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 the Cisco Transport Controller (CTC) views, menus options, tool options, shortcuts, and table display options. This appendix also describes the shelf inventory data presented in CTC. For more information about CTC, refer to the “Cisco Transport Controller Operation” chapter in the *Cisco ONS 15454 DWDM Reference Manual*.

Note Unless otherwise specified, “ONS 15454” refers to both ANSI and ETSI shelf assemblies.

Note If network discovery is enabled on the node, CTC searches each node in the network for more recent versions of the CTC software. If a more recent version is discovered, CTC gives you the option of downloading the Java archive (JAR) files to your PC.

A.1 Multishelf and Single-Shelf Modes

In a DWDM configuration, CTC views can be displayed in one of two modes. If a node contains only one shelf, the possible views are network view, node view, and card view. This is known as single-shelf mode. In multishelf mode, a control node and subtending shelves are configured to operate as a single node. In this mode, four views are possible: network view, multishelf view, shelf view, and card view. Multishelf view is the home view for nodes that are configured in multishelf mode. Multishelf view displays all of the shelves in the node. When you open a shelf from multishelf view, shelf view appears, which looks similar to node view but does not contain the tabs and subtabs that are used for node-level operations.

A.2 Display CTC Views

CTC provides four views of the ONS 15454 and the ONS network:

- If the login ONS 15454 node is in multishelf mode, the multishelf view appears when you first log into the node. This view shows a graphic of the ONS 15454 racks and provides access to tabs and subtabs that you use to manage the multishelf node and its subtending shelves.
- If the login ONS 15454 node is in single-shelf mode, node view appears when you first log into an ONS 15454. This view shows a graphic of the ONS 15454 shelf and provides access to tabs and subtabs that you use to manage the node. When you open a shelf from multishelf view, shelf view appears, which looks similar to node view but does not contain the tabs and subtabs that are used for node operations.
- Card view provides access to individual ONS 15454 cards. This view provides 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 and provides access to tabs and subtabs that you use to manage the network. A Superuser can create a network view that is identical for all users who log into the network or users can create custom views with maps.

  Users can group a subset of nodes into a domain, which is used to isolate nodes or groups of nodes for easier maintenance and a more streamlined network view. Double-clicking a domain displays all the nodes that are members of the domain.Nodes connected to the domain nodes are grayed out.

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

Table A-1 Change CTC Views

To Display	Perform One of the Following
Multishelf view (multishelf mode)	• In network view, double-click a node icon, or right-click the node and choose **Open Node** from the shortcut menu. • In network view, single-click a node icon, then choose **Go To Selected Object View** from the View menu. • From the 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 until you reach node view.
Node view (single-shelf mode) or shelf view (multishelf mode)	• In network view, double-click a node icon, or right-click the node and choose **Open Node** from the shortcut menu. If the node is in multishelf view (multishelf mode), double-click a shelf icon, or right-click and choose **Open Shelf** from the shortcut menu. • In network view, single-click a node icon, then choose **Go To Selected Object View** from the View menu. If the node is in multishelf mode, double-click a shelf icon, or right-click and choose **Open Shelf** from the shortcut menu. • In multishelf view (multishelf mode), double-click a shelf icon, or right-click and choose **Open Shelf** from the shortcut menu. • From the 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 until you reach node view.

Table A-1 Change CTC Views (continued)

To Display	Perform One of the Following
Network view	• In node view (single-shelf mode) or multishelf view (multishelf mode), click the up arrow or the Network View tool on the CTC toolbar. If in shelf view (multishelf mode), you must click the up arrow twice. • In multishelf view (multishelf mode), click the up arrow or the Network View tool on the CTC toolbar. • From the View menu, choose **Go To Network View**.
Card view	• In node view, double-click a card or right-click the card and choose **Open Card**. • In node view (single-shelf mode) or shelf view (multishelf mode), single-click a card icon, then choose **Go To Selected Object View** from the View menu. • Use the arrows on the CTC toolbar to navigate up or down views. For example, in node view, click a card, then click the down arrow.

A.2.1 Node Icons on the Network View Map

Table A-2 lists the node icons on the network view map.

Table A-2 Description of Node Icons on Network View Map

Node Name	Icon	Description
SONET SDH Hybrid OADM Hybrid line amplifier Hybrid terminal Passive hybrid terminal Amplified TDM		A SONET, SDH, hybrid, or amplified time-division multiplexing (TDM) node icon is represented as a cylinder with crossed arrows. • A SONET or SDH node can include OC-N cards, electrical cards, cross-connects, Storage Access Management (SAM) cards, and Ethernet cards. • A hybrid optical add/drop multiplexing (OADM) node contains at least one AD-xC-xx.x card or one AD-xB-xx.x card and two TCC2/TCC2P cards. TDM cards can be installed in any available slot. • A hybrid line amplifier node contains amplifiers and both TDM and dense wavelength division multiplexing (DWDM) cards. • A hybrid terminal node contains at least one 32MUX-O card, one 32DMX-O card, amplifiers, two TCC2/TCC2P cards, and TDM cards. Alternatively, the node may contain at least one 40-MUX-C, one 40-DMX-C card, amplifiers, two TCC2/TCC2P cards, and TDM cards. • A passive hybrid terminal node has the same equipment as the hybrid terminal node, but does not contain amplifiers. • An amplified TDM node is a node that increases the span length between two ONS 15454 nodes that contain TDM cards and optical amplifiers. Amplified TDM nodes contain either OPT-BST amplifiers or AD-1C-xx.x cards.
Hub		A DWDM hub node icon is represented as a three-dimensional cylinder with amplifiers. A hub node contains at least two 32DMX or 32DMX-O cards and two 32MUX-O cards. The hub node may alternatively contain at least two 40-DMX-C cards and two 40-MUX-C cards. No OADM cards are provisioned.
OADM		A DWDM OADM node icon is represented as a three-dimensional cylinder with arrows. An OADM node contains at least one AD-xC-xx.x card or one AD-xB-xx.x card. No 32MUX-O, 32DMX-O, 32DMX, 40-MUX-C, or 40-DMX-C cards are provisioned.

Table A-2 Description of Node Icons on Network View Map (continued)

Node Name	Icon	Description
ROADM		A reconfigurable OADM (ROADM) node icon is represented as a three-dimensional cylinder with two amplifier symbols that have arrows between them. An ROADM node contains at least one 32WSS or 40-WSS-C card. A single-slot 32DMX or double-slot 32DMX-O can be installed, but is not required. Alternatively, a 40-DMX-C can be installed, but is not required. Transponders (TXPs) and muxponders (MXPs) can be installed in Slots 6 and 12. If amplification is not used, TXPs or MXPs can be installed in Slots 1 and 17. If OPT-BSTs are not installed, OSC-CSM cards are installed in Slots 2 and 16 and Slots 8 and 10 are empty.
Terminal		A terminal node is represented as a three-dimensional cylinder with a white rectangle in the center. • A terminal node contains one 32DMX or 32DMX-O card and one 32-MUX-O card. Alternatively, a terminal node contains one 40-DMX-C card and one 40-MUX-C card. No OADM cards are provisioned. • A flexible terminal node contains a series of OADM and amplifier cards.
Line OSC regeneration line		Line and OSC regeneration line nodes are represented as a three-dimensional cylinder with one arrow pointing west and another arrow pointing east. • A line node has only OPT-PRE or OPT-BST amplifiers provisioned. • An optical service channel (OSC) regeneration line node contains two OSC-CSM cards.
Unknown		An unknown DWDM node icon is represented as a three-dimensional cylinder with one arrow pointing north. An unknown node means that the provisioned cards do not allow the node to fit any of the defined DWDM node categories.

A.3 Manage the 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.

A.3.1 CTC Menu and Toolbar Options

The CTC window menu bar and toolbar provide primary CTC functions. Table A-3 shows the actions that are available from the CTC menu and toolbar.

Table A-3 CTC Menu and Toolbar Options

Menu	Menu Option	Toolbar	Description
File	Add Node		Adds a node to the current session. See the "DLP-G49 Add a Node to the Current Session or Login Group" task on page 2-31.
	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 open CTC.
	Print		Prints CTC data. See the "DLP-G113 Print CTC Data" task on page 9-2.
	Export		Exports CTC data. See the "DLP-G114 Export CTC Data" task on page 9-4.
	Exit	—	Closes the CTC session.
Edit	Preferences		Displays the Preferences dialog box, which shows the following tabs: • General—Allows you to change event defaults and manage preferences. • Login Node Groups—Allows you to create login node groups. See the "DLP-G48 Create Login Node Groups" task on page 2-30. • Map—Allows you to customize the network view. See the "DLP-G168 Change the Network View Background Color" task on page 10-30 and the "DLP-G170 Apply a Custom Network View Background Map" task on page 10-31. • Circuit—Allows you to change the color of circuit spans. This task is not applicable on DWDM-only nodes. • Firewall—Sets the Internet Inter-ORB Protocol (IIOP) listener ports for access to the ONS 15454 through a firewall. See the "NTP-G27 Set Up the ONS 15454 for Firewall Access" procedure on page 3-27. • JRE—Allows you to select another Java Runtime Environment (JRE) version. See the "DLP-G52 Change the JRE Version" task on page 2-9.

Table A-3 CTC Menu and Toolbar Options (continued)

Menu	Menu Option	Toolbar	Description
View	Go To Previous View		Displays the previous CTC view. Available only after you navigate to a next view.
	Go To Next View		Displays the next CTC view. Go to Previous View and Go to Next View are similar to forward and backward navigation in a web browser.
	Go To Parent View		References the CTC view hierarchy: network view, multishelf view (multishelf mode), node view (single-shelf mode), shelf view (multishelf mode), and card view. In card view, this command displays the node view (single-shelf mode) or shelf view (multishelf mode); in node view (single-shelf mode) or multishelf view (multishelf mode), the command displays network view. Not available in network view. In shelf view (multishelf mode), this command displays multishelf 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 (single-shelf mode) or multishelf view (multishelf mode). If the login node is a multishelf node controller, the multishelf view displays.
	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	—	Click this item to display or hide the status bar at the bottom of the CTC window.
	Show Tool Bar	—	Click this item to display or hide the CTC toolbar.
—	—		(Toolbar only) Zooms out the network view area.
—	—		(Toolbar only) Zooms in the network view area.
—	—		(Toolbar only) Zooms in a selected network view area.

Table A-3 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 15454 alarm interface panel (AIP). Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide* for more information. • Reconfigure Circuits—Allows you to reconfigure circuits. Not applicable to DWDM nodes. • Set Path Selector Attributes—Allows you to edit path protection or subnetwork connection protection (SNCP) circuit path selector attributes. Not applicable to DWDM nodes. • Set Circuit State—Allows you to change a circuit state. Not applicable on DWDM nodes. • Roll Circuit—Allows you to reroute live traffic without interrupting service. • Delete Rolls—Removes rolls that are not deleted by CTC after a roll has been completed. • Upgrade OCHNC—(ONS 15454 only) Upgrades OCHNCs created in earlier software releases to OCHCCs. Refer to the *Cisco ONS 15454 DWDM Procedure Guide* for more information. • Show RPR Circuit Ring—Shows the RPR ring for the circuit selected on the Circuits window.
	Overhead Circuits	—	(SONET and SDH only) Displays the Repair IP Tunnels option, which fixes circuits that are in the PARTIAL status as a result of node IP address changes.
	Topology Upgrade	—	Displays the following options: • Convert path protection to BLSR (or Convert SNCP to MS-SPRing)—Converts a path protection to a bidirectional line switch ring (BLSR) or an SNCP to a multiplex section-shared protection ring (MS-SPRing). Not applicable to DWDM nodes. • Convert Unprotected to path protection (or SNCP)—Converts a point-to-point or linear add/drop multiplexer (ADM) to path protection or SNCP. Not applicable to DWDM nodes.
	Manage VLANs	—	Displays a list of VLANs that have been created and allows you to delete VLANs. Not applicable to DWDM nodes.
	Manage TL1 Tunnels	—	Displays existing TL1 tunnels; allows you to create, edit, and delete the tunnels.
	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 Reference Guide* and the *Cisco ONS 15454 SDH and Cisco ONS 15600 SDH TL1 Reference Guide*.
	Open IOS Connection		Displays the Cisco IOS command line interface (CLI) dialog box if a Cisco IOS capable card (ML-Series card) is installed in the node. Not applicable to DWDM nodes.
	Update CTC	—	Allows you to update CTC to a newer version, if a newer version was found during network discovery.
Help	Contents and Index	—	Displays the online help window.

Table A-3 CTC Menu and Toolbar Options (continued)

Menu	Menu Option	Toolbar	Description
	User Manuals	—	Displays the Cisco ONS 15454 documentation.
	About CTC	—	Displays the software version and the nodes in the CTC session.
—	Network Scope	—	Displays the selected network scope. The network scope drop-down list has three options: DWDM, TDM, or All. If you choose DWDM, DWDM and hybrid nodes appear on the network view map. If you choose TDM, TDM and hybrid nodes appear on the network view map. If you choose All, every node on the network appears on the network view map.
—	Link Filter		Opens the Link Filter dialog box, which allows you to choose which link classes appear on the nondetail network map. The available classes vary according to the selected network scope. • ALL—DCC, GCC, OTS, PPC • DWDM—GCC, OTS, PPC • TDM—DCC, PPC
—	—		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 icons in 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 chose "Notify when complete" as described in the "DLP-G106 Delete Optical Channel Network Connections" task on page 7-23 and the "DLP-G347 Delete Optical Channel Client Connections" task on page 7-10. 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 appears automatically. To disable automatic popup, see the "DLP-G53 Configure the CTC Alerts Dialog Box for Automatic Popup" task on page 2-33.

A.3.2 CTC Mouse Options

In addition to the CTC menu bar and toolbar, you can invoke actions by double-clicking CTC window items with your mouse, or by right-clicking an item and selecting actions from shortcut menus. Table A-4 lists the CTC window mouse shortcuts.

Table A-4 CTC Window Mouse Shortcuts

Technique	Description
Double-click	• Node in network view—Displays the node view (single-shelf mode) or multishelf view (multishelf mode) view. • Domain in network view—Displays the domain view. • Shelf in multishelf view—Displays the shelf view. • Card in node view (single-shelf mode) or shelf view (multishelf mode)—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 shortcut menu that you can use to create a new domain; change the position and zoom level of the graphic image; save the map layout (if you have a Superuser security level); reset the default layout of the network view; set, change, or remove the background image and color; collapse and expand links; and save or reset the node position. • Domain in network view—Displays a shortcut menu 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 shortcut menu that you can use to open the node, reset the node icon position to the longitude and latitude that is set on the Provisioning > General tab, delete the node, fix the node position for automatic layout, provision circuits, provision channels, and update circuits or channels with a new node. • Multishelf view (multishelf mode)—Right-clicking over an existing shelf displays a shortcut menu that you can use to open or delete a shelf. Right-clicking over an empty space in a rack displays a shortcut menu that allows you to add a shelf. Right-clicking over an empty space that is outside of a rack displays a shortcut menu that you can use to add a new rack. Right-clicking over the rack number displays a shortcut menu that you can use to delete a rack. • Span in network view—Displays a shortcut menu that you can use to view information about the span's source and destination ports, the protection scheme, and the optical or electrical level. You can display the Circuits on Spans dialog box, which displays additional span information. You can also expand and collapse links. • Card in node view (single-shelf mode) or shelf view (multishelf mode)—Displays a shortcut menu that you can use to open, delete, reset, and change cards. The card that you choose determines the commands that appear. • Card in card view—Displays a shortcut menu that you can use to reset the card, or go to the parent view (node view). • Empty slot in node view (single-shelf mode) or shelf view (multishelf mode)—Displays a shortcut menu with cards that you can choose to preprovision the slot.

Table A-4 CTC Window Mouse Shortcuts (continued)

Technique	Description
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. For DWDM spans, the optical direction and optical ring ID appear. If the span terminates on the trunk port of a transponder (TXP) or muxponder (MXP) card, the associated DWDM wavelength also appears. • Over domain in network view—Displays domain name and the number of nodes in the domain. • Over card in node view (single-shelf mode) or multishelf view (multishelf mode)—Displays card type, card status, alarm profile status and, depending on the DWDM card type, number of bands or channels. • Over card port in node/shelf view—Displays port number and/or name, port service state, and alarm profile status. • Over card port in card view—Displays port name (if applicable), port service state, protection status (if applicable), and alarm profile status. For DWDM cards, the port number is labeled as channel, band, or line depending on the card type along with the port state and alarm profile status.

A.3.3 Multishelf View Shortcuts

Table A-5 shows actions on ONS 15454 cards that you can perform by moving your mouse over the CTC window in multishelf view (multishelf mode).

Table A-5 Multishelf View Card-Related Shortcuts

Action	Shortcut
Display card information	In multishelf view (multishelf mode), move your mouse over cards in the graphic to display tool tips with the card type, card status (active or standby), the highest level of alarm (if any), and the alarm profile used by the card.

A.3.4 Node View (Single-Shelf Mode) and Shelf View (Multishelf Mode) Shortcuts

Table A-6 shows actions that you can perform by moving your mouse in the CTC window in node (single-shelf mode) or shelf (multishelf mode) view.

Table A-6 Node/Shelf View Card-Related Shortcuts

Action	Shortcut
Display card information	In node view (single-shelf mode) or shelf view (multishelf mode), move your mouse over cards in the graphic to display tool tips 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	In node view (single-shelf mode) or shelf view (multishelf mode), right-click a card. Choose **Open Card** to display the card in card view, **Delete Card** to delete it, or **Reset Card** to reset the card. It is recommended that the card be physically removed from its slot before deleting it from CTC.
Preprovision a slot	In node view (single-shelf mode) or shelf view (multishelf mode), right-click an empty slot. Choose the card type for which you want to provision the slot from the shortcut menu.
Change a card	In node view (single-shelf mode) or shelf view (multishelf mode), right-click an OC-N card or a DS3 card, and choose **Change Card**. In the Change Card dialog box, choose the card type. Change Card retains all card provisioning, including data communications channel (DCC) terminations, protection, circuits, and rings.

A.3.5 Network View Tasks

Right-click the network view graphic area or a node, span, or domain to display shortcut menus. Table A-7 lists the actions that are available from the network view.

Table A-7 Network Management Tasks in Network View

Action	Task
Open a node	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 View menu. • From the View menu, choose **Go To Other Node**. Choose a node from the Select Node dialog box. • Double-click a node alarm or event in the Alarms or History tab.
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 tab in node view (single-shelf mode) or multishelf view (multishelf mode).
Consolidate links	Right-click on a link and choose **Consolidate/Expand** from the shortcut menu. For more detailed instructions, refer to Chapter 10, “Manage the Node.”

Table A-7 Network Management Tasks in Network View (continued)

Action	Task
Provision a circuit	Right-click a node. From the shortcut menu, choose **Provision Circuit To** and choose the node where you want to provision the circuit. For circuit creation procedures, see Chapter 7, "Create Optical Channel Circuits and Provisionable Patchcords."
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 end point	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 the 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 (ANSI) or SNCP (ETSI) protection switch for an entire span	Right-click a network span and click **Circuits**. In the Circuits on Span dialog box, switch options appear in the path protection (or SNCP) Span Switching field.
Display DWDM span properties	Right-click a DWDM network span and choose **Circuits** from the shortcut menu. The optical channel network connection (OCHNC), optical direction, and circuit appear.
Upgrade a span	Right-click a span and choose **Upgrade Span** from the shortcut menu. Not applicable to DWDM nodes.

A.3.6 Table Display Options

Right-clicking a table column displays a shortcut menu. Table A-8 shows table display options, which include rearranging or hiding CTC table columns and sorting table columns by primary or secondary keys.

Table A-8 Table Display Options

Task	Click	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**.
Show column	—	Choose **Show Column >** *column_name*.

Table A-8 Table Display Options (continued)

Task	Click	Right-Click Shortcut Menu
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)**.
Reset sorting	—	Choose **Reset Sorting**.
View table row count	—	View the number after "Row count=" (it is the last item on the shortcut menu).

A.4 Equipment Inventory

In node view (single-shelf mode) and multishelf view (multishelf mode), the Inventory tab displays information about the ONS 15454 equipment, including:

- Location—Identifies where the equipment is installed, either chassis or slot number.
- Eqpt Type—Displays the type of equipment.
- Actual Eqpt Type—Displays the specific card name.
- Admin State—Changes the card service state unless network conditions prevent the change. For more information about card administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.
  - IS (ANSI) or Unlocked (ETSI)—Puts the card in the In-Service and Normal (IS-NR [ANSI]) or Unlocked-enabled (ETSI) service state.
  - OOS,MA (ANSI) or Locked,maintenance (ETSI)—Puts the card in the Out-of-Service and Autonomous, Maintenance (OOS-AU,MT [ANSI]) or Unlocked-disabled,maintenance (ETSI) service state.
- Service State—Displays the current card service state, which is an autonomously generated state that gives the overall condition of the card. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about card service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.
- HW Part #—Displays the hardware part number; this number is printed on the top of the card or equipment piece.
- HW Rev—Displays the hardware revision number.
- Serial #—Displays the equipment serial number; this number is unique to each card.
- CLEI Code—Displays the Common Language Equipment Identifier code.
- Bootroom Rev—Displays the boot read-only memory (ROM) revision number.
- Product ID—Displays the manufacturing product identifier for a hardware component, such as a fan tray, chassis, or card. The Product ID column displays "N/A" for equipment existing before Software Release 4.6.

- Version ID—Displays the manufacturing version identifier for a fan tray, chassis, or card. The Version ID column displays “N/A” for equipment existing before Software Release 4.6.

Buttons at the bottom of the Inventory tab are used to delete or reset a card when a card is selected, or to delete a PPM if a PPM is selected on the table.

Note After the card is upgraded using the boot code upgrade procedure, the bootstrap version is displayed in the Inventory tab in CTC. However, the boot code version is not displayed.

A.5 Facilities View

In node view (single-shelf mode), shelf view (multishelf mode), and multishelf view (multishelf mode), the Maintenance > DWDM > All Facilities tab displays facility information for all facilities on the ONS 15454 equipment:

- Marked—Displays a check mark if you have designated the facility for logical grouping. For information on marking a facility to group it with others, see the “NTP-G166 View the Facilities” procedure on page 13-45.
- Location—Displays the slot number, slot type, port number, and port type of the facility.
- Admin State—Displays the administrative state of the facility.
- Service State—Displays the service state of the facility.
- Power—Displays the power level of the facility.