



CHAPTER 14

Maintain the Node

This chapter provides procedures for maintaining the Cisco ONS 15310-MA SDH.

Before You Begin

Before performing any of the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15310-MA SDH Troubleshooting Guide* as necessary.

This section lists the chapter procedures (NTPs). Turn to a procedure to view its tasks (DLPs).

1. [NTP-H102 Back Up the Database, page 14-2](#)—Complete as needed.
2. [NTP-H103 Restore the Database, page 14-3](#)—Complete as needed.
3. [NTP-H132 View and Manage OSI Information, page 14-4](#)—Complete as needed.
4. [NTP-H104 Restore the Node to Factory Configuration, page 14-5](#)—Complete as needed to clear the database and upload a blank database and the latest software.
5. [NTP-H105 View the Audit Trail Records, page 14-6](#)—Complete as needed.
6. [NTP-H106 Offload the Audit Trail Record, page 14-8](#)—Complete as needed.
7. [NTP-H107 Off-Load the Diagnostics File, page 14-9](#)—Complete as needed.
8. [NTP-H108 Initiate or Clear an External Switching Command, page 14-10](#)—Complete as needed.
9. [NTP-H109 Clean Fiber Connectors, page 14-11](#)—Complete as needed.
10. [NTP-H145 Replace the Fan-Tray Assembly, page 14-12](#)—Complete as needed.
11. [NTP-H134 Reset Cards Using CTC, page 14-13](#)—Complete as needed to reset cross-connect, electrical, and Ethernet cards.
12. [NTP-H114 View the Loopback Status on a Port, page 14-14](#)—Complete as needed to view the loopback status on electrical and optical ports.
13. [NTP-H115 Switch the Node Timing Reference, page 14-15](#)—Complete as needed to switch the node timing reference in order to perform maintenance or return to normal timing operation.
14. [NTP-H116 View the Timing Report, page 14-15](#)—Complete as needed.
15. [NTP-H137 Edit Network Element Defaults, page 14-18](#)—Complete as needed to edit the factory-configured (default) network element (NE) settings.
16. [NTP-H138 Import Network Element Defaults, page 14-19](#)—Complete as needed to import the factory-configured (default) NE settings.

17. [NTP-H139 Export Network Element Defaults, page 14-21](#)—Complete as needed to export the factory-configured (default) NE settings.

NTP-H102 Back Up the Database

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


Note

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


Note

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

- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node you want to back up. 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 Backup Database window, click **Browse**.
- Step 5** In the Save window, navigate to a local PC directory or network directory and type a database name (such as database.db) in the File name field.


Note

The database file must have a *.db extension.

- Step 6** Click **Save**.
- Step 7** Click **OK** to confirm the path and file name.
- Step 8** If you are overwriting an existing file, click **OK** in the confirmation dialog box.
- Stop. You have completed this procedure.**

NTP-H103 Restore the Database

Purpose	This procedure restores the 15310E-CTX-K9 (ONS 15310-MA SDH) software database.
Tools/Equipment	None
Prerequisite Procedures	NTP-H102 Back Up the Database, page 14-2
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning (if granted privilege through NE Defaults) or higher.


Note

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


Note

Ethernet cards must be reset after a database restore. For information on restoring Ethernet cards, refer to the *Cisco ONS 15310-CL and Cisco ONS 15310-MA Ethernet Card Software Feature and Configuration Guide*.


Caution

If you are restoring the database on multiple nodes, wait approximately one minute after the 15310E-CTX-K9 reboot has completed on each node before proceeding to the next node.

- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you are restoring the database. If you are already logged in, continue with Step 2.
- Step 2** In node view, click the **Maintenance > Database** tabs.
- Step 3** Click **Restore**.
- Step 4** Locate the database file stored on the workstation hard drive or on network storage.


Note

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

- Step 5** Click the database file to highlight it.
- Step 6** Click **Open**. The DB Restore dialog box appears.


Caution

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

- Step 7** If you need a complete database restore, check the **Complete database (System and Provisioning)** check box. Continue with [Step 9](#).

**Note**

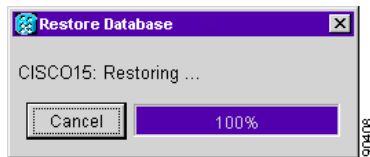
Complete database restore may be used only on a node that is removed from the network, and does not carry live provisioning traffic. This operation needs to be done by a live operator onsite, and must not use a remote connection.

Step 8 If you need to restore only the provisioning database (partial restore), do not check the **Complete database (System and Provisioning)** checkbox.

Step 9 Click **Ok**.

The Restore Database dialog box monitors the file transfer (Figure 14-1).

Figure 14-1 Restoring the Database—In-Process Notification



Step 10 Wait for the file to complete the transfer to the 15310E-CTX-K9 card. When the transfer completes, CTC switches to network view. Wait for the node to reconnect.

Stop. You have completed this procedure.

NTP-H132 View and Manage OSI Information

Purpose	This procedure allows you to view and manage Open System Interconnection (OSI) including the End System-to-Intermediate System (ES-IS) and Intermediate System-to-Intermediate System (IS-IS) routing information tables, the TID Address Resolution Protocol (TARP) data cache, and the manual area table.
Tools/Equipment	None
Prerequisite Procedures	NTP-H102 Back Up the Database, page 14-2 NTP-H13 Set Up Computer for CTC, page 2-1 NTP-H131 Provision OSI, page 3-13
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher can view OSI information. Maintenance or higher can manage OSI information.

**Note**

Additional information about OSI is provided in the “Management Network Connectivity” chapter of the *Cisco ONS 15310-MA SDH Reference Manual*.

Step 1 Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43. If you are already logged in, continue with Step 2.

Step 2 Perform any of the following tasks as needed:

- [DLP-H215 View IS-IS Routing Information Base, page 18-13](#)
- [DLP-H216 View ES-IS Routing Information Base, page 18-13](#)
- [DLP-H217 Manage the TARP Data Cache, page 18-14](#)

Stop. You have completed this procedure.

NTP-H104 Restore the Node to Factory Configuration

Purpose	This procedure reinitializes the ONS 15310-MA SDH using the CTC reinitialization tool. Reinitialization uploads a new software package to the 15310E-CTX-K9 card, clears the node database, and restores the factory default parameters.
Tools/Equipment	Cisco ONS 15310-MA SDH System Software CD, Release 9.1 and Release 9.2. JRE 5.0 must be installed on the computer to log into the node at the completion of the reinitialization. JRE 1.6 must be installed for Release 9.2. The reinitialization tool can run on JRE 1.3.1_02, JRE 1.4.2, JRE 5.0, or JRE 1.6 (Release 9.2 only).
Prerequisite Procedures	NTP-H102 Back Up the Database, page 14-2 NTP-H13 Set Up Computer for CTC, page 2-1 One of the following: <ul style="list-style-type: none"> • NTP-H14 Set Up TL1 session for Local Craft Connection to the Node, page 2-3 • NTP-H15 Set Up a CTC Computer for a Corporate LAN Connection to the Node, page 2-4
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Superuser



Caution

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



Caution

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



Caution

If you are restoring the database on multiple nodes, wait until the 15310E-CTX-K9 card has rebooted on each node before proceeding to the next node.

**Caution**

Cisco recommends that you take care to save the node database to safe location if you are not restoring the node using the database provided on the software CD.

**Note**

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

- Step 1** If you are using Microsoft Windows, complete the “[DLP-H169 Use the Reinitialization Tool to Clear the Database and Upload Software \(Windows\)](#)” task on page 17-60.
- Step 2** If you are using UNIX, complete the “[DLP-H170 Use the Reinitialization Tool to Clear the Database and Upload Software \(UNIX\)](#)” task on page 17-62.

Stop. You have completed this procedure.

NTP-H105 View the Audit Trail Records

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

- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you want to view the audit trail log. If you are already logged in, continue with [Step 2](#).
- Step 2** In the node view, click the **Maintenance > Audit** tabs.
- Step 3** Click **Retrieve**.
- A window containing the most recent audit trail records appears as shown in [Figure 14-2](#).

Figure 14-2 Viewing Audit Trail Records

Database	Date	Num	User	P/F	Operation
Ether Bridge	03/13/04 06:01:08	8	tCORBA	F	Security:General:login("CISCO15", "64.101.4.221", "FAIL - Password")
Protection	03/13/04 06:01:42	12	tCORBA	F	Security:General:login("CISCO15", "64.101.4.221", "FAIL - Password")
BLSR	03/13/04 06:02:09	16	tCORBA	F	Security:General:login("CISCO15", "64.101.4.221", "FAIL - Password")
Software	03/16/04 02:19:49	49	tCORBA	F	Security:General:login("CISCO15", "64.101.146.148", "FAIL - Password")
Cross-Connect	03/16/04 02:23:49	58	CISCO15	F	Equipment:EntityTable:provisionModule(SLOT-3, DS3_EC1_48_CARD)
Overhead XConnect	03/16/04 02:24:02	60	CISCO15	F	Equipment:EntityTable:provisionModule(SLOT-3, DS3_EC1_48_CARD)
Diagnostic	03/17/04 04:12:53	99	CISCO15	F	SonetTopology:StsCircuitPart:setAdminState(occ, cf.d3.14.22:1)
Timing	03/19/04 06:32:49	114	tCORBA	F	Security:General:login("CISCO15", "64.101.7.46", "FAIL - Password")
Audit	03/19/04 06:33:20	115	tCORBA	F	Security:General:login("CISCO15", "64.101.7.46", "FAIL - Password")
Routing Table	03/19/04 06:33:56	116	tCORBA	F	Security:General:login("CISCO15", "64.101.7.46", "FAIL - Username")
RIP Routing Table	03/19/04 06:36:12	117	tCORBA	F	Security:General:login("CISCO15", "64.101.7.46", "FAIL - Password")
DWDM	03/23/04 06:21:29	187	CISCO15	F	Equipment:Module:unprovision(SLOT-12)
	03/23/04 06:23:43	188	CISCO15	F	Equipment:Module:unprovision(SLOT-12)
	03/23/04 06:24:21	190	CISCO15	F	Equipment:Module:unprovision(SLOT-12)
	03/23/04 06:28:21	203	CISCO15	F	Equipment:Module:unprovision(SLOT-5)
	03/23/04 06:28:52	204	CISCO15	F	Equipment:Module:unprovision(SLOT-5)
	03/26/04 04:44:54	328	CISCO15	F	Equipment:EntityTable:provisionModule(SLOT-17, DS3_EC1_48_CARD)
	03/27/04 05:50:35	354	CISCO15	F	Equipment:Module:unprovision(SLOT-3)
	03/30/04 01:28:45	413	CISCO15	F	Equipment:Module:unprovision(SLOT-5)
	03/30/04 01:33:14	419	CISCO15	F	Equipment:Module:unprovision(SLOT-5)
	03/13/04 05:52:31	1	tlrit	P	Event:EventManager:RegisterClient("SNMPproxy", "IOR:00dfdfdf0000001e49444c3a43616c6c261636b2f457665")
	03/13/04 05:52:31	2	tlrit	P	Event:EventManager:RegisterClient("TL1proxy", "IOR:00dfdfdf0000001e49444c3a43616c6c261636b2f457665")
	03/13/04 05:53:56	3	tlrit	P	Event:EventManager:RegisterClient("SNMPproxy", "IOR:00dfdfdf0000001e49444c3a43616c6c261636b2f457665")
	03/13/04 05:53:56	4	tlrit	P	Event:EventManager:RegisterClient("TL1proxy", "IOR:00dfdfdf0000001e49444c3a43616c6c261636b2f457665")
	03/13/04 06:00:53	5	tCORBA	P	Security:General:login("CISCO15", "64.101.4.221", "SUCCESS")

A definition of each column in the Audit Trail log is listed in [Table 14-1](#).

Table 14-1 Audit Trail Column Definitions

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

Step 4 Right-click the column headings if you want to display the list in ascending-to-descending or descending-to-ascending order.

Step 5 Left-click the column heading to display a shortcut menu containing the following options:

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

Step 6 Shift-click the column heading if you want to display an incrementally sorted list.

Stop. You have completed this procedure.

NTP-H106 Offload the Audit Trail Record

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

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- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you want to off-load the audit trail log. If you are already logged in, continue with [Step 2](#).
- Step 2** In the node view, click the **Maintenance > Audit** tabs.
- Step 3** Click **Retrieve**.
- Step 4** Click **Archive**.
- Step 5** In the Archive Audit Trail dialog box, navigate to the directory (local or network) where you want to save the file.
- Step 6** Enter a name in the File Name field.
- Use .txt.gz as the extension. This creates a .gzip file. Use WinZip or GNU gzip to uncompress the file. The uncompressed file is readable in any application that supports text files, such as WordPad, Microsoft Word (imported), etc.
- Step 7** Click **Save**.

Entries not saved in the previous archive are saved in this file. The next entries continue with the next number in the sequence, rather than starting over.



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

Stop. You have completed this procedure.

NTP-H107 Off-Load the Diagnostics File

Purpose	This procedure describes how to off-load a diagnostics file. The diagnostics file contains a set of debug commands run on a node and their result. This file is useful to the Cisco Technical Assistance Center (TAC) when they troubleshoot problems with the node.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you want to off-load the diagnostics file. If you are already logged in, continue with [Step 2](#).

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

Step 3 Click **Node Diagnostic Logs**.



Note For Release 9.1, click **Retrieve Tech Support Log** and proceed to Step 5.

Step 4 The Node Diagnostics dialog box is displayed. Click **OK** to continue.

Step 5 Navigate to the directory (local or network) where you want to save the file.

Step 6 Enter a name in the File Name field.

You do not have to give the archive file a particular extension. It is a compressed file that can be unzipped and read by Cisco Technical Support.

Step 7 Click **Save**.

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

Step 8 Click **OK**.

Stop. You have completed this procedure.

NTP-H108 Initiate or Clear an External Switching Command

Purpose	This procedure describes how to apply an external switching command to an optical port, including Manual and Force switches, lock-ons, and lockouts. Path protection Force switches are also included.
Tools/Equipment	None
Prerequisite Procedures	NTP-H142 Create Protection Groups for ONS 15310-MA SDH, page 3-10 or NTP-H31 Provision Path Protection Nodes, page 4-9
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	Maintenance or higher

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- Step 1** Complete the [“DLP-H29 Log into CTC” task on page 16-43](#) at the node where you want to apply a lock-on or lockout. If you are already logged in, continue with [Step 3](#).
- Step 2** To initiate a Manual or Force switch in a 1+1 protection group, complete the [“DLP-H179 Initiate an Optical Protection Switch” task on page 17-69](#).
- Step 3** To prevent traffic on a working or protect port from switching to the other port in the pair, complete the [“DLP-H171 Apply a Lock-on” task on page 17-64](#).
- Step 4** To prevent traffic from switching to the protect port, complete the [“DLP-H172 Apply a Lockout” task on page 17-65](#).
- Step 5** To remove a lock-on or lockout and return a protection group to its usual switching method, complete the [“DLP-H173 Clear a Lock-on or Lockout” task on page 17-65](#).



Note A nonalarmed event (INHSWWKG or INHSWPR) is raised when a port is placed in a lock-on or lockout state.

- Step 6** As needed, complete the [“DLP-H166 Initiate a Path Protection Force Switch on a Span” task on page 17-58](#).
- Step 7** As needed, complete the [“DLP-H167 Clear a Path Protection Force Switch” task on page 17-59](#).



Note Refer to the “Port Protection” chapter in the *Cisco ONS 15310-MA SDH Reference Manual* for a description of protection switching and switch state priorities.

Stop. You have completed this procedure.

NTP-H109 Clean Fiber Connectors

Purpose	This procedure cleans the fiber connectors.
Tools/Equipment	<p>Inspection microscope</p> <p>Type A Fiber Optic Connector Cleaner (CLETOP reel)</p> <p>Optical swab</p> <p>Optical receiver cleaning stick</p>
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None



Warning

Class 1 laser product. Statement 1008



Warning

Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments. Statement 1051



Caution

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



Note

Replace all dust caps whenever the equipment is not to be immediately used.

- Step 1** Using an inspection microscope, inspect each fiber connector for dirt, cracks, or scratches.
- Step 2** Replace any damaged fiber connectors.
- Step 3** Complete the [“DLP-H175 Clean Fiber Connectors with CLETOP”](#) task on page 17-67 as necessary.
- Step 4** Complete the [“DLP-H176 Clean the Fiber Adapters”](#) task on page 17-67 as necessary.



Note

To clean multi-fiber optic connectors, complete the [“DLP-H174 Clean Multi Fiber-Optic Cable Connectors”](#) task on page 17-66 as necessary.

Stop. You have completed this procedure.

NTP-H145 Replace the Fan-Tray Assembly

Purpose	This procedure replaces a malfunctioning fan-tray assembly in an ONS 15310-MA SDH.
Tools/Equipment	None
Prerequisite Procedures	NTP-H152 Install the Fan-Tray Assembly, page 1-14
Required/As Needed	As needed
Onsite/Remote	Onsite
Security Level	None


Caution

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

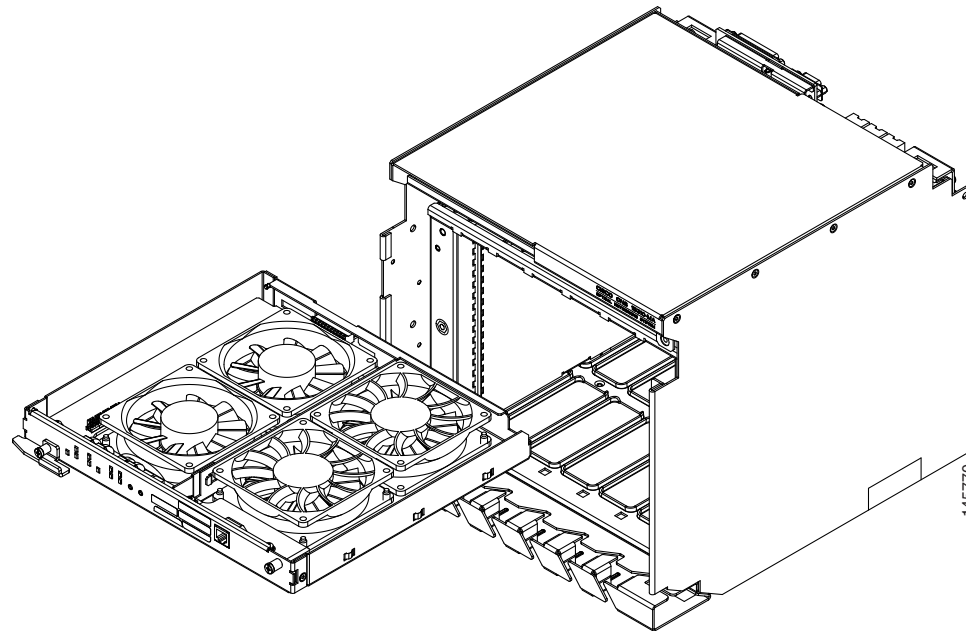

Note

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

- Step 1** Remove the front door on the ONS 15310-MA SDH by unscrewing the two screws, detaching the door ground strap, and sliding the door up and away from the shelf assembly.
- Step 2** Use a Phillips screwdriver to unscrew each screw at either end of the fan tray.
- Step 3** Pull the fan tray ejector all the way out, and use the ejector to slide the fan tray out the shelf assembly one inch (25.4 mm), and wait until the fans stop.
- Step 4** When the fans have stopped, pull the fan-tray assembly completely out of the shelf assembly.
- Step 5** On the fan-tray assembly you want to install, pull the fan tray ejector all the way out.
- Step 6** Use the ejector to slide the fan tray into the shelf assembly until the electrical plug at the rear of the tray plugs into the corresponding receptacle on the backplane.
- Step 7** Close the ejector.
- Step 8** Use a Phillips screwdriver to tighten the screws at either end of the fan-tray assembly.
- Step 9** To verify that the tray has plugged into the backplane, look at the fan tray and listen to determine that the fans are running.

[Figure 14-3](#) shows the location of the fan tray.

Figure 14-3 Installing the Fan-Tray Assembly



Step 10 If you replace the door, be sure to reattach the ground strap.

Stop. You have completed this procedure. Estimated time of replacement by a skilled technician: two minutes.

NTP-H134 Reset Cards Using CTC

Purpose	This procedure resets a 15310E-CTX-K9, electrical, or Ethernet card using soft and hard resets. A soft reset reboots the card and reloads the operating system and the application software. A hard reset temporarily removes power from the card and clears all buffer memory before it is physically reset.
Tools/Equipment	None
Prerequisite Procedures	Card installation procedure(s)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher



Caution

Do not soft reset more than one ONS 15310-MA SDH card at a time. Instead, issue a soft reset command for a single card, then wait until CTC shows that the card is initialized. You can then issue a soft reset on another card if needed. Completing soft resets in sequence helps to avoid unexpected traffic hits.

Step 1 Complete the [“DLP-H29 Log into CTC” task on page 16-43](#) at the node where you are performing the software reset. If you are already logged in, continue with Step 2.

- Step 2** As needed, complete the “DLP-H218 Soft-Reset a 15310E-CTX-K9 Card Using CTC” task on [page 18-15](#).
- Step 3** As needed, complete the “DLP-H219 Hard-Reset the 15310E-CTX-K9 Card Using CTC” task on [page 18-16](#).
- Step 4** As needed, complete the “DLP-H220 Soft-Reset an Ethernet or Electrical Card Using CTC” task on [page 18-17](#).
- Step 5** As needed, complete the “DLP-H221 Hard-Reset an Ethernet or Electrical Card Using CTC” task on [page 18-18](#).

Stop. You have completed this procedure.

NTP-H114 View the Loopback Status on a Port

Purpose	Use this task to view the loopback status on a selected ports.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

- Step 1** Complete the “DLP-H29 Log into CTC” task on [page 16-43](#) at the node where you want to view the loopback status. If you are already logged in, continue with [Step 2](#).
- Step 2** In node view, double-click the card where you want to view the loopback status on a port. The card view displays.
- Step 3** Depending on the port where the loopback is located, click one of the following tab sequences:
- Maintenance > E1 > Loopback
 - Maintenance > DS3 > Loopback
 - Maintenance > E3 > Loopback
 - Maintenance > Optical > Loopback

The Number (#) and Service State columns identify the port number and current operating state (In-Service and Normal [unlocked-enabled]; Out-of-Service and Management, Maintenance [locked-enabled,maintenance]; and Out-of-Service and Management, Disabled [locked-enabled,disabled]) of each port on the card. The Loopback Type column identifies the type of loopback (None, Terminal, or Facility) applied to each port on the card.

Stop. You have completed this procedure.

NTP-H115 Switch the Node Timing Reference

Purpose	This procedure switches the node timing reference to enable maintenance on a timing reference or to return the node timing to normal operation.
Tools/Equipment	None
Prerequisite Procedures	NTP-H23 Set Up Timing, page 3-10
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Maintenance or higher

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- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node that you want to monitor. If you are already logged in, continue with Step 2.
- Step 2** As needed, use the following tasks to change the display of node timing maintenance information:
- [DLP-H177 Manual or Force Switch the Node Timing Reference, page 17-68](#)
 - [DLP-H178 Clear a Manual or Force Switched Node Timing Reference, page 17-68](#)
- Stop. You have completed this procedure.**
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NTP-H116 View the Timing Report

Purpose	This procedure displays the current status of the ONS 15310-MA SDH timing references.
Tools/Equipment	None
Prerequisite Procedures	NTP-H23 Set Up Timing, page 3-10
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Retrieve or higher

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- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you want to view the node timing status. If you are already logged in, continue with [Step 2](#).
- Step 2** Click the **Maintenance > Timing > Report** tabs.
- Step 3** In the Timing Report area you can view node timing information. The date and time of the report appear at the top of the report. The time stamp is the same as the alarms time stamp and can be configured using the “[DLP-H75 Display Alarms and Conditions Using Time Zone](#)” task on page 16-93. [Table 14-2](#) describes the report fields and entries.
- Step 4** To update the report, click **Refresh**.

Table 14-2 ONS 15310-MA SDH Timing Report

Item	Description	Options	Option Descriptions
Clock	Indicates the timing clock. The report section that follows applies to the timing clock indicated.	NE	The node timing clock.
		BITS-1 Out	The BITS-1 Out timing clock.
Status	Indicates the status of the timing clock.	INIT_STATE	The timing reference has not been provisioned. For an NE reference, this status appears just before the first provisioning messages when the 15310E-CTX-K9 is booting. Timing is provisioned to the internal clock of the node.
		HOLDOVER_STATE	The clock was locked onto a valid timing reference for more than 140 seconds when a failure occurred. Holdover state timing is a computation based on timing during Normal state combined with the node's internal clock. The node holds onto this frequency until the valid reference is restored. This status appears for NE references only.
		FREERUN_STATE	The node is running off its internal clock without any modification except the calibrated value to bring timing to 0 PPM. Free-run state can occur when a Force switch to the Internal clock is initiated, all references fail without the 140 seconds of holdover data, or only internal timing references are defined. This status appears for NE references only.
		NO_SYNC_STATE	A synchronization timing reference is not defined. BITS-1 Out defaults to this status until an STM-M card is defined as its reference on the Provisioning > Timing tab. This status appears for external references only.
		NE_SYNC_STATE	BITS-1 Out uses the same timing source as the NE. This appears when NE Reference is selected for BITS-1 Out Reference List on the Provisioning > Timing tab.
		NORMAL_STATE	The timing reference is locked onto one of its provisioned references. The reference cannot be Internal or No Sync state.
		FAST_START_STATE	The node has switched references, but the reference is too far away to reach Normal state within an acceptable amount of time. Fast Start state is a fast acquisition mode to allow the node to quickly acquire the reference. After it achieves this goal, the node progresses to the Normal state.
		FAST_START_FAILED_STATE	A timing reference is too far away to reach in Normal state. The Fast Start state could not acquire sufficient timing information within the allowable amount of time.

Table 14-2 ONS 15310-MA SDH Timing Report (continued)

Item	Description	Options	Option Descriptions
Status Changed At	Date and time of the last status change.	—	—
Switch Type	Type of switch.	AUTOMATIC	The timing switch was system-generated.
		Manual	The timing switch was a user-initiated Manual switch.
		Force	The timing switch was user-initiated Force switch.
Reference	Indicates the timing reference.	Three timing references are available on the Provisioning > Timing tab.	The timing references are One and Two, which correspond to BITS-1, BITS-2, and Internal Clock respectively.
Selected	Indicates whether the reference is selected.	Selected references are indicated with an X.	—
Facility	Indicates the timing facility provisioned for the reference on the Provisioning > Timing tab.	BITS-1	The timing facility is a building integrated timing supply (BITS) clock attached to the node's BITS-1 pins.
		BITS-2	The timing facility is a BITS clock attached to the node's BITS-2 pins.
		STM-M/E1	If the node is set to line timing, this is the STM-M or E1 port provisioned as the timing reference.
		Internal clock	The node is using its internal clock.
State	Indicates the timing reference state.	unlocked	The timing reference is in service.
		OOS	The timing reference is out of service.
Condition	Indicates the timing reference state.	OKAY	The reference is valid to use as a timing reference.
		OOB	Out of bounds; the reference is not valid and cannot be used as a timing reference, for example, a BITS clock is disconnected.
		LOS	Loss of signal; the reference is valid on a E1, STM1, or STM4 facility used for timing.
Condition Changed	Indicates the date and time of the last status change in MM/DD/YY HH:MM:SS format.	—	—
SSM	Indicates whether SSM is enabled for the timing reference.	Enabled	Synchronization status messaging (SSM) is enabled.
		Disabled	SSM is not enabled.

Table 14-2 ONS 15310-MA SDH Timing Report (continued)

Item	Description	Options	Option Descriptions
SSM Quality	Indicates the SSM timing quality.	Eight to ten SSM quality messages can appear.	For a list of SSM message sets, refer to the “Timing” chapter in the <i>Cisco ONS 15310-MA SDH Reference Manual</i> .
SSM Changed	Indicates the date and time of the last SSM status change in MM/DD/YY HH:MM:SS format.	—	—

Stop. You have completed this procedure.

NTP-H137 Edit Network Element Defaults

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



Note

For a list of card and node default settings, refer to the “Network Element Defaults” appendix in the *Cisco ONS 15310-MA SDH Reference Manual*. To change card settings individually (that is, without changing the defaults), see [Chapter 9, “Change Port Settings.”](#) To change node settings, see [Chapter 10, “Change Node Settings.”](#)

- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on [page 16-43](#) at the node where you want to edit NE defaults.
- Step 2** Click the **Provisioning > Defaults** tabs.
- Step 3** Under Defaults Selector, choose a card type (if editing card-level defaults), **CTC** (if editing CTC defaults), or **NODE** (if editing node-level defaults). Clicking on the node name (at the top of the Defaults Selector column) lists all available NE defaults in the Default Name column. To selectively display the defaults for a given card type from a node-level or CTC-level, you can drill down the Defaults Selector tree structure.
- Step 4** Locate a default that you want to change under Default Name.

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



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

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

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



Note Changes to most node defaults reprovision the node when you click Apply. Changes made to card settings using the Defaults Editor do not change the settings for cards that are already installed or slots that are preprovisioned for cards, but rather, change only cards that are installed or preprovisioned thereafter. To change settings for installed cards or preprovisioned slots, see [Chapter 9, “Change Port Settings.”](#)



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

- Step 7** If you are modifying node-level defaults, a dialog box appears telling you that applying defaults for node level attributes overrides current provisioning and asks if you want to continue. Click **Yes**.
- Step 8** If you are modifying the IOP Listener Port setting, a dialog box appears warning you that the node will reboot and asks if you want to continue. Click **Yes**.

Stop. You have completed this procedure.

NTP-H138 Import Network Element Defaults

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



Note For a list of card and node NE defaults, refer to the “Network Element Defaults” appendix in the *Cisco ONS 15310-MA SDH Reference Manual*.

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- Step 1** Complete the “[DLP-H29 Log into CTC](#)” task on page 16-43 at the node where you want to import NE defaults.
- Step 2** Click the **Provisioning > Defaults** tabs.
- Step 3** Click **Import**.
- Step 4** If the correct file name and location of the desired file do not appear in the Import Defaults from File dialog box, click **Browse** and navigate to the file that you are importing.
- Step 5** When the correct file name and location appear in the dialog box (the correct file name is 15310-defaults.txt if you are importing the factory defaults), click **OK**.

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

- Step 6** Click **Apply**.
- Step 7** If the imported file fails to pass all tests, the problem field shows the first encountered problem default value that must be fixed. Change the problem default value and click **Apply**. Repeat until the imported file passes all tests successfully.



Note Changes to most node defaults reprovision the node when you click **Apply**. Changes made to card settings using the Defaults Editor do not change the settings for cards that are already installed or slots that are preprovisioned for cards, but rather, change only cards that are installed or preprovisioned thereafter. To change settings for installed cards or pre-provisioned slots, see [Chapter 10, “Change Node Settings.”](#)



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

- Step 8** If you are modifying node-level defaults, a dialog box appears telling you that applying defaults for node level attributes overrides current provisioning and asks if you want to continue. Click **Yes**.
- Step 9** If you are modifying the IOP Listener Port setting, a dialog box appears warning you that the node will reboot and asks if you want to continue. Click **Yes**.

Stop. You have completed this procedure.

NTP-H139 Export Network Element Defaults

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



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



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

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- Step 1** Complete the [“DLP-H29 Log into CTC” task on page 16-43](#) at the node where you want to export NE defaults.
- Step 2** Click the **Provisioning > Defaults** tabs.
- Step 3** Click **Export**.
- Step 4** If the desired file to export to does not appear in the Export Defaults to File dialog box (or does not yet exist) click **Browse** and browse to the directory where you want to export the data; then either choose or type in (to create) the file to export to [the defaults will be exported as a text file delimited by equals (=) signs].
- Step 5** Click **OK**.

Stop. You have completed this procedure.
