CHAPTER 24

Maintain the Node

This chapter provides procedures for maintaining the Cisco ONS 15454, including database backup 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 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-G103 Back Up the Database, page 24-2—Complete as needed.
2. NTP-G104 Restore the Database, page 24-3—Complete as needed.
3. NTP-G105 Restore the Node to Factory Configuration, page 24-4—Complete as needed to clear the database and upload a blank database and the latest software.
4. NTP-G133 View and Manage OSI Information, page 24-10—Complete as needed.
5. NTP-G106 Reset Cards Using CTC, page 24-13—Complete as needed to reset the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards and the dense wavelength division multiplexing (DWDM) cards.
6. NTP-G108 Viewing the Audit Trail Records, page 24-15—Complete as needed.
7. NTP-G109 Off-Load the Audit Trail Record, page 24-16—Complete as needed.
8. NTP-G110 Off-Load the Diagnostics File, page 24-17—Complete as needed.
9. NTP-G112 Change the Node Timing Reference, page 24-18—Complete as needed.
10. NTP-G113 View the ONS 15454 Timing Report, page 24-20—Complete as needed.

11. NTP-G135 Edit Network Element Defaults, page 24-23—Complete as needed to edit the factory-configured (default) network element (NE) settings for the Cisco ONS 15454.
12. NTP-G136 Import Network Element Defaults, page 24-24—Complete as needed to import the factory-configured (default) NE settings for the Cisco ONS 15454.
13. NTP-G137 Export Network Element Defaults, page 24-25—Complete as needed to export the factory-configured (default) NE settings for the Cisco ONS 15454.
14. NTP-G166 View the Facilities, page 24-26—Complete as needed to view all facilities for the Cisco ONS 15454.
15. NTP-G119 Power Down the Node, page 24-27—Complete as needed to power down the node.

NTP-G103 Back Up the Database

Purpose	This procedure stores a backup version of the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE (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 or higher

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

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), 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/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card software database, either partially or completely.
Tools/Equipment	None
Prerequisite Procedures	NTP-G103 Back Up the Database, page 24-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

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 restored only when the **Complete Database (System and Provisioning)** checkbox is checked: node name, IP address, subnet mask and gateway, and IIOP port. If you change the node name and then restore a backed up database on this node, the circuits automatically map to the newly renamed node. It is recommended to keep 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/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card reboot has completed on each node before proceeding to the next node.

Caution TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards can be used in single IP address (repeater) and dual IP address (secure) mode. The secure mode has advanced features that affect database restore. A database from a secure node cannot be loaded on an unsecure repeater node. A repeater mode database can be loaded onto a secure node but the database will follow the node characteristics (that is, it will become secure). A secure database cannot be loaded onto a TCC2; only TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards support secure mode. For more information about the dual IP secure mode, see the "NTP-G26 Set Up CTC Network Access" procedure on page 14-16. Also refer chapter, "Chapter 22, "Manage Network Connectivity."

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

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Circuits** tab. Verify that no optical channel network connection (OCHNC) circuits have a PARTIAL_OOS state. If so, investigate and resolve the partial state before continuing.

Step 3 Complete the DLP-G157 Disable Automatic Power Control task

Step 4 In multishelf view (multishelf mode) or in node view (single-shelf mode), 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.

Caution Opening a restore file from another node or from an earlier backup might affect traffic on the login node.

Step 9 If you need a complete database restore, check the **Complete database (System and Provisioning)** checkbox. Continue with Step 11.

Note Complete database restore may be used only on a node that is removed from the network, and does not carry live provisioning traffic. This operation needs to be done by a live operator onsite, and must not use a remote connection.

Step 10 If you need to restore only the provisioning database (partial restore), do not check the **Complete database (System and Provisioning)** checkbox.

Step 11 Click **Ok**.

The Restore Database dialog box monitors the file transfer.

Step 12 Wait for the file to complete the transfer to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card.

Step 13 Click **OK** when the "Lost connection to node, changing to Network View" dialog box appears. Wait for the node to reconnect.

Step 14 Complete the DLP-G158 Enable Automatic Power Control task.

Stop. You have completed this procedure.

Note During the database restore process, GMPLS circuits provisioned after the database was backed up may go into the partial state. When this occurs, delete and recreate the GMPLS circuits to revert to the discovered state.

NTP-G105 Restore the Node to Factory Configuration

Purpose	This procedure reinitializes the Cisco ONS 15454, ONS 15454 M2,and ONS 15454 M6 using the CTC reinitialization tool. Reinitialization uploads a new software package to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards, clears the node database, and restores the factory default parameters.
Tools/Equipment	ONS 15454 System Software CD, Version 9.2 JRE 1.6 is recommended to log into the node after reinitialization is complete. The reinitialization tool can run on JRE 1.3.1_02, JRE 1.4.2, or JRE 1.6.

Prerequisite Procedures	NTP-G103 Back Up the Database, page 24-2 NTP-G17 Set Up Computer for CTC One of the following: • NTP-G18 Set Up CTC Computer for Local Craft Connection to the ONS 15454 • NTP-G19 Set Up a CTC Computer for a Corporate LAN Connection to the ONS 15454
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Superuser only

Caution Cisco strongly recommends that you keep different node databases in separate folders. This is because the reinitialization 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 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.

Note A node will remain locked in secure mode even if it is restored with the factory database. A node locked in secure mode can only be unlocked by Cisco Technical Support.

Step 1 If you need to install or replace one or more TCC2/TCC2P/TCC3 cards, see the "DLP-G33 Install the TCC2, TCC2P, or TCC3 Card" task on page 3-35. If you need to install one or more TNC/TNCE/TSC/TSCE cards, see the "DLP-G604 Install the TNC, TNCE, TSC, or TSCE Card" task on page 3-42.

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 24-6.

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 24-8.

Stop. You have completed this procedure.

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

Purpose	This task reinitializes the Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6 using the CTC reinitialization tool on a Windows computer. Reinitialization uploads a new software package to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards, clears the node database, and restores the factory default parameters.
Tools/Equipment	ONS 15454 System Software CD, Version 9.2 JRE 1.6 must be installed on the computer to log into the node at the completion of the reinitialization. The reinitialization tool can run on JRE 1.3.1_02, JRE 1.4.2, or JRE 1.6.
Prerequisite Procedures	NTP-G103 Back Up the Database, page 24-2 NTP-G17 Set Up Computer for CTC One of the following: • NTP-G18 Set Up CTC Computer for Local Craft Connection to the ONS 15454 • NTP-G19 Set Up a CTC Computer for a Corporate LAN Connection to the ONS 15454
Required/As Needed	As needed to clear the existing database from the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards and restore the node default settings.
Onsite/Remote	Onsite
Security Level	Superuser only

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

Note The ONS 14545 Software CD is if the Reinit.jar file, the CISCO 15454 package file, and the NE default file are not stored on your computer.

Note A node will remain locked in secure mode after the node's database is deleted, even if it is restored with the factory database. A node locked in secure mode can only be unlocked by Cisco Technical Support.

Step 1 Insert the ONS 15454 System Software CD, Version 9.2, into the computer CD-ROM drive. If the CTC Installation Wizard appears, click **Cancel**.

Step 2 From the Windows Start menu, choose **Run.** In the Run dialog box, click **Browse** and navigate to the CISCO15454 or CISCO15454SDH folder on the software CD.

Step 3 In the Browse dialog box Files of Type field, choose **All Files**.

Step 4 Choose the RE-INIT.jar file and click **Open**. The NE Re-Initialization window appears.

Step 5 Complete the following fields:

- GNE IP—If the node you are reinitializing is accessed through another node configured as a gateway network element (GNE), enter the GNE IP address. If you have a direct connection to the node, leave this field blank.
- Node IP—Enter the node name or IP address of the node that you are reinitializing.
- User ID—Enter the user ID needed to access the node.
- Password—Enter the password for the user ID.
- Upload Package—Check this box to send the software package file to the node. If unchecked, the software stored on the node is not modified.
- Force Upload—Check this box to send the software package file to the node even if the node is running the same software version. If unchecked, reinitialization will not send the software package if the node is already running the same version.
- Activate/Revert—Check this box to activate the uploaded software (if the software is a later than the installed version) or revert to the uploaded software (if the software is earlier than the installed version) as soon as the software file is uploaded. If unchecked, the software is not activated or reverted after the upload, allowing you to initiate the functions later from the node view Maintenance > Software tab.
- Re-init Database—Check this box to send a new database to the node. (This is equivalent to the CTC database restore operation.) If unchecked, the node database is not modified.
- Confirm—Check this box if you want a warning message displayed before any operation is performed. If unchecked, reinitialization does not display a warning message.
- Search Path—Enter the path to the CISCO15454 folder on the CD drive.

Step 6 Click **Go**.

Caution Before continuing with the next step, verify that the database to upload is correct. You cannot reverse the upload process after you click Yes.

Step 7 Review the information in the Confirm NE Re-Initialization dialog box, then click **Yes** to start the reinitialization.

The reinitialization begins. After the software is downloaded and activated, and the database is uploaded to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards, “Complete” appears in the status bar, and the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards reboot. Wait a few minutes for the reboot to complete.

Step 8 After the reboot is complete, log into the node using the “DLP-G46 Log into CTC” task.

Step 9 Complete the NTP-G24 Set Up Name, Date, Time, and Contact Information, page 14-13 and the NTP-G26 Set Up CTC Network Access, page 14-16.

Step 10 Return to your originating procedure (NTP).

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

Purpose	This task reinitializes the Cisco ONS 15454, ONS 15454 M2, and ONS 15454 M6 using the CTC reinitialization tool on a UNIX computer. Reinitialization uploads a new software package to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards, clears the node database, and restores the factory default parameters.
Tools/Equipment	ONS 15454 SONET System Software CD, Version 9.2 JRE 1.6 must be installed on the computer to log into the node at the completion of the reinitialization. The reinitialization tool can run on JRE 1.3.1_02, JRE 1.4.2, or JRE 1.6.
Prerequisite Procedures	NTP-G103 Back Up the Database, page 24-2 NTP-G17 Set Up Computer for CTC One of the following: • NTP-G18 Set Up CTC Computer for Local Craft Connection to the ONS 15454 • NTP-G19 Set Up a CTC Computer for a Corporate LAN Connection to the ONS 15454
Required/As Needed	As needed to clear the existing database from the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards and restore the node default settings.
Onsite/Remote	Onsite
Security Level	Superuser only

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

Note A node will remain locked in secure mode after the node's database is deleted, even if it is restored with the factory database. A node locked in secure mode can only be unlocked by Cisco Technical Support.

Step 1 Insert the system software CD containing the reinitialization 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 or /cdrom/cdrom0/CISCO15454SDH).

Step 3 If you are using a file explorer, double-click the **RE-INIT.jar** file. If you are working with a command line, run **java -jar RE-INIT.jar**. The NE Re-Initialization window appears.

Step 4 Complete the following fields:

- GNE IP—If the node you are reinitializing is accessed through another node configured as a GNE, enter the GNE IP address. If you have a direct connection to the node, leave this field blank.
- Node IP—Enter the node name or IP address of the node that you are reinitializing.
- User ID—Enter the user ID needed to access the node.
- Password—Enter the password for the user ID.

- Upload Package—Check this box to send the software package file to the node. If unchecked, the software stored on the node is not modified.
- Force Upload—Check this box to send the software package file to the node even if the node is running the same software version. If unchecked, reinitialization will not send the software package if the node is already running the same version.
- Activate/Revert—Check this box to activate the uploaded software (if the software is a later than the installed version) or revert to the uploaded software (if the software is earlier than the installed version) as soon as the software file is uploaded. If unchecked, the software is not activated or reverted after the upload, allowing you to initiate the functions later from the node view Maintenance > Software tab.
- Re-init Database—Check this box to send a new database to the node. (This is equivalent to the CTC database restore operation.) If unchecked, the node database is not modified.
- Confirm—Check this box if you want a warning message displayed before any operation is performed. If unchecked, reinitialization does not display a warning message.
- Search Path—Enter the path to the CISCO15454 or CISCO15454SDH folder on the CD drive.

Step 5 Click **Go**.

Caution Before continuing with the next step, verify that the database to upload is correct. You cannot reverse the upload process after you click **Yes**.

Step 6 Review the information in the Confirm NE Re-Initialization dialog box, then click **Yes** to start the reinitialization.

The reinitialization begins. After the software is downloaded and activated and the database is uploaded to the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards, “Complete” appears in the status bar and the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE cards will reboot. Wait a few minutes for the reboot to complete.

Step 7 After the reboot is complete, log into the node using the “DLP-G46 Log into CTC” task.

Step 8 Complete the NTP-G24 Set Up Name, Date, Time, and Contact Information, page 14-13 and the NTP-G26 Set Up CTC Network Access, page 14-16.

Step 9 Return to your originating procedure (NTP).

NTP-G133 View and Manage OSI Information

Purpose	This procedure allows you to view and manage Open Systems Interconnection (OSI) including the End System to Intermediate System (ES-IS) and Intermediate System to Intermediate System (IS-IS) routing information tables, the Target Identifier Address Resolution Protocol (TARP) data cache, and the manual area table.
Tools/Equipment	None
Prerequisite Procedures	NTP-G103 Back Up the Database, page 24-2 NTP-G17 Set Up Computer for CTC NTP-G132 Provision OSI, page 14-35
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Additional information about the ONS 15454 implementation of OSI is provided in "Chapter 22, "Manage Network Connectivity."

Step 1 Complete the "DLP-G46 Log into CTC" task. If you are already logged in, continue with Step 2.

Step 2 Perform any of the following tasks as needed:

- DLP-G298 View IS-IS Routing Information Base, page 24-10
- DLP-G299 View ES-IS Routing Information Base, page 24-11
- DLP-G300 Manage the TARP Data Cache, page 24-12

Stop. You have completed this procedure.

DLP-G298 View IS-IS Routing Information Base

Purpose	This task allows you to view the IS-IS protocol routing information base (RIB). IS-IS is an OSI routing protocol that floods the network with information about NEs on the network. Each NE uses the information to build a complete and consistent picture of a network topology. The IS-IS RIB shows the network view from the perspective of the IS node.
Tools/Equipment	None
Prerequisite procedures	"DLP-G46 Log into CTC"
Required/As needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Maintenance > OSI > IS-IS RIB** tabs.

Step 2 View the following RIB information for Router 1:

- Subnet Type—Indicates the OSI subnetwork point of attachment type used to access the destination address. Subnet types include SDCC, LDCC, GCC, OSC, and LAN.
- Location—Indicates the OSI subnetwork point of attachment. For data communications channel (DCC) subnets, the slot and port are displayed. LAN subnets are shown as LAN.
- Destination Address—The destination Network Service Access Point (NSAP) of the IS.
- MAC Address—For destination NEs that are accessed by LAN subnets, the NE's MAC address.

Step 3 If additional routers are enabled, you can view their RIBs by choosing the router number in the Router field and clicking **Refresh**.

Step 4 Return to your originating procedure (NTP).

DLP-G299 View ES-IS Routing Information Base

Purpose	This task allows you to view the ES-IS protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other. For ESs, the ES-IS RIB shows the network view from the perspective of the ES node. For ISs, the ES-IS RIB shows the network view from the perspective of the IS node.
Tools/Equipment	None
Prerequisite procedures	"DLP-G46 Log into CTC"
Required/As needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Maintenance > OSI > ES-IS RIB** tabs.

Step 2 View the following RIB information for Router 1:

- Subnet Type—Indicates the OSI subnetwork point of attachment type used to access the destination address. Subnet types include SDCC, LDCC, GCC, OSC, and LAN.
- Location—Indicates the subnet interface. For DCC subnets, the slot and port are displayed. LAN subnets are shown as LAN.
- Destination Address—The destination IS NSAP.
- MAC Address—For destination NEs that are accessed by LAN subnets, the NE's MAC address.

Step 3 If additional routers are enabled, you can view their RIBs by choosing the router number in the Router field and clicking **Refresh**.

Step 4 Return to your originating procedure (NTP).

DLP-G300 Manage the TARP Data Cache

Purpose	This task allows you to view and manage the TARP data cache (TDC). The TDC facilitates TARP processing by storing a list of TID to NSAP mappings.
Tools/Equipment	None
Prerequisite procedures	"DLP-G46 Log into CTC" task
Required/As needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Maintenance > OSI > TDC** tabs.

Step 2 View the following TDC information:

- TID—The target identifier of the originating NE. For ONS 15454s, the TID is the name entered in the Node Name/TID field on the Provisioning > General tab.
- NSAP/NET—The NSAP or Network Element Title (NET) of the originating NE.
- Type—Indicates how the TDC entry was created:
  - Dynamic—The entry was created through the TARP propagation process.
  - Static—The entry was manually created and is a static entry.

Step 3 If you want to query the network for an NSAP that matches a TID, complete the following steps. Otherwise, continue with Step 4.

Note The TID to NSAP function is not available if the TDC is not enabled on the Provisioning > OSI > TARP subtab.

a. Click the **TID to NSAP** button.

b. In the TID to NSAP dialog box, enter the TID you want to map to an NSAP.

c. Click **OK**, then click **OK** in the information message box.

d. On the TDC tab, click **Refresh**.

   If TARP finds the TID in its TDC, it returns the matching NSAP. If not, TARP sends protocol data units (PDUs) across the network. Replies will return to the TDC later, and a check TDC later message is displayed.

Step 4 If you want to delete all the dynamically generated TDC entries, click the **Flush Dynamic Entries** button. If not, continue with Step 5.

Step 5 Return to your originating procedure (NTP).

NTP-G106 Reset Cards Using CTC

Purpose	This procedure resets the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE and DWDM cards using CTC.
Tools/Equipment	None
Prerequisite Procedures	DLP-G33 Install the TCC2, TCC2P, or TCC3 Card, page 3-35 DLP-G604 Install the TNC, TNCE, TSC, or TSCE Card, page 3-42
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

Step 1 Complete the "DLP-G46 Log into CTC" task at the node where you are performing the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE reset. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "DLP-G250 Reset the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE Card" task on page 24-13.

Step 3 As needed, complete the "DLP-G251 Reset DWDM Cards Using CTC" task on page 24-14.

Stop. You have completed this procedure.

DLP-G250 Reset the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE Card

Purpose	This task resets the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card and switches the node to the redundant TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G33 Install the TCC2, TCC2P, or TCC3 Card, page 3-35 DLP-G604 Install the TNC, TNCE, TSC, or TSCE Card, page 3-42 "DLP-G46 Log into CTC"
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

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.** Statement 206

Note Before you reset the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card, you should wait at least 60 seconds after the last provisioning change you made to avoid losing any changes to the database.

Note The ONS 15454 M2 chassis do not have a redundant controller card.

Note (On ONS 15454 shelf) When a software reset is performed on an active TCC2/TCC2P/TCC3, 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/TCC2P/TCC3 card goes through a software-initiated reset.

Step 1 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Alarms** tab.

a. Verify that the alarm filter is not on. See the DLP-G128 Disable Alarm Filtering task 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 2 In node view, right-click the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card to reveal a shortcut menu.

Step 3 For TCC2/TCC2P/TCC3 cards, click **Reset Card** to initiate a soft reset.

For TNC/TNCE/TSC/TSCE cards, click **Soft-Reset Card** to initiate a soft reset.

Note To initiate a hard reset on the TNC/TNCE/TSC/TSCE card, right-click the card and click **Hard-Reset Card** when the card is in OOS-MT state. See Equipment Inventory for more information.

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

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

Step 6 Return to node view (single-shelf mode) or multishelf view (multishelf mode) and confirm that the TCC2/TCC2P/TCC3/TNC/TNCE/TSC/TSCE 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, 40-MUX-C, 32DMX-O, 32DMX, 40-DMX-C, 40-DMX-CE, 32WSS, 40-WSS-C, 40-WSS-CE, 40-SMR1-C, 40-SMR2-C, TDC-CC, TDC-FC, OPT-BST, OPT-PRE, OPT-AMP-17-C, 40-WXC-C, 80-WXC-C, AD-xC.xx.x, AD-xB.xx.x, transponder (TXP), muxponder (MXP), and ADM-10G cards using CTC.
Tools/Equipment	None
Prerequisite Procedures	NTP-G30 Install the DWDM Cards, page 14-64 NTP-G179 Install the TXP, MXP, AR_MXP, AR_XP, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, ADM-10G, and OTU2_XP Cards, page 14-69 "DLP-G46 Log into CTC" task
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

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.** Statement 206

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

Note A software reset of the TXP and MXP card leads to removal of PM data from the PM counters. As a result, the PM counters do not display any PM data.

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. If not, continue with Step 2.

Step 2 Right-click the card that you want to reset to reveal a shortcut menu.

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. If not, continue with Step 6.

Step 6 Return to your originating procedure (NTP).

NTP-G108 Viewing the Audit Trail Records

Purpose	This procedure explains how to view audit trail records. Audit trail records are useful for maintaining security, recovering lost transactions, and enforcing accountability. Accountability refers to tracing user activities; that is, associating a process or action with a specific user.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task 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 node view (single-shelf mode) or multishelf view (multishelf mode), click the **Maintenance > Audit** tabs.

Step 3 Click **Retrieve**.

A window containing the most recent audit trail records appears.

A definition of each column in the audit trail log is listed in Table 24-1.

Table 24-1 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

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

Right-click the column heading to display the following options:

- Reset Sorting—Resets the column to the default setting.
- Hide Column—Hides the column from view.
- Sort Column—Sorts the table by the column's values.
- Sort Column (incremental)—Sorts the table incrementally by multiple columns.
- Reset Columns Order/Visibility—Displays all hidden columns.
- Row Count—Provides a numerical count of log entries.

Shift-click 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 or higher

Step 1 Complete the "DLP-G46 Log into CTC" task 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 node view (single-shelf mode) or multishelf view (multishelf mode), click, 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**. Click **OK**.

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 procedure describes how to off-load a diagnostic file. The diagnostic file contains a set of debug commands that were run on a node and their results. This file is useful to the Cisco Technical Assistance Center (TAC) when troubleshooting problems with the node.
Tools/Equipment	None
Prerequisite Procedures	None
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 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 node view (single-shelf mode) or multishelf view (multishelf mode), click the **Maintenance > Diagnostic** tabs.

Step 3 Click **Node Diagnostic Logs**. The Node Diagnostics dialog box is displayed.

Step 4 Click **OK** to continue.

Step 5 In the Select a Filename for the Node Diagnostics Zip Archive 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 a compressed file (.zip) that can be unzipped and read by Cisco Technical Support.

Step 7 Click **Save**.

The status window shows a progress bar indicating the percentage of the file being saved.

Step 8 Click **OK**.

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	
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 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 24-18 as needed.

Step 3 Complete the "DLP-G260 Clear a Manual or Force Switch on a Node Timing Reference" task on page 24-19 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"
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf mode), 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 synchronization status message (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 24-19.

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"
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf mode), click the **Maintenance > Timing > Source** tabs.

Step 2 Find the Clock reference that is currently set to Manual or Force in the Operation drop-down list.

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	
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 at the node where you want to view the node timing status. If you are already logged in, continue with Step 2.

Step 2 In node view (single-shelf mode) or shelf view (multishelf mode), 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. Table 24-2 describes the report fields and entries.

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

Table 24-2 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 24-2 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/TCC2P/TCC3/TNC/TNCE/TSC/TSCE card 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 the 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/STM-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 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.	—	—

Table 24-2 ONS 15454 Timing Report (continued)

Item	Description	Option	Option Description
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.
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 Chapter 26, "Timing Reference".
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-G135 Edit Network Element Defaults

Purpose	This procedure edits the factory-configured NE defaults using the NE Defaults editor. The new defaults can be applied to the node where they are edited, or exported to a file to be imported for use on other nodes.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

Note For a list of NE defaults, see the "*Network Element Defaults* document.

Step 1 Complete the "DLP-G46 Log into CTC" task at the node where you want to edit NE defaults.

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > Defaults** tabs. Wait for the Defaults selector frame to load the defaults. This could take several minutes.

Step 3 Under Defaults Selector, choose either a card (if editing card-level defaults) or NODE (if editing node-level defaults). Clicking on the node name (at the top of the Defaults Selector column) lists all available NE defaults (both node- and card-level) under Default Name.

Step 4 Locate a default that you want to change under Default Name.

Step 5 Click in the **Default Value** column for the default property that you are changing and either choose a value from the drop-down list (when available), or type in the desired new value.

Note If you click **Reset** before you click **Apply**, all values will return to their original settings.

Step 6 Click **Apply** (click in the **Default Name** column to activate the Apply button if it is unavailable). You can modify multiple default values before applying the changes.

A pencil icon will appear next to any default value that will be changed as a result of editing the defaults file.

Step 7 If you are modifying node-level defaults, a dialog box appears telling you that defaults were successfully applied to the node. Click **Yes**.

If you are modifying the IIOP Listener Port setting, a dialog box appears warning you that the node will reboot and asks if you want to continue. Click **Yes**.

Note Changes to most node defaults reprovision the node when you click Apply. Changes made to card settings using the Defaults Editor do not change the settings for cards that are already installed or slots that are preprovisioned for cards, but rather, change only cards that are installed or preprovisioned thereafter. To change settings for installed cards or preprovisioned slots, see Chapter 20, "Change DWDM Card Settings." To change settings for transponder or muxponder cards see Chapter 11, "Provision Transponder and Muxponder Cards."

Note Changing some NE defaults can cause CTC disconnection or a reboot of the node in order for the default to take effect. Before you change a default, view the Side Effects column of the Defaults editor (right-click a column header and select **Show Column > Side Effects**) and be prepared for the occurrence of any side effects listed for that default.

Stop. You have completed this procedure.

NTP-G136 Import Network Element Defaults

Purpose	This procedure imports the NE defaults using the NE Defaults editor. The defaults can either be imported from the CTC software CD (factory defaults) or from a customized file exported and saved from a node.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

Note For a list of NE defaults, refer to the "Network Element Defaults" document.

Step 1 Complete the "DLP-G46 Log into CTC" task at the node where you want to import NE defaults.

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > Defaults** tabs.

Step 3 Click **Import**.

Step 4 If the correct file name and location of the desired file do not appear in the Import Defaults from File dialog box, click **Browse** and browse to the file that you are importing.

Step 5 When the correct file name and location appear in the dialog box, click **OK**. If you are importing the factory defaults, the correct file name is 15454-defaults.txt for ANSI shelves and 15454SDH-defaults.txt for ETSI shelves.

A pencil icon will appear next to any default value that will be changed as a result of importing the new defaults file.

Step 6 Click **Apply**.

Step 7 If the imported file fails to pass all edits, the problem field shows the first encountered problem default value that must be fixed. Change the problem default value and click **Apply**. Repeat until the imported file passes all edits successfully.

Step 8 If you are modifying node-level defaults, a dialog box appears telling you that defaults were successfully applied to the node. Click **Yes**.

Step 9 If you are modifying the IIOP Listener Port setting, a dialog box appears warning you that the node will reboot and asks if you want to continue. Click **Yes**.

Note Changes to most node defaults reprovision the node when you click Apply. Changes made to card settings using the Defaults Editor do not change the settings for cards that are already installed or slots that are preprovisioned for cards, but rather, change only cards that are installed or preprovisioned thereafter. To change settings for installed cards or preprovisioned slots, seeChapter 20, "Change DWDM Card Settings." To change settings for transponder or muxponder cards, see Chapter 11, "Provision Transponder and Muxponder Cards."

Note Changing some NE defaults can cause CTC disconnection or a reboot of the node in order for the default to take effect. Before you change a default, view the Side Effects column of the Defaults editor (right-click a column header and select **Show Column > Side Effects**) and be prepared for the occurrence of any side effects listed for that default.

Stop. You have completed this procedure.

NTP-G137 Export Network Element Defaults

Purpose	This procedure exports the NE defaults using the NE Defaults editor. The exported defaults can be imported to other nodes.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser only

Note The defaults currently displayed are exported whether or not they have been applied to the current node.

Note The NE defaults can also be exported from the File > Export menu. These exported defaults are for reference only and cannot be imported.

Note For a list of NE defaults, refer to the Network Element Defaults document.

Step 1 Complete the "DLP-G46 Log into CTC" task at the node where you want to export NE defaults.

Step 2 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > Defaults** editor tabs.

Step 3 Click **Export**.

Step 4 If the location where you want to export the file does not appear in the Export Defaults to File dialog box, click **Browse** and browse to the location.

Step 5 Change the file name to something that is easy to remember (the file name has no extension).

Step 6 Click **OK**.

Stop. You have completed this procedure.

NTP-G166 View the Facilities

Purpose	This procedure displays DWDM facility information for all facilities in a node (single-shelf mode), shelf view (multishelf mode), or multishelf node (multishelf mode).
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance and higher

Step 1 Complete the "DLP-G46 Log into CTC" task at the node where you want to view DWDM facilities.

Step 2 In node view (single-shelf mode), shelf view (multishelf mode), or multishelf view (multishelf mode), click the **Maintenance > DWDM> All Facilities** tabs.

- Marked—Displays a check mark if you have designated the facility for logical grouping. To mark a facility to group it with others, go to Step 3.
- Location—Displays the slot number, slot type, port number, and port type of the facility.
- Admin State—Displays the administrative state of the facility.
- Service State—Displays the service state of the facility.
- Power—Displays the power level of the facility.

Step 3 To mark certain facilities to group during column sorting, click the desired row and click **Mark**. A check mark appears in the Marked column. Click the Marked column header to group all of the checked facilities in ascending order. Click the Marked header again to sort in descending order.

Step 4 To sort the facilities by the Location, Admin State, Service State, or Power columns in ascending order, click on the desired column header. Click the column header again to sort in descending order.

Stop. You have completed this procedure.

NTP-G119 Power Down the Node

Purpose	This procedure stops all node activity.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Provisioning or higher

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.** Statement 206

Caution The following procedure is designed to minimize traffic outages when powering down nodes, but traffic will be lost if you delete and recreate circuits that passed through a working node.

Note Always use the supplied ESD wristband when working with the Cisco ONS 15454. Plug the wristband into the ESD jack located on the fan-tray assembly or on the lower right outside edge of the shelf on the NEBS 3 shelf assembly. To access the ESD plug on the NEBS 3 shelf assembly, open the front door of the Cisco ONS 15454. The front door is grounded to prevent electrical shock. For detailed instructions on how to wear the ESD wristband, see the *Electrostatic Discharge and Grounding Guide for Cisco CPT and Cisco ONS Platforms*.

Note The CTC views referenced in this procedure depend on the mode. For more information about CTC views, see CTC Operation, Information, and Shortcuts.

Step 1 Identify the node that you want to power down. If no cards are installed, go to Step 20. If cards are installed, log into the node. See the "DLP-G46 Log into CTC" task for instructions.

Step 2 Choose **Go to Network View** from the View menu.

Step 3 Verify that the node is not connected to a network.

a. If the node is part of a Software R4.7 or later dense wavelength division multiplexing (DWDM) configuration, see the NTP-G130 Remove a DWDM Node and continue with Step 4.

b. If the node is not connected to a working network and the current configurations are no longer required, proceed to Step 4.

Note Before the power-down of a DWDM node, the fiber spans connected around it must be disconnected from the network. This is to prevent the accidental disconnection of wavelengths that pass through the shelf. A good indication that the shelf has been disconnected from the network is optical service channel (OSC) alarms, or no OSC channels provisioned.

Note Current configurations will be saved if Steps 4 to 20 are skipped.

Step 4 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Circuits** tab and verify that no circuits appear, then proceed to Step 5. If circuits appear, delete all the circuits that originate or terminate in the node. Complete the "DLP-G106 Delete Optical Channel Network Connections" section on page 16-46, the "DLP-G347 Delete Optical Channel Client Connections" section on page 16-26, or the "DLP-G112 Delete Overhead Circuits" section on page 16-89 as needed.

Note When deleting circuits from a node, make sure that the node is not connected to any network.

Step 5 In node view (single-shelf mode) or shelf view (multishelf mode), click the **Provisioning > Protection** tabs and delete all protection groups:

a. Click the protection group that needs to be deleted and click **Delete**.

b. Click **Yes**.

Repeat until no protection groups appear.

Step 6 In node view (single-shelf mode) or multishelf view (multishelf mode), click the **Provisioning > Comm Channels** tabs and delete all communications channel terminations:

a. Click the section data communications channel (SDCC), line data communications channel (LDCC), generic communications channel (GCC), link management protocol (LMP), provisionable (external) patchcords (PPC), or OSC termination that needs to be deleted and click **Delete**.

b. Click **Yes**.

Repeat until no SDCC, LDCC, GCC, or OSC terminations are present.

Step 7 Before deleting any installed DWDM cards, the optical sides and the optical patchcords must be deleted. In node view (single-shelf mode) or multishelf view (multishelf mode), click **Provisioning > WDM-ANS > Optical Side** tabs.

a. Select all the connections and click **Delete**.

b. Click **Yes**.

Repeat until no optical sides and the optical patchcords are present.

Step 8 In node view (single-shelf mode) or multishelf view (multishelf mode), click **Provisioning > WDM-ANS > Internal Patchcords** tabs.

a. Select all the connections and click **Delete**.

b. Click **Yes**.

Repeat until no internal patchcords are present.

Step 9 In node view (single-shelf mode) or multishelf view (multishelf mode), click **Provisioning > WDM-ANS > Provisioning** tabs and delete all the ANS parameters.

a. Select all the ANS parameters and click **Remove**. The Network Type parameter cannot be deleted.

b. Click **Yes**.

Step 10 In node view (single-shelf mode) or multishelf view (multishelf mode), click **Provisioning > WDM-ANS > Passive Cards** tabs, and delete all the passive cards.

a. Click the passive card you want to delete.

b. Click **Delete**, then click **Yes**.

Step 11 Repeat Step a and Step b for each installed passive card.

Step 12 For each installed channel-bearing card (AD-1C-xx.x, AD-2C-xx.x, and AD-4C-xx.x, where xx.x refers to the specific wavelengths), make sure all lines and bands are not in IS-NR (ANSI) or Unlocked-Enabled (ETSI) service state:

a. In card view, click the **Provisioning > Optical Line > Parameters** tabs.

b. In the Admin State column for each line, make sure that the default state IS, AINS (ANSI), or Unlocked,automaticInservice (ETSI) is selected.

c. Click the **Provisioning > Optical Chn > Parameters** tabs.

d. In the Admin State column for each line, make sure that the default state IS, AINS (ANSI), or Unlocked,automaticInservice (ETSI) is selected.

Step 13 For each installed DWDM band-bearing card (AD-1B-xx.x and AD-4B-xx.x, where xx.x refers to the specific wavelengths), make sure all lines and bands are not in the IS-NR (ANSI) or Unlocked-Enabled (ETSI) service state:

a. In card view, click the **Provisioning > Optical Line > Parameters** tabs.

b. In the Admin State column for each line, make sure that the default state IS, AINS (ANSI), or Unlocked,automaticInservice (ETSI) is selected.

c. Click the **Provisioning > Optical Band > Parameters** tabs.

d. In the Admin State column for each line, make sure that the default state IS, AINS (ANSI), or Unlocked,automaticInservice (ETSI) is selected.

Step 14 For each installed transponder (TXP), muxponder (MXP), multiplexer, demultiplexer, amplifier, OSC-CSM, OSCM, wavelength switch, or single module ROADM card (32MUX-O, 32DMX-0, 32DMX, 32WSS, 4MD-xx.x, 40-WSS-C, 40-WSS-CE, 40-WXC-C, 80-WXC-C, 40-DMX-C, 40-DMX-CE, 40-MUX-C, TDC-CC, TDC-FC, 40-SMR1-C, 40-SMR2-C, OPT-BST, OPT-PRE, TXP_MR_10G, TXP_MR_10E, TXP_MR_2.5G, TXPP_MR_2.5G, 40E-TXP-C, 40ME-TXP-C, MXP_2.5G_10G, MXP_2.5G_10E, MXP_MR_2.5G, MXPP_MR_2.5G, 40G-MXP-C, 40E-MXP-C, 40ME-MXP-C, GE_XP, 10GE_XP, GE_XPE, 10GE_XPE, or ADM-10G), make sure all lines are not in the IS-NR (ANSI) or Unlocked-enabled (ETSI) service state:

a. In card view, click the appropriate tab depending on the card:

- For MXP_2.5G, MXP_2.5G_10G, TXP_MR_10G, TXP_MR_10E, click the **Provisioning > Line > SONET** tabs if the card was provisioned for a SONET payload, or the **Provisioning > Line > SDH** tabs if the card was provisioned for an SDH payload.
- For TXP_MR_2.5G, TXPP_MR_2.5G, and MXPP_MR_2.5G cards, click the **Provisioning > Line > SONET** tabs.
- For MXP_2.5G_10E cards, click the **Provisioning > Line > Trunk** tabs.
- For MXP_MR_2.5G cards, click the **Provisioning > Line > Client** tabs.
- For ADM-10G, OTU2_XP, 40E-TXP-C, 40ME-TXP-C, 40G-MXP-C, 40E-MXP-C, 40ME-MXP-C cards, click the **Provisioning > Line > Ports** tabs.
- For 32MUX-O, 32DMX-0, 32DMX, 32WSS, 40MUX, 40DMUX-C, TDC-CC, TDC-FC, OPT-BST, OPT-PRE cards, click the **Provisioning > Optical Line > Parameters** tabs.
- For 32DMX, 32DMX-O, 40-DMX-C, 40-MUX-C, 40-DMX-CE, 4MD cards, click the **Provisioning > Optical Chn > Parameters** tabs.
- For 40-WSS-C/40-WSS-CE cards, click the **Provisioning > Optical Chn: Optical Connector *x* > Parameters** tabs.
- For 40-WXC-C cards, click the **Provisioning > WXC Line > Parameters** tabs.

- For 40-DMX-C, 40-MUX-C, and 40-DMX-CE cards, click the **Provisioning > Optical Line > Parameters** tabs.
- For 4MD-xx.x cards, click the **Provisioning > Optical Band > Parameters** tabs.
- For GE_XP, 10GE_XP, GE_XPE, and 10GE_XPE cards, click the **Provisioning > Ether Ports > Ports** tabs.
- For OPT-BST and OPT-PRE cards, click the **Provisioning > Optical Ampli Line > Parameters** tabs.
- For the 40-SMR1-C and 40-SMR2-C cards, click the **Provisioning > Optical Line > Parameters** tabs and **Provisioning > Opt. Ampli. Line > Parameters** tabs.
- For OSC-CSM and OSCM cards, click the **Provisioning > Optical Line > Parameters** tabs.
- For ADM_10G cards, click the **Provisioning > Line > Ports** tabs.

b. In the Admin State column for each line, make sure that the default state IS, AINS (ANSI) or Unlocked,automaticInservice (ETSI) is selected.

c. Repeat Steps a and b for each installed DWDM card.

Note Ports are put in service when circuits are provisioned, and put out of service when circuits are deleted. When circuits are deleted the Admin State displays as IS, AINS (ANSI) or Unlocked,automaticInservice (ETSI) and the Service State displays OOS-AU,AINS (ANSI) or Unlocked-disabled,automaticInService (ETSI).

Step 15 Remove all fiber connections to the cards.

Step 16 In node view (single-shelf mode) or shelf view (multishelf mode), right-click an installed card and click **Delete**.

Step 17 Click **Yes**.

Step 18 After you have deleted the card, open the card ejectors and remove it from the node.

Step 19 Repeat Step 15 through Step 18 for each installed card.

Note You cannot delete a TCC2/TCC2P/TCC3 card in Cisco Transport Controller (CTC). Physically remove it after all the other cards have been deleted and removed.

Note (On 15454 M2 and 15454 M6) You cannot delete an active TNC/TNCE/TSC/TSCE card in Cisco Transport Controller (CTC). Physically remove it after all the other cards have been deleted and removed.

Step 20 Shut off the power from the power supply that feeds the node.

Step 21 Disconnect the node from its external fuse source.

Step 22 Store all of the cards that you removed and update inventory records according to local site practice.

Stop. You have completed this procedure.