Maintain the Node

This chapter provides procedures for maintaining the Cisco ONS 15454, including database backups and restoration, removing and replacing cards, viewing the ONS 15454 audit trail, and hardware maintenance procedures such as cleaning fibers, changing the fan tray filter, and other maintenance procedures.

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

Before You Begin

Before performing any of the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide* as necessary 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-G103 Back Up the Database, page 11-2—Complete as needed.
2. NTP-G104 Restore the Database, page 11-3—Complete as needed.
3. NTP-G105 Restore the Node to Factory Configuration, page 11-5—Complete as needed to clear the database and upload a blank database and the latest software.
4. NTP-G106 Reset Cards Using CTC, page 11-10—Complete as needed to reset the Advanced Timing, Communications, and Control (TCC2) and dense wavelength division multiplexing (DWDM) cards.
5. NTP-G107 Remove and Replace DWDM Cards, page 11-12—Complete as needed
6. NTP-G108 Viewing the Audit Trail Records, page 11-19—Complete as needed.
7. NTP-G109 Off-Load the Audit Trail Record, page 11-21—Complete as needed.
8. NTP-G110 Off-Load the Diagnostics File, page 11-22—Complete as needed.
9. NTP-G111 Revert to an Earlier Software Load, page 11-22—Complete as needed.
10. NTP-G112 Change the Node Timing Reference, page 11-24—Complete as needed.
11. NTP-G113 View the ONS 15454 Timing Report, page 11-25—Complete as needed.
12. NTP-G114 Inspect, Clean, and Replace the Air Filter, page 11-29—Complete as needed.
13. NTP-G115 Clean Fiber Connectors, page 11-32—Complete as needed.
14. NTP-G116 Replace the Fan-Tray Assembly, page 11-35—Complete as needed.

15. NTP-G117 Replace the ANSI Shelf Alarm Interface Panel, page 11-40—Complete as needed.
16. NTP-G118 Replace the ANSI Shelf Plastic Lower Backplane Cover, page 11-44—Complete as needed.

NTP-G103 Back Up the Database

Purpose	This procedure stores a backup version of the TCC2 (software) database on the workstation running Cisco Transport Controller (CTC) or on a network server.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	Required. Cisco recommends performing a database backup at approximately weekly intervals and prior to and after configuration changes.
Onsite/Remote	Onsite or remote
Security Level	Maintenance

Note You must back up and restore the database for each node on a circuit path in order to maintain a complete circuit.

Note The following parameters are not backed up and restored: node name, IP address, subnet mask and gateway, and Internet Inter-ORB Protocol (IIOP) port. If you change the node name and then restore a backed up database with a different node name, the circuits map to the new node name. Cisco recommends keeping a record of the old and new node names.

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

Step 2 Click the **Maintenance** > **Database** tabs.

Step 3 Click **Backup**.

Step 4 Save the database on the workstation's hard drive or on network storage. Use an appropriate file name with the db file extension; for example, database.db.

Step 5 Click **Save**.

Step 6 Click **OK** in the confirmation dialog box.

Stop. You have completed this procedure.

NTP-G104 Restore the Database

Purpose	This procedure restores the TCC2 software database.
Tools/Equipment	None
Prerequisite Procedures	NTP-G103 Back Up the Database, page 11-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser

Note The following parameters are not backed up and restored: node name, IP address, subnet mask and gateway, and IIOP port. If you change the node name and then restore a backed up database with a different node name, the circuits map to the new renamed node. Cisco recommends keeping a record of the old and new node names.

Caution If you are restoring the database on multiple nodes, wait approximately one minute after the TCC2 reboot has completed on each node before proceeding to the next node.

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

Step 2 Click the **Circuits** tab. Verify that no OCHNC circuits have a PARTIAL_OOS state. If any do, investigate and resolve the partial state before continuing.

Step 3 Complete the "DLP-G157 Disable Automatic Power Control" task on page 9-5.

Step 4 In node view, click the **Maintenance** > **Database** tabs.

Step 5 Click **Restore**.

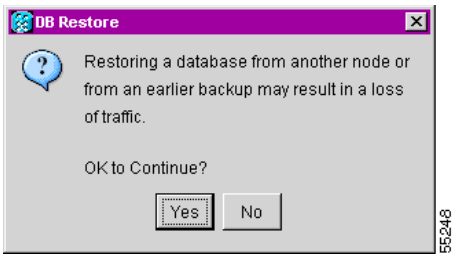
Step 6 Locate the database file stored on the workstation hard drive or on network storage.

Note To clear all existing provisioning, locate and upload the database found on the latest ONS 15454 software CD.

Step 7 Click the database file to highlight it.

Step 8 Click **Open**. The DB Restore dialog box appears. Opening a restore file from another node or from an earlier backup might affect traffic on the login node (Figure 11-1).

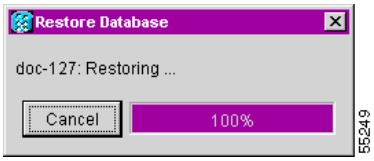
Figure 11-1 Restoring the Database—Traffic Loss Warning



Step 9 Click **Yes**.

The Restore Database dialog box monitors the file transfer (Figure 11-2).

Figure 11-2 Restoring the Database—In-Process Notification



Step 10 Wait for the file to complete the transfer to the TCC2 card.

Step 11 Click **OK** when the "Lost connection to node, changing to Network View" dialog box appears. Wait for the node to reconnect.

Step 12 Complete the "DLP-G158 Enable Automatic Power Control" task on page 9-5.

Stop. You have completed this procedure.

NTP-G105 Restore the Node to Factory Configuration

Purpose	This procedure clears the TCC2 database and restores customer or factory defaults by uploading the most recent software package and a blank database. This process is performed using the RE-INIT.jar utility, also called the reinitialization (reinit) tool.
Tools/Equipment	Software CD containing Software Release 4.7, the node NE defaults, and the reinit tool. JRE 1.3.2 must be installed on the computer you use to perform this procedure.
Prerequisite Procedures	NTP-G103 Back Up the Database, page 11-2
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Superuser

Caution Cisco strongly recommends that you keep different node databases in separate folders. This is because the reinit tool chooses the first product-specific software package in the specified directory if you use the Search Path field instead of the Package and Database fields. You might accidentally copy an incorrect database if multiple databases are kept in the specified directory.

Caution Restoring a node to the factory configuration deletes all cross-connects on the node.

Caution If you are restoring the database on multiple nodes, wait until the TCC2 cards have rebooted on each node before proceeding to the next node.

Caution Restoring a node to factory configuration on a Windows or UNIX workstation should only be carried out on a standby TCC2 card.

Caution Cisco recommends that you save the node database to safe location if you will not be restoring the node using the database provided on the software CD.

Note The following parameters are not backed up and restored when you delete the database and restore the factory settings: node name, IP address, subnet mask and gateway, and IIOP port. If you change the node name and then restore a backed up database with a different node name, the circuits map to the new renamed node. Cisco recommends keeping a record of the old and new node names.

Step 1 If you need to install or replace one or more TCC2 cards, see the "DLP-G33 Install the TCC2 Card" task on page 1-73.

Step 2 If you are using Microsoft Windows, complete the "DLP-G248 Use the Reinitialization Tool to Clear the Database and Upload Software (Windows)" task on page 11-6.

Step 3 If you are using UNIX, complete the "DLP-G249 Use the Reinitialization Tool to Clear the Database and Upload Software (UNIX)" task on page 11-8.

Stop. You have completed this procedure.

DLP-G248 Use the Reinitialization Tool to Clear the Database and Upload Software (Windows)

Purpose	This procedure describes how to use the reinitialization (reinit) tool in Windows. Use this tool to clear the database on the TCC2, upload software, and restore factory or customer defaults.
Tools/Equipment	Software CD containing Software R3.4 or later, the NE defaults, and the reinit tool Straight-through (CAT-5) LAN cable JRE 1.4.2 must be installed on your PC
Prerequisite Procedures	NTP-G103 Back Up the Database, page 11-2
Required/As Needed	As needed to clear the existing database from a TCC2 and restore the node default settings.
Onsite/Remote	Onsite
Security Level	Superuser

Caution Restoring a node to the factory configuration deletes all cross-connects on the node.

Caution Restoring a node to factory configuration on a Windows workstation should only be carried out on a standby TCC2 card.

Note The TCC2 cards reboot several times during this procedure. Wait until they are completely rebooted before continuing.

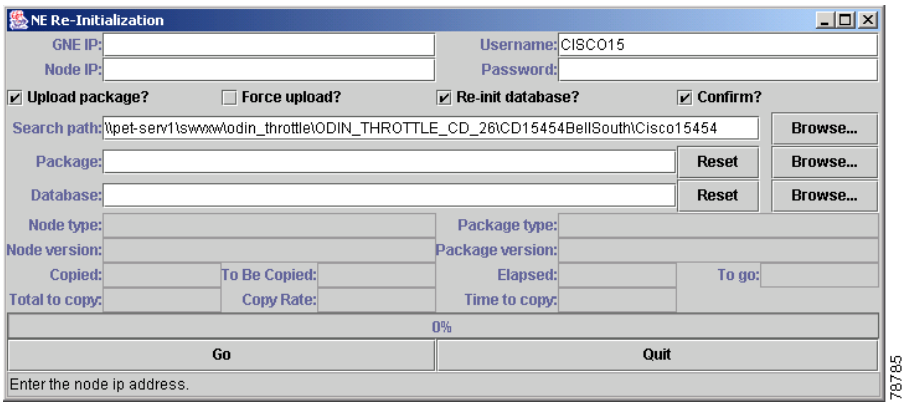
Step 1 Insert the system software CD containing the reinit tool, software, and defaults database into the computer CD-ROM drive. If the CTC Installation Wizard appears, click **Cancel**.

Step 2 To find the recovery tool file, go to **Start > Run > Browse** and select the CD drive.

Step 3 On the CD drive, go to the CISCO15454 folder and choose **All Files** from the Files of Type drop-down list.

Step 4 Select the RE-INIT.jar file and click **Open** to open the reinit tool (Figure 11-3).

Figure 11-3 Reinitialization Tool in Windows



Step 5 If the node you are reinitializing is an end network element (ENE) in a proxy server network, enter the IP address of the gateway network element (GNE) in the GNE IP field. If not, leave it blank.

Step 6 Enter the node name or IP address of the node you are reinitializing in the Node IP field (Figure 11-3).

Step 7 If the User ID field does not contain your user ID, enter the ID. Enter your password in the Password field.

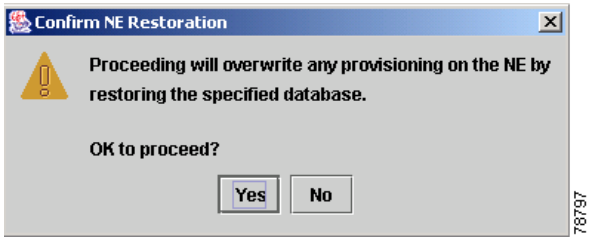
Step 8 Verify that the Re-Init Database, Upload Package, and Confirm check boxes are checked. If one is not checked, check the check box.

Step 9 In the Search Path field, verify that the path to the CISCO15454 folder on the CD drive is listed.

Caution Before you perform the next step, be sure you are uploading the correct database. You cannot reverse the upload process after you click Yes.

Step 10 Click **Go**. A confirmation dialog box appears (Figure 11-4).

Figure 11-4 Confirming NE Restoration



Step 11 Click **Yes**.

Step 12 The status bar at the bottom of the screen displays Complete when the node has activated the software and uploaded the database.

Note The Complete message only indicates that the TCC2 successfully uploaded the database, not that the database restore was successful. The TCC2 then tries to restore the database after it reboots.

Step 13 If you are logged into CTC, close the browser window and disconnect the straight-through LAN cable from the RJ-45 (LAN) port on the TCC2 card or on the hub or switch to which the ONS 15454 is physically connected. Reconnect your straight-through LAN cable to the LAN port and log back into CTC.

Step 14 Manually set the node name and network configuration to site-specific values. See the "NTP-G24 Set Up Name, Date, Time, and Contact Information" procedure on page 3-6 and "NTP-G26 Set Up CTC Network Access" procedure on page 3-8 for information on setting the node name, IP address, subnet mask and gateway, and IIOP port.

Step 15 Return to your originating procedure (NTP).

DLP-G249 Use the Reinitialization Tool to Clear the Database and Upload Software (UNIX)

Purpose	This task describes how to use the reinitialization (reinit) tool in a UNIX environment. Use this tool to clear the database on the TCC2 card and restore factory or customer defaults.
Tools/Equipment	Software CD containing Software R3.4 or later, the node NE defaults, and the reinit tool. JRE 1.4.2 must be installed on the computer that you use to perform this procedure.
Prerequisite Procedures	NTP-G103 Back Up the Database, page 11-2
Required/As Needed	As needed to clear the existing database from a TCC2 card and restore the node default settings.
Onsite/Remote	Onsite or remote
Security Level	Superuser

Caution Restoring a node to the factory configuration deletes all cross-connects on the node.

Caution Restoring a node to factory configuration on a UNIX workstation should only be carried out on a standby TCC2 card.

Note The TCC2 cards reboot several times during this procedure. Wait until they are completely rebooted before continuing.

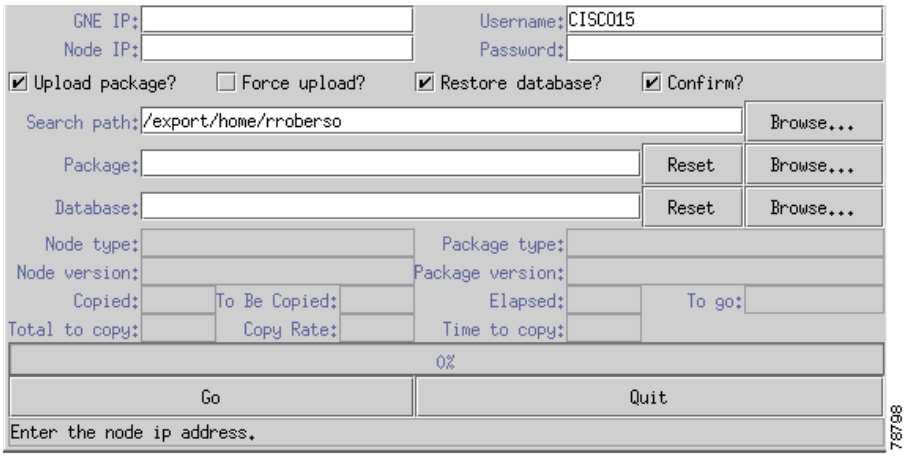
Note JRE 1.4.2 must be installed on the computer you use to perform this procedure.

Step 1 Insert the system software CD containing the reinit tool, software, and defaults database into the computer CD-ROM drive. If the CTC Installation Wizard appears, click **Cancel**.

Step 2 To find the recovery tool file, go to the CISCO15454 directory on the CD (usually /cdrom/cdrom0/CISCO15454).

Step 3 If you are using a file explorer, double-click the **RE-INIT.jar** file to open the reinit tool (Figure 11-5). If you are working with a command line interface, run **java -jar RE-INIT.jar**.

Figure 11-5 Reinitialization Tool in UNIX



Step 4 If the node you are reinitializing is an ENE in a proxy server network, enter the IP address of the GNE in the GNE IP field. If not, leave it blank.

Step 5 Enter the node name or IP address of the node you are reinitializing in the Node IP field.

Step 6 If the User ID field does not contain your user ID, enter the ID. Enter your password in the Password field.

Step 7 Verify that the Re-Init Database, Upload Package, and Confirm check boxes are checked. If any are not checked, check them.

Step 8 In the Search Path field, verify that the path to the CISCO15454 folder on the CD-ROM drive is listed.

Caution Before you perform the next step, be sure you are uploading the correct database. You cannot reverse the upload process after you click Yes.

Step 9 Click **Go**. A confirmation dialog box appears (Figure 11-4 on page 11-7).

Step 10 Click **Yes**.

Step 11 The status bar at the bottom of the screen displays Complete when the node has activated the software and uploaded the database.

Note The Complete message only indicates that the TCC2 successfully uploaded the database, not that the database restore was successful. The TCC2 then tries to restore the database after it reboots.

Step 12 If you are logged into CTC, close the browser window and disconnect the straight-through LAN cable from the RJ-45 (LAN) port on the TCC2 card or on the hub or switch where the ONS 15454 is physically connected. Reconnect your straight-through LAN cable to the LAN port and log back into CTC.

Step 13 Set the node name and network configuration to site-specific values. See the "NTP-G80 Change Node Management Information" procedure on page 9-8 and the "NTP-G81 Change CTC Network Access" procedure on page 9-10 for information on provisioning the node name, IP address, subnet mask and gateway, and IIOP port.

Step 14 Return to your originating procedure (NTP).

NTP-G106 Reset Cards Using CTC

Purpose	This procedure resets the TCC2 and DWDM cards using CTC.
Tools/Equipment	None
Prerequisite Procedures	DLP-G33 Install the TCC2 Card, page 1-73
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-25 at the node where you are performing the TCC2 reset. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "DLP-G250 Reset the TCC2 Card" task on page 11-10.

Step 3 As needed, complete the "DLP-G251 Reset DWDM Cards Using CTC" task on page 11-11.

Stop. You have completed this procedure.

DLP-G250 Reset the TCC2 Card

Purpose	This task resets the TCC2 card and switches the node to the redundant TCC2.
Tools/Equipment	None
Prerequisite Procedures	DLP-G33 Install the TCC2 Card, page 1-73 DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser

Warning **Do not reach into a vacant slot or chassis while you install or remove a module or a fan. Exposed circuitry could constitute an energy hazard.**

Note Before you reset the TCC2, you should wait at least 60 seconds after the last provisioning change you made to avoid losing any changes to the database.

Note When a software reset is performed on an active TCC2, the AIC-I card goes through an initialization process and also resets. The AIC-I card reset is normal and happens each time an active TCC2 card goes through a software-initiated reset.

Step 1 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-G128 Disable Alarm Filtering" task on page 7-32 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 SONET and DWDM Troubleshooting Guide* for procedures.

Step 2 In node view, right-click the TCC2 card to reveal a drop-down list.

Step 3 Click **Reset Card**.

Step 4 Click **Yes** when the confirmation dialog box appears.

Step 5 Click **OK** when the "Lost connection to node, changing to Network View" dialog box appears.

Note For LED behavior during a TCC2 reboot, see Table 3-1 on page 3-12.

Step 6 Confirm that the TCC2 card LED is amber (standby).

Step 7 Return to your originating procedure (NTP).

DLP-G251 Reset DWDM Cards Using CTC

Purpose	This task resets the OSCM, OSC-CSM, 32MUX-O, 32DMX-O, 32DMX, 32WSS, OPT-BST, OPT-PRE, AD-xC.xx.x, AD-xB.xx.x, TXP, and MXP cards using CTC.
Tools/Equipment	None
Prerequisite Procedures	NTP-G30 Install the DWDM Cards, page 3-26 NTP-G32 Install the Transponder and Muxponder Cards, page 3-30 DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser

Warning **Do not reach into a vacant slot or chassis while you install or remove a module or a fan. Exposed circuitry could constitute an energy hazard.**

Caution For TXP or MXP cards placed in a Y-cable protection group, do not perform a software reset on both cards simultaneously. Doing so will cause a traffic hit of more than one minute. For more information about Y-cable protection groups, refer to the "NTP-G33 Create a Y-Cable Protection Group" procedure on page 3-33.

Caution Resetting the active card in a Y-cable group will cause a traffic outage if the standby card is down for any reason.

Note ONS 15454 cards normally do not need to be reset. However, you may occasionally need to reset a card for testing or as an initial trouble-clearing step. For additional information, see the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 1 If you will switch an active TXP or MXP card that is in a Y-Cable protection group, complete the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 9-24. If not, continue with Step 2.

Step 2 Right-click the card you want to reset to reveal a drop-down list.

Step 3 Click **Reset Card**.

Step 4 Click **Yes** when the confirmation dialog box appears.

The card LED on the ONS 15454 shelf graphic will go through the following sequence: Fail (white LED), Ldg (white LED), and Act (green LED). The reset should complete within 1 to 2 minutes.

Step 5 If you performed a Y-Cable protection group switch in Step 1, complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 9-25. If not, continue with Step 6.

Step 6 Return to your originating procedure (NTP).

NTP-G107 Remove and Replace DWDM Cards

Purpose	This procedure removes and replaces DWDM cards housed in the ONS 15454 shelf and rack.
Tools/Equipment	None
Prerequisite Procedures	A card installation procedure
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Caution Do not use this procedure to replace a TCC2 card. To replace a TCC2 card, refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide*.

Step 1 If you are not connected to the ONS 15454 through an onsite connection and logged into CTC, complete the following tasks. If you are logged into CTC through an onsite connection, continue with Step 2.

- "DLP-G45 Connect Computer to the ONS 15454" task on page 2-24
- "DLP-G46 Log into CTC" task on page 2-25

Note If you cannot log into 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 SONET and 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" task on page 7-32 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 SONET and DWDM Troubleshooting Guide* for procedures.

Step 3 Complete the following tasks, as needed:

- If the card you want to replace is the active card in a Y-Cable protection group, complete the "DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 9-24 to force traffic away from the card that you will remove. If the card you want to replace is the standby card in a Y-Cable protection group, complete the "DLP-G182 Apply a Lock Out" task on page 9-26 to keep traffic from switching to the card that you will remove.
- If the card carries circuits, you must delete them. Complete the "DLP-G106 Delete Optical Channel Network Connections" task on page 6-11.
- If the card is an OSCM or OSC-CSM that is used as a node timing reference, complete the "NTP-G112 Change the Node Timing Reference" procedure on page 11-24.
- If the card is an OSCM or OSC-CSM with an OSC or GCC termination, complete the "NTP-G85 Modify or Delete Communications Channel Terminations and Provisionable Patchcords" procedure on page 9-28.

Note If you delete a card in CTC but do not remove it from the shelf, it will reboot and reappear in CTC.

Step 4 Place the ports out of service using one of the following tasks:

- "DLP-G252 Place TXP and MXP Ports Out of Service" task on page 11-14
- "DLP-G253 Place OSCM and OSC-CSM Ports Out of Service" task on page 11-15
- "DLP-G254 Place OPT-BST and OPT-BST Ports Out of Service" task on page 11-16
- "DLP-G255 Place 32MUX-0, 32WSS, 32DMX-O, and 32DMX Ports Out of Service" task on page 11-16
- "DLP-G256 Place 4MD-xx.x Ports Out of Service" task on page 11-17
- "DLP-G257 Place Band OADM Ports Out of Service" task on page 11-18
- "DLP-G258 Place Channel OADM Ports Out of Service" task on page 11-18

Step 5 Click the **Alarms** tab. Verify that alarms unrelated to tasks performed in Step 3 do not appear. If unexplained alarms appear, investigate and resolve them before continuing. Refer to the *Cisco ONS 15454 SONET and DWDM Troubleshooting Guide* for procedures.

Step 6 Physically remove the card:

a. Open the card latches/ejectors.

b. 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 3-26
- NTP-G32 Install the Transponder and Muxponder Cards, page 3-30

Step 8 Continue with the "NTP-G34 Install Fiber-Optic Cables on DWDM Cards" procedure on page 3-35.

Step 9 Complete the "NTP-G37 Run Automatic Node Setup" procedure on page 3-58.

Step 10 Complete the following tasks, as needed:

- If you switched a Y-Cable protection group in Step 3, complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 9-25.
- If you deleted circuits in Step 3, complete the "DLP-G105 Provision DWDM Optical Channel Network Connections" task on page 6-9.
- If you switched the timing reference in Step 3, complete the "NTP-G112 Change the Node Timing Reference" procedure on page 11-24.
- If you deleted an OSC or GCC termination in Step 3, complete the "NTP-G85 Modify or Delete Communications Channel Terminations and Provisionable Patchcords" procedure on page 9-28.

Step 11 Click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the "DLP-G128 Disable Alarm Filtering" task on page 7-32 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 SONET and DWDM Troubleshooting Guide* for procedures.

Stop. You have completed this procedure.

DLP-G252 Place TXP and MXP Ports Out of Service

Purpose	This task places TXP and MXP ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the node view shelf graphic, double-click the TXP or MXP card with the ports you want to put out of service.

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

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 Return to your originating procedure (NTP).

DLP-G253 Place OSCM and OSC-CSM Ports Out of Service

Purpose	This task places OSCM and OSC-CSM card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the OSCM or OSC-CSM card with the ports you want to put out of service.

Step 2 Click the **Provisioning** > **OC3 > OC3** tabs.

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 Click the **Provisioning** > **Optical Line > Parameters** tabs.

Step 7 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 8 Click **Apply**.

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

Step 10 Return to your originating procedure (NTP).

DLP-G254 Place OPT-BST and OPT-BST Ports Out of Service

Purpose	This task places OPT-BST and OPT-PRE card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

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

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

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB 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 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 8 Click **Apply**.

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

Step 10 Return to your originating procedure (NTP).

DLP-G255 Place 32MUX-0, 32WSS, 32DMX-O, and 32DMX Ports Out of Service

Purpose	This task places 32MUX-O, 32WSS, 32DMX-O, and 32DMX card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the 32MUX-O or 32DMX card with the ports you want to put out of service.

Step 2 Click the **Provisioning** > **Optical Chn > Parameters** tabs. (For 32WSS cards, the tabs are Provisioning > Optical Chn Optical Connector 1 > Parameters.)

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 If the card is a 32WSS, repeat Steps 3 through 5 for the Optical Chn Optical Connector [2...4] tabs.

Step 7 Click the **Provisioning** > **Optical Line > Parameters** tabs.

Step 8 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 9 Click **Apply**.

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

Step 11 Return to your originating procedure (NTP).

DLP-G256 Place 4MD-xx.x Ports Out of Service

Purpose	This task places 4MD-xx.x card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the 4MD card with the ports you want to put out of service.

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

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 Click the **Provisioning** > **Optical Band > Parameters** tabs.

Step 7 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 8 Click **Apply**.

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

Step 10 Return to your originating procedure (NTP).

DLP-G257 Place Band OADM Ports Out of Service

Purpose	This task places the AD-1B-xx.x and AD-4B-xx.x card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the AD-1B-xx.x or AD-4B-xx.x card with the ports you want to put out of service.

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

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 Click the **Provisioning** > **Optical Band > Parameters** tabs.

Step 7 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 8 Click **Apply**.

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

Step 10 Return to your originating procedure (NTP).

DLP-G258 Place Channel OADM Ports Out of Service

Purpose	This task places the AD-1C-xx.x, AD-2C-xx.x, and AD-4C-xx.x card ports out of service in preparation for card removal.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 On the shelf graphic in CTC, double-click the AD-1C-xx.x, AD-2C-xx.x, or AD-4C-xx.x card with the ports you want to put out of service.

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

Step 3 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 4 Click **Apply**.

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

Step 6 Click the **Provisioning** > **Optical Chn** > **Parameters** tabs.

Step 7 Under Admin State, choose **OOS,DSLB** for each port that does not have an OOS-MA,DSLB service state.

Step 8 Click **Apply**.

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

Step 10 Return to your originating procedure (NTP).

NTP-G108 Viewing the Audit Trail Records

Purpose	This procedure describes how to view audit trail records.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning

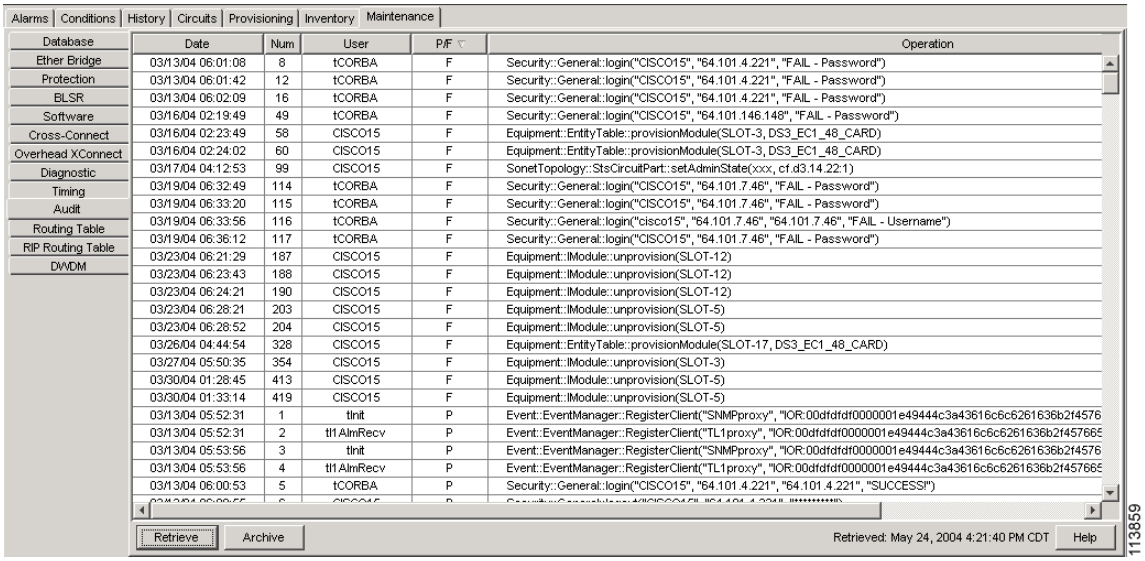
Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-25 at the node where you want to view the audit trail log. If you are already logged in, continue with Step 2.

Step 2 In the node view, click the **Maintenance** > **Audit** tabs.

Step 3 Click **Retrieve**.

A window containing the most recent audit trail records appears as shown in Figure 11-6.

Figure 11-6 Viewing the Audit Trail Records



A definition of each column in the audit trail log is listed in Table 11-1.

Table 11-1 Audit Trail Column Definitions

Column	Definition
Date	Date when the action occurred in the format MM/dd/yy HH:mm:ss
Num	Incrementing count of actions
User	User ID that initiated the action
P/F	Pass/Fail (that is, whether or not the action was executed)
Operation	Action that was taken

Right-click on the column headings to display the list in ascending-to-descending or descending-to-ascending order.

Left-click on the column heading to display the following options:

- Reset Sorting—Resets the column to the default setting
- Hide Column—Hides the column from view
- Reset Columns Order/Visibility—Displays all hidden columns
- Row Count—Provides a numerical count of log entries

Shift-click on the column heading for an incremental sort of the list.

Stop. You have completed this procedure.

NTP-G109 Off-Load the Audit Trail Record

Purpose	This procedure describes how to off-load up to 640 audit trail log entries in a local or network drive file to maintain a record of actions performed for the node. If the audit trail log is not off-loaded, the oldest entries are overwritten after the log reaches capacity.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-25 at the node where you want to off-load the audit trail log. If you are already logged in, continue with Step 2.

Step 2 In the node view, click the **Maintenance** > **Audit** tabs.

Step 3 Click **Retrieve**.

Step 4 Click **Archive**.

Step 5 In the Archive Audit Trail dialog box, navigate to the directory (local or network) where you want to save the file.

Step 6 Enter a name in the File Name field.

You do not have to give the archive file a particular extension. It is readable in any application that supports text files, such as WordPad, Microsoft Word (imported), etc.

Step 7 Click **Save**.

The 640 entries are saved in this file. The next entries continue with the next number in the sequence, rather than starting over.

Note Archiving does not delete entries from the CTC audit trail log. However, entries can be self-deleted by the system after the log maximum is reached. If you archived the entries, you cannot reimport the log file back into CTC and will have to view the log in a different application.

Stop. You have completed this procedure.

NTP-G110 Off-Load the Diagnostics File

Purpose	This task describes how to off-load a diagnostics file.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance

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

Step 2 In the node view, click the **Maintenance** > **Diagnostic** tabs.

Step 3 Click **Retrieve Diagnostics File**.

Step 4 In the Saving Diagnostic File dialog box, navigate to the directory (local or network) where you want to save the file.

Step 5 Enter a name in the File Name field.

You do not have to give the archive file a particular extension. It is readable in any application that supports text files, such as WordPad, Microsoft Word (imported), etc.

Step 6 Click **Save**.

The Get Diagnostics status window shows a progress bar indicating the percentage of the file being saved, then shows "Get Diagnostics Complete."

Step 7 Click **OK**.

Stop. You have completed this procedure.

NTP-G111 Revert to an Earlier Software Load

Purpose	This procedure reverts the ONS 15454 database to an earlier software load.
Tools/Equipment	None
Prerequisite Procedures	DLP-G33 Install the TCC2 Card, page 1-73
Required/As Needed	As needed
Onsite/Remote	On site or remote
Security Level	Superuser

Tip The revert feature is useful if a maintenance window closes while you are upgrading CTC software. You can revert to the protect software load without losing traffic. When the next maintenance window appears, complete the upgrade and activate the new software load.

Caution Provisioning performed after a software load is activated (upgraded to a higher software release) will not reinstate with a revert. The database configuration at the time of activation is reinstated by a revert.

Note Circuits created and provisioning performed after a software load is activated (upgraded to a later software release) do not reinstate with a revert. The database configuration at the time of activation is reinstated after a revert. This note does not apply to maintenance reverts (for example, R2.2.2 to R2.2.1), because maintenance releases use the same database.

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

Step 2 Record the IP address of that node; the IP address is displayed on the left side of the node view window.

Note To find the IP address, you can also click the **Provisioning** > **Network** > **General** tabs.

Step 3 If you are reverting to a previous software release (not a maintenance release), record any new circuits created since the previous software upgrade because these circuits have to be manually recreated after the software reversion if you still need to have them.

Step 4 Click the **Maintenance** > **Software** tabs.

Step 5 Click **Revert**. The Revert button activates the protect software load.

Step 6 Click **Yes** in the revert confirmation dialog box. The ONS 15454 reboots and loses the connection to CTC.

Step 7 Wait until the software upgrade finishes. This might take as long as 30 minutes.

Step 8 When the software upgrade is finished, click the **Delete CTC Cache** button in the browser window.

Step 9 Completely close the browser.

Step 10 Restart the browser and log back into the node using the IP address recorded in Step 2.

The browser downloads the CTC applet for the protect software load.

Step 11 If needed, recreate the circuits recorded in Step 3. See Chapter 6, "Create Channels and Circuits" for specific circuit creation procedures.

Stop. You have completed this procedure.

NTP-G112 Change the Node Timing Reference

Purpose	This procedure enables automatic timing reference switching or returns the node timing to normal operation.
Tools/Equipment	None
Prerequisite Procedures	NTP-G53 Set Up Timing, page 5-4
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

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

Step 2 Complete the "DLP-G259 Manual or Force Switch the Node Timing Reference" task on page 11-24 as needed.

Step 3 Complete the "DLP-G260 Clear a Manual or Force Switch on a Node Timing Reference" task on page 11-25 as needed.

Stop. You have completed this procedure.

DLP-G259 Manual or Force Switch the Node Timing Reference

Purpose	This task commands the node to switch to the timing reference you have selected.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

Step 1 In node view, click the **Maintenance > Timing > Source** tabs.

Step 2 From the Reference drop-down list for the desired Clock, choose the desired reference.

Step 3 From the Operation drop-down list for the desired Clock, choose one of the following options:

- **Manual**—This operation commands the node to switch to the reference you have selected if the SSM quality of the reference is not lower than the current timing reference.
- **Force**—This operation commands the node to switch to the reference you have selected, regardless of the SSM quality (if the reference is valid).

Note For information about the Clear option, see the "DLP-G260 Clear a Manual or Force Switch on a Node Timing Reference" task on page 11-25.

Step 4 Click **Apply** next to the timing source.

Step 5 Click **Yes** in the confirmation dialog box. If the selected timing reference is an acceptable valid reference, the node switches to the selected timing reference. If the selected timing reference is invalid, a warning dialog box appears. Click **OK**; the node will not switch to the new timing reference.

Step 6 Return to your originating procedure (NTP).

DLP-G260 Clear a Manual or Force Switch on a Node Timing Reference

Purpose	This task clears a Manual or Force switch on a node timing reference and reverts the timing reference to its provisioned reference.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-25
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

Step 1 In node view, click the **Maintenance** > **Timing** > **Source** tabs.

Step 2 Find the Clock reference that is currently set to Manual or Force in the Operation menu.

Step 3 From the Operation drop-down list, choose **Clear**.

Step 4 Click **Apply**.

Step 5 Click **Yes** in the confirmation dialog box. If the normal timing reference is an acceptable valid reference, the node switches back to the normal timing reference as defined by the system configuration. If the normal timing reference is invalid or has failed, a warning dialog box appears. Click **OK**; the timing reference will not revert.

Step 6 Return to your originating procedure (NTP).

NTP-G113 View the ONS 15454 Timing Report

Purpose	This procedure displays the current status of the ONS 15454 timing references.
Tools/Equipment	None
Prerequisite Procedures	NTP-G53 Set Up Timing, page 5-4
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

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

Step 2 Click the **Maintenance** > **Timing** > **Report** tabs.

Step 3 In the Timing Report area, you can view node timing information. The date and time of the report appear at the top of the report. The time stamp is the same as the alarms time stamp and can be configured using the "DLP-G118 Display Alarms and Conditions Using Time Zone" task on page 7-11. Table 11-2 describes the report fields and entries.

Step 4 To update the report, click **Refresh**.

Table 11-2 ONS 15454 Timing Report

Item	Description	Option	Option Description
Clock	Indicates the timing clock. The report section that follows applies to the timing clock indicated.	NE	The node timing clock.
		BITS-1 Out	The BITS-1 Out timing clock.
		BITS-2 Out	The BITS-2 Out timing clock.

Table 11-2 ONS 15454 Timing Report (continued)

Item	Description	Option	Option Description
Status	Indicates the status of the timing clock.	INIT_STATE	The timing reference has not been provisioned. For an NE reference, this status appears just before the first provisioning messages when the TCC2 is booting. Timing is provisioned to the internal clock of the node.
		HOLDOVER_STATE	The clock was locked onto a valid timing reference for more than 140 seconds when a failure occurred. Holdover state timing is a computation based on timing during normal state combined with the node's internal clock. The node holds onto this frequency until the valid reference is restored. This status appears for NE references only.
		FREERUN_STATE	The node is running off its internal clock without any modification except the calibrated value to bring timing to 0 PPM. Freerun state can occur when a Force switch to the Internal clock is initiated, when all references fail without the 140 seconds of holdover data, or when only Internal timing references are defined. This status appears for NE references only.
		NO_SYNC_STATE	A synchronization timing reference is not defined. BITS-1 Out or BITS-2 Out default to this status until an OC-N card is defined as its reference on the Provisioning > Timing tab. This status appears for external references only.
		NE_SYNCH_STATE	BITS-1 Out and BITS-2 Out use the same timing source as the NE. This is displayed when NE Reference is selected in the BITS-1 Out and BITS-2 Out Reference List on the Provisioning > Timing tab.
		NORMAL_STATE	The timing reference is locked onto one of its provisioned references. The reference cannot be Internal or NO SYNC STATE.
		FAST_START_STATE	The node has switched references, but the reference is too far away to reach NORMAL_STATE within an acceptable amount of time. FAST_START_STATE is a fast acquisition mode to allow the node to quickly acquire the reference. After it achieves this goal, the node progresses to the normal state.
		FAST_START_FAILED_STATE	A timing reference is too far away to reach in normal state. The FAST_START_STATE could not acquire sufficient timing information within the allowable amount of time.
Status Changed At	Date and time of the last status change.	—	—
Switch Type	Type of switch.	AUTOMATIC	The timing switch was system-generated.
		Manual	The timing switch was a user-initiated Manual switch.
		Force	The timing switch was user-initiated Force switch.

Table 11-2 ONS 15454 Timing Report (continued)

Item	Description	Option	Option Description
Reference	Indicates the timing reference.	Three timing references are available on the Provisioning > Timing tab.	—
Selected	Indicates whether the reference is selected.	Selected references are indicated with an X.	—
Facility	Indicates the timing facility provisioned for the reference on the Provisioning > Timing tab.	BITS-1	The timing facility is a building integrated timing supply (BITS) clock attached to the node's BITS-1 pins.
		BITS-2	The timing facility is a BITS clock attached to the node's BITS-2 pins.
		OC-N/STM-N card with port number	If the node is set to line timing, this is the OC-N /STM-N card and port provisioned as the timing reference.
		Internal clock	The node is using its internal clock.
State	Indicates the timing reference state.	IS	The timing reference is in service.
		OOS	The timing reference is out of service.
Condition	Indicates the timing reference state.	OKAY	The reference is valid to use as a timing reference.
		OOB	Out of bounds; the reference is not valid and cannot be used as a timing reference, for example, a BITS clock is disconnected.
Condition Changed	Indicates the date and time of the last status change in MM/DD/YY HH:MM:SS format.	—	—
SSM	Indicates whether SSM is enabled for the timing reference.	Enabled	SSM is enabled.
		Disabled	SSM is not enabled.
SSM Quality	Indicates the SSM timing quality.	8 to 10 SSM quality messages might be displayed.	For a list of SSM message sets, see the "18.2.2 Synchronization Status Messaging" section on page 18-8.
SSM Changed	Indicates the date and time of the last SSM status change in MM/DD/YY HH:MM:SS format.	—	—

Stop. You have completed this procedure.

NTP-G114 Inspect, Clean, and Replace the Air Filter

Purpose	This procedure explains how to inspect, clean, and replace the reusable fan tray air filter. This procedure ensures that the air filter is free from dirt and dust, which allows optimum air flow and prevents dirt and dust from entering the shelf.
Tools/Equipment	Vacuum or detergent and water faucet, spare filter, pinned hex key tool
Prerequisite Procedures	None
Required/As Needed	Inspection required every 30 days. Clean as needed.
Onsite/Remote	Onsite
Security Level	None

Warning **Do not reach into a vacant slot or chassis while you install or remove a module or a fan. Exposed circuitry could constitute an energy hazard.**

Note Although the filter can work if it is installed with either side facing up, Cisco recommends that you install it with the metal bracing facing up to preserve the surface of the filter.

Step 1 Verify that you are replacing a reusable air filter. The reusable filter is made of a gray, open-cell, polyurethane foam that is specially coated to provide fire and fungi resistance.

Step 2 If the air filter is installed in the external filter brackets, slide the filter out of the brackets while being careful not to dislodge any dust that might have collected on the filter and proceed to Step 9. Figure 11-7 shows the reusable fan-tray air filter in an external filter bracket on an ANSI shelf. Figure 11-8 shows the reusable fan-tray air filter in an external filter bracket on an ETSI shelf.

Step 3 If the filter is installed below the fan tray and not in the external filter brackets, open the front door of the shelf assembly. If the front door is already open, proceed to Step 4.

a. Open the front door lock.

The ONS 15454 comes with a pinned hex key for locking and unlocking the front door. Turn the key counterclockwise to unlock the door and clockwise to lock it.

b. Press the door button to release the latch.

c. Swing the door open.

Step 4 Remove the front door (optional). If you do not want to remove the door or it is already removed, proceed to Step 5.

a. Detach the ground strap from either the door or the chassis by removing one of the Kepnuts.

b. Place the Kepnut back on the stud after the ground strap is removed to avoid misplacement.

c. Secure the dangling end of the ground strap to the door or chassis with tape.

Figure 11-7 ANSI Shelf Fan-Tray Air Filter in an External Filter Bracket (Front Door Removed)

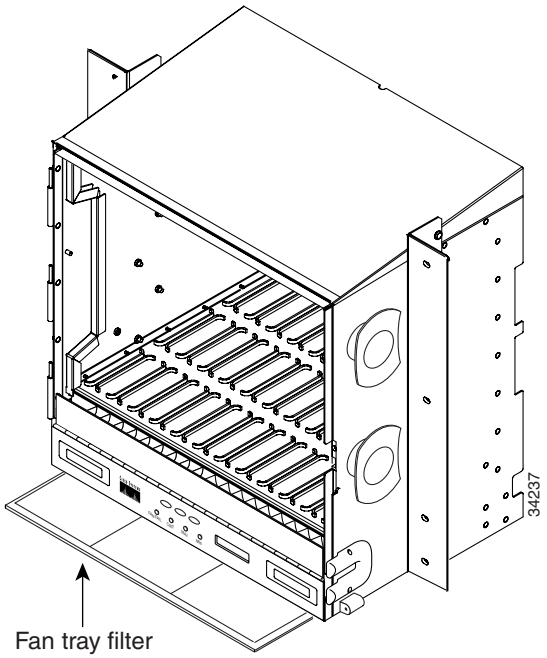
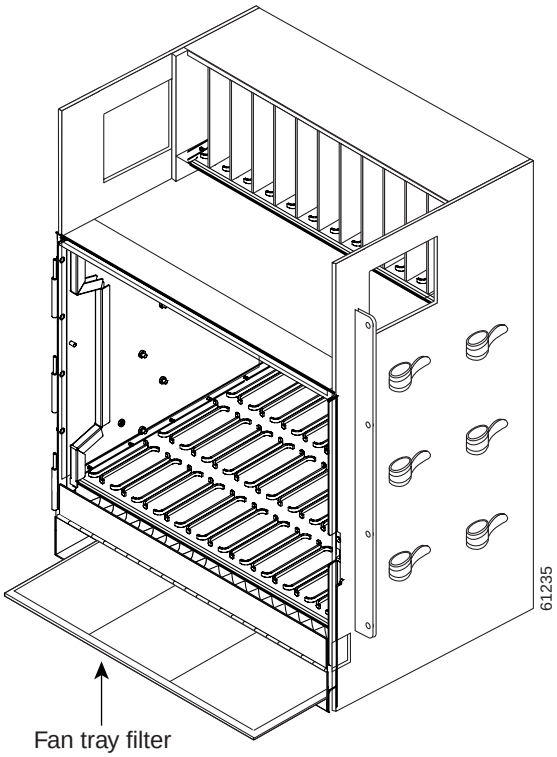


Figure 11-8 ETSI Shelf Fan-Tray Air Filter in an External Filter Bracket (Front Door Removed)



Step 5 Push the outer side of the handles on the fan-tray assembly to expose the handles.

Step 6 Pull the handles and slide the fan-tray assembly one inch (25.4 mm) out of the shelf assembly and wait until the fans stop.

Step 7 When the fans have stopped, pull the fan-tray assembly completely out of the shelf assembly.

Step 8 Gently remove the air filter from the shelf assembly. Be careful not to dislodge any dust that might have collected on the filter.

Step 9 Visually inspect the air filter material for dirt and dust.

Step 10 If the reusable air filter contains a concentration of dirt and dust, replace the dirty air filter with a clean air filter (spare filters should be kept in stock) and reinsert the fan-tray assembly. Then, vacuum the dirty air filter or wash it under a faucet with a light detergent.

Caution Do not leave the fan tray out of the chassis for an extended period of time because excessive heat can damage the ONS 15454 cards.

Note Cleaning should take place outside of the operating environment to avoid releasing dirt and dust near the equipment.

Step 11 If you washed the filter, allow it to completely air dry for at least eight hours.

Warning **Do not put a damp filter back in the ONS 15454.**

Step 12 Replace the clean filter:

- **a.** If the air filter is installed in the external filter brackets, slide the dry air filter all the way to the back of the brackets to complete the procedure.
- **b.** If the filter is installed below the fan-tray assembly, remove the fan-tray assembly and slide the dry/clean air filter into the recessed compartment at the bottom of the shelf assembly. Put the front edge of the air filter flush against the front edge of the recessed compartment. Push the fan tray back into the shelf assembly.

Caution If the fan tray does not slide all the way to the back of the shelf assembly, pull the fan tray out and readjust the position of the reusable filter until the fan tray fits correctly.

Note On a powered-up ONS 15454, the fans start immediately after the fan-tray assembly is correctly inserted.

Step 13 To verify that the tray is plugged into the backplane, ensure that the LCD on the front of the fan-tray assembly is activated and displays node information.

Step 14 Rotate the retractable handles back into their compartments.

Step 15 If you replace the door, also reattach the ground strap.

Step 16 Close and lock the door.

Step 17 Return to your originating procedure (NTP).

NTP-G115 Clean Fiber Connectors

Purpose	This procedure cleans the fiber connectors.
Tools/Equipment	Inspection microscope Compressed air/duster Type A Fiber Optic Connector Cleaner (CLETOP reel) Isopropyl alcohol 70 percent or higher Optical swab Optical receiver cleaning stick
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Warning **Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not stare into the beam or view directly with optical instruments.**

Step 1 Using an inspection microscope, inspect each fiber connector for dirt, cracks, or scratches.

Step 2 Replace any damaged fiber connectors.

Note Replace all dust caps whenever the equipment is unused for 30 minutes or more.

Step 3 Complete the "DLP-G261 Scope and Clean Fiber Connectors and Adapters with Alcohol and Dry Wipes" task on page 11-33 as necessary.

Step 4 Complete the "DLP-G262 Clean Fiber Connectors with CLETOP" task on page 11-34 as necessary.

Step 5 Complete the "DLP-G263 Clean the Fiber Adapters" task on page 11-34 as necessary.

Caution Do not reuse optical swabs. Keep unused swabs off of work surfaces.

Stop. You have completed this procedure.

DLP-G261 Scope and Clean Fiber Connectors and Adapters with Alcohol and Dry Wipes

Purpose	This task cleans the fiber connectors and adapters with alcohol and dry wipes.
Tools/Equipment	Compressed air/duster
	Isopropyl alcohol 70 percent or higher
	Optical swab
	Optical receiver cleaning stick
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Warning **Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not stare into the beam or view directly with optical instruments.**

Step 1 Remove the dust cap from the fiber connector.

Step 2 Wipe the connector tip with the premoistened alcohol wipe.

Step 3 Blow-dry using filtered air.

Step 4 Use an inspection microscope to inspect each fiber connector for dirt, cracks, or scratches. If the connector is not clean, repeat Steps 1 to 3.

Step 5 Insert the fiber connector into the applicable adapter or attach a dust cap to the fiber connector.

Note If you must replace a dust cap on a connector, first verify that the dust cap is clean. To clean the dust cap, wipe the outside of the cap using a dry, lint-free wipe and the inside of the dust cap using a CLETOP stick swab (14100400).

Step 6 Return to your originating procedure (NTP).

DLP-G262 Clean Fiber Connectors with CLETOP

Purpose	This task cleans the fiber connectors with CLETOP.
Tools/Equipment	Type A Fiber Optic Connector Cleaner (CLETOP reel) Optical receiver cleaning stick
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Step 1 Remove the dust cap from the fiber connector.

Step 2 Press the lever down to open the shutter door. Each time you press the lever, you expose a clean wiping surface.

Step 3 Insert the connector into the CLETOP cleaning cassette slot, rotate one quarter turn, and gently swipe downwards.

Step 4 Use an inspection microscope to inspect each fiber connector for dirt, cracks, or scratches. If the connector is not clean, repeat Steps 1 to 3.

Step 5 Insert the fiber connector into the applicable adapter or attach a dust cap to the fiber connector.

Note If you must replace a dust cap on a connector, first verify that the dust cap is clean. To clean the dust cap, wipe the outside of the cap using a dry, lint-free wipe and the inside of the dust cap using a CLETOP stick swab (14100400).

Step 6 Return to your originating procedure (NTP).

DLP-G263 Clean the Fiber Adapters

Purpose	This task cleans the fiber adapters.
Tools/Equipment	CLETOP stick swab
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Step 1 Remove the dust plug from the fiber adapter.

Step 2 Insert a CLETOP stick swab (14100400) into the adapter opening and rotate the swab.

Step 3 Place dust plugs on the fiber adapters when not in use.

Step 4 Return to your originating procedure (NTP).

NTP-G116 Replace the Fan-Tray Assembly

Purpose	This procedure replaces a malfunctioning fan-tray assembly.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None

Caution The 15454-FTA3 fan-tray assembly can only be installed in ONS 15454 R3.1 and later shelf assemblies (15454-SA-ANSI, P/N: 800-19857; 15454-SA-HD, P/N: 800-24848). It includes a pin that does not allow it to be installed in ONS 15454 shelf assemblies released before ONS 15454 R3.1 (15454-SA-NEBS3E, 15454-SA-NEBS3, and 15454-SA-R1, P/N: 800-07149). Equipment damage can result from attempting to install the 15454-FTA3 in a incompatible shelf assembly.

Caution Do not force a fan-tray assembly into place. Doing so can damage the connectors on the fan tray and/or the connectors on the backplane.

Note To replace the fan-tray assembly (FTA), it is not necessary to move any of the cable management facilities.

Step 1 Review Table 11-3 (ANSI) or Table 11-4 (ETSI) to ensure that you have compatible components when replacing the fan-tray assembly. Note the alarms that will be generated when an incompatibility occurs.

Note If you need to determine the hardware that has been installed on a node, click the Inventory tab in node view.

Table 11-3 Incompatibility Alarms for ONS 15454 ANSI

Shelf Assembly[1]	Fan Tray[2]	AIP[3]	10G Cards[4]	Ethernet Cards[5]	Alarms
—	—	No fuse	—	—	Mismatch of Equipment Attributes (MEA) on alarm interface panel (AIP)
NEBS3E or NEBS3	2A	2A	No	—	None
NEBS3E or NEBS3	2A	2A	Yes	—	MEA on 10G
NEBS3E or NEBS3	2A	5A	No	—	None
NEBS3E or NEBS3	2A	5A	Yes	—	MEA on 10G
ANSI or HD	2A	2A	No	—	None

Table 11-3 Incompatibility Alarms for ONS 15454 ANSI (continued)

Shelf Assembly[1]	Fan Tray[2]	AIP[3]	10G Cards[4]	Ethernet Cards[5]	Alarms
ANSI or HD	2A	2A	Yes	2.5G compatible	MEA on fan tray, AIP, and Ethernet
ANSI or HD	2A	2A	Yes	10G compatible	MEA on fan tray and AIP
ANSI or HD	2A	5A	No	Either	None
ANSI or HD	2A	5A	Yes	2.5G compatible	MEA on fan tray and Ethernet
ANSI or HD	2A	5A	Yes	10G compatible	MEA on fan tray
ANSI or HD	5A	2A	No	Either	MEA on AIP
ANSI or HD	5A	2A	Yes	2.5G compatible	MEA on AIP and Ethernet
ANSI or HD	5A	2A	Yes	10G compatible	MEA on AIP
ANSI or HD	5A	5A	No	Either	None
ANSI or HD	5A	5A	Yes	Either	None

1. 15454-SA-NEBS3E (P/N: 800-07149-xx) or 15454-SA-NEBS3 (P/N: 800-06741-xx) = shelf assemblies released before ONS 15454 Release 3.1
   15454-SA-ANSI (P/N: 800-19857-01) = ONS 15454 Release 3.1 and later shelf assembly
   15454-SA-HD (P/N: 800-24848) = ONS 15454 Release 3.1 and later shelf assembly
2. 5A Fan Tray = 15454-FTA3 (P/N: 800-19858-xx) or 15454-FTA3-T (P/N: 800-21448-xx)
   2A Fan Tray = 15454-FTA2 (P/Ns: 800-07145-xx, 800-07385-xx, 800-19591-xx, 800-19590-xx)
3. 5A AIP (P/N: 73-7665-01), 2A AIP (P/N: 73-5262-01)
4. 10G cards = XC-10G, OC-192, OC-48 AS
5. 2.5G compatible Ethernet cards = E1000-T, E1000-2, E1000T-G, E10002-G, G1000-4, G1K-4
   10G compatible Ethernet cards = E1000T-G, E10002-G, G1000-4, G1K-4, ML100T-12, ML1000-2

Table 11-4 Incompatibility Alarms for ONS 15454 ETSI

Shelf Assembly [1]	Fan Tray[2]	10G Cards[3]	Ethernet Cards[4]	Alarms
15454E-SA-ETSI	2A	No	—	None
15454E-SA-ETSI	2A	Yes	—	MEA on 10G
15454E-SA-ETSI	2A	No	—	None
15454E-SA-ETSI	2A	Yes	—	MEA on 10G
15454E-SA-ETSI	5A	No	—	MEA on fan tray
15454E-SA-ETSI	5A	Yes	—	MEA on fan tray and 10G cards
15454E-SA-ETSI	5A	No	—	None
15454E-SA-ETSI	5A	Yes	—	MEA on 10G
ETSI	2A	No	—	None
ETSI	2A	Yes	2.5G compatible	MEA on fan tray or Ethernet
ETSI	2A	Yes	10G compatible	MEA on fan tray

Table 11-4 Incompatibility Alarms for ONS 15454 ETSI (continued)

Shelf Assembly [1]	Fan Tray[2]	10G Cards[3]	Ethernet Cards[4]	Alarms
ETSI	2A	No	Either	None
ETSI	2A	Yes	2.5G compatible	MEA on fan tray, Ethernet
ETSI	2A	Yes	10G compatible	MEA on fan tray
ETSI	5A	Yes	2.5G compatible	MEA on Ethernet
ETSI	5A	No	Either	None
ETSI	5A	Yes	Either	None

1. 15454-SA-ETSI (P/N: 800-08708-XX) = ONS 15454 SDH Release 3.3 and later shelf assembly
2. 5A Fan Tray = 15454E-FTA-60V
   2A Fan Tray = 15454E-FTA-48V
3. 10G cards = XC-10G, XC-VXL-10G, STM-64, STM-16 AS
4. 2.5G compatible Ethernet cards = E1000-T, E1000-2, E1000T-G, E10002-G, G1000-4, G1K-4
   10G compatible Ethernet cards = E1000T-G, E10002-G, G1000-4, G1K-4, ML100T-12, ML1000-2

Step 2 Open the front door of the shelf assembly. If the shelf assembly does not have a front door, continue with Step 4.

- **a.** Open the front door lock.

  The ONS 15454 comes with a pinned hex key for locking and unlocking the front door. Turn the key counterclockwise to unlock the door and clockwise to lock it.
- **b.** Press the door button to release the latch.
- **c.** Swing the door open.

Step 3 Remove the front door (optional). If you do not want to remove the door, proceed to Step 4.

- **a.** Detach the ground strap from either the door or the chassis by removing one of the Kepnuts.
- **b.** Place the Kepnut back on the stud after the ground strap is removed to avoid misplacement.
- **c.** Secure the dangling end of the ground strap to the door or chassis with tape.

Step 4 Push the outer side of the handles on the fan-tray assembly to expose the handles.

Step 5 Fold out the retractable handles at the outside edges of the fan tray.

Step 6 Pull the handles and slide the fan-tray assembly one inch (25.4 mm) out of the shelf assembly and wait until the fans stop.

Step 7 When the fans have stopped, pull the fan-tray assembly completely out of the shelf assembly. Figure 11-9 shows the location of the fan tray on the ONS 15454 ANSI shelf.

Figure 11-9 Removing or Replacing the Fan-Tray Assembly (Front Door Removed) (ANSI)

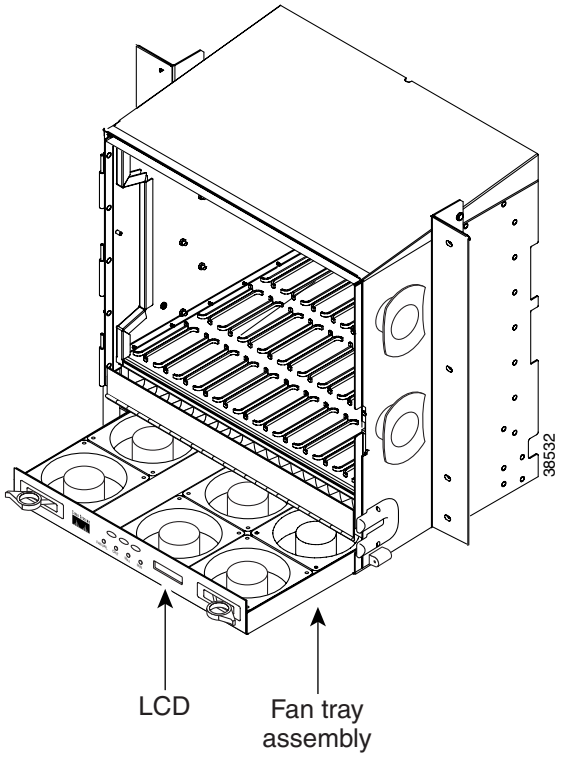
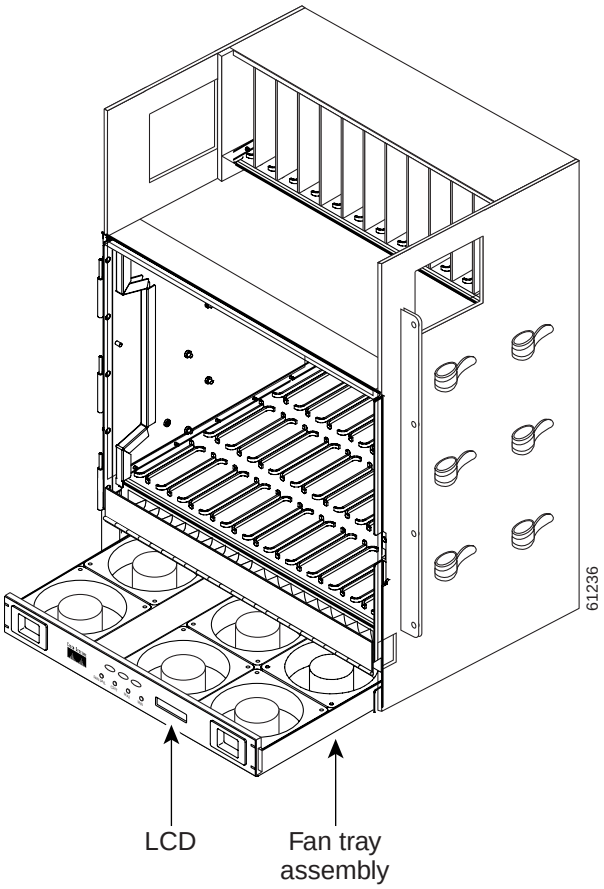


Figure 11-10 shows the location of the fan tray on the ONS 15454 ETSI shelf.

Figure 11-10 Removing or Replacing the Fan-Tray Assembly (Front Door Removed) (ETSI)



Step 8 If you are replacing the fan-tray air filter and it is installed beneath the fan-tray assembly, slide the existing air filter out of the shelf assembly and replace it before replacing the fan-tray assembly.

If you are replacing the fan-tray air filter and it is installed in the external bottom bracket (ANSI shelf only), you can slide the existing air filter out of the bracket and replace it at anytime. For more information on the fan-tray air filter, see the "NTP-G114 Inspect, Clean, and Replace the Air Filter" procedure on page 11-29.

Step 9 Slide the new fan tray into the shelf assembly until the electrical plug at the rear of the tray plugs into the corresponding receptacle on the backplane.

Step 10 To verify that the tray has plugged into the backplane, check that the LCD on the front of the fan tray is activated.

Step 11 If you replace the door on an ANSI shelf, be sure to reattach the ground strap.

Stop. You have completed this procedure.

NTP-G117 Replace the ANSI Shelf Alarm Interface Panel

Purpose	This procedure replaces the alarm interface panel (AIP) on the ONS 15454 ANSI shelf assembly.
Tools/Equipment	#2 Phillips screwdriver
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Caution Do not use a 2A AIP with a 5A fan-tray assembly; doing so will cause a blown fuse on the AIP.

Caution Always use the supplied ESD wristband when working with a powered ONS 15454. Plug the wristband cable into the ESD jack located on the lower-right outside edge of the shelf assembly.

Caution Do not perform this procedure on a node with live traffic. Hot-swapping the AIP can affect traffic and result in a loss of data. For assistance with AIP replacement, contact Cisco TAC at (800) 553-2447.

Step 1 Review Table 11-3 on page 11-35 to ensure that you have compatible components when replacing the fan-tray assembly and note the alarms that will occur when an incompatibility occurs.

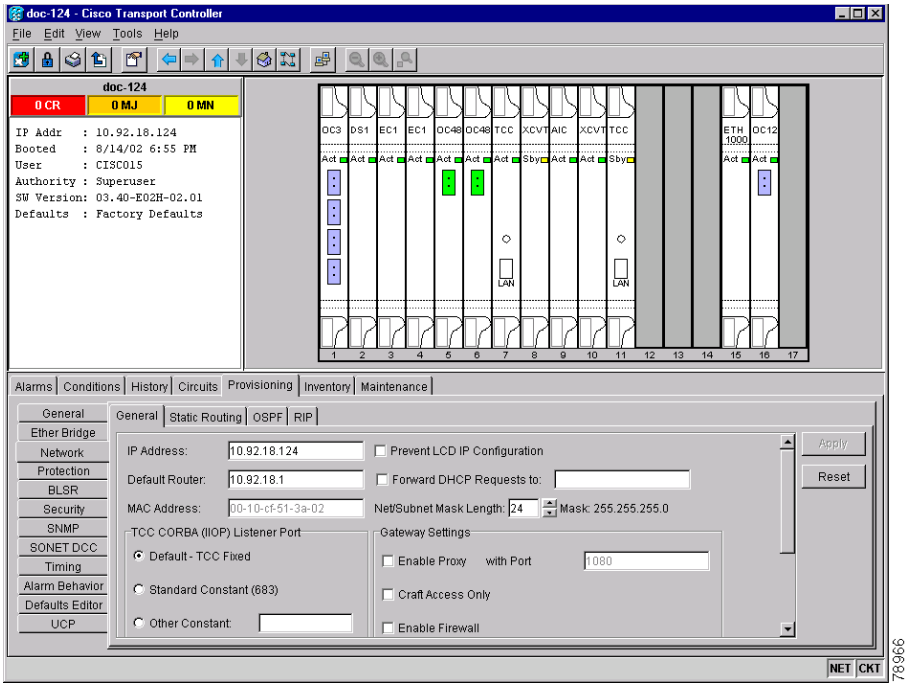
Step 2 Ensure that all nodes in the affected network are running the same software version before replacing the AIP and repairing circuits:

- **a.** In network view, click the **Maintenance > Software** tabs. The working software version for each node is listed in the Working Version column.
- **b.** If you need to upgrade the software on a node, refer to the release-specific software upgrade document. No hardware should be changed or circuit repair performed until after the software upgrade is complete. If you do not need to upgrade software or have completed the software upgrade, proceed to Step 3.

Step 3 Record the MAC address of the old AIP:

- **a.** Log into the node where you will replace the AIP. See the "DLP-G46 Log into CTC" task on page 2-25.
- **b.** In node view, click the **Provisioning > Network** tabs.
- **c.** Record the MAC address shown in the General tab (Figure 11-11).

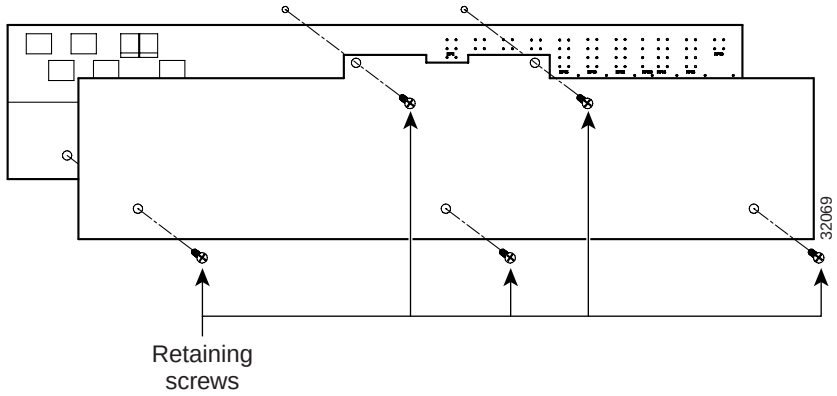
Figure 11-11 Find the MAC Address



Step 4 Call Cisco TAC at (800) 553-2447 for assistance in replacing the AIP and maintaining the original MAC address.

Step 5 Unscrew the five screws that hold the lower backplane cover in place (Figure 11-12).

Figure 11-12 Lower Backplane Cover



Step 6 Grip the lower backplane cover and gently pull it away from the backplane.

Step 7 Unscrew the two screws that hold the AIP cover in place.

Step 8 Grip the cover and gently pull away from the backplane.

Note On the 15454-SA-HD (P/N: 800-24848), 15454-SA-NEBS3E, 15454-SA-NEBS3, and 15454-SA-R1 (P/N: 800-07149) shelves, the AIP cover is clear plastic. On the 15454-SA-ANSI shelf (P/N: 800-19857), the AIP cover is metal.

Step 9 Grip the AIP and gently pull it away from the backplane.

Step 10 Disconnect the fan-tray assembly power cable from the AIP.

Step 11 Set the old AIP aside for return to Cisco.

Caution The type of shelf the AIP resides in determines the version of AIP that should replace the failed AIP. The 15454-SA-ANSI shelf (P/N: 800-19857) and 15454-SA-HD (P/N: 800-24848) currently use the 5A AIP, (P/N: 73-7665-01). The 15454-SA-NEBS3E, 15454-SA-NEBS3, and 15454-SA-R1 (P/N: 800-07149) shelves and earlier use the 2A AIP (P/N: 73-5262-01).

Caution Do not put a 2A AIP (P/N: 73-5262-01) into a 15454-SA-ANSI (P/N: 800-19857) or 15454-SA-HD (P/N: 800-24848) shelf; doing so will cause a blown fuse on the AIP.

Step 12 Attach the fan-tray assembly power cable to the new AIP.

Step 13 Place the new AIP on the backplane by plugging the panel into the backplane using the DIN connector.

Step 14 Replace the AIP cover over the AIP and secure the cover with the two screws.

Step 15 Replace the lower backplane cover and secure the cover with the five screws.

Step 16 In node view, click the **Provisioning** > **Network** tabs.

Caution Cisco recommends that TCC2 card resets be performed in a maintenance window to avoid any potential service disruptions.

Step 17 Reset the standby TCC2 card:

- **a.** Right-click the standby TCC2 card and choose **Reset Card**.
- **b.** Click **Yes** in the Resetting Card dialog box. As the card resets, a loading (Ldg) indication appears on the card in CTC.

Note The reset takes approximately five minutes. Do not perform any other steps until the reset is complete.

Step 18 Complete the "DLP-G250 Reset the TCC2 Card" task on page 11-10 to reset the active TCC2 card.

Step 19 From the **File** drop-down list, choose **Exit** to exit the CTC session.

Step 20 Log back into the node. At the Login dialog box, choose **(None)** from the Additional Nodes drop-down list.

Step 21 Record the new MAC address:

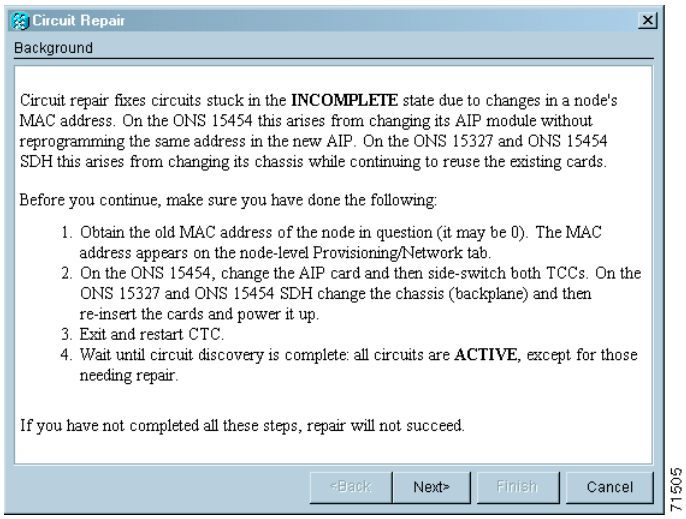
- **a.** In node view, click the **Provisioning** > **Network** tabs.
- **b.** Record the MAC address shown in the General tab.

Step 22 In node view, click the **Circuits** tab. Note that all circuits listed have a status of PARTIAL.

Step 23 In node view, choose **Repair Circuits** from the **Tools** drop-down list. The Circuit Repair dialog box appears.

Step 24 Read the instructions in the Circuit Repair dialog box (Figure 11-13). If all the steps in the dialog box have been completed, click **Next**. Ensure that you have the old and new MAC addresses.

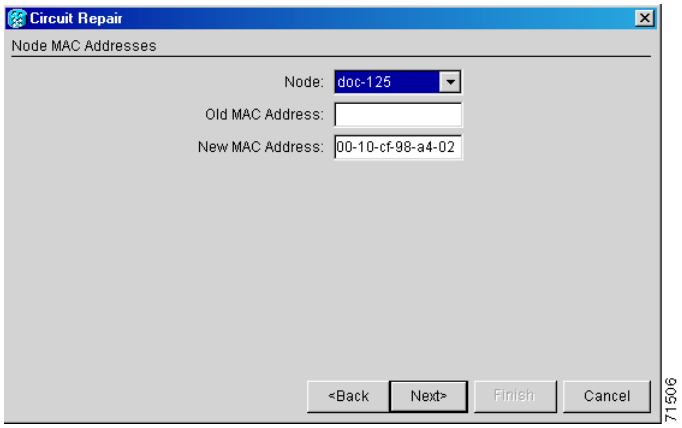
Figure 11-13 Repairing Circuits



Step 25 The Node MAC Addresses dialog box appears (Figure 11-14):

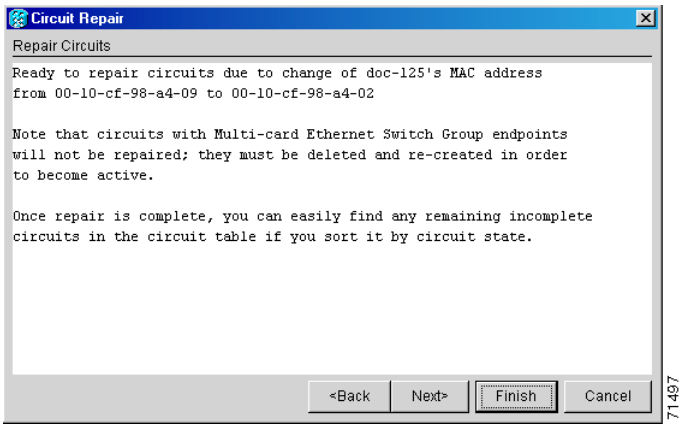
- **a.** From the Node drop-down list, choose the name of the node where you replaced the AIP.
- **b.** In the Old MAC Address field, enter the old MAC address that was recorded in Step 3.
- **c.** Click **Next**.

Figure 11-14 Recording the Old MAC Address Before Replacing the AIP



Step 26 The Repair Circuits dialog box appears (Figure 11-15). Read the information in the dialog box and click **Finish**.

Figure 11-15 Circuit Repair Information



Note The CTC session freezes until all circuits are repaired. Circuit repair can take up to five minutes or more depending on the number of circuits provisioned.

When the circuit repair is complete, the Circuits Repaired dialog box appears.

Step 27 Click **OK**.

Step 28 In the node view of the new node, click the **Circuits** tab. Check to ensure that all circuits listed have a status of DISCOVERED. If all circuits listed are not DISCOVERED, call the Cisco TAC at (800) 553-2447 to open a Return Material Authorization (RMA).

Stop. You have completed this procedure.

NTP-G118 Replace the ANSI Shelf Plastic Lower Backplane Cover

Purpose	This procedure replaces the plastic cover located at the bottom rear of the ONS 15454 ANSI shelf.
Tools/Equipment	Phillips screwdriver
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None

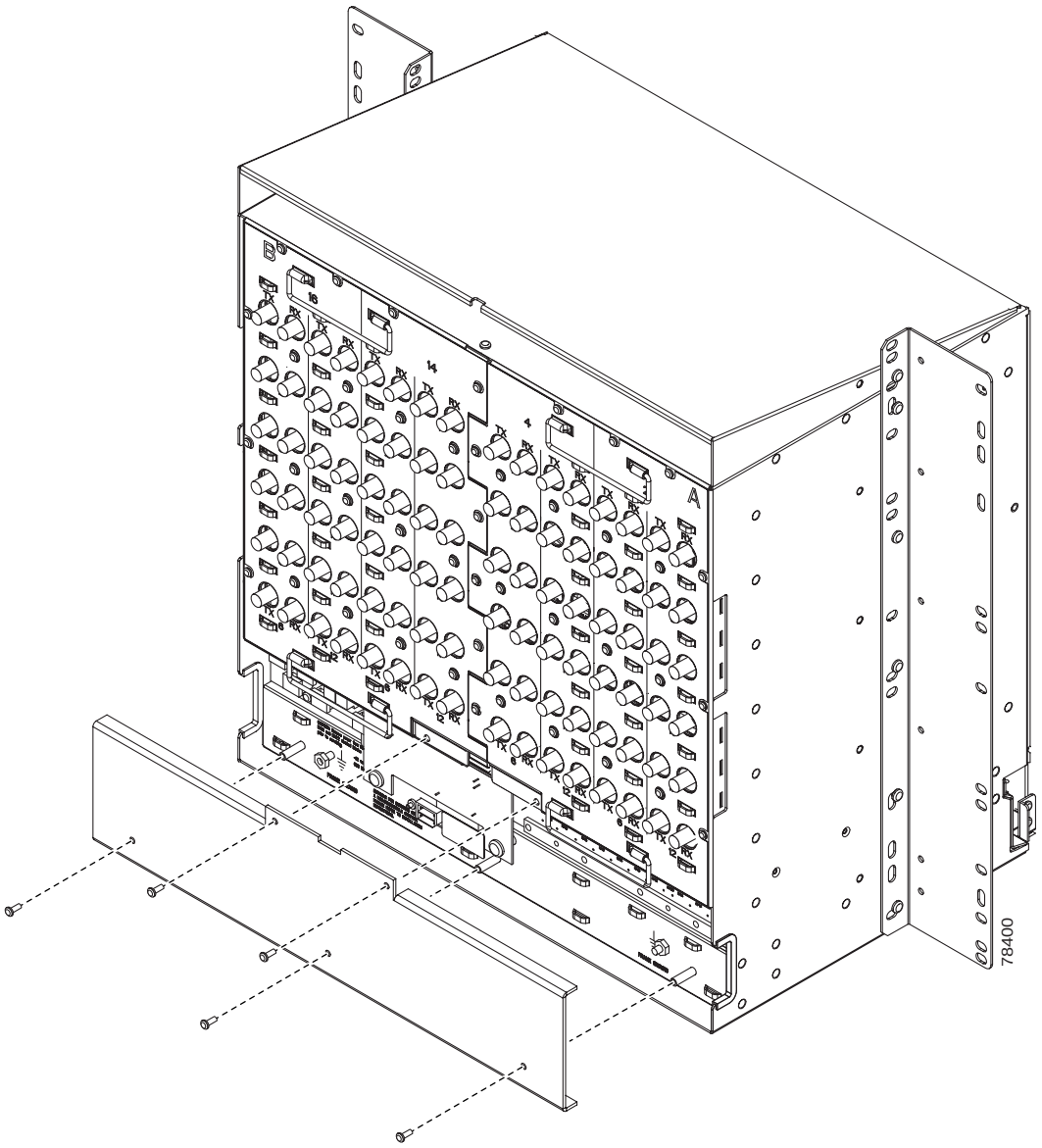
Step 1 Use the Phillips screwdriver to unscrew the five retaining screws that hold the metal cover in place.

Step 2 Grasp the metal cover on each side.

Step 3 Gently pull the metal cover away from the backplane.

Step 4 Place the plastic cover against the shelf assembly and align the screw holes on the cover and the shelf assembly (Figure 11-16).

Figure 11-16 Attaching Plastic Lower Backplane Cover



Step 5 Tighten the five retaining screws that hold the plastic cover in place.

Stop. You have completed this procedure.