APPENDIX A

CTC Information and Shortcuts

Note The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

This appendix describes how to navigate in the Cisco Transport Controller (CTC) and change CTC table data. It also describes menu and tool options and the shelf inventory data presented in CTC. For information about CTC, refer to the "Cisco Transport Controller Operation" chapter in the *Cisco ONS 15600 Reference Manual*.

Display Node, Card, and Network Views

CTC provides three views of the ONS platform:

- Node view appears when you first log into an ONS 15600. This view shows a graphic of the ONS 15600 shelf and provides access to tabs and subtabs that you use to manage the node.

- Card view provides access to individual ONS 15600 cards. This view shows a graphic of the card and provides access to tabs and subtabs that you use to manage the card.

- Network view shows all the nodes in a ring. A Superuser can set up this feature so each user will see the same network view, or the user can create a custom view with maps. This view provides access to tabs and subtabs that you use to manage the network.

- Domain view shows all nodes in a selected domain. This view shows nodes that are members of the selected domain. Nodes connected to the domain nodes are grayed out. A domain is used to isolate nodes or groups of nodes for easier maintenance.

Table A-1 lists different actions for changing CTC views.

Table A-1   Change CTC Views

To display:	Perform one of the following:
Node view	• Log into a node; node view is the default view. • In network view, double-click a node icon, or right-click the node and choose **Open Node**. • From the CTC View menu, choose **Go To Other Node**, then choose the node you want from the shortcut menu. • Use the arrows on the CTC toolbar to navigate up or down views. For example, in network view select a node and click the down arrow.
Home view (node view of the first node you logged into in a network)	• From the CTC View menu, choose **Go To Home View**.
Domain view	• In network view, double-click a domain.
Card view	• In node view, double-click a card or right-click the card and choose **Open Card**. • In node view, single-click a card icon, then select **Go To Selected Object View** from the View menu. • Use the arrows on the CTC toolbar to navigate up or down. For example, in node view select a card and then click the down arrow.
Network view	• In node view, click the up arrow on the CTC toolbar. • From the View menu, choose **Go To Network View**.

CTC Window

Different navigational methods are available within the CTC window to access views and perform management actions. You can double-click and right-click objects in the graphic area and move the mouse over nodes, cards, and ports to view popup status information.

CTC Menu and Toolbar Options

The CTC window menu bar and toolbar provide primary CTC functions. Table A-2 shows the actions that are available from the CTC menu and toolbar.

Table A-2   CTC Menu and Toolbar Options

Menu	Menu Option	Toolbar	Description
File	Add Node		Adds a node to the current session. See the "DLP-E28 Add a Node to the Current Session or Login Group" task on page 16-43.
	Delete Selected Node		Deletes a node from the current session.
	Lock CTC		Locks CTC without closing the CTC session. A user name and password are required to reopen CTC.
	Print		Prints CTC data. See the "DLP-E214 Print CTC Data" task on page 18-18.
	Export		Exports CTC data. See the "DLP-E265 Export CTC Data" task on page 18-84.
	Exit		Closes the CTC session. The exit icon only appears in the File menu.
Edit	Preferences		Displays the Preferences dialog box: • General tab—Allows you to change event defaults and manage preferences. • Login Node Group tab—Allows you to create login node groups. See the "DLP-E27 Create Login Node Groups" task on page 16-41. • Map—Allows you to customize the network view. See the "DLP-E81 Change the Network View Background Color" task on page 16-87 and the "DLP-E83 Apply a Customer Network View Background" task on page 16-88. • Circuit—Allows you to change the color of circuit spans. See the "DLP-E68 Change Active and Standby Span Color" task on page 16-83. • Firewall—Sets the Internet Inter-ORB Protocol (IIOP) listener ports for access to the ONS 15600 through a firewall. See the "NTP-E94 Set Up the ONS 15600 for Firewall Access" procedure on page 4-6. • JRE—Allows you to select a different Java Runtime Environment (JRE) when CTC restarts.

Table A-2   CTC Menu and Toolbar Options (continued)

Menu	Menu Option	Toolbar	Description
View	Go To Previous View		Displays the previous CTC view.
	Go To Next View		Displays the next CTC view. Available only after you navigate to a previous view. Go to Previous and Go to Next is similar to forward/backward navigation in a web browser.
	Go To Parent View		References the CTC view hierarchy: network view, node view, and card view. In card view, this command displays the node view; in node view, the command displays network view. Not available in network view.
	Go To Selected Object View		Displays the object selected in the CTC window.
	Go To Home View		Displays the login node in node view.
	Go To Network View		Displays the network view.
	Go To Other Node		Displays a dialog box allowing you to type in the node name or IP address of a a network node that you want to view.
	Show Status Bar	—	Displays or hides the status bar at the bottom of the CTC window.
	Show Tool Bar	—	Displays or hides the CTC toolbar.
—	—		Zooms out the network view area (toolbar only).
—	—		Zooms in the network view area (toolbar only).
—	—		Zooms in a selected network view area (toolbar only).

Table A-2   CTC Menu and Toolbar Options (continued)

Menu	Menu Option	Toolbar	Description
Tools	Circuits	—	Displays the following options: • Repair Circuits—Repairs incomplete circuits following replacement of the ONS 15600 alarm interface panel (AIP). Refer to the *Cisco ONS 15600 Troubleshooting Guide* for more information. • Merge Circuits—Merges multiple circuits. See the "NTP-E127 Merge Circuits" procedure on page 7-6. • Set Path Selector Attributes—Allows you to edit path protection circuit path selector attributes. Refer to the "DLP-E127 Edit Path Protection Circuit Path Selectors" task on page 17-24. • Set Circuit State—Allows you to change a circuit state. See the "DLP-E188 Change a Circuit Service State" task on page 17-67. • Roll Circuit—Allows you to reroute live traffic without interrupting service. See the "NTP-E55 Bridge and Roll Traffic" procedure on page 7-4. • Delete Rolls—Removes rolls that are not deleted by CTC after a roll has been completed. See the "DLP-E241 Delete a Roll" task on page 18-62.
	Overhead Circuits	—	Displays the Repair IP Tunnels option. Refer to the "NTP-E134 Modify and Delete Overhead Circuits" procedure on page 7-3.
	Topology Upgrade	—	Displays the following options: • Convert UPSR to BLSR (This option does not apply to the ONS 15600)—Converts path protection to BLSR. • Convert Unprotected to UPSR (This option does not apply to the ONS 15600)—Converts a point-to-point or linear ADM to path protection.
	Manage VLANs	—	Displays a list of VLANs that have been created and allows you to delete or create new VLANs.
	Open TL1 Connection		Displays the TL1 session dialog box so you can create a TL1 session to a specific node. Refer to the *Cisco ONS SONET TL1 Command Guide*.
	Open IOS Connection		(Not applicable to ONS 15600.) Displays the Cisco IOS command line interface dialog box if a Cisco IOS capable card (ML1000-2 or ML100T-12) is installed in the node. Refer to the *Ethernet Card Software Feature and Configuration Guide*.
Help	Contents and Index	—	Displays the online help window.
	User Manuals	—	Displays the Cisco ONS 15600 documentation.
	About CTC	—	Displays the software version and the nodes in the CTC session.

Table A-2   CTC Menu and Toolbar Options (continued)

Menu	Menu Option	Toolbar	Description
—	Network Scope	—	The network scope drop-down list has three options: DWDM, TDM, or All. If you choose DWDM, dense wavelength division multiplexing (DWDM) and hybrid nodes appear on the network view map. If you choose TDM, time division multiplexing (TDM) and hybrid nodes appear on the network view map. If you choose All, every node in the network appears on the network view map.
—	—		Opens the CTC Alerts dialog box, which shows the status of certain CTC background tasks. When the CTC Alerts toolbar icon contains a red triangle, unread notifications exist. When there are no unread notifications, the CTC Alerts toolbar icon contains a gray triangle (see the Toolbar column for comparison). Notifications include: • Network disconnection • Send-PDIP inconsistency—CTC discovers a new node that does not have a SEND-PDIP setting consistent with the login node. • Circuit deletion status—Reports when the circuit deletion process completes if you choose "Notify when complete" as described in the "DLP-E163 Delete Circuits" task on page 17-49. The CTC Alerts window always reports circuit deletion errors. • Conditions retrieval error • Software download failure You can save a notification by clicking the Save button in the CTC Alerts dialog box and navigating to the directory where you want to save the text file. By default, the CTC Alerts dialog box opens automatically. To disable automatic popup, see the "DLP-E184 Configure the CTC Alerts Dialog Box for Automatic Popup" task on page 17-65.

CTC Mouse Options

Table A-3 shows mouse navigation techniques in CTC.

Table A-3   CTC Mouse Options

Technique	Description
Double-click	• Node in network view—Displays the node view. • Domain in network view—Displays the domain view. • Card in node view—Displays the card view. • Alarm/Event—Displays the object that raised the alarm or event. • Circuits—Displays the Edit Circuit window.
Right-click	• Network view graphic area—Displays a menu that you can use to create a new domain, change the position and zoom level of the graphic image, and change the background image and color. • Domain in network view—Displays a mneu that you can use to open a domain, show the domain overview, rename the domain, and delete the domain. • Node in network view—Displays a menu where you can open the node, go to the node domain, reset the node icon position to the longitude and latitude set on the Provisioning > General tabs, provision circuits, and update circuits with a new node. • Span in network view—Displays a menu where you can view information about the source and destination ports, the span's protection scheme, and the span's optical level. You can also display the Circuits on Span dialog box, which displays additional span information and allows you to perform path protection switching. If a BLSR is provisioned, you can display the PCA circuits. • Card in node view—Displays a menu where you can open, delete, hard and soft reset, and change cards. The card you select determines the commands that appear. • Card in card view—Displays a menu that you can use to reset the card, or go to the parent view (node view). • Empty slot in node view—Displays a menu that allows you to add (preprovision) a card.
Move mouse cursor	• Over node in network view—Displays a summary of node alarms and provides a warning if the node icon has been moved out of the map range. • Over span in network view—Displays circuit (node, slot, port) bandwidth and protection information. • Over domain in network view—Displays domain name and the number of nodes in the domain. • Over card in node view—Displays card type, card status, highest-level alarm, and alarm profile status. The ONS 15600 ASAP card displays the Protocol Independent Multicast (PIM) and pluggable port modules (PPM). • Over card port in node view—Displays port number, port status, and alarm profile status. • Over card port in card view—Displays port state, protection status (if applicable), PPM, and alarm profile status.

Node View Shortcuts

Table A-4 shows actions on ONS 15600 cards that you can perform by moving your mouse over the CTC window.

Table A-4   Node View Card-Related Shortcuts

Action	Shortcut
Display card information	Move your mouse over cards in the graphic to display tooltips with the card type, card status (active or standby), the highest level of alarm (if any), and the alarm profile used by the card.
Open, reset, or delete a card	Right-click a card. Choose **Open Card** to display the card in card view, **Hard-reset Card** to perform a hard reset on the card, **Soft-reset Card** to perform a soft reset of the card, or **Delete Card** to delete it.
Preprovision a slot	Right-click an empty slot. Select the card type you want to provision the slot for from the shortcut menu.
Change a card	Right-click an OC-N card and choose **Change Card**. In the Change Card dialog box, select the card type. Change card retains all card provisioning.
Change view	Right-click on the area outside the node to display a menu that allows you to return to the parent view.

Network View Shortcuts

Right-click the network view graphic area or a node, span, or domain to display shortcut menus. Table A-5 lists the actions that are available from the network view.

Table A-5   Network Management Tasks in Network View

Action	Task
Open a node	Do any of the following: • Double-click a node icon. • Right-click a node icon, and choose **Open Node** from the shortcut menu. • Click a node and choose **Go To Selected Object View** from the CTC View menu. • From the View menu, choose **Go To Other Node**. Select a node from the Select Node dialog box. • Double-click a node alarm or event in the Alarms or History tabs.
Move a node icon	Press the **Ctrl** key and the left mouse button simultaneously and drag the node icon to a new location.
Reset node icon position	Right-click a node and choose **Reset Node Position** from the shortcut menu. The node icon moves to the position defined by the longitude and latitude fields on the Provisioning > General tabs in node view.
Provision a circuit	Right-click a node. From the shortcut menu, choose **Provision Circuit To** and select the node where you want to provision the circuit. For circuit creation procedures, see Chapter 6, "Create Circuits."

Table A-5   Network Management Tasks in Network View (continued)

Action	Task
Update circuits with new node	Right-click a node and choose **Update Circuits With New Node** from the shortcut menu. Use this command when you add a new node and want to pass circuits through it.
Display a link endpoint	Right-click a span. From the shortcut menu, choose **Go To** [<node> | <port> | <slot>] for the drop port you want to view. CTC displays the card in card view.
Display span properties	Do any of the following: • Move mouse over a span; the properties appear near the span. • Click a span; the properties appear in the upper left corner of the window. • Right-click a span; the properties appear at the top of the shortcut menu.
Perform a path protection switch for all circuits on a span	Right-click a network span and click **Circuits**. In the Circuits on Span dialog box, switch options appear in the UPSR Span Switching field.

Table Display Options

Table A-6 shows table display options, which include rearranging or hiding CTC table columns and sorting table columns by primary or secondary keys (Figure A-1).

Table A-6   Table Display Options

Action	Click Shortcut	Right-Click Shortcut Menu
Resize column	Click while dragging the column separator to the right or left.	—
Rearrange column order	Click while dragging the column header to the right or left.	—
Reset column order	—	Choose **Reset Columns Order/Visibility**.
Hide column	—	Choose **Hide Column**.
Display a hidden column	—	Choose **Show Column >** *column-name*.
Display all hidden columns	—	Choose **Reset Columns Order/Visibility**.
Sort table (primary)	Click a column header; each click changes sort order (ascending or descending).	Choose **Sort Column**.
Sort table (secondary sorting keys)	Press the **Shift** key and simultaneously click the column header.	Choose **Sort Column (incremental)**.

Table A-6   Table Display Options (continued)

Action	Click Shortcut	Right-Click Shortcut Menu
Reset sorting	—	Choose **Reset Sorting**.
View table row count	—	View the number after **Row count=**; it is the last item on the shortcut menu. Refer to .

Figure A-1   Table Shortcut Menu to Customize Table Appearance
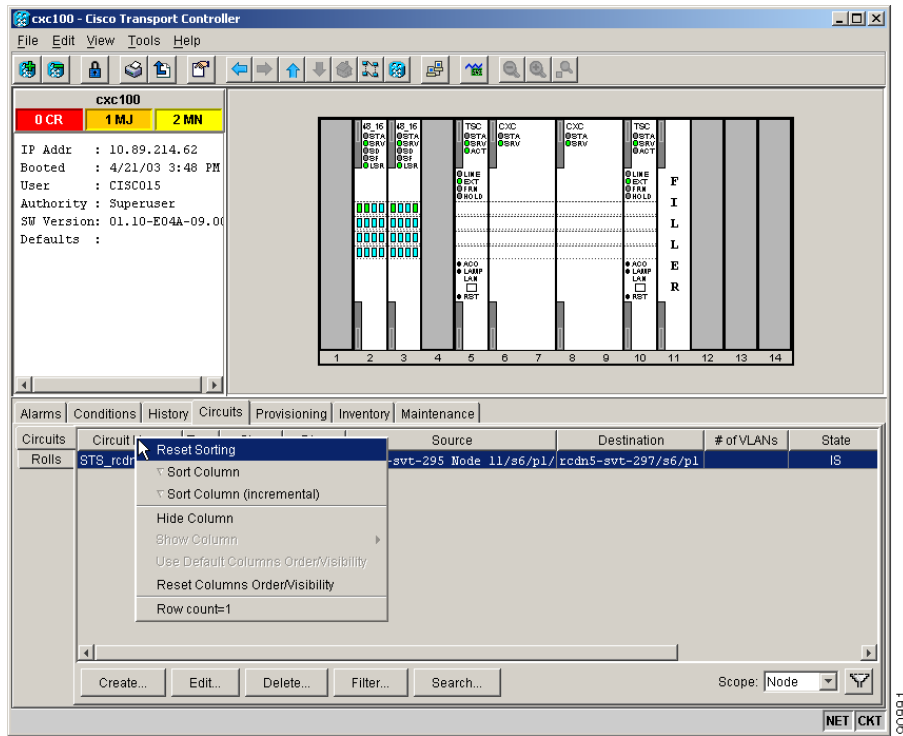
# Equipment Inventory

In node view, the Inventory tab () displays ONS 15600 equipment information, including:

- Location—Where the equipment is installed, either chassis or slot number.

- Eqpt Type—The equipment type, for example, FAN_TRAY or OC48_16.

- Admin State—Shows the administrative state of the port. Choosing an administrative state from the drop-down list and clicking Apply sets the service state:

  - IS places the port in the IS-NR service state.

  - IS,AINS places the port in the OOS-AU,AINS service state.

  - OOS,DSBLD places the port in the OOS-MA,DSBLD service state.

  - OOS,MT places the port in the OOS-MA,MT service state.

- Service State—Shows the service state of the port:
    - IS-NR—In service; able to carry traffic.
    - OOS-AU,AINS—Auto in service; alarm reporting is suppressed, but traffic is carried. When ports are in the OOS-AU,AINS service state, the ONS node monitors the ports for an error-free signal. When an error-free signal is detected, the port stays in OOS-AU,AINS for the duration of the soak period. When the soak period ends, the port service state changes to IS-NR. Raised fault conditions, whether or not their alarms are reported, can be retrieved on the CTC Conditions tab or by using the TL1 RTRV-COND command.
    - OOS-MA,DSBLD—Out of service; unable to carry traffic.
    - OOS-MA,MT—Out of service, maintenance; alarm reporting is suppressed, but traffic is carried and loopbacks are allowed. Raised fault conditions, whether or not their alarms are reported, can be retrieved on the CTC Conditions tab or by using the TL1 RTRV-COND command.
- Actual Eqpt Type—The actual equipment type, for example, FTA or OC48-LR.
- HW Part #—Hardware part number; this number is printed on the top of the card or equipment piece.
- HW Rev—Hardware revision number.
- Serial #—Equipment serial number; this number is unique to each card.
- CLEI Code—Common Language Equipment Identifier code.
- User Code—A text entry field that allows the user to type a 20-character ASCII code to further identify cards.
- Firmware Rev—Revision number of the software used by the application-specific integrated circuit (ASIC) chip installed.
- Product ID—Displays the manufacturing product identifier for a hardware component, such as a fan tray, chassis, or card.
- Version ID—Displays the manufacturing version identifier for a fan tray, chassis, or card.

Figure A-2   Inventory Tab
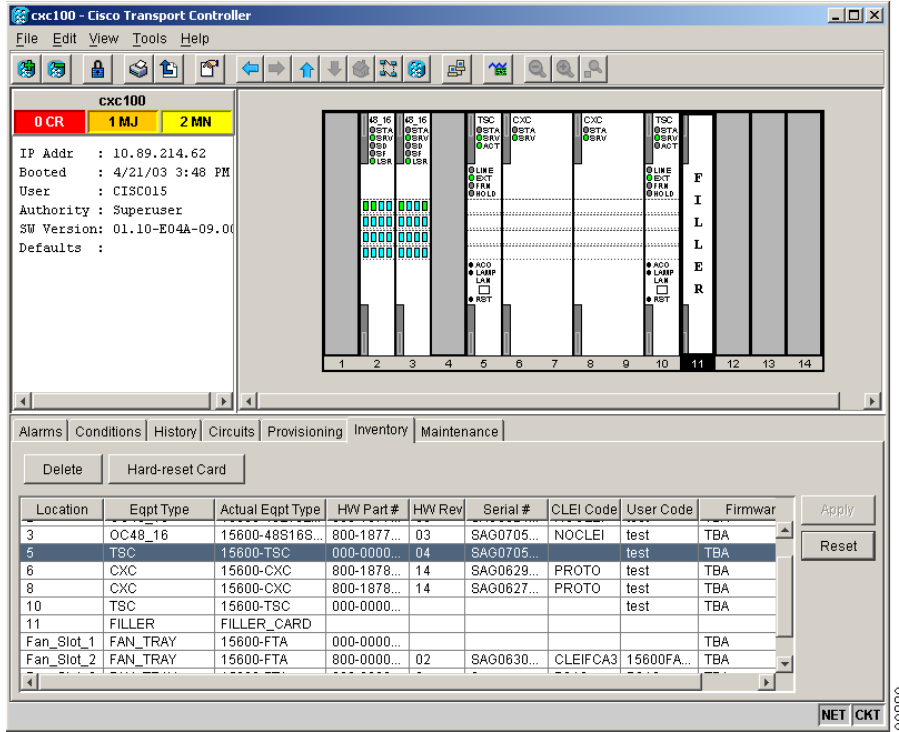
CTC Data Export

CTC data exported in HTML format can be viewed with any web browser, such as Netscape Communicator or Microsoft Internet Explorer. To display the data, use the browser's **File > Open** command to open the CTC data file.

CTC data exported as comma separated values (CSV) or tab separated values (TSV) can be viewed in text editors, word processors, spreadsheets, and database management applications. Although procedures depend on the application, you can typically use **File > Open** to display the CTC data. Text editors and word processors display the data exactly as it is exported. Spreadsheet and database management applications display the data in cells. You can then format and manage the data using the spreadsheet or database management application tools.

In addition to the CTC exporting, CTC text information can be copied and pasted into other applications using the Windows Copy (Ctrl-C), Cut (Ctrl-X), and Paste (Ctrl-V) commands. You can also print CTC windows and table data such as alarms and inventory by choosing **File > Print**. Table A-7 shows the CTC tabs and subtabs that contain exportable data.

Table A-7   Table Data with Export Capability

View or Card	Tab	Subtab(s)
Network	Alarms	—
	Conditions	—
	History	—
	Circuits	Circuits, Rolls
	Provisioning	Alarm Profiles
	Maintenance	Software
Node	Alarms	—
	Conditions	—
	History	Session, Node
	Circuits	Circuits, Rolls
	Provisioning	Network (General, Static Routing, OSPF, Internal Subnet)
		Alarm Behavior
	Inventory	—
	Maintenance	Software
		Audit
		Routing Table
		Test Access
		Alarm Extenders
		Logged on User
OC-N Cards	Alarms	—
	Conditions	—
	History	Session, Card
	Circuits	Circuits, Rolls
	Provisioning	Line, Threshold, STS, Alarm Behavior
	Maintenance	Loopback, Transceiver, Protection
	Performance	—

Cisco ONS 15600 Procedure Guide, R6.0