Upgrading the Cisco ONS 15600 SDH to Release 8.0

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This document explains how to upgrade the Cisco ONS 15600 SDH Cisco Transport Controller (CTC) software from Release 1.4 to Release 8.0, using the Timing and Shelf Controller (TSC) card.

⚠️

Caution   The ONS 15600 SDH upgrade is service-affecting.

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CISCO SYSTEMS

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Before You Begin

Before beginning, write down the following information about your site: date, street address, site phone number, and dial-up number. This data will be useful during and after the upgrade.

⚠ **Caution** Before beginning an upgrade of an ONS 15600 SDH from Software Release 1.4, contact the Cisco Technical Assistance Center (TAC) for system verification. See the "Obtaining Documentation and Submitting a Service Request" section on page 28 for Cisco TAC contact information.

⚠ **Caution** Read each procedure before you begin the upgrade.

⚠ **Caution** This document supports upgrades from Software R1.4 to Software R8.0.

✎ **Note** Upgrading to ONS 15600 SDH Software 8.0 requires replacement of the Core Cross-Connect (CXC) cards in the ONS 15600 SDH with Single Shelf Cross-Connect (SSXC) cards during the upgrade procedure. You must be physically present during the upgrade to perform this card upgrade task.

✎ **Note** Perform the procedures in this document in consecutive order unless otherwise noted. In general, you are not done with a procedure until you have completed it for each node that you are upgrading, and you are not done with the upgrade until you have completed each procedure that applies to your network. If you are new to upgrading the ONS 15600 SDH, you might want to check off each procedure on your printed copy of this document as you complete it.

This section lists the document Non Trouble Procedures (NTPs). An NTP will, in most cases, refer to one or more related Detail Level Procedures (DLPs).

Each NTP contains a list of steps designed to accomplish a specific task. Follow the steps until the task is complete. For a craftspersons requiring more detailed instructions, the NTP might refer to the steps in the DLP. Some steps might require that equipment indications be checked for verification.

The following NTPs are contained in this document:

1. NTP-U236 Prepare for the Release 8.0 Upgrade, page 3—This procedure contains critical information and tasks that you must read and complete before beginning the upgrade process.

2. NTP-U237 Back Up the Software Release 1.4 Database, page 5—Complete the database backup to ensure that you have preserved your node and network provisioning in the event that you need to restore them.

3. NTP-U238 Upgrade to ONS 15600 SDH Release 8.0, page 7—You must complete this entire procedure to complete the upgrade.

4. NTP-U239 Restore the Previous Software Load and Database, page 19—Complete this procedure if you need to return to the previous software load.

5. NTP-U240 Upgrade to ONS 15600 SDH Software R8.0 Using TL1, page 22—Complete this procedure to install the ONS 15600 SDH software using Transaction Language 1 (TL1).

NTP-U236 Prepare for the Release 8.0 Upgrade

Purpose	This procedure steps you through the critical information checks and tasks you must complete before beginning an upgrade.
Tools/Equipment	PC or UNIX workstation
	Cisco ONS 15600 SDH nodes to upgrade
	Cisco ONS 15600 SDH Software 8.0 (CD or soft copy)
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Superuser

Step 1 Read the *Release Notes for Cisco ONS 15600 SDH Release 8.0.*

Step 2 Using the CTC software, log into the node that you are upgrading. For detailed instructions, refer to the *Cisco ONS 15600 SDH Procedure Guide.*

Note You cannot open an SDH node in the same CTC session where a SONET node is active.

Step 3 Complete the "DLP-U351 Verify CTC Workstation Requirements" task on page 4.

Step 4 Disable all other Ethernet devices (such as a dial-up adapter) on the workstation that runs CTC. For instructions, contact the Cisco TAC.

Step 5 Ensure that the CXC cards are installed in the ONS 15600 SDH node that is running Software R1.4.

Step 6 Ensure that you have replacement SSXC cards at hand. You will replace the CXC cards with SSXC cards in order to install and run Software R8.0.

Note If you have multiple IP addresses on your workstation, you should remove them; you cannot run ONS 15600 SDH Software R8.0 if multiple IP addresses are configured.

Step 7 If you have multiple ONS 15600 SDH nodes configured in the same IP subnet, ensure that only one is connected to a router. Otherwise, the remaining nodes might be unreachable. Refer to the *Cisco ONS 15600 Reference Manual* for LAN-connection suggestions.

Step 8 Verify that TSC cards are installed in Slots 5 and 10, and that the TSC in Slot 10 is active.

Step 9 If the TSC in Slot 5 is active, select the slot, and right-click to display a shortcut menu. Click the **Soft reset Card** button. The reset takes a few minutes, and resets the TSC card in Slot 10 as the active TSC.

Step 10 Complete the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5.

Stop. You have completed this procedure.

DLP-U351 Verify CTC Workstation Requirements

Purpose	This task verifies that all PC or UNIX workstation hardware and software requirements are met.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Step 1 Ensure that your workstation is one of the following:

- IBM-compatible PC with a Pentium III/700 or faster processor, CD-ROM drive, a minimum of 384 MB RAM and 190 MB of available hard drive space, running Windows 98, Windows NT 4.0 (with Service Pack 6a), Windows 2000 Professional (with Service Pack 3), or Windows XP Professional (with Service Pack 1)

- UNIX workstation with Solaris Versions 8 or 9, on an UltraSPARC or faster processor, with a minimum of 384 MB RAM and a minimum of 190 MB of available hard drive space

Step 2 Ensure that your web browser software is one of the following:

- Netscape Navigator 7.x or higher on Windows

- Internet Explorer 6.x or higher on Windows

- Mozilla 1.7 or higher on Solaris

Step 3 Verify that the Java Version installed on your computer is Java Runtime Environment (JRE) 1.3.1; higher versions of Java will not run CTC for the ONS 15600 SDH R1.4.

> **Note** JRE 1.3.1 is used to launch CTC for Software R1.4. After upgrading to Software R8.0, you need to upgrade your JRE to 5.0 in order to run CTC with Software R8.0. See "DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load" task on page 11.

> **Note** To check your JRE version, type the node IP address in the Address field of your browser and then look at the JRE version listed under the Java Environment label. Be sure to delete any JRE versions higher than 1.3.1. If you need to install JRE 1.3.1, go to www.java.com and follow the instructions on the site to download and install the JRE 1.3.1 package.

Step 4 Verify that the correct Java Policy file is installed on your computer.

> **Note** For important information about how CTC backward compatibility is affected by your choice of JRE versions, see the Readme.txt or Readme.html file on the software CD.

Step 5   Return to your originating procedure (NTP).

NTP-U237 Back Up the Software Release 1.4 Database

Purpose	This procedure preserves all Software R1.4 configuration data for your network before performing the upgrade.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U236 Prepare for the Release 8.0 Upgrade, page 3
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Note   Multiplex Section-Shared Protection Ring (MS-SPRing nodes only) The database must be backed up prior to locking the MS-SPRing. To restore a software database, a backup file of that database must be available.

Step 1   Log into CTC. For detailed instructions, refer to the *Cisco ONS 15600 SDH Procedure Guide.* If you are already logged in, continue with Step 2.

Step 2   In CTC node view, click the **Maintenance** tab and then click the **Software** button.

Step 3   Verify that the correct working and protect versions of the software are installed.

Step 4   (Optional) Cisco recommends that you manually log critical information by either writing it down or printing screens where applicable. Use Table 1 to determine the information you should log. Complete the table (or your own version) for every node in the network.

Table 1   Manually Logged Data

Item	Record Data Here (If Applicable)
IP address of the node	
Node name	
Timing settings	
Data Communications Channel (DCC) connections; list all optical ports that have DCCs activated	
User IDs (List all, including at least one Superuser)	
Inventory; do a print screen from the Inventory window	
Active TSC **Note** The TSC card in Slot 10 must be the active TSC card for an upgrade.	Slot 5 or Slot 10 (circle one). If the TSC in Slot 5 shows active status, the slot and right-click to display a shortcut menu. Click **Soft reset Card**. The reset takes a few minutes, and resets the TSC card in Slot 10 as the active TSC.
SSXC preferred copy	Slot 6/7 or Slot 8/9 (circle one)

Table 1   Manually Logged Data (Continued)

Item	Record Data Here (If Applicable)
Network information; do a print screen from the Provisioning tab in network view.	
Current configuration: SNCP, linear, etc. Do print screens as needed.	
List all protection groups in the system; do a print screen from the Protection Group window.	
List alarms; do a print screen from the Alarm window.	
List circuits; do a print screen from the Circuit window.	

Step 5   In CTC node view, click the **Maintenance** tab and then click the **Database** button.

Step 6   Click the **Backup** button.

Step 7   In the Database Backup dialog box, click the **Browse** button, then navigate to a local PC directory or network directory and type a database name (such as database 10101882010107.db) in the Select file for saving backup field.

Step 8   In the Database Backup dialog box, click the **OK** button. If you are overwriting an existing file, click **Yes** in the confirmation dialog box.

Step 9   In the Database Backup dialog box, check the **Alarm History** and the **Performance** check boxes in order to choose these database items in addition to provisioning information.

> **Note**   The Provisioning selection in the Database Backup dialog box is a default component of the backup file, and this selection is dimmed.

Step 10   Save the database on the workstation's hard drive or on network storage. In the Database Backup dialog box, click **OK**.

Step 11   A message indicates the status of the backup. When the backup is complete, click the **OK** button to close the message dialog box.

Step 12   Repeat Steps 1 through 11 for each node in the network.

Stop. You have completed this procedure.

NTP-U238 Upgrade to ONS 15600 SDH Release 8.0

Purpose	This procedure upgrades your Software R1.4 to Software R8.0.
Tools/Equipment	PC or UNIX workstation; Cisco ONS 15600 SDH Software R8.0 (CD or soft copy)
Prerequisite Procedures	(MS-SPRing nodes only) The database must be backed up prior to locking the MS-SPRing. See NTP-U237 Back Up the Software Release 1.4 Database, page 5
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Note To upgrade the software successfully, read and perform each task that applies to your network in the proper order.

Caution Executing an upgrade with only a single TSC card present in the node is traffic-affecting. Do not start an upgrade unless both TSC cards are present and are alarm free.

Note The UPGRADE, SFTWDOWN, and SW-VER alarms are raised during the upgrade process. These alarms are normal and will clear when the download is complete.

Step 1 Install and run the JRE 5.0 version. Software R8.0 does not run with lower versions of the JRE.

Step 2 Insert the Software R8.0 CD into the workstation CD-ROM (or otherwise acquire access to the software) to begin the upgrade process.

Note Inserting the software CD activates the CTC Setup Wizard. You can use the Setup Wizard to install components or click the **Cancel** button to continue with the upgrade without the wizard.

Step 3 Log into the ONS 15600 SDH node that you want to upgrade. For detailed instructions, refer to the *Cisco ONS 15600 SDH Procedure Guide*. If you are already logged in, continue with Step 3.

Step 4 (MS-SPRing nodes only) Complete the "DLP-U353 Perform an MS-SPRing Lockout" task on page 9.

Note The MS-SPRing lockout must be completed for all nodes in all rings where the ONS 15600 SDH is provisioned. The database must be backed up prior to locking the MS-SPRing.

Step 5 Complete the "DLP-U354 Download the ONS 15600 SDH Release 8.0 Software" task on page 10.

Step 6 Complete the "DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load" task on page 11.

Step 7 Ensure that CTC is not running, and perform the "DLP-U352 Upgrade the CXC Card to the SSXC Card" task on page 14 to replace the CXC cards with SSXC cards.

Step 8 If you have trouble logging back into a node after software activation, complete the "DLP-U356 Delete Cached JAR Files" task on page 15.

Step 9 Reconnect to the node using CTC. The new CTC applet for Software R8.0 uploads.

Step 10 During CTC login, complete the "DLP-U357 Install the Public-Key Security Certificate" task on page 16.

⚠️
Caution After you have accepted the Software R8.0 build and both releases are present in the working and protect fields on CTC, you cannot revert to Software R1.4 without downloading Software 1.4 or installing the Software R1.4 PKG file and restoring the Software R1.4 database.

Step 11 Complete the "DLP-U358 Accept the New Load" task on page 16.

Step 12 Repeat Steps 6 through 11 for all nodes in the network that need to be upgraded. Allow each node to finish. Wait until all alarms have been cleared for 10 minutes before activating the next node.

✎
Note Activate only one node at a time.

Step 13 Complete the "DLP-U359 Remove the MS-SPRing Lockout" task on page 17 for all MS-SPRing nodes in the network.

Step 14 (Optional) Use this step only if you wish to ensure that a software revert to the previous software release is no longer possible. Complete the "DLP-U354 Download the ONS 15600 SDH Release 8.0 Software" task on page 10 again for all nodes, or groups of nodes you are upgrading.

Step 15 Complete the "DLP-U360 Set the Date and Time" task on page 18 for any nodes that are not using Simple Network Time Protocol (SNTP).

Step 16 As needed, upgrade any spare TSC cards by installing the spare in the standby slot.

⚠️
Caution When you insert a spare TSC card in the standby slot, a software mismatch alarm is raised. The working software on the active TSC card is then copied to the standby TSC, causing the standby TSC card to reset. When the standby TSC card reset completes, the standby TSC is running the same software version as the active TSC card.

✎
Note You can activate only one node at a time; however, you can begin activation of the next node as soon as the TSC cards for the current node have rebooted successfully (wait 5 minutes from the time the SYSBOOT alarm is raised).

Step 17 Backup the Software R8.0 database, using the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5, and substituting Software R8.0 for Software R1.4.

Stop. You have completed this procedure.

Step 18 Return to your originating procedure (NTP).

DLP-U353 Perform an MS-SPRing Lockout

Purpose	If you have an MS-SPRing provisioned, before beginning the upgrade you must perform a span lockout at each node in the ring. The database must be backed up prior to locking the MS-SPRing.
Tools/Equipment	PC or UNIX workstation, Software R8.0 files
Prerequisite Procedures	NTP-U237 Back Up the Software Release 1.4 Database, page 5
	(MS-SPRing nodes only) The database must be backed up prior to locking the ring.
Required/As Needed	Required for MS-SPRing only
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Note   During activation, MS-SPRing spans are not protected. You must leave the MS-SPRing in the lockout state until you have finished activating all nodes in the ring, but you must be sure to remove the lockout after you have finished activating.

Note   To prevent ring or span switching, perform the lockout on both the east and west spans of each node.

Step 1   Start CTC, if it is not already started.

Note   The Software R1.4 CTC launches only when using the Version 1.3.1 JRE. See the "DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load" task on page 11 for information about how to change Java versions.

Step 2   Back up the database. See the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5 for details.

Step 3   In node view, click the **Maintenance** tab, and click the **MS-SPRing** button.

Step 4   For each of the MS-SPRing trunk (span) cards (STM-16, STM-64), perform the following steps:

   a.   Next to the trunk card row, click the **East Switch** column to show the drop-down list.

   b.   From the menu options, choose **Lockout Protect**.

   c.   Click **Apply**.

   d.   In the same row, click the **West Switch** column to show the drop-down list.

   e.   From the menu options, choose **Lockout Protect**.

   f.   Click **Apply**.

Note   Ignore any Default K alarms that occur on the protect STS time slots during this lockout period.

✎ **Note** Certain Multiservice Switching Platform (MSSP) related alarms might be raised following activation of the first node in the ring. The following alarms, if raised, are normal and should not cause concern. They clear upon completion of the upgrade, after all nodes have been activated.

- MSSP-OSYNC (MN)
- RING-MISMATCH (MJ)
- APSCDFLTK (MN)
- MSSP-RESYNC (NA)
- MSSP-SW-VER-MISM

Step 5 Return to your originating procedure (NTP).

DLP-U354 Download the ONS 15600 SDH Release 8.0 Software

Purpose	This task downloads the software to the ONS 15600 SDH nodes.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U237 Back Up the Software Release 1.4 Database, page 5
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

✎ **Note** The download task does not affect traffic because the active software continues to run at the primary RAM location; therefore, you can download the software at any time.

Step 1 If CTC is not already running, start CTC.

Step 2 In node view, click the **Alarms** tab.

Step 3 Verify that the alarm filter is not on. Click the **Filter** tool at the lower-left of the window.

Step 4 The Alarm Filter dialog box appears. Click the check boxes to deselect any selections in the Show Severity section of the **General** tab.

Step 5 On the **Alarms** tab, check all nodes for existing alarms. Resolve any outstanding critical alarms before proceeding. If necessary, refer to the *Cisco ONS 15600 SDH Troubleshooting Guide*.

Step 6 If the TSC card in Slot 5 is the active TSC, you will need to perform a soft reset to make the TSC in Slot 10 the active TSC. Select Slot 5, then right-click to display a shortcut menu. Click the **Soft reset Card** button. The reset takes a few minutes, and resets the TSC card in Slot 10 as the active TSC.

✎ **Note** The TSC card can take several minutes to reboot.

Step 7 If not in node view, open the **View** menu and choose **Go to Home View** to go to the node view.

Step 8 Click the **Maintenance** tab and then click the **Software** button.

Step 9   Click the **Download** button. The Download Selection dialog box appears.

Step 10   Click the **Browse** button.

Step 11   In the Open dialog box, navigate to the software package files on the ONS 15600 SDH software CD or on your hard drive, if you are working from a local copy.

Step 12   Select the file with the PKG extension and click the **Open** button.

Step 13   In the Download Selection dialog box, verify that the node is selected, then click **OK**. The software begins downloading to the active TSC card, and the TSC card in Slot 10 is highlighted.

Step 14   Click the **History** tab to view the conditions:

1. Downloading (approximately 10 to 20 minutes)
2. System Upgrade in progres**s** (approximately 3 to 5 minutes)

Step 15   Click the **Maintenance** tab and then click the **Software** button. The Download Status column shows the percentage of the completion of the upgrade progress.

When the Download Status column is empty, the software has finished loading.

Step 16   Verify that the Working Version field shows the pre-upgrade Software R1.4 version, and that the **Prote**ct Version field shows Software R8.0.

⚠️

Caution   If the Software R8.0 package has been incorrectly installed in the Working Version field, you must download Software R8.0 once again to ensure that both the Working and the Protect versions are 8.0. Otherwise, a protection switch will result in a significant service interruption.

Step 17   Repeat Steps 1 through 16 for each node.

✎

Note   The software download process can take 15 minutes or more per node.

Step 18   Return to your originating procedure (NTP).

DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load

Purpose	This task activates Software R8.0 in each node in the network. Activating the software load downloads the software to the standby TSC[1].
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U237 Back Up the Software Release 1.4 Database, page 5
	DLP-U354 Download the ONS 15600 SDH Release 8.0 Software, page 10
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

1. If you have downloaded the software into the protect side of the TSC card and want to activate (or revert) it at a later time, the Activate (or Revert) buttons may be grayed out. This occurs when the Cisco ONS 15600 node detects the software in the protect side of the TSC as invalid. In order to activate (or revert) the software, download the software to the TSC card once again.

Note Although the software activation task is not service affecting, Cisco recommends that you activate the new load during a maintenance window.

Caution Do not perform maintenance or provisioning activities during the activation task.

Note For MS-SPRing nodes only, a non-service affecting APS-CHAN-FAILURE alarm is raised on each of the nodes joined to an activating node in the ring during activation. After the activation completes for that node, the alarms will clear.

Note Cisco recommends that the first node you activate be a LAN-connected node. This ensures that the new CTC JAR files will download to your workstation as quickly as possible.

Step 1 If CTC is not already running, use the IP address of the ONS 15600 SDH node to start CTC.

Step 2 In node view, click the **Maintenance** tab and then click the **Software** button.

Step 3 Verify that the version in the Protect Version column is Software R8.0.

Step 4 Click the **Activate** button. The Activate dialog box appears with a warning message indicating that you should perform a database backup before proceeding.

Step 5 Complete one of the following:

- If you have not backed up the database for the Working TSC B card, click the **No** button. Complete the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5. When you have completed the procedure, return to Step 4 in this task.

- If you have backed up the database for the Working TSC B card, click **Yes** to proceed with the activation. The Download Status column shows:

  – A Qualifying message, indicating the percentage of qualification completed (approximately 1 to 2 minutes).

  – A Wait message, generated when the standby TSC card containing the upgrade software reboots. It signals to the active TSC card that it is ready to take over. When the active TSC receives this signal, it resets itself, and the standby TSC in Slot 5 takes over and transitions to the active software version. The pre-upgrade version of the TSC card is now the standby TSC.

  – An Acquiring message, indicating the percentage completed as the standby TSC acquires the active timing reference (approximately 10 to 15 minutes).

Step 6 Click **OK** when the Rebooting dialog box appears indicating that the software is successfully activated. The node reboot could take up to four minutes.

Step 7 A Connection Lost dialog box appears, indicating that the connection between the node and CTC is not currently active. Click **OK** in the Connection Lost dialog box.

Note CTC loses connection to the node while the node reboots and displays the network view. The node might take several minutes to reboot. A Minor loss of connection between the node and CTC alarm appears in the **History** tab. Next, a CTC and node incompatible alarm is raised. Wait for node reactivation.

Step 8 In CTC, choose **Exit** from the **File** menu to exit, or proceed to Step 9 to delete the CTC cache.

Step 9 In CTC Launcher browser window, click the **Delete CTC Cache** button.

> ✎
> **Note** You must ensure that CTC is closed before clicking the Delete CTC Cache button. CTC behavior is unreliable if the button is clicked while the software is still running.

> ✎
> **Note** It might also be necessary to delete cached files from your browser's directory, or from the temp directory on your MS Windows workstation. If you have trouble reconnecting to CTC, complete the "DLP-U356 Delete Cached JAR Files" task on page 15.

Step 10 Close your browser.

Step 11 Install JRE 5.0, in order to run CTC with ONS 15600 SDH Software R8.0 and (optionally) run the Cache Loader pre-caching utility:

> ✎
> **Note** Cisco recommends you run the optional Cache Loader pre-caching utility during this step, prior to activating the node. This ensures that the new CTC JAR files download to your workstation as quickly as possible.

   a. In your Windows environment, click **Start > Control Panel > Add/Remove Programs**.

   b. Scroll the list of programs until you see the Java 1.3.1 Runtime Environment, then click **Change/Remove**.

   c. Click **Yes** in the dialog box to proceed with removing the old JRE version.

   a. Load the Software R8.0 CD into your CD-ROM drive. If the directory of the CD does not open automatically, open it.

   b. Double-click the **setup.exe** file to run the Installation Wizard. The CTC installation wizard dialog box opens.

   c. Click **Next**. The setup options dialog box opens.

   d. Choose **Custom**, and click **Next**. The custom options dialog box appears.

   e. Click **Cisco Transport Controller**, **Java Runtime Environment 5.0**, and (optionally) **CTC JAR files**. Click again to deselect any other selected options.

   f. Click **Next**. A confirmation dialog box appears.

   g. Click **Next** again. The (optional) CTC Cache Loader pre-caches the JAR files to your workstation, displaying a progress status box, and installs the JRE.

   h. When the installation finishes, click **OK**, and then in the wizard, click the **Finish** button.

Step 12 Reopen your browser.

Step 13 Return to your originating procedure (NTP).

DLP-U352 Upgrade the CXC Card to the SSXC Card

Purpose	This task upgrades the CXC card to the SSXC card. The CXC card supports Software R1.4 and earlier. The SSXC card supports Software R8.0.
Tools/Equipment	Two SSXC cards
Prerequisite Procedures	None
Required/As Needed	Required
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.**

⚠
Warning **Before making contact with the chassis or card(s), ensure that you are wearing appropriate anti-static devices such as wrist or foot straps.**

✎
Note To replace the CXC card with the SSXC card, upgrade the CTC software from R1.x to R5.0.8 and then upgrade to the latest version.

Step 1 If CTC is not started, start CTC.

Step 2 Verify that there are no critical alarms in the network.

Step 3 In node view, click the **Maintenance** tab and click the **Preferred Copy** button.

Step 4 View the preferred data copy currently in use (A or B) and verify that all traffic is using that copy (the Currently used Data Copy field should show the same copy).

Step 5 Physically remove one of the CXC cards:

   a. Open the card ejectors.

   b. Slide the card out of the slot.

✎
Note An UNPROT-SCMTX alarm is reported when you remove the CXC card.

Step 6 Install a new SSXC card in the shelf:

   a. Open the ejectors on the replacement card.

   b. Slide the replacement card into the slot along the guide rails until it contacts the backplane.

   c. Close the ejectors.

Step 7 Restart CTC, connecting to the ONS 15600 SDH node where you exchanged the cards.

Step 8 Wait for the new card to boot, and for all out-of-service states and alarms to clear. This takes approximately one minute.

Step 9 On the Maintenance tab, click the **Preferred Copy** button.

Step 10 Select the SSXC you just installed as the new Preferred data copy and verify that all traffic uses that SSXC copy.

Step 11 Repeat Steps 2 to 6 to replace the remaining CXC card with the new SSXC card.

DLP-U356 Delete Cached JAR Files

Purpose	This task deletes previously cached files from your browser and hard drive.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	None

Step 1 Delete all cached files from your browser directory.

In Netscape:

a. Choose **Edit > Preferences,** click the **Advanced** tab, and then click the **Cache** button.

b. Click **Clear Memory Cache**.

c. Click **OK**.

d. Click **Clear Disk Cache**.

e. Click **OK** twice.

In Microsoft Internet Explorer:

a. Choose **Tools > Internet Options** and then click the **General** tab.

b. Choose **Delete Files**.

c. Click the **Delete all offline content** check box.

d. Click **OK** twice.

Step 2 Close your browser.

You cannot delete cached JAR files from your hard drive until you have closed your browser. If you have other applications open that use JAR files, you must also close them.

Step 3 (Windows systems only) Delete cached files from your workstation.

a. In the Windows **Start** menu, choose **Control Panel > System** and select the **Advanced** tab.

b. Click the **Environment Variables** button. The resulting dialog box shows you a list of user variables and a list of system variables.

c. In the list of user variables, look for the TEMP variable. The value associated with this variable is the path to your temporary directory where JAR files are stored.

d. Open the TEMP directory located in the path you just looked up.

e. Select **View > Details**.

f. Click to select and delete all files with "jar" in the Name or Type field.

Step 4 Reopen your browser. You should now be able to connect to CTC.

Step 5 Return to your originating procedure (NTP).

DLP-U357 Install the Public-Key Security Certificate

Purpose	This task installs the ITU Recommendation X.509 public-key security certificate. The public-key certificate is required to run Software R8.0 or later.
Tools/Equipment	None
Prerequisite Procedures	DLP-U356 Delete Cached JAR Files, page 15
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 If CTC is not already running, start CTC.

Step 2 If the Java Plug-in Security Warning dialog box appears, choose one of the following options:

- Grant This Session—Installs the public-key certificate to your PC only for the current session. After the session is ended, the certificate is deleted. This dialog box will display the next time you log into the ONS 15600 SDH.

- Deny—Denies permission to install the certificate. If you choose this option, you cannot log into the ONS 15600 SDH.

- Grant always—Installs the public-key certificate and does not delete it after the session is over. Cisco recommends this option.

- View Certificate—Allows you to view the public-key security certificate.

Step 3 Return to your originating procedure (NTP).

DLP-U358 Accept the New Load

Purpose	This task upgrades the standby TSC card.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load, page 11
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Step 1 If CTC is not already running, start CTC.

Step 2 In node view, click the **Maintenance** tab and then click the **Software** button.

Step 3 Click the **Accept** button. The acceptance process will take approximately 2 to 5 minutes.

> **Note** You can reject the new software load by clicking the **Cancel** button.

> **Note** If the Cancel button is not active, the standby TSC has not finished acquiring the active timing reference. The acquire process can take approximately 10 to 15 minutes. When the acquire process completes, the Cancel button becomes active.

Step 4 On the Maintenance tab, click the **Software** button and verify the version:

    a. Click the **Info** button.

    b. In the Current Software Info dialog box, verify that the TSC B Working field shows the correct version. The TSC B Protect field should show the previous version.

    c. If the TSC B Working and TSC B Protect fields show **none**, click **OK** and click the **Info** button again after several minutes. Repeat until the TSC B software versions appear.

    d. Click **OK**.

Step 5 Back up Software 8.0 using the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5, substituting Software R8.0 for Software R1.4.

Step 6 Return to your originating procedure (NTP).

DLP-U359 Remove the MS-SPRing Lockout

Purpose	Release the span lockouts on all MS-SPRing nodes. Complete this task after the new software load is activated on all nodes.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U355 Activate the ONS 15600 SDH Release 8.0 Software Load, page 11
Required/As Needed	Required for all MS-SPRing nodes that were locked for software upgrade
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Step 1 If CTC is not already running, start CTC.

Step 2 In CTC node view, click the **Maintenance** tab, and click the **MS-SPRing** button.

Step 3 For each of the MS-SPRing trunk (span) cards (STM-16 or STM-64), perform the following steps:

    a. Next to the trunk card row, click the West Switch column to show the drop-down list.

    b. Choose **Clear** from the list.

    c. Click the **Apply** button to activate the command.

> **Note** When removing a lockout, be sure to apply your changes each time you choose the Clear option. If you try to select Clear for more than one lockout at a time, you risk traffic loss on the first ring switch.

    d. In the same row, click the East Switch column to show the drop-down list.

    e. Choose **Clear** from the list.

    f. Click **Apply** to activate the command.

Step 4 Repeat this task as many times as necessary to remove all MS-SPRing span lockouts on the upgrade nodes.

Step 5 Return to your originating procedure (NTP).

DLP-U360 Set the Date and Time

Purpose	This task resets the date and time at each node.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Note If you are not using Simple Network Time Protocol (SNTP), the upgrade procedure can cause the date and time setting to change. If you are using SNTP, you do not need to perform this task.

Step 1 Start CTC.

Step 2 In node view, click the **Provisioning** tab, and click the **General** button.

Step 3 Set the correct date and time, then click the **Apply** button.

Step 4 Repeat Steps 2 and 3 for each remaining node.

Step 5 Return to your originating procedure (NTP).

NTP-U239 Restore the Previous Software Load and Database

Purpose	This procedure returns the node to the software and database provisioning you had before you activated Software R8.0.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U236 Prepare for the Release 8.0 Upgrade, page 3
	NTP-U237 Back Up the Software Release 1.4 Database, page 5
	NTP-U238 Upgrade to ONS 15600 SDH Release 8.0, page 7
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

Note If the version in both the Working Version and the Protect Version fields in CTC is Software R8.0, as you cannot revert to a previous software version.

Note The tasks to downgrade to a previous load are not a part of the upgrade. They are provided here as a convenience to those wishing to restore an earlier software load after an upgrade. If you have performed all necessary procedures up to this point, you have finished the software upgrade.

Note Before you upgraded to Software R8.0, you should have backed up the existing database at all nodes in the network (using the "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5). Cisco recommends that you record or export all critical information to your hard drive.

Caution Downgrades are service affecting.

Caution Prior to downgrading to Software R1.4, you must exit CTC and then swap out the SSXC cards out and replace them with CXC cards (see "DLP-U361 Downgrade the SSXC Card to the CXC Card" task on page 21. You must also downgrade the JRE version to 1.3.3. If card exchange and JRE reversion are not completed, a Software Mismatch error will render Software 1.4 unable to communicate with the ONS 15600 SDH node.

Note A system-wide soft reset occurs after the Software 1.4 database is restored. All line (I/O) and matrix cards automatically soft reset. Existing traffic can be affected, depending on the circuit provisioning map.

Step 1 Start CTC using the IP address for an ONS 15600 SDH that has been upgraded from Software R1.4 to Software R8.0, and access the node view. For detailed instructions, refer to the *Cisco ONS 15600 SDH Procedure Guide*.

✎
Note   To perform a downgrade from Software R8.0, Software R1.4 must have been working at the time you activated to Software R8.0 on that node. Also, a supported reversion restores the node configuration at the time of the previous activation. Thus, any configuration changes made after activation will be lost when you revert the software.

Step 2   Back up the Software R8.0 database. See "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5, making sure that you are backing up the Software R8.0 database.

Step 3   (MS-SPRing nodes only) Complete the "DLP-U353 Perform an MS-SPRing Lockout" task on page 9.

✎
Note   The MS-SPRing lockout must be completed for all nodes in all rings for which the ONS 15600 SDH is provisioned.

Step 4   Exit from CTC.

Step 5   Remove the current version of the JRE, and install the JRE 1.3.1 version.

Step 6   Swap out the SSXC cards and install the CXC cards. See "DLP-U361 Downgrade the SSXC Card to the CXC Card" task on page 21 for information about this procedure.

Step 7   Restart CTC.

Step 8   Click the **Revert** button. The Database Restore dialog box appears.

Step 9   Click the **Browse** button. An Open dialog box appears.

✎
Note   To restore the database only, without reverting the software version, select the database that you backed up prior to the MS-SPRing Lockout.
To restore the database for a reverted software version, select the database for the reverted version.

Step 10   In the Open dialog box, navigate to a local PC directory or network directory where the backup database file is stored and click the **Open** button, then click **OK**. The Database Restore dialog box appears.

✎
Note   If alarms and performance were backed up, click the **Alarms** and **Performance** check boxes in the Database Restore dialog box.

Step 11   Click **Yes** in the confirmation dialog box.

Step 12   Click the **History** tab to view the conditions:

1. Downloading (approximately 10 to 20 minutes)

2. System Upgrade in progress (approximately 3 to 5 minutes)

Step 13   Click the **Maintenance** tab and then click the **Software** button. The Download Status column shows the percentage of the completion of the upgrade progress.

When the Download Status column is empty, Software R1.4 has finished loading.

Step 14   Log out of CTC.

Step 15   Restart CTC with the Software R1.4 version, using the same IP address used in Step 1.

Step 16   Complete the "DLP-U359 Remove the MS-SPRing Lockout" task on page 17 for all MS-SPRing nodes in the network.

Step 17   Complete the "DLP-U358 Accept the New Load" task on page 16.

Step 18 Repeat Steps 1 through 17 for any other nodes you want to downgrade.

Stop. You have completed this procedure.

DLP-U361 Downgrade the SSXC Card to the CXC Card

Purpose	This task downgrades the SSXC card to the CXC card in the case where a software revert must be performed from Software R8.0 to Software R1.4. The SSXC card supports Software R8.0. The CXC card supports Software R1.4.
Tools/Equipment	Two CXC cards
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.**

Warning **Before contacting a shelf or card(s), ensure that you are wearing appropriate anti-static devices (wrist straps or foot straps).**

Note Card removal raises an improper removal (IMPROPRMVL) alarm, but this clears after the card replacement is complete.

Step 1 If CTC is not started, start CTC.

Step 2 Verify that there are no critical alarms in the network.

Step 3 In node view, click the **Maintenance** tab and click the **Preferred Copy** button.

Step 4 View the preferred data copy currently in use (A or B) and verify that all traffic is using that copy (the Currently used Data Copy field should show the same copy).

Step 5 Physically remove the nonpreferred SSXC (for example, if the preferred copy is A, remove SSXC B):

  a. Open the card ejectors.

  b. Slide the card out of the slot.

    Note An UNPROT-SCMTX alarm is reported when you remove the SSXC card.

Step 6 Install the replacement CXC card in the shelf:

  a. Open the ejectors on the replacement card.

  b. Slide the replacement card into the slot along the guide rails until it contacts the backplane.

    c. Close the ejectors.

Step 7 Wait for the CXC card to boot. (Wait for the service state to return to normal and alarms to clear.) This takes approximately one minute.

> **Note** The MEA (card mismatch) alarm is displayed because CTC recognizes a mismatch between XC card types. Disregard this alarm; it clears by the end of the procedure.

Step 8 On the **Maintenance** tab, click the **Preferred Copy** button.

Step 9 Select the CXC card that you just installed as the new Preferred data copy and verify that all traffic uses that CXC copy.

> **Note** A 2-ms traffic interruption occurs as traffic transfers to the CXC card.

Step 10 Repeat Steps 5 to 9 for the remaining SSXC card and replacement CXC card.

Step 11 Return to your originating procedure (NTP).

NTP-U240 Upgrade to ONS 15600 SDH Software R8.0 Using TL1

Purpose	This procedure upgrades the software to Software 8.0 using TL1, rather than CTC.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U236 Prepare for the Release 8.0 Upgrade, page 3
	NTP-U237 Back Up the Software Release 1.4 Database, page 5
Required/As Needed	Optional
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

> **Note** This procedure assumes you are upgrading using Release 6.x TL1 syntax. TL1 commands issued prior to software activation to Software 8.0 will vary in syntax depending on the release you are actually upgrading from. To ensure that your syntax for each command is correct, use the TL1 syntax supplied in the *Cisco ONS SONET TL1 Command Guide* for your particular release when issuing the following commands:
>
> - ACT-USER
> - APPLY
> - CANC
> - COPY-RFILE
> - REPT EVT FXFR
> - OPR-PROTNSW-<OCN_TYPE>
> - RTRV-COND-ALL
> - RTRV-ALM-ALL

Note   To perform a Software R8.0 download using TL1, you must first have an FTP server or a terminal emulation program like HyperTerminal running on your workstation.

Note   To perform an R8.0 software download using TL1, you must first have an FTP server or a terminal emulation program like HyperTerminal running on your workstation.In the following conditions, the download (COPY-RFILE) command is different when downloading software to a gateway network element (GNE) or an end network element (ENE):

- - FTP is being used.
- - The server is set up with a login and password of FTPUSER1 and FTPUSERPASSWORD1.
- - The FTP server has an IP address of 10.1.1.1.
- - The FTP server is running on the standard FTP port.
- - The software package is called "15600-03xx-A04K-1405.pkg

Note   The GNE and ENE commands are as follows:

- When downloading software to a GNE, use a command similar to:

```
COPY-RFILE:NODENAME:RFILE-PKG:CTAG::TYPE=SWDL,
SRC="ftp://FTPUSER1:FTPUSERPASSWORD1@10.1.1.1/15600-03xx-A04K-1405.pkg";
```

- When downloading software to an ENE, use a command similar to:

```
COPY-RFILE:NODENAME:RFILE-PKG:CTAG::TYPE=SWDL,
SRC="ftp://FTPUSER1:FTPUSERPASSWORD1@10.111.11.1:2361@90.90.90.90/15600-03xx-A04K-1405
.pkg";
```

The ":2361" after the FTP server IP address 10.111.11.1 denotes port 2361 on the server.

The software PKG file in the preceding example is located in the home directory of the FTP server. If the software PKG file is not in the home directory on the FTP server, insert the directory path where the software package resides between the last IP address and the PKG file in the command line. An example is shown here.

```
COPY-RFILE:NODENAME:RFILE-PKG:CTAG::TYPE=SWDL,
SRC="ftp://FTPUSER1:FTPUSERPASSWORD1@10.1.1.1:2361@90.90.90.90/CISCO/SOFTWARE/15600-03xx-A
04K-1405.pkg"; To use
```

Step 1   To use TL1 commands, set up an FTP session or use HyperTerminal or a similar terminal emulation package to establish a session with the ONS 15600 SDH node.

Step 2   Type the IP address for the node, using port 3083 or 2361.

The terminal emulation interface will display a Warning message and a command prompt (usually >). You issue TL1 commands at this prompt.

Step 3   Type the **ACT-USER** (Activate User) command in the TL1 request window to open a TL1 session:

```
ACT-USER:[<TID>]:<uid>:<CTAG>[::<pid>];
```

where:

- <TID> is the target identifier (optional).

- <UID> is the profile username (required).

- <CTAG> is the correlation tag that correlates command and response messages (optional).

- <PID> is the password identifier (required).

For example, in the TL1 command:

```
ACT-USER::CISCO99:100::PASSWORD;
```

ACT-USER is the activation command, CISCO99 is the user ID, 100 is the correlation tag (used to correlate commands to command responses), and PASSWORD is the password associated with the user ID.

A response message containing the CTAG that you specified indicates the completion status of the command.

Step 4   Select the IP address for the node, using port 3083 or 2361.

Step 5   Type the **COPY-RFILE** command in the TL1 window or, if using HyperTerminal, click **Transfer > Receive File**, and click in the associated dialog box to select a file to receive. The COPY-RFILE command downloads a new software package from the location specified by the FTP URL into the inactive Flash partition residing on either of the TCC2/TCC2P cards.

```
COPY-RFILE:[<TID>]:<SRC>:<CTAG>::TYPE=<xfertype>,[SRC=<src1>],[DEST=<dest>],[OVWRT=<ovwrt>
],[FTTD=<fttd>];
```

where:

- <UID> is the optical support system Operations Support System (OSS) profile username (required).

- <SRC> is the source AID (required).

- <CTAG> is the correlation tag that correlates command and response messages (optional).

- <TYPE> is the file transfer protocol (required).

- <SRC> specifies the source of the file to be transferred (required).

- <DEST> is the destination of the file to be transferred (required).

- <OVWRT> is overwrite. If <OVWRT> is yes, then files should be overwritten. If <OVWRT> is no, then file transfers will fail if the file already exists at the destination (required).

- <FTTD> is the URL format (required).

Step 6   Repeat Step 5 for all nodes to be upgraded.

Step 7   Look for the **REPT EVT FXFR** message in the TL1 window. REPT EVT FXFR is an autonomous message used to report the start, completion, and completed percentage status of the software download. REPT EVT FXFR also reports any failure during the software upgrade, including invalid package, invalid path, invalid user ID/password, and loss of network connection.

The format of the message is:

```
REPT EVT FXFR

   SID DATE TIME
A  ATAG REPT EVT FXFR
   "<FILENAME>,<FXFR_STATUS>,[<FXFR_RSLT>],[<BYTES_XFRD>]"
;
```

where:

- <FILENAME> indicates the transferred file path name and is a string.
- <FXFR_STATUS> indicates the file transferred status: Start, IP (in progress), or COMPLD.
- <FXFR_RSLT> indicates the file transferred result: success or failure. FXFR_RSLT is optional (the FXFR_RSLT is only sent when the FXFR_STATUS is COMPLD).
- <BYTES_XFRD> indicates the percentage transfer complete and is optional (the BYTES_XFRD is only sent when the FXFR_STATUS is IP or COMPLD).

Step 8 Complete "NTP-U236 Prepare for the Release 8.0 Upgrade" procedure on page 3 for each node to be upgraded.

Step 9 Complete "NTP-U237 Back Up the Software Release 1.4 Database" procedure on page 5 for each node to be upgraded.

Step 10 Lock out each MS-SPRing span on each node being upgraded using the following command.

```
OPR-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>::<SC>,[<SWITCHTYPE>][:<DIRN>];
```

where:

- <AID> identifies the facility in the node to which the switch request is directed.
- <CTAG> is the correlation tag that correlates command and response messages.
- <SC> is the switch command that is to be initiated on the paths.
- <SWITCHTYPE> is the MS-SPRing switch type.
- <DIRN> is the direction of transmission in which switching is to be made and is relative to the SONET line or path identified by the AID. The default value is RCV and should be changed to BTH.

Note Some nodes might have more than one MS-SPRing. If this is the case, all MS-SPRing spans on all nodes being upgraded need to be locked out. Nodes that are not being upgraded do not need to have the MS-SPRing spans locked out. You must be aware of each span that is part of a MS-SPRing to make sure all necessary spans are locked out.

Note MS-SPRing lockouts must remain in place until the upgrade is complete for all nodes.

Note Ignore any Default K alarms that occur on the protect STS time slots during the lockout.

Note Certain MS-SPRing-related alarms might be raised following activation of the first node in the ring. The alarms, if raised, are normal, and should not cause concern. They clear upon completion of the upgrade, after all nodes have been activated.

Step 11 Verify that all necessary MS-SPRing spans on each node being upgraded have been locked out using the following command:

```
RTRV-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>:<CTAG>[:::::];
```

<AID> must not be null.

Step 12 Verify that there are no outstanding alarms or conditions on each node using the following commands:

```
RTRV-COND-ALL:[<TID>]:[<AID>]:<CTAG>::[<TYPEREQ>][,,,];
```

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where:

<TYPEREQ> is the type of condition to be retrieved. A null value is equivalent to ALL.

```
RTRV-ALM-ALL:[<TID>]:[<AID>]:<CTAG>::[<NTFCNCDE>],[<CONDITION>],[<SRVEFF>][,,,];
```

where:

- <AID> identifies the facility in the node to which the switch request is directed.
- <CTAG> is the correlation tag that correlates command and response messages.
- <NTFCNCDE> is a notification code. A null value is equivalent to ALL.
- <CONDITION> is the type of alarm condition. A null value is equivalent to ALL.
- <SRVEFF> is the effect on service caused by the alarm condition. A null value is equivalent to ALL.

Resolve all issues before proceeding.

✎ **Note** You can only activate only one node at a time; however, in a parallel upgrade you can begin activation of the next node as soon as the controller cards for the current node have rebooted successfully. If you wish to perform a parallel upgrade remotely, wait five minutes for the controller cards to complete the reboot.

Step 13 Starting at the node farthest from the GNE, type the **APPLY** command to activate the system software.

```
APPLY:[<TID>]::<CTAG>[::<MEM_SW_TYPE>];
```

where:

- <TID> is the target identifier.
- <CTAG> is the correlation tag that correlates command and response messages.
- <MEM_SW_TYPE> indicates a memory switch action during the software upgrade. Valid values are:
  - MEM_SW_TYPE is ACT to activate.
  - MEM_SW_TYPE is CANC to cancel the activation.

If the command is successful, the appropriate flash is selected and the TSC card reboots.

The following occurs:

- When the standby TSC card containing the upgrade software reboots (this can take up to 5 minutes).
- When the reboot is completed, the standby TSC is now running the Software R8.0 upgrade. The active TSC in Slot 10 is running Software R1.4.
- The standby TSC acquires the active timing reference, which may take up to 15 minutes to accomplish. Then the active TSC in Slot 10 reboots, and the card in Slot 5 becomes active, using Software R8.0 as the working copy. When the TSC card in Slot 10 resets, it is in standby mode, and is running the Software R1.4 version.
- All remaining cards in the shelf reset simultaneously, raising a SYSBOOT alarm while activation in progress. When all cards have reset, this alarm clears.
- When the common control cards have finished resetting and all alarms are cleared, you can proceed to the next step.

After the common control cards finish resetting and all associated alarms clear, you can safely proceed to the next step. (If you are upgrading remotely and cannot see the nodes, wait for 5 minutes for the process to complete, then check to ensure that related alarms have cleared before proceeding.)

Step 14   Perform Step 13 for each node that will be upgraded, moving from the furthest node from the GNE toward the GNE itself, which should be activated last.

> **Note**   You might have to log in (and Step 3) to each node again to activate the software (Step 13).

Step 15   After all nodes have been activated, log in using CTC or Telnet (and Step 3) and verify there are no outstanding alarms.

Step 16   Remove all MS-SPRing lockouts using the following TL1 command:

```
RLS-PROTNSW-<OCN_TYPE>:[<TID>]:<AID>::[::<DIRECTION>];
```

where:

- <AID> identifies the facility in the node to which the switch request is directed.
- <CTAG> is the correlation tag that correlates command and response messages (optional).
- <DIRN> is the direction of transmission (transmit or receive). The possible values are:
    - RCV—Receive direction only (default)
    - TRMT—Transmit direction only
    - BTH—Both transmit and receive directions

For example:

```
RLS-PROTNSW-OC48:PETALUMA:FAC-6-1:209::BTH;
```

Stop. You have completed this procedure.

Related Documentation

Use this document in conjunction with the following publications:

- *Cisco ONS 15600 SDH Procedure Guide*
  Provides installation, turn up, test, and maintenance procedures
- *Cisco ONS 15600 SDH Reference Manual*
  Provides technical reference information for cards, nodes, and networks
- *Cisco ONS 15600 SDH Troubleshooting Guide*
  Provides a list of alarms and troubleshooting procedures, general troubleshooting information, and hardware replacement procedures
- *Cisco ONS SDH TL1 Command Guide*
  Provides a full TL1 command and autonomous message set including parameters, AIDs, conditions and modifiers for the Cisco ONS 15454 SDH and ONS 15600 SDH
- *Cisco ONS SDH TL1 Reference Guide*
  Provides general information, procedures, and errors for TL1 in the Cisco ONS 15454 SDH and ONS 15600 SDH
- *Release Notes for Cisco ONS 15600 SDH Release 8.0*
  Provides caveats, closed issues, and new feature and functionality information

Obtaining Optical Networking Information

This section contains information that is specific to optical networking products. For information that pertains to all of Cisco, refer to the Obtaining Documentation and Submitting a Service Request section.

Where to Find Safety and Warning Information

For safety and warning information, refer to the *Cisco Optical Transport Products Safety and Compliance Information* document that accompanied the product. This publication describes the international agency compliance and safety information for the Cisco ONS 15454 system. It also includes translations of the safety warnings that appear in the ONS 15454 system documentation.

Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15xxx product documentation, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM is updated periodically and may be more current than printed documentation.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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