



Upgrading the Cisco ONS 15310-MA SDH to Release 9.2.1.3

This document explains how to upgrade Cisco ONS 15310-MA SDH Cisco Transport Controller (CTC) software from Releases 8.5.4 and 9.2.1 to Release 9.2.1.3.

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Before You Begin

Before you begin, 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.



Note

Read the procedures in this document before you begin the upgrade.



Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

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**Caution**

This upgrade is supported for Releases 8.5.4 and 9.2.1 upgrading to Release 9.2.1.3. For more information, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page 20.

**Note**

R9.2.1.3 supports parallel upgrades for multiple nodes in a network. In a parallel upgrade, you can activate only one node at a time. However, you can begin activation of the next node as soon as the controller cards for the current node have rebooted successfully (wait five minutes from the time the SYSBOOT alarm is raised).

**Caution**

When managing end-to-end circuits participating in an ML-Series resilient packet ring (RPR) across multiple nodes involved in a parallel upgrade, all nodes participating in these circuits must have completed the activation before the end-to-end traffic resumes.

Document Procedures

Procedures in this document must be performed sequentially unless noted otherwise. Ensure that the procedure is completed for each node in a given network. If you are new to upgrading the ONS 15310-MA SDH Software, make a printed copy of this document and use it as a checklist.

Each non-trouble procedure (NTP) is a list of steps designed to be accomplished in a specific order. Follow the steps until the procedure is complete. If you need more detailed instructions, refer to the detail-level procedure (DLP) specified in the procedure steps. Throughout this guide, NTPs are referred to as “procedures” and DLPs as “tasks.” Every reference to a procedure includes an NTP number, and every reference to a task includes a DLP number.

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

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

1. [NTP-U487 Preparing to Upgrade to a New Release, page 3](#)—This section contains critical information and tasks that you must read and complete before beginning the upgrade process.
2. [NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4](#)—Complete the database backup to ensure that you have preserved your node and network provisioning if you need to restore them later.
3. [NTP-U512 Upgrade the Cisco ONS 15310-MA SDH Software, page 6](#)—You must complete this entire procedure before the upgrade is finished.
4. [NTP-U483 Install Public-Key Security Certificate, page 11](#)—You must complete this procedure to be able to run ONS 15310-MA SDH Software R9.2.1.3.
5. [NTP-U484 Revert to Previous Software Load and Database, page 12](#)—Complete this procedure only if you have to return to the software load you were running before activating the Software R9.2.1.3 version.
6. [NTP-U513 Upgrade to the ONS 15310-MA SDH Software Using TL1, page 15](#)—Complete this procedure only if you want to upgrade to Software R9.2.1.3 using Transaction Language 1 (TL1).

NTP-U487 Preparing to Upgrade to a New Release

Purpose	This procedure provides critical information checks and tasks you must complete before starting an upgrade to Release 9.2.1.3.
Tools/Equipment	<ul style="list-style-type: none"> • ONS 15310-MA SDH nodes to upgrade • PC or UNIX workstation • Cisco ONS 15310-MA SDH Software R9.2.1.3
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 15310-MA SDH Release 9.2.1*.
- Step 2** Log into the node that you want to upgrade. For detailed instructions, refer to the *Cisco ONS 15310- MA SDH Procedure Guide*.
- Step 3** Complete the “[DLP-U537 Verify CTC Workstation Requirements](#)” task on page 3.
- Step 4** When you have completed the tasks in this section, proceed with the “[NTP-U481 Back Up the ONS 15310-MA SDH Software Database](#)” procedure on page 4.
- Stop. You have completed this procedure.**
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DLP-U537 Verify CTC Workstation Requirements

Purpose	This task verifies all PC or UNIX workstation hardware and software requirements. Before upgrading the workstation to run CTC Software R9.2.1.3, complete this task.
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

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- Step 1** Ensure that your workstation is one of the following:
- IBM-compatible PC with a Pentium IV or faster processor, CD-ROM drive, a minimum of 1 GB RAM and 250 MB of available hard drive space, Windows 2000 Professional (with Service Pack 3), Windows Server 2003 and 2008, or Windows XP Professional (with Service Pack 1 and 2), Windows Vista, or Windows 7.
 - UNIX workstation with Solaris Version 9 or 10 on an UltraSPARC-III or faster processor, with a minimum of 1 GB RAM and a minimum of 250 MB of available hard drive space

**Note**

Use the latest patch or service pack released by the OS vendor. Check with the vendor for the latest patch or service pack.

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

- Netscape Navigator 7.x or later on Windows
- Internet Explorer 6.x or later on Windows
- Mozilla 1.7 or later on Solaris

Step 3 Verify that the following are installed on your computer:

- Java Runtime Environment (JRE) 1.6
- Java Plug-in 1.6

**Tip**

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

**Note**

For important information about CTC backward compatibility affected by your choice of JRE version, see the *Readme.txt* or *Readme.html* file in the software CD.

**Note**

To install JRE 1.6, the Java Policy file, or the Software R9.2.1.3 online help, refer to the installation instructions in the *Cisco ONS 15310- MA SDH Procedure Guide*.

Step 4 Return to your originating procedure (NTP).

NTP-U481 Back Up the ONS 15310-MA SDH Software Database

Purpose	This procedure preserves all configuration data of your network before performing the upgrade.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U487 Preparing to Upgrade to a New Release, page 3
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Maintenance or higher; Superuser, if performing optional Step 8

- Step 1** Log into CTC. For detailed instructions, refer to the *Cisco ONS 15310- MA SDH Procedure Guide*. After you log in, continue with Step 2.
- Step 2** In CTC node view, click the **Maintenance** tab and then click the **Database** button.
- Step 3** Click the **Backup** button. A Database Backup dialog box appears.

- Step 4** In the Database Backup dialog box, click the **Browse** button, then navigate to a local PC directory or network directory and type or select a database name using the IP address of the node to upgrade (such as 10101882010107.db).
- Step 5** 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 6** A message indicates the status of the backup. When the backup is complete, click the **OK** button to close the message dialog box.
- Step 7** Repeat Steps 1 through 6 for each node in the network.
- Step 8** (Optional) Cisco recommends that you manually log critical information by either writing it down or printing screens where applicable. Use the following table to determine the information you should log. Complete the table for every node in the network.

Table 1 *Manually Recorded Data*

Item	Record Applicable Data Here
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; copy the screen contents of the Inventory window. Press PrintScreen .	
Network information; copy the network information from the Provisioning tab in the network view. Press PrintScreen .	
Current configuration (linear, etc.); copy the configuration as needed.	
List all protection groups in the system; copy the protection group window from the Maintenance tab, in the network view. Press PrintScreen .	
List alarms; copy the screen contents of the Alarm window. Press PrintScreen .	
List circuits; copy the screen contents of the Circuit window. Press PrintScreen .	

Stop. You have completed this procedure.

NTP-U512 Upgrade the Cisco ONS 15310-MA SDH Software

Purpose	This procedure upgrades your CTC software to R9.2.1.3.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Note After upgrading from R8.5.4 and R9.2.1 to R9.2.1.3, the date and time in CTC is reset.

Step 1 Insert the Software R9.2.1.3 software CD into the workstation CD-ROM (or otherwise obtain access to the software) to begin the upgrade process.



Note Inserting the software CD activates the CTC Setup Wizard.



Caution When managing end-to-end circuits participating in an ML-Series resilient packet ring (RPR) across multiple nodes involved in a parallel upgrade, all nodes participating in these circuits must have completed the activation before end-to-end traffic resumes.

Step 2 Complete the “[DLP-U582 Download the ONS 15310-MA SDH Software](#)” task on page 7 for all nodes (or groups of 8 or less nodes) you are upgrading.

Step 3 Complete the “[DLP-U583 Activate the New ONS 15310-MA SDH Software](#)” task on page 8 for all nodes you are upgrading.



Note Activate one node at a time. You can begin activation of the next node as soon as the controller cards for the current node have rebooted (wait five minutes from the time the SYSBOOT alarm is raised).

Step 4 (Optional) If you wish to ensure that a software revert to the previous software release will no longer be possible, complete the “[DLP-U582 Download the ONS 15310-MA SDH Software](#)” task on page 7 for all nodes, or groups of nodes you are upgrading a second time.



Caution Downloading Software R9.2.1.3 a second time after activation will prevent reversion to the previous software version.

Step 5 Complete the “[DLP-U541 Set the Date and Time](#)” task on page 11 for any nodes not using Simple Network Time Protocol (SNTP).

Step 6 If you need to return to the software and database you had before activating Software R9.2, proceed with the “[NTP-U484 Revert to Previous Software Load and Database](#)” procedure on page 12.

Step 7 Back up the Software R9.2.1.3 database for the working software load using “[NTP-U481 Back Up the ONS 15310-MA SDH Software Database](#)” procedure on page 4 to preserve the database for Software R9.2.

- Step 8** (Optional) Upgrade the field-programmable gate array (FPGA) on CTX2500 cards for all nodes or groups of nodes to eliminate unwanted data coming in the UDC Rx path. An upgrade to 1D ensures that FPGA only processes clear data.

**Caution**

Upgrading the FPGA can be service affecting, so Cisco recommends that you activate the new load in a maintenance window. ML-Series Ethernet traffic, time-division multiplexing (TDM) traffic, and CE-Series Ethernet traffic can remain down from the time the CTX2500 cards switch to the time all Ethernet and TDM cards have finished resetting (3 to 8 minutes).

To upgrade the FPGA do the following:

- a. In node view, click **Provisioning > FPGA Update** tabs.
- b. Click the **Force FPGA Update** button.

The active CTX2500 card reboots and restarts the updated FPGA. Once the active CTX2500 comes up, the peer CTX2500 card reboots. The FPGA is updated in the peer CTX2500 card as well. The new FPGA revision number is visible on the active CTX2500.

**Note**

Update the FPGA during a scheduled maintenance window.

Stop. You have completed this procedure.

DLP-U582 Download the ONS 15310-MA SDH Software

Purpose	This task downloads Software R9.2.1.3 to the ONS 15310-MA SDH nodes prior to activation.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser or Maintenance

**Note**

The CTX2500 card has two flash RAMs. An upgrade downloads the software to the backup RAM on the CTX2500 card. 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, using the IP address of the ONS 15310-MA SDH node.
- Step 2** In CTC node view, click the **Alarms** tab.
- Step 3** Verify that the alarm filter is not on.
- a. Click the **Filter** button at the lower-left of the window.
The Alarm Filter dialog box appears.
 - b. Click to select any check box that is not selected in the Show Severity section of the **General** tab.

Step 4 On the **Alarms** tab, check all nodes for existing alarms. Resolve any outstanding critical alarms before proceeding.



Note During the software download process, the SWFTDWN alarm is raised twice, once on standby and again on active, to indicate that the software download is taking place. The alarm is normal and clears when the download is complete.



Note To download and upgrade the software using TL1, see the [“NTP-U513 Upgrade to the ONS 15310-MA SDH Software Using TL1” procedure on page 15.](#)

Step 5 If the display is not in node view, double-click the node icon to return to node view.

Step 6 Click the **Maintenance** tab and then click the **Software** button.

Step 7 Click the **Download** button. The Download Selection dialog box appears.

Step 8 Click the **Browse** button to locate the software files on the ONS 15310-MA SDH software CD or on your hard drive, if you are working from a local copy.

Step 9 Open the Cisco 15310-MA SDH folder, choose the file with the PKG extension and click **Open**.

Step 10 In the list of compatible nodes, click the check boxes for all nodes for software download.



Note Cisco advises that you limit concurrent software downloads on a Section data communications channel (SDCC) to eight nodes at once, using the central node to complete the download.



Note If you attempt more than eight concurrent software downloads at once, all those downloads in excess of eight are placed in a queue.

Step 11 Click **OK**. The Download Status column monitors the progress of the download.



Note The software download process can take up to 30 minutes per node, though typically under ten minutes.

Step 12 Return to your originating procedure (NTP).

DLP-U583 Activate the New ONS 15310-MA SDH Software

Purpose	This task activates Software R9.2.1.3 in each node in the network.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U582 Download the ONS 15310-MA SDH Software, page 7
Required/As Needed	Required
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

**Caution**

Activation can be service affecting, so Cisco recommends that you activate the new load in a maintenance window. ML-Series Ethernet traffic can remain down from the time the CTX2500 cards switch to the time all Ethernet cards have finished resetting (3 to 8 minutes). However time-division multiplexing (TDM) traffic and CE-Series Ethernet traffic should remain errorless.

**Note**

If you do not plan to run the pre-caching utility, Cisco recommends that the first node you activate be a LAN-connected node. This ensures that the new CTC JAR files download to your workstation as quickly as possible.

- Step 1** If CTC is not already running, start CTC, using the IP address of the ONS 15310-MA SDH node.
- Step 2** Record the IP address of the node. The IP address is on the upper left corner of the CTC window.
- Step 3** Verify that the alarm filter is not on.
- a. Click the Filter tool at the lower-left of the window.
The Alarm Filter dialog box appears.
 - b. Click to deselect any selections in the Show Severity section of the **General** tab.
- Step 4** On the **Alarms** tab, check all nodes for existing alarms. Resolve any outstanding critical alarms before proceeding.
- Step 5** Click the **Maintenance** tab and then click the **Software** button.
- Step 6** Verify that the version in the Protect Version column is Software R9.2.1.3.
- Step 7** Click the **Activate** button. Click **Yes** to proceed with the activation.
- Step 8** Click **Yes** to proceed with the activation. An Activation Successful message indicates that the software is successfully activated. Click **OK** in the message dialog box.

When you click **Yes** the activation begins, and the software upgrade reboot occurs as follows:

- Each card in the node resets, beginning with the standby CTX2500 card. When the standby CTX2500 finishes rebooting, the two CTX2500 cards switch and CTC temporarily loses connection with the node. (The connection is restored after the switch is established, within 4 minutes of the connection loss.)
- Next, the standby (previously active) CTX2500 reboots, along with the electrical and Ethernet cards. They reboot from left to right.
- A system reboot (SYSBOOT) alarm is raised while activation is in progress (following the CTX2500 and cross-connect card resets). When all cards have reset, this alarm clears. The complete activation process can take up to 30 minutes, depending on how many cards are installed.
- The whole process can take up to 10 minutes. This process is errorless for TDM and CE-series traffic. ML-Series cards are expected to incur a traffic hit of 3 to 8 minutes.

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.)

**Note**

During the software upgrade, a reset alarm is raised on all the cards. When upgrading from 8.5.4 and 9.2.1 to 9.2.1.3 an AUTORESET alarm is raised on Standby CTX2500 cards and all the other cards.

Step 9 In CTC, choose **File > Exit**.



Note

Steps 10 through 12 are only necessary after upgrading the first node in a network because cached files only need to be removed from your workstation once. For the remaining nodes, you will still be disconnected and removed to the network view during the node reboot, but after the reboot is complete, CTC will restore connectivity to the node.

Step 10 A message indicating the CTC software release version and detection of a R9.2.1.3 network element appears. You must download and install R9.2.1.3 CTC jar files on your computer.

Step 11 To do so, select **Update CTC** from the Tools menu.

Step 12 After the CTC Java Jar files are successfully downloaded, close CTC and reopen.

DLP-U540 Delete Cached JAR Files

Purpose	This task manually deletes cached Java JAR files from your browser and hard drive. When you upgrade or revert to a different CTC software load, you must reload CTC to your browser. Before you can reload CTC, you must ensure that previously cached files are cleared 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	Maintenance or higher

Step 1 Delete cache files from your browser directory.

In Netscape:

- Choose **Edit > Preferences**, click the **Advanced** tab, then click the **Cache** button.
- Click the **Clear Memory Cache** button, and click **OK**.
- Click the **Clear Disk Cache** button, and click **OK** twice.

In Microsoft Internet Explorer:

- Choose **Tools > Internet Options**. The Internet Options dialog box appears.
- Click the **General** tab, and then click the **Delete Files** button.
- Click the **Delete all offline content** check box.
- Click **OK** twice.

Step 2 Close your browser.



Note

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** On Windows systems, delete cached files from your workstation in the following location:
C:\Documents and Settings*username*\Application Data\Cisco\CTC.
- Step 4** Reopen your browser. You should now be able to connect to CTC.
- Step 5** Return to your originating procedure (NTP).

DLP-U541 Set the Date and Time

Purpose	If you are not using SNTP, the upgrade procedure can cause the date/time setting to change. This task resets the date and time for 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 This task is not applicable if you are using SNTP.

- Step 1** If CTC is not already running, start CTC, using the IP address of the ONS 15310-MA SDH node.
- Step 2** In CTC node view, click the **Provisioning** tab and then click the **General** button.
- Step 3** Set the correct date and time, then click the **Apply** button.
- Step 4** Repeat Steps 1 and 3 for each remaining node.
- Step 5** Return to your originating procedure (NTP).

NTP-U483 Install Public-Key Security Certificate

Purpose	This procedure installs the ITU Recommendation X.509 public-key security certificate. The public-key certificate is required to run Software R4.1 or later.
Tools/Equipment	None
Prerequisite Procedures	This procedure is performed when logging into CTC. You cannot perform it at any other time.
Required/As Needed	This procedure is required to run ONS 15310-MA SDH software.
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

- Step 1** Log into 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. When the session ends, the certificate is deleted. This dialog box appears the next time you log into the ONS 15310-MA SDH.
 - **Deny**—Denies permission to install the certificate. If you choose this option, you cannot log into the ONS 15310-MA SDH.
 - **Grant always**—Installs the public-key certificate and does not delete it even after the session is over. Cisco recommends this option.
 - **View Certificate**—Allows you to view the public-key security certificate.

After you complete the security certificate dialog boxes, the web browser displays information about your Java and system environments. If this is the first time you are logging in, a CTC downloading message appears while CTC files are downloaded to your computer and this process can take several minutes. After the download, the CTC Login dialog box displays.

- Step 3** If you need to return to the software and database you had before activating Software R9.2.1.3, proceed with the [“NTP-U484 Revert to Previous Software Load and Database” procedure on page 12](#).

Stop. You have completed this procedure.

NTP-U484 Revert to Previous Software Load and Database

Purpose	This procedure restores the software and database provisioning you had before you activated Software R9.2.1.3.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U487 Preparing to Upgrade to a New Release, page 3 NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4 NTP-U512 Upgrade the Cisco ONS 15310-MA SDH Software, page 6
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Note

The tasks to revert to a previous load are not part of the upgrade. If you have performed all the necessary procedures up to this point, you have completed the software upgrade to R9.2.1.3.



Note

The defaults database files (db files) used to restore the basic configuration on a single non-multishelf node are shipped along with the standard R9.2.1.3 software release package. For a multishelf set-up, the multishelf configuration must be unprovisioned to restore the basic configuration using the defaults database file. Also, the database backup from a multishelf system can be used to restore the same multishelf system.

**Note**

Before you upgraded to Software R9.2.1.3, you should have backed up the existing database on all the nodes in the network (this is part of the [“NTP-U481 Back Up the ONS 15310-MA SDH Software Database” procedure on page 4](#)). Cisco recommends that you record or export all critical information to your hard drive. If you need to revert to the backup database, use the following tasks, in order.

Step 1 Log into the node. For detailed instructions, refer to the *Cisco ONS 15310- MA SDH Procedure Guide*. If you are already logged in, continue with Step 2.

Step 2 Complete the [“DLP-U542 Revert to Protect Load” task on page 13](#).

**Caution**

Do not perform [“DLP-U543 Manually Restore the Database” task on page 14](#) unless the software revert failed.

Step 3 If the software revert to a previous release failed to restore the database, complete the [“DLP-U543 Manually Restore the Database” task on page 14](#).

Stop. You have completed this procedure.

DLP-U542 Revert to Protect Load

Purpose	This task reverts to the software you were running prior to the last activation and restores the database to the provisioning prior to the activation.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U487 Preparing to Upgrade to a New Release, page 3 NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4 NTP-U512 Upgrade the Cisco ONS 15310-MA SDH Software, page 6
Required/As Needed	Required for revert
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser

**Note**

To perform a supported (non-service-affecting) revert from Software R9.2.1.3, the release you want to revert to must have been working at the time you activated to Software R9.2.1.3 on that node. Also, a supported revert automatically restores the node configuration at the time of the previous activation. Any configuration changes made after activation will be lost when you revert the software. The exception to this is when you have downloaded Software R9.2.1.3 a second time, to ensure that no actual revert to a previous load can take place. In this latter case, the revert occurs, but the traffic is not affected and there are no changes to the database.

Step 1 If CTC is not already running, start CTC, using the IP address of the ONS 15310-MA SDH node.

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

Step 3 Verify that the protect software is the release you upgraded from.

- Step 4** Click the **Revert** button to activate the protect software and to restore the database from the previous load. A dialog box asks you to confirm the choice.
- Step 5** Click **Yes**. This begins the revert. CTC drops the connection to the node and takes you to the network view, displaying a confirmation dialog box.
- Step 6** Click **OK** and wait until the software revert finishes before continuing.



Note The system reboot might take up to 10 minutes to complete.

- Step 7** Wait one minute before reverting another node.
- Step 8** After reverting all the nodes in the network, close and restart your Netscape or Internet Explorer browser and log back into the last node that was reverted. This uploads the appropriate CTC applet to your workstation.



Note It is necessary to delete cached files from your browser’s directory or from the TEMP directory on your Microsoft Windows workstation. If you have trouble reconnecting to CTC, see the [“DLP-U540 Delete Cached JAR Files” task on page 10](#).

- Step 9** Return to your originating procedure (NTP).

DLP-U543 Manually Restore the Database

Purpose	This task manually restores the database. If you were unable to perform a revert successfully and need to restore the database, perform this task.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	DLP-U542 Revert to Protect Load, page 13
Required/As Needed	As needed
Onsite/Remote	Onsite or remote (but in the presence of the workstation)
Security Level	Superuser



Caution Do not perform these steps unless the software revert failed.



Caution This process is service affecting and should be performed during a maintenance window.

- Step 1** If CTC is not already running, start CTC, using the IP address of the ONS 15310-MA SDH node.
- Step 2** In the CTC node view, Click the **Maintenance** tab and then click the **Database** button.
- Step 3** Click the **Restore** button. The Restore Database dialog box appears.
- Step 4** Select the previously saved database file and choose **Open**.
The database is restored and the CTX2500 cards reboots.
- Step 5** When the CTX2500 cards have rebooted, log back into CTC and verify that the database is restored.

Wait one minute before restoring the next node.

Step 6 You have now completed the manual database restore.



Note When the complete database is restored, the node does not report an event regarding the IP change; the node reboots and configures the new IP from the database. If the IP address being restored is not in the CTC network IP addressing scheme, you might lose visibility of the node. To resolve this, you must launch CTC with the IP mentioned in the table against the database backup. Refer to Table 1 “Manually Recorded Data” in the “[NTP-U481 Back Up the ONS 15310-MA SDH Software Database](#)” procedure on page 4 for more information.

Step 7 Return to your originating procedure (NTP).

NTP-U513 Upgrade to the ONS 15310-MA SDH Software Using TL1

Purpose	This procedure upgrades the software to R9.2.1.3 using TL1 rather than CTC.
Tools/Equipment	PC or UNIX workstation
Prerequisite Procedures	NTP-U487 Preparing to Upgrade to a New Release , page 3 NTP-U481 Back Up the ONS 15310-MA SDH Software Database , page 4
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 R9.2.1.3 varies 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 15454 SDH*, *Cisco ONS 15600 SDH*, and *Cisco ONS 15310-MA SDH TL1 Command Guide* for your particular release when issuing the following commands:

- ACT-USER
- COPY-RFILE
- REPT-EVT-FXFR
- OPR-PROTNSW-<OCN_TYPE>
- RTRV-COND-ALL
- RTRV-ALM-ALL

**Note**

To perform an R9.2.1.3 software download using TL1, you must first have an FTP server or a terminal emulation program like HyperTerminal running on your workstation. The download (COPY-RFILE) command is different when downloading software to a gateway network element (GNE) or an end network element (ENE) under the following conditions:

- FTP is being used.
- Server is set up with a login and password of FTPUSER1 and FTPUSERPASSWORD1.
- FTP server has an IP address of 10.1.1.1.
- FTP server is running on the standard FTP port.
- Software package is called "15310masdh-03xx-A04K-1405.pkg".

The GNE and ENE commands are as follows:

- When downloading software to a GNE, use the following command:

```
COPY-RFILE:NODENAME:RFILE-PKG:CTAG::TYPE=SWDL,
SRC="ftp://FTPUSER1:FTPUSERPASSWORD1@10.1.1.1/15310-03xx-A04K-1405.pkg";
```

- When downloading software to an ENE, use the following command:

```
COPY-RFILE:NODENAME:RFILE-PKG:CTAG::TYPE=SWDL,
SRC="ftp://FTPUSER1:FTPUSERPASSWORD1@10.111.11.1:21@90.90.90.90/15310-03xx-A04K-1405.p
kg";
```

The ":21" after the FTP server IP address 10.111.11.1 denotes port 21 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@10.1.1.1:21@90.90.90.90/CISCO/SOFTWARE/15310-03xx
-A04K-1405.pkg";
```

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 15310-MA SDH node.

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

The terminal emulation interface displays a warning message and a command prompt (usually >). Execute the 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 optical support system Operations Support System (OSS) profile user ID (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. If you are using HyperTerminal, select **Transfer > Receive File**, and use 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 CTX2500 cards.

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

where:

- <TID> is the target identifier (optional).
- <src> is the source AID (required).
- <CTAG> is the correlation tag that correlates command and response messages (optional).
- <xfertype> is the file transfer protocol (required).
- <src1> 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 userid/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-U487 Preparing to Upgrade to a New Release, page 3](#) for each node to be upgraded.

Step 9 Complete [NTP-U481 Back Up the ONS 15310-MA SDH Software Database, page 4](#) for each node to be upgraded.

Step 10 Verify that there are no outstanding alarms or conditions on each node using the following commands:

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

where:

- <TID> is the target identifier (optional).
- <AID> indicates the entity in the node. <AID> must not be null.
- <CTAG> is the correlation tag that correlates command and response messages (optional).
- <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:

- <TID> is the target identifier (optional).
- <AID> indicates the entity in the node. <AID> must not be null.
- <CTAG> is the correlation tag that correlates command and response messages (optional).
- <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 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 11 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. MEM_SW_TYPE is ACT for activate.

If the command is successful, the appropriate flash is selected and the CTX2500 card reboots.

The following occurs:

- Each card in the node reboots, beginning with the standby CTX2500 card. When the standby CTX2500 card reboots, it signals the active CTX2500 card that it is ready to take over. When the active CTX2500 receives this signal, it resets itself, and the standby CTX2500 takes over and transitions to active. The pre-upgrade version of the CTX2500 card is now the standby CTX2500.
- Next, the E-Series Ethernet cards reset simultaneously.
- Any cards in Y-cable protection groups boot next, one at a time (protect card first), in order of first creation (refer to the CTC protection group list for order of first creation).

- Next, the traffic cards, G-Series Ethernet cards, CE-Series Ethernet cards, and ML-Series Ethernet cards boot consecutively, in ascending order of slot number, first standby, then working, for each card pair.
- A system reboot (SYSBOOT) alarm is raised while activation is in progress (following the CTX2500 and cross-connect card resets). When all cards have reset, this alarm clears. The complete activation process can take up to 30 minutes, depending on how many cards are installed.

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 12** Perform [Step 11](#) 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 ([Step 1](#) and [Step 3](#)) to each node again to activate the software ([Step 11](#)).

- Step 13** After all nodes have been activated, log in using CTC or Telnet ([Step 1](#) and [Step 3](#)) and verify there are no outstanding alarms.

Stop. You have completed this procedure.

Related Documentation

- *Release Notes for Cisco ONS 15310-MA SDH, Release 9.2.1.3*
- *Cisco ONS 15310- MA SDH Procedure Guide*
- *Cisco ONS 15310-MA SDH Reference Manual*
- *Cisco ONS 15310-MA SDH Troubleshooting Guide*
- *Cisco ONS 15310-MA SDH Ethernet Card Software Feature and Configuration Guide*
- *Cisco ONS 15454 SDH, Cisco ONS 15600 SDH, and Cisco ONS 15310-MA SDH TL1 Command Guide*
- *Cisco ONS 15454 SDH, Cisco ONS 15600 SDH, and Cisco ONS 15310-MA SDH TL1 Reference Guide*

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>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

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