCOVERED status and IS/Unlocked state, contact your next level of support.

Stop. **You have completed this procedure**.

NTP-G242 Modify the CD setting of TDC-CC and TDC-FC Cards

Purpose	This procedure allows you to modify the CD settings of the TDC-CC and TDC-FC cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G30 Install the DWDM Cards, page 4-64
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the DLP-G46 Log into CTC, page 3-30 task at the node where you want to change the TDC-CC or TDC-FC card settings. If you are already logged in, continue with Step 2.

Step 2 Complete the "NTP-G103 Back Up the Database" procedure on page 14-2.

Note Changing the CD value of the T-DCU can severely affect the performance of the channels travelling through the T-DCU. As a general rule the new value is provided through an additional analysis performed by the CTP. In this case, complete NTP-G177 Upgrade ANS Parameters on a DWDM Node, page 13-32 procedure. If for some reason, the NTP-G177 Upgrade ANS Parameters on a DWDM Node, page 13-32 procedure cannot be applied, then a skilled operator can directly change the CD value according to the CTP findings. To modify the CD setting of the TDC-CC or TDC-FC card proceed to Step 3.

Step 3 To modify the CD setting of the TDC-CC or TDC-FC card, perform any of the following tasks as needed:

Note As the operation is traffic affecting, change the CD value during a maintenance window.

- DLP-G526 Modify the CD Value of the TDC-CC and TDC-FC When Connected to OPT-AMP-C, OPT-PRE, 40-SMR-1 and 40-SMR-2 Cards, page 13-34.
- DLP-G527 Modify the CD Value of the TDC-CC and TDC-FC cards When Connected to OPT-RAMP-C and OPT-RAMP-CE Amplifiers, page 13-34.

Step 4 Complete the "NTP-G103 Back Up the Database" procedure on page 14-2.

Stop. You have completed this procedure.

DLP-G526 Modify the CD Value of the TDC-CC and TDC-FC When Connected to OPT-AMP-C, OPT-PRE, 40-SMR-1 and 40-SMR-2 Cards

Purpose	This procedure allows you to modify the CD value when the TDC-CC and TDC-FC cards are connected to the DC ports of the OPT-PRE, OPT-AMP-C, 40-SMR-1 and 40-SMR-2 cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 3-30
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Before you modify the CD value of the TDC-CC or TDC-FC card, disable the Automatic Power Control (APC) in the domain that has the TDC-CC or TDC-FC card. To disable the APC domain, complete the "DLP-G157 Disable Automatic Power Control" section on page 11-4.

Step 2 Modify the CD value for the TDC-CC or TDC-FC Card. To modify the CD value, Complete the "DLP-G545 Modify the Chromatic Dispersion Value for the TDC-CC and TDC-FC Cards" section on page 12-74.

Step 3 Enable the APC domain that has the TDC-CC or TDC-FC card. To enable the APC domain, complete the "DLP-G158 Enable Automatic Power Control" section on page 11-5.

Step 4 Return to your originating procedure (NTP).

DLP-G527 Modify the CD Value of the TDC-CC and TDC-FC cards When Connected to OPT-RAMP-C and OPT-RAMP-CE Amplifiers

Purpose	This procedure allows you to modify the CD value of the TDC-CC and TDC-FC cards when connected to the DC ports of the OPT-RAMP-C and OPT-RAMP-CE amplifiers.
Tools/Equipment	None

Prerequisite Procedures	DLP-G46 Log into CTC, page 3-30
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Before you modify the CD value of the TDC-CC or TDC-FC card, run the APC. To run the APC, complete the "DLP-G430 Run Automatic Power Control" section on page 11-6.

Step 2 Modify the CD value for the TDC-CC or TDC-FC Card. To modify the CD value, Complete the "DLP-G545 Modify the Chromatic Dispersion Value for the TDC-CC and TDC-FC Cards" section on page 12-74.

Note Do not change the compensation value directly in one instance. In order to avoid traffic drops and alarms, it is required to change the CD value in steps not too large. For example, if you want to change the CD value of a TDC-CC from -880 to -1320 ps/nm, do not change the CD value in a single step, but in a couple of steps. Change the CD value to an intermediate value of -1100 ps/nm and then to -1320 ps/nm. Change the CD value of the TDC-CC by steps no larger than 330 ps/nm and the CD value of the TDC-FC by steps no larger than 270 ps/nm. This approach of changing the CD value avoids misleading alarms and traffic drops.

Step 3 Run the APC. To run the APC, complete the "DLP-G430 Run Automatic Power Control" section on page 11-6.

Step 4 If the **APC correction skipped** alarm appears, then force the APC correction. Do the following:

a. Click the alarmed port.

b. Click the **Maintenance** tab.

c. Click the **Force APC correction** button.

Step 5 Repeat steps 2 to 4 until the CD target value is set.

Step 6 Return to your originating procedure (NTP).

NTP-G278 Upgrade the TSC Card to the TNC Card

Purpose	This procedure upgrades the TSC card to the TNC card on the Cisco ONS 15454 M6 shelf.
Tools/Equipment	Two TNC cards
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Maintenance or higher

Note Downgrade procedures from TNC cards to TSC cards are not supported. Contact Cisco TAC for more information. See the "Obtaining Optical Networking Information" section on page lxxxi for contact information.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 3-30.

Step 2 Verify that the LAN wires on the RJ-45 LAN port are installed properly. The TNC card does not autodetect miswired LAN connections. If a LAN connection is miswired, a LAN Connection Polarity Reversed condition appears. For information on installing LAN wires, refer to the *Cisco ONS 15454 Procedure Guide*.

Step 3 Verify that the node you are upgrading has ONS 15454 M6 Software R9.2 installed. The software version is displayed in the upper left corner of the window.

Step 4 Complete the *NTP-U214 Back Up the Software Database* procedure before beginning the upgrade.

Step 5 Physically replace the standby TSC card with a TNC card.

a. Check the LED on the faceplate. The ACT/STBY LED on the faceplate of the TNC/TSC card indicates whether the card is in active or standby mode. A green ACT/STBY LED indicates an active card and an amber light indicates a standby card.

b. Open the ejectors on the standby TSC card.

c. Slide the card out of the slot. This raises the IMPROPRMVL alarm, which clears when the upgrade is complete.

d. Right-click the slot from which the TSC card was ejected out.

e. Click **Delete Card** to delete TSC from CTC.

Note If the TSC card is not deleted from the CTC shelf view before inserting the TNC card, the MEA (card mismatch) alarm appears on that slot.

f. Open the ejectors on the TNC card to be installed.

g. Slide the TNC card into the slot along the guide rails.

h. Close the ejectors.

i. In CTC node view, Ldg (loading) appears on the newly installed TNC card.

Note It takes approximately 10 minutes for the active TSC card to copy the system software and database to the newly installed TNC card. During this operation, the LEDs on the TNC card flash Fail and then the active/standby LED flashes. When the transfer completes, the TNC card reboots and goes into standby mode after approximately three minutes. Do not remove the card from the shelf during a database transfer.

Caution If your active TSC card resets during the upgrade before the new TNC card is in full standby mode, remove the new TNC card immediately.

Step 6 When the newly installed TNC card is in standby, right-click the active TSC card in CTC.

Step 7 From the pull-down menu, click **Reset Card**.

Wait for the TSC card to reboot. The standby TNC card is switched to active mode. The TSC card verifies that it has the same database as the TNC card and then switches to standby.

Step 8 Verify that the remaining TSC card is now in standby mode (the ACT/STBY LED changes to amber).

Step 9 Physically replace the remaining TSC card with the second TNC card.

a. Open the ejectors on the TSC card.

b. Slide the card out of the slot. This raises the IMPROPRMVL alarm, which clears when the upgrade is complete.

c. Right-click the slot from which the TSC card was ejected out.

d. Click **Delete Card** to delete TSC from CTC.

Note If the TSC card is not deleted from the CTC shelf view before inserting the TNC card, the MEA (card mismatch) alarm appears on that slot.

e. Open the ejectors on the TNC card.

f. Slide the TNC card into the slot along the guide rails.

g. Close the ejectors.

The second TNC card boots up. The second TNC card must also copy the database. Do not remove the card from the shelf during a database transfer.

Step 10 If power-related alarms occur after the second TNC card is installed, check the voltage on the RJ-45 LAN port. Refer to the *Cisco ONS 15454 Troubleshooting Guide* for information on clearing the alarms.

Stop. You have completed this procedure.