



Upgrading Cisco ONS 15600 Release 1.x to R5.0

This chapter explains how to upgrade the Cisco ONS 15600 Cisco Transport Controller (CTC) software from Software Release 1.x to Software R5.0 using the Timing and Shelf Controller (TSC) card. The ONS 15600 supports errorless upgrades.

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

Read each procedure before you begin the upgrade.



Caution

This document supports upgrades from Release 1.1.x or 1.3.x to 5.0. You cannot upgrade from Release 1.4 to 5.0.



Caution

Upgrading to Release 5.0 requires replacement of the Core Cross-Connect (CXC) cards in your nodes 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 chapter 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, you might want to check off each procedure on your printed copy of this document as you complete it.

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

Each non-trouble procedure (NTP) is a list of steps designed to accomplish a specific task. Follow the steps until the task is complete. For a crafts person requiring more detailed instructions, refer to the Detailed Level Procedure (DLP) specified in the procedure steps.

The detailed level procedure (DLP) supplies additional task details to support the NTP. The DLP lists numbered steps that lead the crafts person through completion of a task. Some steps require that equipment indications be checked for verification. When the proper response is not obtained, a trouble clearing reference is provided.

The following NTPs are in this document:

1. [NTP-U118 Prepare for the Release 1.x to Release 5.0 Upgrade, page 2](#)—This procedure contains critical information and tasks that you must read and complete before beginning the upgrade process.
2. [NTP-U119 Back Up the Software R1.x Database, page 4](#)—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-U120 Upgrade Software R1.x to Software R5.0, page 5](#)—You must complete this entire procedure to complete the upgrade.
4. [NTP-U121 Restore the Previous Software Load and Database, page 17](#)—Complete this procedure if you need to return to Software R1.x.

NTP-U118 Prepare for the Release 1.x to Release 5.0 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 Software Release 5.0 (CD or soft copy)
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Superuser

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- Step 1** Read the *Release Notes for Cisco ONS 15600 Release 5.0*.
- Step 2** Log into the node that you will upgrade. For detailed instructions, refer to the *Cisco ONS 15600 Procedure Guide*.
- Step 3** Complete the [“DLP-U185 Verify CTC Workstation Requirements” task on page 3](#).
- Step 4** Disable all other Ethernet devices (such as a dial-up adapter) on the workstation that runs CTC. For instructions, contact the Cisco Technical Assistance Center (TAC).
If you have multiple IP addresses on your workstation, you should remove them; you cannot run Software R5.0 if multiple IP addresses are configured.
- Step 5** If you have multiple ONS 15600 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 6** Verify that TSC cards are installed in Slots 5 and 10 and that the TSC in Slot 10 is active.
- Step 7** Complete the [“NTP-U119 Back Up the Software R1.x Database” task on page 4](#).

Stop. You have completed this procedure.

DLP-U185 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 either one of the following:
- IBM-compatible PC with a Pentium or higher processor, CD-ROM drive, and 128 MB RAM running Windows 95, Windows 98, Windows 2000, or Windows NT
 - UNIX workstation running any Solaris release

- Step 2** Ensure that your web browser software is one of the following:
- Netscape Navigator 7.0 or higher (Netscape Navigator 7.0 is included on the ONS 15454 software CD shipped with the node)
 - Internet Explorer 6.x or higher

- Step 3** Verify that the Java Version installed on your computer is Java Runtime Environment (JRE) Release 1.3.1_02.



Tip You can check the JRE version in your browser window after entering the node IP address in the URL window under Java Version.



Note You will upgrade the JRE version to JRE 1.4.2, and Java Plug-in 1.4.2 at the end of the activation task. Release 5.0 requires JRE 1.4.2, and Java Plug-in 1.4.2, which are supplied on the software CD.

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



Note For important information on CTC backward compatibility 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).
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NTP-U119 Back Up the Software R1.x Database

Purpose	This procedure preserves all configuration data for your network before performing the upgrade.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U118 Prepare for the Release 1.x to Release 5.0 Upgrade, page 2
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Note 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 Procedure Guide*. If you are already logged in, continue with Step 2.
- Step 2** In node view, click the **Maintenance > Database** tabs.
- Step 3** Click **Backup**.
- Step 4** In the Database backup dialog box, click **Browse**.
- Step 5** In the Save dialog box, navigate to a local PC directory or network directory and type a database name (such as database.db) in the File name field.
- Step 6** Click **Save**.
- Step 7** If you are overwriting an existing file, click **Yes** in the confirmation dialog box.
- Step 8** In the Database backup dialog box, check the **Alarms**, **Performance**, and/or **Audit** check boxes to choose these database items in addition to provisioning information.



Note Provisioning is a default component of the backup file.

- Step 9** Click **OK**.
- Step 10** Repeat Steps 1 through 9 for each node in the network.
- Step 11** (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	
DCC connections; list all optical ports that have DCCs activated	
User IDs (List all, including at least one super user)	
Inventory; do a print screen from the inventory window	

Table 1 Manually Logged Data (Continued)

Item	Record Data Here (If Applicable)
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)
CXC preferred copy	Slot 6/7 or Slot 8/9 (circle one)
Network information; do a print screen from the Provisioning tab in the network view.	
Current configuration: UPSR, 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.	

Stop. You have completed this procedure.

NTP-U120 Upgrade Software R1.x to Software R5.0

Purpose	This procedure upgrades your software to Software R5.0.
Tools/Equipment	PC or UNIX workstation; Cisco ONS 15600 Software Release 5.0 (CD or soft copy)
Prerequisite Procedures	NTP-U119 Back Up the Software R1.x Database, page 4
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Caution

Executing an upgrade with a single TSC card is traffic affecting. Do not start an upgrade unless both TSC cards are present and alarm free.



Note

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



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

Insert the Software R5.0 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 **Cancel** to continue with the upgrade.

- Step 2** Log into the node that you want to upgrade. For detailed instructions, refer to the *Cisco ONS 15600 Procedure Guide*. If you are already logged in, continue with Step 3.
- Step 3** (BLSR nodes only) Complete the “[DLP-U187 Perform a Software R1.x BLSR Lockout](#)” task on page 7.



Note The bidirectional line switched ring (BLSR) lockout must be completed for all nodes in all rings for which the ONS 15600 is provisioned.

- Step 4** Complete the “[DLP-U186 Download the Software](#)” task on page 8.
- Step 5** Complete the “[DLP-U188 Activate the New Load](#)” task on page 10.
- Step 6** (As needed) Complete the “[DLP-U91 Delete Cached JAR Files](#)” task on page 12.



Note The “[DLP-U91 Delete Cached JAR Files](#)” task on page 12 is provided in case you have trouble logging back into a node after the activation. This task is not generally necessary.

- Step 7** Reconnect to the node using CTC. The new CTC applet for Software R5.0 uploads.
- Step 8** During the CTC login, complete the “[DLP-U92 Install the Public-Key Security Certificate](#)” task on page 13.



Note Release 5.0 raises an “EQPT-IMPR-XC” alarm while any CXC cards are installed. This alarm will clear after you replace the CXC cards with SSXC cards in [Step 10](#).

- Step 9** Complete the “[DLP-U189 Accept the New Load](#)” task on page 14.



Note After you have accepted the Software R5.0 build, you cannot revert to Software R1.x without downloading Software R1.x again and restoring the R1.x database.

- Step 10** Complete the “[DLP-U190 Upgrade the CXC Card to the SSXC Card](#)” task on page 15.
- Step 11** Repeat Steps 5 through 10 for all nodes in the network that need to be upgraded. Allow each node to finish. All alarms should be cleared for 10 minutes before activating the next node.



Note Only activate one node at a time.

- Step 12** Complete the “[DLP-U127 Remove the BLSR Lockout](#)” task on page 16 for all BLSR nodes in the network.
- Step 13** Complete the “[DLP-U94 Set the Date and Time](#)” task on page 17 for any nodes that are not using Simple Network Time Protocol (SNTP).
- Step 14** As needed, upgrade any spare TSC cards by installing the spare in the standby slot of a Software R5.0 node.



Note When you insert a spare TSC card in the standby slot, a software mismatch 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.

Stop. You have completed this procedure.

DLP-U187 Perform a Software R1.x BLSR Lockout

Purpose	If you have a BLSR provisioned, before beginning the upgrade you must perform a span lockout at each node in the ring.
Tools/Equipment	PC or UNIX workstation, Software R5.0 files
Prerequisite Procedures	NTP-U119 Back Up the Software R1.x Database, page 4
Required/As Needed	Required for BLSR only
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Note During the lockout, BLSR spans are not protected. You must leave the BLSR 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 In node view, click the **Maintenance > BLSR** tabs.

Step 2 For each of the BLSR trunk (span) cards (OC-48, OC-192), perform the following steps:

- Next to the trunk card row, click the **East Switch** column to show the drop-down list.
- From the menu options, choose **Lockout Span**.
- Click **Apply**.
- In the same row, click the **West Switch** column to show the drop-down list.
- From the menu options, choose **Lockout Span**.
- Click **Apply**.



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

**Note**

Certain BLSR or 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.

- BLSROSYNC (MN)
- RING-MISMATCH (MJ)
- APSCDFLTK (MN)
- BLSR-RESYNC (NA)

Step 3 Return to your originating procedure (NTP).

DLP-U186 Download the Software

Purpose	This task downloads the software to the ONS 15600 nodes.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U119 Back Up the Software R1.x Database, page 4
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 From the View menu, choose **Go To Network View**.

Step 2 Verify that the alarm filter is not on:

- a. Click the **Alarms** tab.
- b. Click the Filter tool at the lower-right side of the bottom toolbar.

Alarm filtering is enabled if the tool is selected and disabled if the tool is raised (not selected).

Step 3 On the Alarms tab, check all nodes for existing alarms. Resolve any outstanding alarms before proceeding. If necessary, refer to the *Cisco ONS 15600 Troubleshooting Guide*.

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

Step 5 Verify that the TSC card in Slot 10 is the active card. If it is not, complete the following:

- a. Right-click the TSC in Slot 5 and choose **Soft-reset Card**.
- b. Click **Yes** in the confirmation dialog box.
- c. Click **OK** in the Connection Lost dialog box.

**Note**

The TSC card takes several minutes to reboot.

- Step 6** Double-click the node icon to return to node view.
- Step 7** Click the **Maintenance > Software** tabs.
- Step 8** Click **Download**. The Download Selection dialog box appears.
- Step 9** Click **Browse**.
- Step 10** In the Open dialog box, navigate to the software package files on the ONS 15600 software CD or on your hard drive, if you are working from a local copy.
- Step 11** Select the file with the .pkg extension and click **Open**.
- Step 12** In the Download Selection dialog box, verify that the node is checked.
- Step 13** Click **OK**. The software begins downloading to the active TSC card. The Download Status column on the Maintenance > Software tab shows the percentages complete:
1. Downloading (approximately 7 to 10 minutes)
 2. Qualifying (approximately 1 to 2 minutes)
 3. Copying to stby TSC (approximately 2 to 5 minutes)
- When the Download Status column is empty, the software has finished loading.

- Step 14** Verify the version:
- a. Click **Info**.
 - b. In the Current Software Info dialog box, verify that the TSC B Working field shows 1.x and the TSC B Protect field shows 5.0.
 - c. Click **OK**.



Note You can also verify the load information on the Maintenance > Software tab. The Working Version column shows the original software load and the Protect Version column shows the software load that you just downloaded.

- Step 15** Repeat Steps 1 through 14 for each node.



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

- Step 16** Return to your originating procedure (NTP).
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DLP-U188 Activate the New Load

Purpose	This task activates Software R5.0 in each node in the network. Activating the software load downloads the software to the standby TSC.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U119 Back Up the Software R1.x Database, page 4 DLP-U186 Download the Software, page 8
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser


Note

Although the activate 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 BLSRs 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. Once 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** In node view, click the **Maintenance > Software** tabs.
- Step 2** Verify the version:
- Click **Info**.
 - In the Current Software Info dialog box, verify that the TSC B Working shows R1.x and the TSC B Protect shows R5.0.
 - Click **OK**.
- Step 3** Click **Activate**. The Activate dialog box appears with a warning message indicating that you should perform a database backup.
- Step 4** Complete one of the following:
- If you have not backed up the Software R1.x database, click **No**. Complete the “[NTP-U119 Back Up the Software R1.x Database](#)” procedure on page 4. When you have completed the procedure, return to [Step 3](#) in this task.
 - If you have backed up the Software R1.x database, click **Yes** to proceed with the activation. The Download Status column shows:
 - The Qualifying percentage completed (approximately 1 to 2 minutes).

- The status “Wait” while the standby TSC reboots (approximately 2 to 5 minutes). When the standby TSC completes the reboot, it is still in standby but is now running Software R5.0. The active TSC in Slot 10 is still active and is running Software R1.x.
- The Acquiring percentage completed as the standby TSC acquires the active timing reference (approximately 10 to 15 minutes).

Step 5 Click **OK** when the Rebooting message appears indicating that the software is successfully activated. The node reboot could take up to four minutes.

Step 6 Click **OK** in the Connection Lost dialog box.



Note CTC loses connection to the node while the node reboots and displays the network view.

Step 7 After activating the node, wait until the software upgrade reboot finishes at that node before continuing. The node will remain gray for the remainder of this task. The upgrade process can take up to 30 minutes, depending on how many cards are installed. The following occurs:

- When the active TSC card in Slot 10 reboots, the TSC card in Slot 5 becomes active, using Software R5.0 as the working copy. When the TSC card in Slot 10 resets, it is in standby mode and is still running Software R1.x. All remaining cards in the shelf reset simultaneously.
- A system reboot (SYSBOOT) alarm is raised briefly while activation is in progress. When all cards have reset, this alarm clears.

When all of the cards finish rebooting and all of the alarms clear, you can safely proceed to the next step.

Step 8 In CTC, choose **File > Exit**.

Step 9 In your 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-U91 Delete Cached JAR Files” task on page 12](#).

Step 10 Close your browser.

Step 11 Install the new JRE version 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, choose **Start > Settings > Control Panel**, and click **Add/Remove Programs**.
- b. Scroll the list of programs until you see the Java 2 Runtime Environment, then click **Change/Remove**.

- c. Click **Yes** in the dialog box to proceed with removing the old JRE version.
 - a. Load the Release 5.0 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. Select **Cisco Transport Controller, Java Runtime Environment 1.4.2**, and (optionally) **CTC JAR files**. Deselect any other preselected options.
 - f. Click **Next**. A confirmation 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 **Finish**.
- Step 12** Reopen your browser.
- Step 13** Return to your originating procedure (NTP).
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DLP-U91 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	DLP-U188 Activate the New Load, page 10
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	None

- Step 1** Delete cache files from your browser directory.

In Netscape:

- a. Choose **Edit > Preferences > Advanced > Cache**.
- 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 > General**.
- b. Choose **Delete Files**.
- c. Select the **Delete all offline content** check box.
- d. Click **OK** twice.

- Step 2** Close your browser.
- You will not be able to 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.
- In your Windows start menu, choose **Settings > Control Panel > System > Advanced**.
 - Click **Environment Variables**. This shows you a list of user variables and a list of system variables.
 - 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.
 - Open the TEMP directory located in the path you just looked up.
 - Select **View > Details**.
 - 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).
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DLP-U92 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 R5.0 or later.
Tools/Equipment	None
Prerequisite Procedures	DLP-U91 Delete Cached JAR Files, page 12
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher



Caution

If you delete the Java policy file, you cannot log into nodes running Software R1.x and earlier. If you delete the file and want to log into an ONS 15600 running an earlier release, insert the software CD for the release into your PC CD-ROM and run the CTC setup wizard to reinstall the Java policy file.

- Step 1** 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 appear the next time you log into the ONS 15600.
 - Deny**—Denies permission to install the certificate. If you choose this option, you cannot log into the ONS 15600.
 - 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 2** If the Login dialog box appears, continue with [Step 3](#). If the Change Java Policy File dialog box appears, complete this step. The Change Java Policy File dialog box appears if CTC finds a modified Java policy file (.java.policy) on your PC. In Software R1.1.x, the Java policy file was modified to allow CTC software files to be downloaded to your PC. The modified Java policy file is not needed in Software R5.0, so you can remove it unless you will log into ONS 15600s running Software R1.1.x. Choose one of the following options:
- **Yes**—Removes the modified Java policy file from your PC. Choose this option only if you will log into ONS 15600s running Software R5.0 or later.
 - **No**—Does not remove the modified Java policy file from your PC. Choose this option if you will log into ONS 15600s running Software R1.1.x. If you choose **No**, this dialog box will appear every time you log into the ONS 15600. If you do not want it to appear, check the **Do not show the message again** check box.
- Step 3** Return to your originating procedure (NTP).
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DLP-U189 Accept the New Load

Purpose	This task upgrades the standby TSC.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U188 Activate the New Load, page 10
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

- Step 1** In node view, click the **Maintenance > Software** tabs.
- Step 2** Click **Accept**. This process takes approximately 2 to 5 minutes.



Note You can reject the new software load by clicking **Cancel**. The Cancel button resets the active TSC card in Slot 5. The TSC card in Slot 10 then becomes the active TSC using Software R1.x as the working copy. After the TSC card in Slot 5 resets, it becomes the standby TSC and begins using Software R1.x.



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 3** Verify the version:
- Click **Info**.
 - 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.
 - 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 4 Return to your originating procedure (NTP).

DLP-U190 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.x. The SSXC card supports Software R5.0.
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.



Note

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

- Step 1** Verify that there are no relevant alarms in the network other than the EQPT-IMPR-XC alarm raised against any node with CXC cards.
- Step 2** In the node view, click the **Maintenance > Preferred Copy** tabs.
- Step 3** 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 4** Physically remove the nonpreferred CXC (for example, if the preferred copy is A, remove CXC B):
- Open the card ejectors.
 - Slide the card out of the slot.



Note

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

- Step 5** Install a new SSXC card in the shelf:
- Open the ejectors on the replacement card.
 - Slide the replacement card into the slot along the guide rails until it contacts the backplane.
 - Close the ejectors.
- Step 6** Wait for the new card to boot. (Wait for the service state to change from OOS-AUMA,MT & SWDL to OOS-MA,MT. The UNPROT-XCMTX alarm will also clear.) This takes approximately one minute.



Note

The MEA (card mismatch) alarm appears because CTC recognizes a mismatch between cross-connect card types. Disregard this alarm; it clears by the end of the procedure.

- Step 7** On the **Maintenance > Preferred Copy** tab, select the SSXC you just installed as the new Preferred data copy and verify that all traffic uses that SSXC copy.
- Step 8** Repeat Steps 4 to 7 for the remaining CXC card and new SSXC card.
- Step 9** Return to your originating procedure (NTP).
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DLP-U127 Remove the BLSR Lockout

Purpose	Release the span lockouts on all BLSR nodes. Complete this task after the new software load is activated on all nodes.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U188 Activate the New Load, page 10
Required/As Needed	Required for BLSR
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

- Step 1** In CTC node view, click the **Maintenance > BLSR** tabs.
- Step 2** For each of the BLSR trunk (span) cards (OC-48, or OC-192), perform the following steps:
- Next to the trunk card row, click the **West Switch** column to show the drop-down list.
 - Choose **Clear** from the list
 - Click **Apply** 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.

- In the same row, click the **East Switch** column to show the drop-down list.
 - Choose **Clear** from the list.
 - Click **Apply** to activate the command.
- Step 3** Repeat this task as many times as necessary to remove all BLSR span lockouts on the upgrade nodes.
- Step 4** Return to your originating procedure (NTP).
-

DLP-U94 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 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** In node view, click the **Provisioning > General** tabs.
 - Step 2** Set the correct date and time, then click **Apply**.
 - Step 3** Repeat Steps 1 and 2 for each remaining node.
 - Step 4** Return to your originating procedure (NTP).
-

NTP-U121 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 R5.0.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U118 Prepare for the Release 1.x to Release 5.0 Upgrade, page 2 NTP-U119 Back Up the Software R1.x Database, page 4 NTP-U120 Upgrade Software R1.x to Software R5.0, page 5
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



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 Release 5.0 software, you should have backed up the existing database at all nodes in the network (using the “[NTP-U119 Back Up the Software R1.x Database](#)” procedure on [page 4](#)). Cisco recommends that you record or export all critical information to your hard drive.

**Caution**

Downgrades are service affecting.

**Note**

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

Step 1

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

**Note**

To perform a downgrade from Software R5.0, Software R1.x must have been working at the time you activated to Software R5.0 on that node. Also, a supported revert 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

(BLSR nodes only) Complete the “[DLP-U187 Perform a Software R1.x BLSR Lockout](#)” task on page 7.

**Note**

The BLSR lockout must be completed for all nodes in all rings for which the ONS 15600 is provisioned.

Step 3

Complete the “[DLP-U191 Downgrade the SSXC Card to the CXC Card](#)” task on page 19.

Step 4

Complete the “[DLP-U186 Download the Software](#)” task on page 8.

Step 5

Click **Revert**. The Database Restore dialog box appears.

Step 6

Click **Browse**.

Step 7

In the Open dialog box, navigate to a local PC directory or network directory where the database file is stored and click **Open**.

Step 8

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

Step 9

Click **OK**.

Step 10

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

Step 11

Wait until the software download finishes. The Download Status column shows:

- The Qualifying percentage completed (approximately 1 to 2 minutes)
- The status “Wait” while the standby TSC reboots (approximately 2 to 5 minutes)
- The Acquiring percentage completed as the standby TSC acquires the active timing reference (approximately 10 to 15 minutes)

The ONS 15600 then reboots.

**Note**

When you have upgraded your JRE version to 1.4.2, you will no longer be able to log into nodes running Releases 1.x until you also downgrade the JRE to 1.3.1. For instructions on uninstalling one JRE version and installing another, refer to [Step 11](#) of the “[DLP-U188 Activate the New Load](#)” task on page 10.

- Step 12** Complete the “[DLP-U127 Remove the BLSR Lockout](#)” task on page 16 for all BLSR nodes in the network.
- Step 13** Complete the “[DLP-U189 Accept the New Load](#)” task on page 14.
- Step 14** Repeat Steps 1 through 13 for any other nodes you want to downgrade.
- Stop. You have completed this procedure.**

DLP-U191 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 R5.0 to Software R1.x. The SSXC card supports Software R5.0. The CXC card supports Software R1.x.
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.



Note

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

- Step 1** Verify that there are no relevant alarms in the network.
- Step 2** In node view, click the **Maintenance > Preferred Copy** tabs.
- Step 3** 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 4** Physically remove the nonpreferred SSXC (for example, if the preferred copy is A, remove SSXC B):
- Open the card ejectors.
 - Slide the card out of the slot.



Note

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

- Step 5** Install the replacement CXC card in the shelf:
- Open the ejectors on the replacement card.
 - Slide the replacement card into the slot along the guide rails until it contacts the backplane.
 - Close the ejectors.

Step 6 Wait for the CXC card to boot. (Wait for the service state to change from OOS-AUMA,MT & SWDL to OOS-MA,MT. The UNPROT-XCMTX alarm will also clear.) This takes approximately one minute.



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

Step 7 On the **Maintenance > Preferred Copy** tab, select the CXC 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 8 Repeat Steps 4 to 7 for the remaining SSXC card and replacement CXC card.

Step 9 Return to your originating procedure (NTP).

Related Documentation

Use this Upgrading Cisco ONS 15600 Release 1.x to R5.0 document in conjunction with the following publications:

- *Cisco ONS 15600 Procedure Guide*
Provides installation, turn up, test, and maintenance procedures
- *Cisco ONS 15600 Reference Manual*
Provides technical reference information for SONET/SDH cards, nodes, and networks
- *Cisco ONS 15600 Troubleshooting Guide*
Provides a list of alarms and troubleshooting procedures, general troubleshooting information, and hardware replacement procedures
- *Cisco ONS SONET TL1 Command Guide*
Provides a comprehensive list of TL1 commands
- *Release Notes for Cisco ONS 15600 Release 5.0*
Provides caveats, closed issues, and new feature and functionality information

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 15600 systems. It also includes translations of the safety warnings that appear in the ONS 15600 system documentation.

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

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You can access the most current Cisco documentation at this URL:

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Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15600 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.

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**Note**

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

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Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

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- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:
<http://www.cisco.com/packet>
- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:
<http://www.cisco.com/go/iqmagazine>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:
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