

# HP 24-Port 4x Fabric Copper Switch Chassis Manager User Guide



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# Preface

---

This document is a guide to the Chassis Manager Web-based graphical user interface (GUI) that runs on your Server Switch. This document explains how to use Chassis Manager (CM) and provides the steps that you need to perform to configure your Server Switch with the GUI.

## Intended Audience

The intended audience is the administrator responsible for installing, configuring, and managing your equipment. This administrator should have experience administering similar networking or storage equipment.

## Typographical Conventions

The following typographic conventions are used in this manual to provide visual clues as to the purpose or application of specific text.

- **Bold** text indicates a command or keyword, or text that appears in your display.
- *Italics* indicate variables that you replace with an actual value.
- Square brackets ([,]) indicate an optional argument that you choose to include or exclude when you enter a command.
- Pipe character (|) indicates an “or” choice. For example, “**a | b**” indicates “a or b.”
- Ellipses (...) indicate truncated text. You will see these in long examples depicting terminal output that is too long to be shown in its entirety.



---

**NOTE:** Indicates an important point or aspect that you need to consider before continuing.

---

# Contact Information

**Table 2-1: Customer Contact Information**

For the name of your nearest authorized HP reseller:	In the United States, call 1-800-345-1518. In Canada, call 1-800-263-5868. Outside the United States and Canada, refer to <a href="http://www.hp.com">www.hp.com</a> .
For HP technical support	In the United States and Canada, call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored. Outside the United States and Canada, refer to <a href="http://www.hp.com">www.hp.com</a> .

# About Chassis Manager

---

The following sections appear in this chapter:

- [“Introduction” on page 1](#)
- [“Anatomy of Chassis Manager” on page 1](#)
- [“Browser Requirements” on page 6](#)
- [“Platform Requirements” on page 6](#)

## Introduction

The Chassis Manager (CM) runs directly on your switch to help you quickly and easily perform various administration tasks. This chapter discusses the various components of the interface. CM runs on all switches.

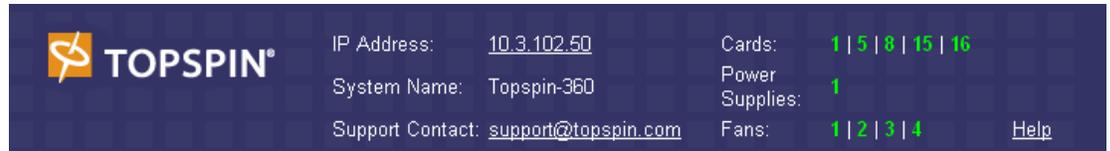
## Anatomy of Chassis Manager

CM runs in a standard Web browser and displays information in standard HTML formats. The GUI consists primarily of the following three frames:

- System frame
- Tree frame
- View frame

### System Frame

The System frame appears above the Tree and View frames and provides basic system information and links to FRUs. [Figure 1-1](#) displays an example of the CM System frame.



**Figure 1-1:** System Frame

- Click the IP address in the **IP Address** field of the System frame to open a telnet window that launches a CLI session to the switch.
- Click the email address in the **Support Contact** field to send an email message to technical support.
- Click **Help** to open online help.

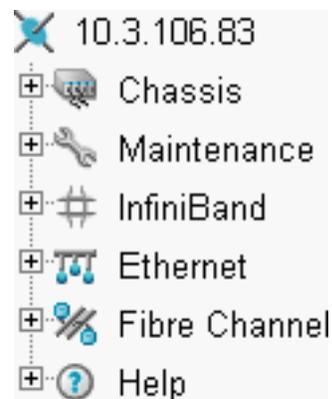
The System frame displays and updates the status of the cards, power supplies, and fans in your device. Each number in the **Cards**, **Power Supplies**, and **Fans** fields identifies a field-replaceable unit (FRU) in your device based on the slot number in which it resides. The color of the slot number indicates the status of the FRU. [Table 1-1](#) lists the colors in the display and explains what each color indicates.

**Table 1-1:** FRU Color Indicators

Color	Indication
green	Operational and administrative status of <b>up</b> .
gray	Administrative status of <b>down</b> .
red	Operational status of <b>down</b> .

## Tree Frame

The Tree frame appears on the lower-left-hand side of the CM display and provides a navigation tree that groups the functional branches of your device under icons. [Figure 1-2](#) displays an example of the Tree frame.



**Figure 1-2:** Tree Frame

**NOTE:** [Figure 1-2](#) displays a Tree frame for a user with unrestricted access. Restricted users may see fewer icons. For more information, refer to [“Understanding Access Privileges” on page 15](#).

Table 1-2 lists and describes the icons in the Tree frame.

**Table 1-2:** Tree Frame Icons

Icon	Description
<b>Chassis</b> (  )	The <b>Chassis</b> icon lets you view and configure hardware in your switch. Access this icon to view the status of all field replaceable units (FRUs) on your device.
<b>Maintenance</b> (  )	The <b>Maintenance</b> icon contains branches that let you perform basic administrative tasks on your switch. Access this icon to configure NTP servers, assign a boot-config file, view the contents of the file system, etc.
<b>InfiniBand</b> (  )	The <b>InfiniBand</b> ® icon provides subnet manager (SM) and I/O details. You can click the <b>Subnet Manager</b> branch of this icon to configure basic SM properties.
<b>Ethernet</b> (  ) (select hardware platforms only)	The <b>Ethernet</b> icon lets you view and configure many aspects of IP traffic on your switch.
<b>Fibre Channel</b> (  ) (select hardware platforms only)	The <b>Fibre Channel</b> icon shows you SRP host and Fibre Channel (FC) storage details and lets you configure global policies.
<b>Help</b> (  )	The <b>Help</b> icon takes you to on-line help and support resources.

## Tree Frame Branches

1. Click the plus-sign () to expand an icon and display the branches that you can configure.
2. Click a branch icon () to open the configuration options for that branch in the View frame.  
Table 1-3 lists and describes the configurable branches under the **Chassis** icon.

**Table 1-3:** Chassis Icon Branches

Branch	Description
<b>Cards</b>	Click this branch to display and configure controller, switch, and gateway cards.
<b>Ports</b>	Click this branch to display and configure all external IB, Ethernet, and FC ports on your device.
<b>Power Supplies</b> (select hardware platforms only)	Click this branch to view the status of the power supplies on your device.
<b>Fans</b> (select hardware platforms only)	Click this branch to view the status of the fans on your device.
<b>Sensors</b>	Click this branch to view the status and readings on the temperature sensors on your device.
<b>Backplane</b> (select hardware platforms only)	Click this branch to view backplane details.
<b>Management Ports</b>	Expand the <b>Management Ports</b> icon to display the following branches: <ul style="list-style-type: none"> <li>• Serial—displays the Serial Console port configuration.</li> <li>• Ethernet—displays the Ethernet Management port configuration.</li> <li>• InfiniBand—displays the InfiniBand Management port configuration.</li> </ul>

Table 1-4 lists and describes the configurable branches under the **Maintenance** icon.

**Table 1-4:** Maintenance Icon Branches

Branch	Description
<b>System Information</b>	Click this branch to view and configure the information that appears in the System frame.
<b>Time</b>	Click this branch to configure the time and date on your switch and to assign NTP servers to your device.
<b>File Management</b>	Click this branch to view, import, export, and install files in the file system on your device.
<b>Boot Configuration</b>	Click this branch to select a configuration for your switch to use when it boots.
<b>Backup Configuration</b>	Click this branch to save your running configuration to a file.
<b>Save Config</b>	Click this branch to save the running configuration as the startup configuration. When your switch reboots, it runs the updated configuration.
<b>Reboot</b>	Click this branch when you want to reload your switch.
<b>Services</b>	Expand the <b>Services</b> icon to display the following branches: <ul style="list-style-type: none"> <li>• <b>General</b>—displays the following system services and lets you configure them: <ul style="list-style-type: none"> <li>• DNS</li> <li>• FTP</li> <li>• telnet</li> <li>• syslog</li> <li>• RADIUS</li> <li>• HTTP</li> </ul> </li> <li>• <b>RADIUS Servers</b>—displays the RADIUS server(s) that your device can use to authenticate user logins and lets you configure attributes of the server(s).</li> <li>• <b>Authentication Failures</b>—lists CLI, SNMP, and HTTP authentication failures.</li> </ul>
<b>Diagnostics</b>	Click this branch to view switch diagnostic data.

Table 1-5 lists and describes the configurable branches under the **InfiniBand** icon.

**Table 1-5:** InfiniBand Icon Branches

Branch	Description
<b>Subnet Managers</b>	Click this branch to view and configure the SMs in your fabric.
<b>Services</b>	Click this branch to view the IB fabric services that have registered with the SM.
<b>Topology</b>	Expand the <b>Topology</b> icon to display the following branches: <ul style="list-style-type: none"> <li>• <b>Nodes</b>—click this branch to view the IB nodes in your IB fabric.</li> <li>• <b>Ports</b>—click this branch to view the IB ports in your IB fabric.</li> <li>• <b>Neighbors</b>—click this branch to display the interconnecting IB nodes, and relevant ports, in your IB fabric.</li> </ul>

**Table 1-5:** InfiniBand Icon Branches (Continued)

Branch	Description
<b>Device Management</b> (select hardware platforms only)	Expand the <b>Device Management</b> icon to display the following branches: <ul style="list-style-type: none"> <li>• <b>IOU</b>—click this branch to view the I/O unit on your switch.</li> <li>• <b>IOCs</b>—click this branch to view the controller(s) on your device.</li> <li>• <b>IOC Services</b>—click this branch to view the IB features on your device.</li> </ul>

[Table 1-6](#) lists and describes the configurable branches under the **Ethernet** icon.

**Table 1-6:** Ethernet Icon Branches

Branch	Description
<b>Bridge Groups</b>	Click this branch to view bridge groups on your switch.
<b>Trunk Groups</b>	Click this branch to view trunk groups on your switch.

[Table 1-7](#) lists and describes the configurable branches under the **InfiniBand** icon.

**Table 1-7:** InfiniBand Icon Branches

Branch	Description
<b>Global Policies</b>	Click this branch to view and configure the default attributes of new IB-to-FC connections.
<b>SRP Hosts</b>	Click this branch to view and configure SRP hosts that serve as initiators for SAN fabrics.
<b>Targets</b>	Click this branch to view and configure FC targets that connect to your switch through FC gateways.
<b>Logical Units</b>	Click this branch to view and configure FC Logical Units (LUNs) that connect to your switch through FC gateways.
<b>ITs</b>	Click this branch to view and configure attributes of initiator-target connections.
<b>ITLs</b>	Click this branch to view and configure attributes of initiator-target-LUN connections.
<b>Global Statistics</b>	Click this branch to view IB-to-FC traffic statistics.

[Table 1-8](#) lists and describes the configurable branches under the **Help** icon.

**Table 1-8:** Help Icon Branches

Branch	Description
<b>Help Index</b>	Click this branch to launch CM on-line help.
<b>Support</b>	Click this branch to open the HP support Web site.

## View Frame

The View frame appears on the right-hand side of the interface. Input fields and device details appear in this frame. The contents of the View frame vary based on the branch that you click in the Tree frame.

Figure 1-3 displays the table that appears in the View frame when you expand the **Chassis** icon and click the **Ports** branch.

## Ports

10.3.102.66 > Chassis > Ports

Properties Refresh Show Options... ▾

	Port	Name	Type	Admin Status	Oper Status	MTU
<input type="radio"/>	5/1	5/1	fc2GFX	up	up	2048
<input type="radio"/>	5/2	5/2	fc2GFX	up	up	2048
<input type="radio"/>	7/1	7/1	fc2GFX	up	down	2048
<input type="radio"/>	7/2	7/2	fc2GFX	up	up	2048
<input type="radio"/>	16/1	16/1	ib4xTX	up	down	4096
<input type="radio"/>	16/2	16/2	ib4xFX	up	up	2048
<input type="radio"/>	16/3	16/3	ib4xTX	up	down	4096
<input type="radio"/>	16/4	16/4	ib4xFX	up	up	2048
<input type="radio"/>	16/5	16/5	ib4xFX	up	up	2048
<input type="radio"/>	16/6	16/6	ib4xTX	up	down	4096
<input type="radio"/>	16/7	16/7	ib4xTX	up	down	4096
<input type="radio"/>	16/8	16/8	ib4xTX	up	down	4096
<input type="radio"/>	16/9	16/9	ib4xFX	up	up	2048
<input type="radio"/>	16/10	16/10	ib4xTX	up	down	4096
<input type="radio"/>	16/11	16/11	ib4xTX	up	down	4096
<input type="radio"/>	16/12	16/12	ib4xTX	up	down	4096

Data Refreshed At - Wednesday, March 17, 2004 8:46:32 AM

Figure 1-3: View Frame

## Browser Requirements

CM supports the following browsers:

- Microsoft® Internet Explorer version 6
- Netscape Navigator version 6
- Mozilla version 1.4

## Platform Requirements

CM runs on the following platforms:

- Windows®

- Solaris
- Linux



# Getting Started

---

The following sections appear in this chapter:

- [“Preparing Your Device” on page 9](#)
- [“Launching Chassis Manager” on page 11](#)
- [“Navigating Chassis Manager” on page 14](#)
- [“Understanding Access Privileges” on page 15](#)
- [“Viewing Device Status” on page 15](#)

## Preparing Your Device

To launch CM on your Server Switch, you must:

- Configure an IP address on the Ethernet management port.
- Configure an IP gateway on the Ethernet management port.
- Enable HTTP and/or HTTPS services.



---

**NOTE:** CM optionally supports Secure Sockets Layer (SSL) secure connections.

---

If your device meets these requirements, proceed to [“Launching Chassis Manager” on page 11](#). Otherwise, to prepare your device:




---

**NOTE:** Consult your network administrator for an IP address, subnet mask, and gateway address before you begin this process.

---

1. Use the Serial Console port to open a CLI session to your device, then log in as a user with administrative access.
2. Enter the **enable** command to enter Privileged Exec mode.

**Example**

```
Topspin-360> enable
Topspin-360#
```

3. Enter the **configure terminal** command to enter Global Configuration mode.

**Example**

```
Topspin-360# configure terminal
Topspin-360 (config)#
```

4. Enter the **interface mgmt-ethernet** command to enter Ethernet Management Interface Configuration submode.

**Example**

```
Topspin-360 (config)# interface mgmt-ethernet
Topspin-360 (config-if-mgmt-ethernet)#
```

5. Enter the **ip address** command, then an address and subnet mask. Consult your network administrator for an IP address. You will use this address in your Web browser to launch CM.

**Example**

```
Topspin-360 (config-if-mgmt-ethernet)# ip address 10.3.102.66 255.255.0.0
```

6. Enter the **gateway** command, then a default IP gateway. Consult your network administrator for a gateway address.

**Example**

```
Topspin-360 (config-if-mgmt-ethernet)# gateway 10.3.0.1
```

7. Enter the **no shutdown** command to enable the Ethernet Management port.

**Example**

```
Topspin-360 (config-if-mgmt-ethernet)# no shutdown
```

8. Enter the **exit** command to return to Global Configuration mode

**Example**

```
Topspin-360 (config-if-mgmt-ethernet)# exit
```

9. Enable HTTP and/or HTTPS services.
  - a. (Optional) Enter the **ip http server** command to enable HTTP services on your device to permit unsecured access to your Server Switch.

**Example**

```
Topspin-360 (config)# ip http server
```

- b. (Optional) Enter the **ip http secure-server** command to enable HTTPS services on your device to permit SSL-secured access to your Server Switch.

**Example**

```
Topspin-360(config)# ip http secure-server
```

## Launching Chassis Manager

CM without SSL requires no additional setup. CM with SSL requires additional steps based on your Web browser.

### Launching Chassis Manager without SSL

To launch CM:

1. Launch your Web browser.
2. Type the IP address of your Server Switch in the address field of your browser and press **Enter**. (You configured the IP address in [step 5](#) of “[Preparing Your Device](#)” on [page 9](#).)

A login window opens. [Figure 2-1](#) displays the login window.



**Figure 2-1:** CM Login Window

3. Enter your Server Switch user name and password in the login window and click the **OK** button. CM loads in your browser window.

### Launching Chassis Manager with SSL

SSL setups vary by browser types. The following sections explain how to launch CM with particular browsers.

## Netscape/Mozilla

To launch a secure CM connection:

1. Launch your Web browser.
2. Type **https://** and the IP address of your Server Switch in the address field of your browser and press **Enter**. (You configured the IP address in [step 5 of “Preparing Your Device” on page 9](#)) A login window opens.
3. Click **Yes** or **OK** to close any browser messages. Mozilla dynamically manages your certificate.
4. Enter your Server Switch user name and password in the login window and click the **OK** button. CM loads in your browser window.

## Internet Explorer

To launch a secure CM connection:

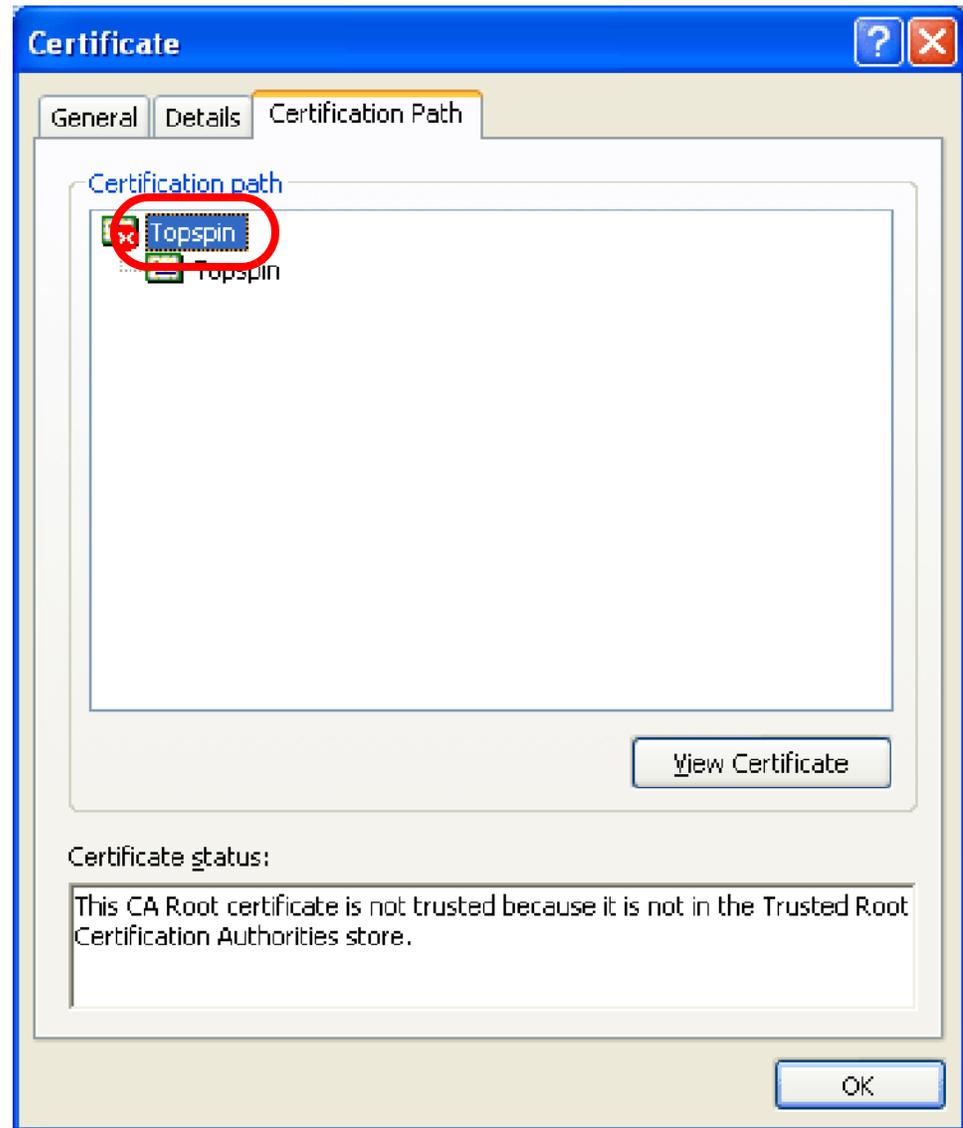
1. Launch your Web browser.
2. Type **https://** and the IP address of your Server Switch in the address field of your browser and press **Enter**. (You configured the IP address in [step 5 of “Preparing Your Device” on page 9](#)) A **Security Alert** window opens.



3. Click the **View Certificate** button. The **Certificate** window opens.
4. Click the **Certification Path** tab.

- Click the root certificate in the tree.

#### Example



- Click the **View Certificate** button.
- Click the **Install Certificate** button.
- Click the **Next** button.
- Click the **Place all certificates in the following store** radio button.
- Click the **Browse** button. The **Select Certificate Store** window opens.
- Click **Trusted Root Certification Authorities**, then click **OK**.
- Click the **Next** button, then click the **Finish** button.

## Avoiding Error Messages

By default, SSL certificates map to the IP address of the Ethernet Management Port of a Server Switch. If you enter one of the following, your browser displays an alert:

- the system name of your host (that you configure with the **hostname** command)
- the IP address of the InfiniBand Management Port of your Server Switch to launch CM.

The alert cautions you that the name on the certificate does not match the name of the site. This hostname mismatch message reappears after you log in and the java applet begins to load. To avoid this message entirely, configure your Server Switch to use the identifier that you enter in the browser to verify certificates.

To configure the certificate name to use the system name:

1. Telnet to your Server Switch and log in as a user with administrative privileges.

#### Example

```
Login: super
Password: xxxxxx
```

2. Enter the **enable** command to enter Privileged Exec mode.

#### Example

```
Topspin-270> enable
Topspin-270#
```

3. Enter the **configure terminal** command to enter Global Configuration mode.

#### Example

```
Topspin-270# configure terminal
Topspin-270 (config)#
```

4. Enter the **ip http** command with the following to configure your certificates to use the system name of your Server Switch:
  - the **secure-cert-common-name** keyword
  - the system name (hostname) of the Server Switch

#### Example

```
Topspin-270 (config)# ip http secure-cert-common-name useSysName
```

Now, when you open CM with the system name of your Server Switch, error messages will not repeatedly appear.

## Logging Out of Chassis Manager

To log out of CM, close the Web browser window that displays the GUI. If you have multiple windows open (such as the main CM window and a “properties” window), close all such windows.

## Navigating Chassis Manager

The Tree frame of the Web-based interface provides a high-level map of CM. As you move from display to display in CM, the View frame constantly reminds you where you are in the system.

When you click a branch in the Tree frame, the title of the display that appears in the View frame matches the name of the branch. Directly below the display title appears a tiered locator that details the level of the current display in relation to other elements of CM. For instance, when you click the **Cards** branch of the **Chassis** icon, the following locator string appears:

```
A.B.C.D > Chassis > Cards
```

In this instance, *A.B.C.D* represents the IP address of your Server Switch. The tiered locator indicates that your current display is the Cards display, which is a branch of the Chassis icon on the device with an IP address of *A.B.C.D*.

When you further filter your display, the View frame indicates the new level of granularity. For instance, if you view the ports on a particular gateway card instead of all ports on the device, a tiered locator appears, followed by a filter indicator. If you view only external ports on an Ethernet gateway in slot 4, the following identifiers appear:

*A.B.C.D* > Chassis > Ports

Filter : Card = 4

The second identifier indicates that the display shows only the ports on Card 4.

## Moving Backward

Because no formal “move backward” function exists in CM, use one of the following options to return to a previous display:

- Click the **Back** button on your Web browser.
- Right-click the View frame and select **Back** from the pop-up menu.
- Navigate to the desired display with the Tree frame.




---

**NOTE:** When you use the **Back** button of your Web browser, your browser may not cache selections that you made for a particular view. For instance, if you view the gateway ports of a card, then click a branch in the Tree frame, your previous display may not appear correctly when you click the **Back** button.

---

## Refreshing Views

CM lets you update most displays to reflect changes that occurred since you opened the display. To refresh your view, click the **Refresh** button in your display.

# Understanding Access Privileges

The functionality available to you from CM varies based on the access privileges of your username. If you do not have read access to a particular technology, the icon and branches for that technology do not appear in your GUI. If you do not have write access to a particular technology, the configuration options for that technology do not appear in your GUI.

## Viewing Device Status

CM provides an overview of the status of the components of your Server Switch. To view the status summary of your device, click the IP address at the top of the Tree frame. Items that appear in green actively function. Items that appear in gray are not active. Items that appear in red are faulty or administratively down.



## Chassis Icon Tasks

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The following sections appear in this chapter:

- [“Viewing Cards on a Chassis” on page 17](#)
- [“Viewing Internal Gateway Ports” on page 22](#)
- [“Viewing Physical Ports on a Chassis” on page 23](#)
- [“Configuring Ports” on page 27](#)
- [“Viewing Power Supply Status” on page 28](#)
- [“Viewing Fan Status” on page 29](#)
- [“Viewing Temperature Sensor Status” on page 29](#)
- [“Viewing Backplane Information” on page 30](#)
- [“Viewing Management Ports on a Chassis” on page 30](#)

## Viewing Cards on a Chassis

To view the cards on your chassis:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Cards** branch. The **Cards** table that includes all cards on the chassis appears in the View frame. [Table 3-1](#) lists and describes the fields in this table.

**Table 3-1:** Cards Table Fields

Field	Description
<b>Slot</b>	Number of the chassis slot in which the card resides.
<b>Type</b>	Type of the card.
<b>Current Status</b>	Displays <b>up</b> if the card can currently run traffic, otherwise displays <b>down</b> .

**Table 3-1: Cards Table Fields (Continued)**

Field	Description
<b>Operational State</b>	<p>Displays the general condition of the interface card. The general condition may appear as any of the following:</p> <ul style="list-style-type: none"> <li>• unknown</li> <li>• normal</li> <li>• bootFailed</li> <li>• tooHot</li> <li>• booting</li> <li>• checkingBootImage</li> <li>• wrongBootImage</li> <li>• rebooting</li> <li>• standby</li> <li>• recoveryImage</li> </ul> <p>A condition of <b>unknown</b> indicates an unsupported interface card. To address this condition, replace the card with a supported card.</p> <p>The operational state of a card must appear as <b>normal</b> for the current status of the card to appear as <b>up</b>.</p> <p>A <b>wrongBootImage</b> condition indicates that the active system image on the interface card does not match the active system image on the controller. All cards must run the same active system image as the controller card to function.</p> <p>A <b>bootFailed</b> condition indicates that the active system image on the card was incompletely or incorrectly loaded. If the other interface cards come up successfully, reset the individual card. Otherwise, reboot your entire device.</p> <p>When your card overheats, the <b>tooHot</b> condition appears in the <b>show card</b> command output. Expand the <b>Chassis</b> icon and click the <b>Fans</b> branch to check to see if your fans failed.</p> <p>The <b>booting</b> condition indicates that the card has not finished loading necessary image data for internal configuration.</p>
<b>Boot Stage</b>	<p>Boot Stage appears as one of the following:</p> <ul style="list-style-type: none"> <li>• recovery</li> <li>• ipl</li> <li>• ppcboot</li> <li>• fpga</li> <li>• pic</li> <li>• ib</li> <li>• rootfs</li> <li>• kernel</li> <li>• exe</li> <li>• done</li> </ul>

**Table 3-1:** Cards Table Fields (Continued)

Field	Description
<b>Boot Status</b>	Boot Status may appear as any of the following: <ul style="list-style-type: none"> <li>• upgrading</li> <li>• success</li> <li>• failed</li> <li>• badVersion</li> <li>• badCrc</li> <li>• memoryError</li> <li>• outOfSpace</li> <li>• programmingError</li> <li>• hardwareError</li> <li>• fileNotFound</li> <li>• inProgress</li> </ul>

- (Optional) Click the **Refresh** button to update the attributes in the display.

## Viewing Card Properties

To view card properties:

- Expand the **Chassis** icon in the Tree frame.
- Click the **Cards** branch. A Cards table that includes all cards in the chassis appears. A radio button appears to the left of each table entry.
- Click the radio button of the card whose properties you want to view.
- Click the **Properties** button. A **Card Properties** window opens. [Table 3-2](#) lists and describes the elements in this window.

**Table 3-2:** Card Properties Window Elements

Element	Description
<b>Slot ID</b> field	Number of the chassis slot in which the card resides.
<b>Type</b> field	Type of the card.
<b>Admin Status</b> field	Displays the <b>up</b> and <b>down</b> radio buttons. Click a radio button, then click the <b>Apply</b> button to change the administrative status and brings the port up or bring down.
<b>Current Status</b> field	Displays <b>up</b> if the card can currently run traffic, otherwise displays <b>down</b> .

**Table 3-2: Card Properties Window Elements (Continued)**

Element	Description
<b>Operational State</b> field	<p>Displays the general condition of the interface card. The general condition may appear as any of the following:</p> <ul style="list-style-type: none"> <li>• unknown</li> <li>• normal</li> <li>• wrong-image</li> <li>• bootFailed</li> <li>• tooHot</li> <li>• booting</li> </ul> <p>A condition of <b>unknown</b> indicates an unsupported interface card. To address this condition, replace the card with a supported card.</p> <p>The operational state of a card must appear as <b>normal</b> for the current status of the card to appear as <b>up</b>.</p> <p>A <b>wrong-image</b> condition indicates that the active system image on the interface card does not match the active system image on the controller. All cards must run the same active system image as the controller card to function.</p> <p>A <b>bootFailed</b> condition indicates that the active system image on the card was incompletely or incorrectly loaded. If the other interface cards come up successfully, reset the individual card. Otherwise, reboot your entire device.</p> <p>When your card overheats, the <b>tooHot</b> condition appears in the <b>show card</b> command output. Enter the <b>show fan</b> command to check to see if your fans failed.</p> <p>The <b>booting</b> condition indicates that the card has not finished loading necessary image data for internal configuration.</p>
<b>Boot Stage</b> field	<p>Boot Stage appears as one of the following:</p> <ul style="list-style-type: none"> <li>• recovery</li> <li>• ipl</li> <li>• ppcboot</li> <li>• fpga</li> <li>• pic</li> <li>• ib</li> <li>• rootfs</li> <li>• kernel</li> <li>• exe</li> <li>• done</li> <li>• none</li> </ul>

**Table 3-2:** Card Properties Window Elements (Continued)

Element	Description
<b>Boot Status</b> field	Boot Status may appear as any of the following: <ul style="list-style-type: none"> <li>• upgrading</li> <li>• success</li> <li>• failed</li> <li>• badVersion</li> <li>• badCrc</li> <li>• memoryError</li> <li>• outOfSpace</li> <li>• programmingError</li> <li>• hardwareError</li> <li>• fileNotFound</li> <li>• inProgress</li> <li>• none</li> </ul>
<b>Serial Number</b> field	Factory-assigned product serial number of the card.
<b>PCA Serial Number</b> field	Printed circuit assembly (PCA) serial number of the card.
<b>PCA Assembly Number</b> field	PCA assembly number of the card.
<b>FRU Number</b> field	Field-replaceable unit (FRU) number of the card.
<b>Action</b> field (select cards only)	Lists radio buttons with the actions that you make the card perform when you click a radio button and then click the <b>Apply</b> button.
<b>Result</b> field (select cards only)	Displays the result that occurs when you choose an action from the <b>Action</b> field and click the <b>Apply</b> button.
<b>Apply</b> button	Applies the changes that you make in the <b>Card Properties</b> window to the card.
<b>Reset</b> button	Resets the fields in the window to match the properties of the card.
<b>Close</b> button	Closes the <b>Card Properties</b> window. If you close the window before you apply changes, CM makes no changes to the card.
<b>Help</b> button	Opens on-line help.

## Viewing Card Inventory

To view memory and image information on a card:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Cards** branch. The **Cards** table appears.
3. Click the radio button next to the card whose inventory you want to view, then click the **Inventory** button. The **Card Inventory** window opens. [Table 3-3](#) lists and describes the elements in this window.

**Table 3-3:** Card Inventory Window Elements

Element	Description
<b>Slot ID</b> field	Slot on the Server Switch in which the card resides.
<b>Used Memory</b> field	Used memory on the card, in kilobytes.

**Table 3-3: Card Inventory Window Elements (Continued)**

Element	Description
<b>Free Memory</b> field	Available memory on the device, in kilobytes.
<b>Used Disk Space</b> field	Used disk space on the card, in kilobytes.
<b>Free Disk Space</b> field	Available disk space on the device, in kilobytes.
<b>Current Image Source</b> field	Image that the card runs.
<b>Image Source for Next Reboot</b> field	Image that the card runs when you reboot.
<b>Image One</b> field	First image stored on the card.
<b>Image Two</b> field	Second image stored on the card.
<b>CPU Description</b> field	Description of the CPU on the card.
<b>PIC Firmware Revision</b> field (select cards)	Current PIC firmware version that the card runs.
<b>FPGA Firmware Revision</b> field (select cards)	Current FPGA firmware version that the card runs.
<b>IB Firmware Revision</b> field	Version of InfiniBand (IB) firmware on the card.
<b>Close</b> button	Closes the <b>Card Inventory</b> window.
<b>Help</b> button	Opens on-line help.

## Configuring Administrative Status of a Card

With CM, you can bring up or shut down any card on your chassis. To configure the administrative status of a card:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Cards** branch. A table of the cards in the chassis appears. A radio button appears to the left of each table entry.
3. Click the radio button of the card that you want to configure.
4. Click the **Properties** button. A **Card Properties** window opens.
5. In the **Admin Status** field of the, click the **up** or **down** radio button, then click the **Apply** button.

## Viewing Internal Gateway Ports

Each FC gateway and Ethernet gateway uses two internal ports to pass traffic through your device.



**NOTE:** Not all hardware platforms provide this option.

To view gateway port details:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Cards** branch. A **Cards** table that includes all cards in the chassis appears. A radio button appears to the left of each table entry.
3. Click the radio button to the left of the card whose gateway (internal) ports you want to view.

- From the **Show Options...** pulldown menu, select **Show Gateway Ports**. The **Gateway Ports** table opens in the View frame. [Table 3-4](#) lists and describes the fields in this table.

**Table 3-4:** Gateway Ports Table Fields

Field	Description
<b>GW Port</b>	Port number, in slot#/port# format.
<b>Name</b>	Port name.
<b>Type</b>	Port type.
<b>Current Speed</b>	Current speed of the port.

## Viewing Physical Ports on a Chassis

To view the physical ports on your device:

- Expand the **Chassis** icon in the Tree frame.
- Click the **Ports** branch. A table that includes all ports on the chassis appears in the View frame. [Table 3-5](#) lists and describes the fields in the Ports table.

**Table 3-5:** Ports Display Fields

Field	Description
<b>Port</b>	Port number, in slot#/port# format.
<b>Name</b>	User-configured port name.
<b>Type</b>	Displays the type of the port. Types begin with <b>fc</b> to indicate FC, <b>en</b> to indicate Ethernet, and <b>ib</b> to indicate IB.
<b>Admin Status</b>	Displays <b>up</b> when you bring up the port, otherwise displays <b>down</b> .
<b>Oper Status</b>	Indicates whether or not the port is ready for use.
<b>MTU</b>	Maximum transmission unit (MTU) of the port, in bytes.

- (Optional) Click the **Refresh** button to update the attributes in the display.

## Viewing Port Properties

To view port properties:

- Expand the **Chassis** icon in the Tree frame.
- Click the **Ports** branch. A **Ports** table that includes all cards in the chassis appears. A radio button appears to the left of each table entry.
- Click the radio button of the port whose properties you want to view.
- Click the **Properties** button. The **Port Properties** window opens. Each type of port displays different properties in this window.




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**NOTE:** Available port types vary by hardware platform.

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Table 3-6 lists and describes the elements in the **Port Properties** window of an Ethernet port.

**Table 3-6:** Ethernet Port Properties Window Elements

Element	Description
<b>Port</b> field	Displays the port number in slot#/port# notation.
<b>Name</b> field	Provides a port name that you can edit and apply to the port.
<b>Type</b> field	Displays the type of the port.
<b>Admin Status</b> field	Provides the <b>up</b> and <b>down</b> radio buttons so you can configure the administrative status of the port.
<b>Oper Status</b> field	Indicates whether or not the port is ready for use.
<b>Auto Negotiation Supported</b> field	Displays <b>true</b> if the port supports auto-negotiation
<b>Auto Negotiation</b> field	Provides the <b>Enable</b> checkbox so you can enable or disable auto-negotiation on the port.
<b>Set Port Speed</b> field	Provides radio buttons to let you configure the speed of the port.
<b>Current Speed</b> field	Displays the speed of the port.
<b>Set Port Duplex</b> field	Provides radio buttons to let you configure the duplex setting of the port.
<b>Current Duplex</b> field	Indicates whether the port runs in full duplex or half duplex mode.
<b>MTU</b> field	Displays the MTU of the port, in bytes.
<b>MAC Address</b> field	Displays the media access control (MAC) address of the port.
<b>Last Changed On</b> field	Displays the time and date of the last time that a user configured the port.
<b>Action</b> field	Lets you flush the Address Resolution Protocol (ARP) table.
<b>Result</b> field	Displays the result of the action that you perform from the <b>Action</b> field.
<b>Apply</b> button	Applies the changes that you make in the <b>Port Properties</b> window to the port.
<b>Reset</b> button	Resets the fields in the window to match the properties of the card.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the card.
<b>Help</b> button	Opens on-line help.

Table 3-7 lists and describes the fields in the **Port Properties** window of an FC port.

**Table 3-7:** Fibre Channel Port Properties Window Elements

Element	Description
<b>Port</b> field	Port number, in slot#/port# format.
<b>Name</b> field	Provides a port name that you can edit and apply to the port.
<b>Type</b> field	Displays the type of the port.
<b>Admin Status</b> field	Provides the <b>up</b> and <b>down</b> radio buttons so you can configure the administrative status of the port.

**Table 3-7:** Fibre Channel Port Properties Window Elements (Continued)

Element	Description
<b>Oper Status</b> field	Displays <b>up</b> to indicate that the port is physically ready for use, otherwise displays <b>down</b> .
<b>Auto Negotiation Supported</b> field	Displays <b>true</b> if the port supports auto-negotiation
<b>Auto Negotiation</b> field	Provides the <b>Enable</b> checkbox so you can enable or disable auto-negotiation on the port.
<b>Set Port Speed</b> field	Provides the <b>1G</b> and <b>2G</b> radio buttons so you can configure the port speed.
<b>Current Speed</b> field	Displays the speed of the port.
<b>Current Connection Type</b> field	Indicates the type of connection that the Server Switch dynamically discovered for this port.
<b>MTU</b> field	Displays the MTU of the port, in bytes.
<b>WWNN</b> field	Displays the worldwide node name (WWNN) of your device.
<b>WWPN</b> field	Displays the worldwide port name (WWPN) of the port.
<b>FC ID</b> field	FC Protocol (FCP) identifier of the port.
<b>Last Changed On</b> field	Displays the time and date of the last time that a user configured the port.
<b>Apply</b> button	Applies the changes that you make in the <b>Port Properties</b> window to the port.
<b>Reset</b> button	Resets the fields in the window to match the properties of the card.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the port.
<b>Help</b> button	Opens on-line help.

[Table 3-8](#) lists and describes the elements in the **Port Properties** window of an IB port.

**Table 3-8:** InfiniBand Port Properties Window Elements

Element	Description
<b>Port</b> field	Displays the port number in slot#/port# notation.
<b>Name</b> field	Provides a port name that you can edit and apply to the port.
<b>Type</b> field	Displays the type of the port.
<b>Admin Status</b> field	Provides the <b>up</b> and <b>down</b> radio buttons so you can configure the administrative status of the port.
<b>Oper Status</b> field	Displays <b>up</b> to indicate that the port is physically ready for use, otherwise displays <b>down</b> .
<b>Auto Negotiation Supported</b> field	Displays <b>true</b> if the port supports auto-negotiation
<b>Auto Negotiation</b> field	Provide the <b>Enable</b> checkbox so you can enable or disable auto-negotiation on the port.
<b>Set Port Speed</b> field	Provides the <b>2500M</b> , <b>10G</b> and <b>30G</b> radio buttons so you can configure the port speed.
<b>Current Speed</b> field	Displays the speed of the port.
<b>Physical State</b> field	Displays the physical state of the port.

**Table 3-8:** InfiniBand Port Properties Window Elements (Continued)

Element	Description
MTU field	Displays the maximum transmission unit (MTU) of the port, in bytes.
Last Changed On field	Displays the time and date of the last time that a user configured the port.
Apply button	Applies the changes that you make in the <b>Port Properties</b> window to the port.
Reset button	Resets the fields in the window to match the properties of the card.
Close button	Closes the window. If you close the window before you apply changes, CM makes no changes to the port.
Help button	Opens on-line help.

## Viewing Port Bridging Properties

To view the bridge to which a port belongs:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. A **Ports** table that includes all cards in the chassis appears. A radio button appears to the left of each table entry.
3. Click the radio button next to the port whose bridging properties you want to view.
4. Select **Show Bridging** from the **Show Options** pulldown menu. The **Port Bridging** table appears in the View frame. [Table 3-9](#) lists and describes the fields in this table.

**Table 3-9:** Port Bridging Table Fields

Field	Description
Port	Port that you chose from the <b>Ports</b> table.
Vlan	Virtual LAN (VLAN) of the bridge to which the port belongs.
Bridge ID	Bridge ID of the bridge to which the port belongs.

## Viewing Port Statistics

To view port statistics:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. The **Ports** table appears in the View frame.
3. Click the radio button next to the port whose statistics you want to view, then select **Show Port Statistics** from the **Show Options** pulldown menu. The **Port Statistics** display appears in the View frame. [Table 3-10](#) lists and describes the fields in this display.

**Table 3-10:** Port Statistics Display Fields

Field	Description
Port	Port number, as assigned by the SM.
Name	Administratively-assigned port name.
In Octets	Cumulative number of octets that arrived at the port, including framing characters.
In Unicast Packets	Cumulative number of incoming packets destined for a single port.

**Table 3-10: Port Statistics Display Fields (Continued)**

Field	Description
<b>In Multicast Packets</b>	Cumulative number of incoming packets destined for the ports of a multicast group.
<b>In Broadcast Packets</b>	Cumulative number of incoming packets destined for all ports on the fabric.
<b>In Discards</b>	Cumulative number of inbound packets that the port discarded for a reason other than a packet error (for example, lack of buffer space).
<b>In Errors</b>	Number of inbound packets with errors that the port discarded.
<b>In Unknown Protocols</b>	For packet-oriented interfaces, the number of packets received through the interface that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received through the interface that were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0.
<b>Out Octets</b>	Total number of octets transmitted out of the interface, including framing characters.
<b>Out Unicast Packets</b>	Total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.
<b>Out Multicast Packets</b>	Total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.
<b>Out Broadcast Packets</b>	Total number of packets that higher-level protocols requested to be transmitted, and which were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.
<b>Out Discards</b>	Number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free-up buffer space.
<b>Out Errors</b>	For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.

## Configuring Ports

CM provides different configuration options for each type of port. The options available to each port will appear in the **Port Properties** window.

### Configuring a Port Name

To configure the administrative name of a port:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. The **Ports** table appears in the View frame. A radio button appears to the left of each table entry.
3. Click the radio button of the port to which you want to assign a name.

4. Click the **Properties** button. The **Port Properties** window opens.
5. In the **Name** field of the **Port Properties** window, enter a name for the port, then click the **Apply** button.
6. Click the **Close** button to close the **Port Properties** window.

## Enabling or Disabling a Port

To enable or disable a port:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. The **Ports** table appears in the View frame. A radio button appears to the left of each table entry.
3. Click the radio button of the port to which you want to assign a name.
4. Click the **Properties** button. The **Port Properties** window opens.
5. In the **Admin Status** field of the **Port Properties** window, click the **up** (enable) or **down** (disable) radio button, then click the **Apply** button.
6. Click the **Close** button to close the **Port Properties** window.

## Configuring Auto-Negotiation on a Port

To enable or disable auto-negotiation on a port:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. The Ports table appears in the View frame. A radio button appears to the left of each table entry.
3. Click the radio button of the port to which you want to assign a name.
4. Click the **Properties** button. The Port Properties window opens.
5. In the **Auto Negotiation** field of the Port Properties window, check (enable) or uncheck (disable) the **Enable** checkbox, then click the **Apply** button.
6. Click the **Close** button to close the Port Properties window.

## Configuring Port Speed

To configure the speed of a port:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Ports** branch. The **Ports** table appears in the View frame. A radio button appears to the left of each table entry.
3. Click the radio button of the port to which you want to assign a name.
4. Click the **Properties** button. The **Port Properties** window opens.
5. In the **Auto Negotiation** field, uncheck the **Enable** checkbox (if necessary).
6. In the **Set Port Speed** field of the **Port Properties** window, click a radio button to select a speed, then click the **Apply** button.
7. Click the **Close** button to close the **Port Properties** window.

## Viewing Power Supply Status

To view the status of the power supplies on your device:



**NOTE:** Not all hardware platforms include power supply information. In such cases, the **Power Supplies** branch does not appear.

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Power Supplies** branch. The **Power Supplies** table appears in the View frame. [Table 3-11](#) lists and describes the fields in the **Power Supplies** table.

**Table 3-11:** Power Supply Table Fields

Field	Description
<b>PS ID</b>	Numeric identifier of the power supply. For more information on the power supplies in your device, refer to your hardware documentation.
<b>Type</b>	Type of power (AC or DC).
<b>Current Status</b>	Displays <b>up</b> to indicate that your power supply functions and currently supplies power to your device. Displays <b>down</b> for faulty power supplies.
<b>Utilization</b>	Percentage of total power supply resources in use.
<b>Voltage</b>	Voltage of the power supply.

## Viewing Fan Status

To view the status of the fans on your device:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Fans** branch. The **Fans** table appears in the View frame. [Table 3-12](#) lists and describes the fields in this table.

**Table 3-12:** Fan Table Fields

Field	Description
<b>Fan ID</b>	Numeric identifier of the fan. For more information on the fans in your device, refer to your hardware documentation.
<b>Current Status</b>	Displays <b>up</b> if the fan functions properly, otherwise, displays <b>down</b> .
<b>Speed (%)</b>	Displays the speed of the fan in percentage of maximum speed.

## Viewing Temperature Sensor Status

To view the status of the power supplies on your device:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Sensors** branch. The **Sensors** table appears in the View frame. [Table 3-13](#) lists and describes the fields in the **Power Supplies** table.

**Table 3-13:** Sensors Table Fields

Field	Description
<b>Slot ID</b>	Numeric identifier of the slot in which the temperature sensor resides. For more information on the slots in your device, refer to your hardware documentation.

**Table 3-13: Sensors Table Fields (Continued)**

Field	Description
<b>Sensor ID</b>	Numeric identifier of the temperature sensor.
<b>Current Status</b>	Displays <b>up</b> for functional sensors and <b>down</b> for faulty sensors.
<b>Operational Code (Oper Code)</b>	Operational code of the sensor. This field displays <b>normal</b> , <b>tempAlert</b> , <b>currAlert</b> , or <b>voltAlert</b> .
<b>Temperature</b> (select chassis)	Temperature of the slot.
<b>Current Temp</b> (select chassis)	Current temperature of the chassis.
<b>Alarm Temp</b> (select chassis)	Chassis temperature that triggers an alarm.
Shutdown Temp (select chassis)	Chassis temperature that triggers a shutdown.

## Viewing Backplane Information

To view backplane information:



**NOTE:** This feature is not available on all hardware platforms.

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Backplane** branch. The **Backplane** display appears in the View frame. [Table 3-14](#) lists and describes the fields in this display.

**Table 3-14: Backplane Display Field Descriptions**

Field	Description
<b>Serial Number</b>	Factory-assigned product serial number.
<b>PCA Serial Number</b>	PCA serial number.
<b>PCA Assembly Number</b>	PCA assembly number.
<b>FRU Num</b>	FRU number.
<b>Chassis ID</b>	GUID of the chassis
<b>Base MAC Address</b>	24-bit base MAC address of this chassis.
<b>Chassis GUID</b>	GUID of the chassis.

## Viewing Management Ports on a Chassis

To view the configurations of management ports on your device:

1. Expand the **Chassis** icon in the Tree frame.
2. Expand the **Management Ports** sub-icon in the Tree frame.
3. Click the **Serial**, **Ethernet**, or **InfiniBand** branch to view the attributes of that management port.

[Table 3-15](#) lists and describes the fields in the **Serial Management Ports** display.

**Table 3-15: Serial Management Ports Display Fields**

Field	Description
<b>Baud Rate</b>	Transmission speed to which you must configure your serial connection.

**Table 3-15: Serial Management Ports Display Fields (Continued)**

Field	Description
<b>Data Bits</b>	Data bits value to which you must configure your serial connection.
<b>Stop Bits</b>	Stop bits setting to which you must configure your serial connection.
<b>Parity</b>	Parity setting to which you must configure your serial connection.

[Table 3-16](#) lists and describes the fields in the **Ethernet Management Ports** display.

**Table 3-16: Ethernet Management Ports Display Fields**

Field	Description
<b>MAC Address</b>	MAC address of the Ethernet Management Port.
<b>Enable Auto Negotiation</b>	Displays <b>true</b> if you have enabled auto-negotiation and <b>false</b> if you have disabled auto-negotiation.
<b>Administrative Port Status</b>	Displays <b>down</b> if you have shut down the port and <b>up</b> if you brought up the port.
<b>Current Port Status</b>	Displays <b>up</b> if the port runs successfully and <b>down</b> if the port cannot run traffic for physical, logical, or administrative reasons.
<b>IP Address</b>	IP address of the Ethernet Management port.
<b>Net Mask</b>	Subnet mask of the Ethernet Management port.
<b>Gateway</b>	Default IP gateway of the Ethernet Management port.
<b>Address Option</b>	Configured Management Port address option.

[Table 3-17](#) lists and describes the fields in the **InfiniBand Management Ports** display.

**Table 3-17: InfiniBand Management Ports Display Fields**

Field	Description
<b>Administrative Port Status</b>	Displays <b>down</b> if you have shut down the port and <b>up</b> if you brought up the port.
<b>Current Port Status</b>	Displays <b>up</b> if the port runs successfully and <b>down</b> if the port cannot run traffic for physical, logical, or administrative reasons.
<b>IP Address</b>	IP address of the IB Management port.
<b>Net Mask</b>	Subnet mask of the IB Management port.
<b>Gateway</b>	Default IP gateway of the IB Management port.
<b>Address Option</b>	Address option of the IB management port.



# Maintenance Icon Tasks

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The following sections appear in this chapter:

- [“Configuring Basic System Information” on page 33](#)
- [“Configuring Date and Time Properties” on page 35](#)
- [“Viewing Files in the File System” on page 35](#)
- [“Installing Software Images” on page 36](#)
- [“Importing Configuration Files and Image Files with FTP” on page 36](#)
- [“Exporting Configuration Files and Log Files with FTP” on page 37](#)
- [“Customizing the Boot Configuration” on page 37](#)
- [“Backing Up Running Configuration File” on page 38](#)
- [“Saving Configuration File” on page 38](#)
- [“Rebooting your Server Switch” on page 38](#)
- [“Configuring Basic Services” on page 38](#)
- [“Viewing RADIUS Servers” on page 40](#)
- [“Viewing Authentication Failures” on page 42](#)
- [“Viewing Diagnostic Test Results” on page 42](#)

## Configuring Basic System Information

Basic system information includes the name of your device, the location of your device, and support resources.

## Viewing System Information

To view basic system information:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **System Information** branch. The **System Information** display appears in the View frame. [Table 4-1](#) lists and describes the elements on this display.

**Table 4-1:** System Information Elements

Element	Description
Description field	Description of the chassis and the image that runs on the chassis.
System Uptime field	Amount of time the chassis has run since the last boot.
Last Change Made At field	Date and time that a user last changed the running configuration.
Last Config Saved At field	Date and time that a user last saved the running configuration as the startup configuration.
System Name field	Configurable name for your Server Switch.
Location field	Configurable location of your Server Switch.
Support Contact field	Configurable support information for your Server Switch.
Apply button	Applies changes that you make in configurable fields to your Server Switch.
Refresh button	Refreshes the <b>System Information</b> display.

## Naming Your InfiniBand Switch

To assign a hostname to your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **System Information** branch. The **System Information** display appears in the View frame.
3. In the **System Name** field, type the name that you want to assign to the device, then click the **Apply** button.

## Defining Device Location

To add a physical device location description to your switch:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **System Information** branch. The **System Information** display appears in the View frame.
3. In the **Location** field, type the name location of your device, then click the **Apply** button.

## Defining Technical Support Resource

The technical support email address that you define appears in the System frame when you refresh or restart CM. To define a technical support resource:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **System Information** branch. The **System Information** display appears in the View frame.
3. In the **Support Contact** field, enter the email address of your technical support provider, then click the **Apply** button.

# Configuring Date and Time Properties

An internal clock runs on your device, but we recommend that you configure your device to access a network time protocol (NTP) server to synchronize your device with your network.

## Configuring Date and Time

To configure the date and time of the internal clock on your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Time** branch. The **Date and Time Properties** display appears in the View frame.
3. In the **Date** field, enter the date in the *MM/DD/YY* format.
4. In the **Time** field, enter the time in *HH:MM:SS* format.
5. Click the **Apply** button.

## Assigning NTP Servers

To configure your device to use an NTP server to synchronize your Server Switch with the network:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Time** branch. The **Date and Time Properties** display appears in the View frame.
3. In the **NTP Server 1** field, enter the IP address of the NTP server that you want your switch to use.
4. (Optional) In the **NTP Server 2** field, enter the IP address of the NTP server that you want your switch to use in the event that your switch cannot access the primary NTP server.
5. (Optional) In the **NTP Server 3** field, enter the IP address of the NTP server that you want your switch to use in the event that your switch cannot access the primary or secondary NTP servers.
6. Click the **Apply** button.




---

**NOTE:** When your device cannot access a NTP server, it defaults to the on-board clock.

---

# Viewing Files in the File System

To view files that reside on your device (for example, image files, log files, and configuration files) :

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **File Management** branch. The **File Management** table appears in the View frame. [Table 4-2](#) lists and describes the fields in this table.

**Table 4-2:** File Management Table Fields

Field	Description
<b>Slot ID</b>	Slot of the controller card on which the file resides.
<b>Name</b>	Name of the file.
<b>Type</b>	Type of file. The following types may appear: <ul style="list-style-type: none"> <li>• config</li> <li>• log</li> <li>• image</li> </ul>
<b>Size</b>	Size of the file, in bytes.

**Table 4-2:** File Management Table Fields (Continued)

Field	Description
Date	Most recent date and time that your device or a user updated the file.

- (Optional) Click the **Refresh** button to poll your switch and update your display to reflect the most current inventory of your file system.

## Deleting Files in the File System

To delete files from your file system:

- Expand the **Maintenance** icon in the Tree frame.
- Click the **File Management** branch. The **File Management** table appears in the View frame.
- Click the radio button next to the file that you want to delete, then click the **Delete** button.

## Installing Software Images

To install an image file:

- Expand the **Maintenance** icon in the Tree frame.
- Click the **File Management** branch. The **File Management** table appears in the View frame.




---

**NOTE:** If you have not already imported the image file to your file system, refer to [“Importing Configuration Files and Image Files with FTP” on page 36](#).

---

- Click the radio button next to the image file that you want to install, then click the **Install** button. A dialog box appears to verify that you want to proceed.




---

**NOTE:** Before you install an image, verify that you have brought up all of the cards on the chassis that you want to run the new image. Cards that run a different image from the chassis cannot pass traffic.

---




---

**NOTE:** Alert other users that you plan to install a new image to your Server Switch.

---

- Click **OK** to install the image. A status bar appears to display the status of the installation.

## Importing Configuration Files and Image Files with FTP

To import files to your Server Switch from remote devices:

- Expand the **Maintenance** icon in the Tree frame.
- Click the **File Management** branch. The **File Management** table appears in the View frame.
- Click the **Import** button. The **Import File** window opens.
- Enter the IP address of the FTP server that holds the file that you want to import in the **Remote FTP IP Address** field.

5. Enter the user ID that logs you into the FTP server in the **Remote FTP User Name** field.
6. Enter the password logs you into the FTP server in the **Remote FTP Password** field.
7. Enter the directory path and name of the file on the FTP server in the **Remote File Path and Name** field.
8. Enter the name that the file will take on your device in the **File Name on System** field.
9. Click the **Import** button. A status bar appears to display the progress of the file transfer.

## Exporting Configuration Files and Log Files with FTP

To export files from your Server Switch to remote devices:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **File Management** branch. The **File Management** table appears in the View frame.
3. Click the **Export** button. The **Export File** window opens and the name of the file that you chose to export appears in the **File Name on System** field.
4. Enter, in the **Remote FTP IP Address** field, the IP address of the server to which you want to export the file .
5. Enter, in the **Remote FTP User Name** field, the user ID that logs you in to the server.
6. Enter, in the **Remote FTP Password** field, the password that logs you in to the server.
7. Enter, in the **Remote File Path and Name** field, the directory path and file name for the file on the server.
8. Click the **Export** button. A status bar appears to display the progress of the file transfer.

## Customizing the Boot Configuration

Customize the boot configuration to:

- View the image that the switch will load during the next reboot.
- Delete the startup configuration.
- Overwrite the startup configuration with another configuration file in your file system.

To customize the boot configuration:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Boot Configuration** branch. The **Boot Configuration** display appears in the View frame.
3. (Optional) From the **Image Source For Next Reboot** pulldown menu, select the image that you want the Server Switch to load when it reboots.
4. (Optional) Click the **Overwrite startup configuration with** radio button, then select a configuration from the pulldown menu to replace the current startup configuration with another configuration file.




---

**NOTE:** To overwrite your startup configuration with your running configuration, refer to [“Backing Up Running Configuration File” on page 38](#).

---

5. (Optional) Click the **Delete startup configuration** radio button to configure your Server Switch to use the factory default startup configuration.
6. Click the **Apply** button.

## Backing Up Running Configuration File

To save your running configuration file:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Backup Configuration** branch. The **Backup Configuration** display appears in the View frame.
3. Enter a file name in the **Save Configuration As** field. CM will save your running configuration in the config directory with the name that you specify.




---

**NOTE:** Enter **startup-config** in this field if you want to save the running configuration as the startup configuration.

---

4. Click the **Save** button. Optionally, click the **File Management** branch to verify that your file appears in the file system.

## Saving Configuration File

To back up your running configuration as your startup configuration (and to the standby controller in a dual-controller chassis):

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Save Config** branch. The **Save Config** display appears in the View frame.
3. Click the **Save Config** button.

## Rebooting your Server Switch

To reboot your Server Switch with CM:

1. Expand the **Maintenance** icon in the Tree frame.
2. Click the **Reboot** branch. The **Reboot** display appears in the View frame.
3. Click the **Reboot** button.

## Configuring Basic Services

Configure basic services to facilitate remote access to your device.

### Assigning a DNS Server

To assign a DNS server to your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. In the **Server 1** field, enter the IP address of the primary DNS server that you want to use.
5. (Optional) In the **Server 2** field, enter the IP address of the DNS server that you want to use if your device cannot access the primary DNS server.
6. In the **Domain** field, enter the domain to which you want your switch to belong, then click the **Apply** button.

## Enabling or Disabling the FTP Access

To enable FTP transfers to and from your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. In the **FTP Server** field, check (enable) or uncheck (disable) the **Enable** checkbox, then click the **Apply** button.

## Enabling or Disabling the Telnet Access

To enable telnet access to your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. In the **Telnet Server** field, check (enable) or uncheck (disable) the **Enable** checkbox, then click the **Apply** button.

## Assigning a SYSLOG Server




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**NOTE:** This task assumes that you have already configured the host and connected it to the IB fabric.

---

To assign a SYSLOG server to store logs from your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. In the **Remote Syslog Server** field, enter the IP address of the remote server to accept messages from your device, then click the **Apply** button.

## Assigning an Authentication Method

To assign an authentication method to your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. In the **Authentication Method** field (under the **RADIUS** heading), click a radio button to select a method, then click the **Apply** button. [Table 4-3](#) lists and describes the radio buttons that you can choose.

**Table 4-3:** Authentication Methods

Button	Description
<b>local</b>	Authenticates user logins with the local CLI user database only.
<b>localThenRadius</b>	Authenticates user logins with the local CLI user database; upon failure, authenticates with the RADIUS server.
<b>radiusThenLocal</b>	Authenticates user logins with the RADIUS server; upon failure, authenticates with the local CLI user database.

## Configuring HTTP and HTTPS

To configure HTTP and HTTPS services:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **General** branch. The **System Services** display appears in the View frame.
4. Configure fields under the **HTTP** heading. For details, refer to [“Preparing Your Device” on page 9](#).
5. Click the **Apply** button.

## Viewing RADIUS Servers

To view the RADIUS servers that you have configured your device to use to authenticate CLI and CM logins:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **Radius Servers** branch. The **Radius Servers** display appears in the View frame. [Table 4-4](#) lists and describes the fields in the **Radius Servers** table.

**Table 4-4:** Radius Servers Table Fields

Field	Description
<b>Address</b>	Displays the IP address of the RADIUS server.
<b>UDP Port</b>	UDP authentication port of the RADIUS server.
<b>Encryption Key</b>	Authentication key that the client and RADIUS server use.
<b>Timeout</b>	Amount of time, in seconds, in which the server must authenticate a login before the login fails.
<b>Max Retries</b>	Number of sequential logins that a user may perform before the server denies access to the username altogether.

## Viewing and Configuring RADIUS Server Properties

To view and update the RADIUS servers that you have configured your device to use to authenticate CLI logins:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **Radius Servers** branch. The **Radius Servers** table appears in the View frame.
4. Click the radio button to the left of the server whose properties you want to view or configure, then click the **Properties** button. The **Radius Server Properties** window opens. [Table 4-5](#) lists and describes the elements in the **Radius Server Properties** window.

**Table 4-5:** Radius Server Properties Window Elements

Element	Description
<b>Address field</b>	Displays the IP address of the RADIUS server.

**Table 4-5: Radius Server Properties Window Elements (Continued)**

<b>Element</b>	<b>Description</b>
<b>UDP Port</b> field	UDP authentication port of the RADIUS server. Edit this value and click the <b>Apply</b> button to configure the UDP port of the RADIUS server. The numbers to the right of the field indicate the range of integer values that this field supports.
<b>Encryption Key</b> field	Authentication key that the client and RADIUS server use. Enter a value and click the <b>Apply</b> button to configure the encryption key of the RADIUS server. The numbers to the right of the field indicate the range of integer values that this field supports.
<b>Timeout</b> field	Amount of time, in seconds, in which the server must authenticate a login before the login fails. Edit this value and click the <b>Apply</b> button to configure the timeout value of the RADIUS server. The numbers to the right of the field indicate the range of integer values that this field supports.
<b>Max Retries</b> field	Number of sequential logins that a user may perform before the server denies access to the username altogether. Edit this value and click the <b>Apply</b> button to configure the maximum number of retries that the RADIUS server permits. The numbers to the right of the field indicate the range of integer values that this field supports.
<b>Access Requests</b> field	Number of authentication requests that the server has received from your device since your device booted.
<b>Access Accepts</b> field	Number of logins to your device that the server authenticated since your device booted.
<b>Access Rejects</b> field	Number of logins to your device that the server denied since your device booted.
<b>Server Timeout</b> field	Number of authentications that timed out on the server since your device booted.
<b>Apply</b> button	Applies the changes that you make in the Radius Server Properties window.
<b>Reset</b> button	Resets the fields in the window to match the server configuration.
<b>Close</b> button	Closes the <b>Radius Server Properties</b> window. If you close the window before you apply changes, CM makes no changes to the configuration.
<b>Help</b> button	Opens on-line help.

## Adding RADIUS Servers

To configure a new RADIUS server on your device:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **Radius Servers** branch. The **Radius Servers** table appears in the View frame.
4. Click the **Add** button. The **Add Radius Server** window opens.



**NOTE:** Click the **Close** button at any time to abort this process with no changes to your device. configurations apply only after you click the **Apply** button.

5. In the **Address** field, enter the IP address of the server.
6. (Optional) Edit the **UDP Port** field. The numbers to the right of the field indicate the range of integer values that this field supports.
7. (Optional) Enter an encryption key in the **Encryption Key** field.
8. (Optional) Edit the **Timeout** field. The numbers to the right of the field indicate the range of integer values that this field supports.
9. (Optional) Edit the **Max Retries** field. The numbers to the right of the field indicate the range of integer values that this field supports.
10. Click the **Apply** button.

## Deleting RADIUS Servers

To remove a RADIUS server from your configuration:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **Radius Servers** branch. The **Radius Servers** table appears in the View frame.
4. Click the radio button to the left of the server that you want to delete.




---

**NOTE:** CM will not prompt you to be sure that you want to delete this server.

---

5. Click the **Delete** button.

## Viewing Authentication Failures

To view a log of authentication failures for your Server Switch:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **Authentication Failures** branch. The **Authentication Failures** display appears in the View frame. [Table 4-6](#) lists and describes the fields in this display.

**Table 4-6:** Authentication Failures Fields

Field	Description
<b>CLI Access Violation Count</b>	Cumulative number of failed CLI logins since the Server Switch booted.
<b>CLI Last Violation Time</b>	Time of the most recent failed CLI login.
<b>SNMP Access Violation Count</b>	Cumulative number of failed SNMP logins since the Server Switch booted.
<b>SNMP Last Violation Time</b>	Time of the most recent failed SNMP login.
<b>HTTP Access Violation Count</b>	Cumulative number of failed HTTP logins since the Server Switch booted.
<b>HTTP Last Violation Time</b>	Time of the most recent failed HTTP login.

## Viewing Diagnostic Test Results

Available test results vary by hardware platform.

## Viewing POST Test Results

To view POST test results:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Diagnostics** sub-icon in the Tree frame.
3. Click the **POST** branch. The **POST Status** table appears in the View frame. [Table 4-7](#) lists and describes the fields in the table.

**Table 4-7:** POST Status Fields

Field	Description
<b>Card</b>	Card on which the POST test ran.
<b>Post Status</b>	Status of the test.
<b>Error Code</b>	Applicable error codes that resulted from the test.

## Viewing FRU Errors

To view FRU test results:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Diagnostics** sub-icon in the Tree frame.
3. Click the **Fru Error** branch. The **Fru Error** display appears in the View frame. The display lists each FRU and any error codes that apply to the FRU.



## InfiniBand Icon Tasks

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The following sections appear in this chapter:

- “Viewing Subnet Managers” on page 45
- “Viewing InfiniBand Services” on page 47
- “Viewing InfiniBand Nodes” on page 48
- “Viewing InfiniBand Ports” on page 51
- “Viewing Neighboring IB Devices” on page 56
- “Viewing IOUs” on page 57
- “Viewing IOCs” on page 57
- “Viewing IOC Services” on page 59

## Viewing Subnet Managers

The SMs display in CM provides an abridged version of the output of the **show ib sm** CLI command. To view the SMs in your IB fabric:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Subnet Managers** branch. The **Subnet Managers** table appears in the View frame. [Table 5-1](#) lists and describes the fields in this table.

**Table 5-1:** Subnet Managers Table Fields

Field	Description
<b>Subnet Prefix</b>	64-bit value that identifies the IB subnet.
<b>GUID</b>	GUID of the Server Switch.
<b>Status</b>	Displays the operating status (oper-status) of the SM.

## Viewing Subnet Manager Properties

To view SM properties:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Subnet Managers** branch. The **Subnet Managers** table appears in the View frame.
3. Click the radio button next to the SM that you want to view, then click the **Properties** button. The **Subnet Manager Properties** window opens. [Table 5-2](#) lists and describes the elements in this window.

**Table 5-2:** Subnet Manager Properties Window Elements

Element	Description
<b>Subnet Prefix</b> field	Displays the subnet prefix of the SM.
<b>GUID</b> field	Displays the GUID of the networking device on which the SM runs.
<b>Status</b> field	Status of the SM. It may be active or inactive. If <b>active</b> , it is actively managing subnets. If <b>inactive</b> , it is not managing subnets.
<b>Activity Count</b> field	Activity counter that increments each time the SM issues an subnet management packet (SMP) or performs other management activities.
<b>SM Key</b> field	64-bit subnet management key assigned to the SM. The default is fe:80:00:00:00:00:00:00. The SM key serves as the prefix of all GIDs and “brands” nodes as members of this subnet.
<b>Priority</b> field	Priority of the SM relative to other SMs in the IB network. The lower the number, the greater the priority.
<b>Sweep Interval</b> field	Specifies how frequently the SM queries the IB fabric for network changes.
<b>Response Timeout</b> field	Maximum amount of time that the SM waits for a response after it sends a packet to a port. If the SM does not receive a response in time, the SM identifies the port as unresponsive.
<b>Apply</b> button	Applies the changes that you make in the Subnet Manager Properties window to the SM.
<b>Reset</b> button	Resets the fields in the window to match the properties of the SM.
<b>Close</b> button	Closes the <b>Subnet Manager Properties</b> window. If you close the window before you apply changes, CM makes no changes to the SM.
<b>Help</b> button	Opens on-line help.

## Adding a Subnet Manager

To add a SM:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Subnet Managers** branch. The **Subnet Managers** table appears in the View frame.
3. Click the **Add** button. The **Add Subnet Manager** window opens.
4. Enter a subnet prefix in the **Subnet Prefix** field.
5. Assign a priority value (integer) in the **Priority** field. The higher the integer, the higher the priority.
6. (Optional) Enter a key in the **SM Key** field.
7. Click the **Apply** button.

## Deleting a Subnet Manager

To delete a SM:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Subnet Managers** branch. The **Subnet Managers** table appears in the View frame.
3. Click the radio button next to the SM that you want to delete, then click the **Delete** button.

## Configuring Subnet Manager Properties

To configure SM properties:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Subnet Managers** branch. The **Subnet Managers** table appears in the View frame.
3. Click the radio button next to the SM that you want to view, then click the **Properties** button. The **Subnet Manager Properties** window opens.
4. (Optional) Enter an integer in the **Priority** field to configure the priority of the SM; the lower the number, the greater the priority.
5. (Optional) Enter an integer (1 - 268435455) in the **Sweep Interval** field to configure the sweep interval of the SM.
6. (Optional) Enter an integer (200 - 5000) in the **Response Timeout** field to configure how long the SM waits for a response from a connection before it identifies a connection as faulty.
7. Click the **Apply** button to apply your change(s) to your Server Switch.

## Viewing InfiniBand Services

Subnet services provide your IB fabric with various features, such as the ability to run particular protocols. To view the subnet services on your IB fabric:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Services** branch. The **Services** table appears in the View frame. [Table 5-3](#) lists and describes the fields in this table.

**Table 5-3:** Services Table Fields

Field	Description
<b>Name</b>	Name of the subnet service.
<b>Subnet Prefix</b>	Subnet prefix of the subnet service.
<b>Service ID</b>	Unique identifier that the SM assigns to the service.
<b>Service GID</b>	Services use the same GID as the IB controller (node) on which they run.
<b>PKey</b>	Partition key of the node on which the service runs.

## Viewing InfiniBand Service Properties

1. Expand the **InfiniBand** icon in the Tree frame.
2. Click the **Services** branch. The **Services** table appears in the View frame.

- Click the radio button next to the service whose properties you want to view, then click the **Properties** button. The **InfiniBand Service Properties** window opens. [Table 5-4](#) lists and describes the fields in this window.

**Table 5-4:** InfiniBand Service Properties Window Fields

Field	Description
<b>Subnet Prefix</b>	Subnet prefix of the service.
<b>Service ID</b>	ID of the service.
<b>Service GUID</b>	GID of the service.
<b>PKey</b>	Partition key of the service.
<b>Lease</b>	Lease period of the service.
<b>Name</b>	Name of the service.

## Viewing InfiniBand Nodes

Both IB switches and IB hosts qualify as IB nodes. To view the nodes in your IB fabric:

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Topology** icon in the IB frame.
- Click the **Nodes** branch. The **Nodes** table appears in the View frame. [Table 5-5](#) lists and describes the fields in this table.

**Table 5-5:** Nodes Table Fields

Field	Description
<b>Subnet Prefix</b>	Subnet prefix of the node. The prefix of the node matches the prefix of the SM that manages the node.
<b>Node GUID</b>	GUID of the switch or host.
<b>Description</b>	Description of the node.
<b>Type</b>	Identifies the hardware type of the node.

## Viewing Node Properties

To view the properties of a switch or host in your IB fabric:

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Topology** icon in the IB frame.
- Click the **Nodes** branch. The **Nodes** table appears in the View frame.
- Click the radio button next to the node that you want to view, then click the **Properties** button. The **Topology Node Properties** window opens. [Table 5-6](#) lists and describes the **Topology Node Properties** fields in the window.

**Table 5-6:** Topology Node Properties Window Fields

Field	Description
<b>Subnet Prefix</b>	64-bit value that identifies the IB subnet to which this node belongs.
<b>Node GUID</b>	GUID of this node.

**Table 5-6:** Topology Node Properties Window Fields (Continued)

Field	Description
<b>Base Version</b>	Supported base management datagram (MAD) version. Indicates that this channel adapter, switch, or router supports versions up to and including this version. Refer to section 13.4.2, Management Datagram Format, in “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>Class Version</b>	Supported MAD class format version. Indicates that this channel adapter, switch, or router supports versions up to, and including, this version.
<b>Type</b>	Type of node being managed. The value is channel adapter, switch, router, or error. An <b>error</b> entry indicates an unknown type.
<b>Num Ports</b>	Number of physical ports on this node.
<b>Port GUID</b>	GUID of this port. A port within a node can return the node GUID as its PortGUID if the port is an integral part of the node and is not field-replaceable (in other words, not swappable).
<b>Partition Cap</b>	Capacity of entries in the partition table for channel adapter, router, and the switch management port. The value is the same for all ports on the node. This is set to at least 1 for all nodes including switches. This value is fixed and unconfigurable.
<b>Device ID</b>	Manufacturer-assigned device identification.
<b>Revision</b>	Manufacturer-assigned device revision.
<b>Local Port Num</b>	The link port number from which this subnet management packet (SMP) arrived. The value is the same for all ports on the node.
<b>Vendor ID</b>	Device vendor ID. The value is the same for all ports on the node.
<b>Description</b>	Description of the node.
<b>System Image GUID</b>	GUID of the image that runs on the device.

[Table 5-7](#) lists and describes the **Switch Properties** fields in this window.

**Table 5-7:** Switch Properties Window Fields

Field	Description
<b>Linear FDB Cap</b>	Maximum number of entries allowed in the linear unicast forwarding table. Zero (0) indicates that there is no linear forwarding database.
<b>Random FDB Cap</b>	Maximum number of entries allowed in the random unicast forwarding table. Zero (0) indicates that there is no random forwarding database.
<b>MCast FDB Cap</b>	Maximum number of entries allowed in the multicast forwarding table.

**Table 5-7: Switch Properties Window Fields (Continued)**

<b>Field</b>	<b>Description</b>
<b>Linear FDB Top</b>	Specifies the top of the linear forwarding table. Packets received with unicast LIDs greater than this value are discarded by the switch. This parameter applies only to switches that implement linear forwarding tables and is ignored by switches that implement random forwarding tables.
<b>Default Port</b>	Specifies the default port to forward all the unicast packets from other ports whose destination local identifier (DLID) does not exist in the random forwarding table.
<b>Default Primary MCast Port</b>	Specifies the default port to forward all the multicast packets from other ports whose DLID does not exist in the multicast forwarding table.
<b>Default Non-Primary MCast Port</b>	Specifies the port to forward all the multicast packets from default-pri-mcast-port whose DLID does not exist in the multicast forwarding table.
<b>Lifetime Value</b>	Specifies the duration a packet can live in the switch. Time units are in milliseconds. Refer to section 18.2.5.4, Transmitter Queueing, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>Switch Port State Change</b>	Indicates a change in port state. The value changes from <b>NotInTransition</b> to <b>PortInTransition</b> anytime the State parameter of a port changes from down to <b>initialize</b> , <b>initialize</b> to <b>down</b> , <b>armed to down</b> , or <b>active to down</b> , as a result of link state machine logic.
<b>LID Per Port</b>	Number of LID/LMC combinations that may be assigned to a given external port for switches that support the random forwarding table. This value is always 0. 0 indicates that there is one LID per port.
<b>Partition Enforce Cap</b>	Number of entries in this partition enforcement table per physical port. Zero (0) indicates that partition enforcement is not supported by the switch.
<b>In Enforce Cap</b>	Indicates if the switch is capable of partition enforcement on received packets. The value is true or false.
<b>Out Enforce Cap</b>	Indicates if the switch is capable of partition enforcement on transmitted packets. The value is true or false.
<b>In Filter Raw Packet Cap</b>	Indicates if the switch is capable of raw packet enforcement on received packets. The value is true or false.
<b>Out Filter Raw Packet Cap</b>	Indicates if the switch is capable of raw packet enforcement on transmitted packets. The value is true or false.

## Viewing Node Ports

To view the IB ports on a node in your IB fabric:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Topology** icon in the IB frame.
3. Click the **Nodes** branch. The **Nodes** table appears in the View frame.

- Click the radio button next to the node whose ports you want to view, then select **Show Ports** from the **Show Options** pulldown menu. The **InfiniBand Ports** display appears in the View frame, but lists only the ports that belong to the node that you selected. For details, refer to [“Viewing InfiniBand Ports” on page 51](#) or see [Table 5-8](#).

## Viewing Node Neighbors

To view the neighbors of an IB node on your fabric:

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Topology** icon in the IB frame.
- Click the **Nodes** branch. The **Nodes** table appears in the View frame.
- Click the radio button next to the node whose neighbors you want to view, then select **Show Neighbors** from the **Show Options** pulldown menu. The **InfiniBand Neighbors** display appears in the View frame but lists only the neighbors of the node that you selected. For details, refer to [“Viewing Neighboring IB Devices” on page 56](#) or see [Table 5-10](#).

## Viewing InfiniBand Ports

To view the IBs ports on your IB fabric:

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Topology** icon in the Tree frame.
- Click the **Ports** branch in the Tree frame. The **InfiniBand Ports** table appears in the View frame. [Table 5-8](#) lists and describes the fields in this table.

**Table 5-8:** InfiniBand Ports Table Fields

Field	Description
<b>Subnet Prefix</b>	Subnet prefix of the device on which the port resides.
<b>Node GUID</b>	GUID of the node on which the port resides.
<b>Port</b>	Numeric identifier of the port.
<b>LID</b>	Logical ID (LID) of the port.
<b>State</b>	Displays the port state as <b>active</b> , <b>armed</b> , <b>noStateChange</b> , <b>initialize</b> , <b>reserved</b> , or <b>down</b> .
<b>Link Width Active</b>	Speed of the connection to this port.

## Viewing InfiniBand Port Properties

To view the properties of an IB port:

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Topology** icon in the Tree frame.
- Click the **Ports** branch in the Tree frame. The **InfiniBand Ports** table appears in the View frame.

4. Click the radio button next to the port whose properties you want to view, then click the **Properties** button. The **Topology Port Properties** window opens. [Table 5-9](#) lists and describes the fields in this window.

**Table 5-9:** Topology Port Properties Window Fields

Field	Description
<b>Subnet Prefix</b>	64-bit value that identifies the IB subnet to which this port belongs.
<b>Node GUID</b>	64-bit GUID of the node to which this port belongs.
<b>Port</b>	Port number (integer) on the node (host).
<b>MKey</b>	64-bit management key for this port. Refer to section 14.2.4, Management Key and 3.5.3, Keys, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>GID Prefix</b>	64-bit GID prefix for this port. This prefix is assigned by the SM, based upon the port router and the rules for local identifiers. Refer to section 4.1.3, Local Identifiers, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>LID</b>	16-bit base-LID of this port.
<b>Master SM LID</b>	16-bit base LID of the master SM managing this port.
<b>Cap Mask</b>	The capability mask identifies the functions that the host supports. 32-bit bitmask that specifies the supported capabilities of the port. A bit value of 1 (one) indicates a supported capability. The bits are 0, 11-15, 18, 21-31 (Reserved and always 0.), 1 IsSM, 2 IsNoticeSupported, 3 IsTrapSupported, 4 IsResetSupported, 5 IsAutomaticMigrationSupported, 6 IsSLMappingSupported, 7 IsMKeyNVRAM (supports M_Key in NVRAM), 8 IsPKeyNVRAM (supports P_Key in NVRAM), 9 Is LED Info Supported, 10 IsSMdisabled, 16 IsConnectionManagementSupported, 17 IsSNMPTunnelingSupported, 19 IsDeviceManagementSupported, 20 IsVendorClassSupported. Values are expressed in hexadecimal.
<b>Diag Code</b>	16-bit diagnostic code. Refer to section 14.2.5.6.1 Interpretation of Diagcode, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information. This field does not currently apply to your device.
<b>MKey Lease Period</b>	Initial value of the lease-period timer in seconds. The lease period is the length of time that the M_Key protection bits are to remain non-zero after a SubnSet (PortInfo) fails an M_Key check. After the lease period expires, clearing the M_Key protection bits allows any SM to read (and then set) the M_Key. Set this field to 0 to indicate that the lease period is never to expire. Refer to section 14.2.4, “Management Key, InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.”

**Table 5-9:** Topology Port Properties Window Fields (Continued)

Field	Description
<b>Link Width Enabled</b>	<p>Enabled link width (bandwidth). The value is an integer that indicates the enabled link-width sets for this port. The value may be:</p> <ul style="list-style-type: none"> <li>• 0 (no state change)</li> <li>• 1 (1x)</li> <li>• 2 (4x)</li> <li>• 3 (1x or 4x)</li> <li>• 8 (12x)</li> <li>• 9 (1x or 12x)</li> <li>• 10 (4x or 12x)</li> <li>• 11 (1x, 4x or 12x)</li> <li>• 255 (set this parameter to the link-width-supported value)</li> </ul>
<b>Link Width Supported</b>	Supported link width. The value is 1 (1x), 3 (1x or 4x), or 11 (1x, 4x, or 12x).
<b>Link Width Active</b>	Active link width. Used in conjunction with <b>LinkSpeedActive</b> to determine the link rate between two nodes. The value is 1 (1x), 2 (4x), or 8 (12x).
<b>Link Speed Supported</b>	Supported link speed. The value is 1 (2.5 Gbps).
<b>State</b>	A higher form of addressing than PhyState, State determines that the nodes can actually communicate and indicates the state transition that has occurred. A transition is a port change from down to initialize, initialize to down, armed to down, or active to down as a result of link state machine logic. Changes to the port state resulting from SubnSet have no affect on this parameter value. The value is noStateChange, down, initialize, armed, or active.
<b>Physical State</b>	Indicates the physical state of the port. This is used to determine that electricity is flowing between nodes and they can perform a handshake. The value is noStateChange, sleeping, polling, disabled, portConfigurationTraining, linkup, or linkErrorRecovery. The default state upon powerup is polling.
<b>Link Down Def State</b>	Default LinkDown state to return to. The value is noStateChange, sleeping, or polling. Refer to section 5.5.2, Status Outputs (MAD GET), “InfiniBand® Architecture, Vol. 2, Release 1.0”, for more information.
<b>MKey Protocol Bits</b>	Management key protection bits for the port. The bits are 0, 1, 2, and 3. Refer to section 14.2.4.1, Levels of Protection, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>LMC</b>	Local-identifier mask control (LMC) for multipath support. A LMC is assigned to each channel adapter and router port on the subnet. It provides multiple virtual ports within a single physical port. The value of the LMC specifies the number of path bits in the LID. A value of 0 (zero) indicates one LID is allowed on this port. Refer to sections 3.5.10, Addressing, and 4.1.3, Local Identifiers, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.

**Table 5-9:** Topology Port Properties Window Fields (Continued)

<b>Field</b>	<b>Description</b>
<b>Link Speed Active</b>	Speed of an active link. The value is 1 (2.5 Gbps).
<b>Link Speed Enabled</b>	Maximum speed the link is capable of handling. The value is 0 (No state change), 1 (2.5 Gbps), or 3 (value derived from link-speed-supported).
<b>Neighbor MTU</b>	Active maximum transmission unit enabled on this port for transmit. Check the mtu-cap value at both ends of every link and use the lesser speed. The value is mtu256, mtu512, mtu1024, mtu2048, or mtu4096.
<b>Master SM SL</b>	Administrative service level required for this port to send a non-SMP message to the SM.
<b>VL Cap</b>	Maximum range of data virtual lanes supported by this port. The value is v10, v10ToV11, v10ToV13, v10ToV17, or v10ToV114. Refer also to oper-VL. Each port can support up to fifteen virtual lanes (VLs 0 - 15). The VL-cap field displays the range of those lanes (for example, lanes 0 - 7) that the port currently supports.
<b>VL High Limit</b>	Maximum high-priority limit on the number of bytes allowed for transmitting high-priority packets when both ends of a link operate with multiple data virtual-lanes. Used with the virtual-lane arbitration table. The maximum high-limit is determined by checking the vl-arb-high-cap on the other side of the link and then negotiating downward.
<b>VL Arb High Cap</b>	Highest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. Refer to section 14.2.5.9, VL Arbitration Table, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>VI Arb Low Cap</b>	Lowest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. Refer to section 14.2.5.9, VL Arbitration Table, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>MTU Cap</b>	Used in conjunction with neighbor-mtu to determine the maximum transmission size supported on this port. The lesser of mtu-cap and neighbor-mtu determines the actual MTU used. The value is 256, 512, 1024, 2048, or 4096.
<b>VL Stall Count</b>	Number of sequentially dropped packets at which the port enters a VLStalled state. The virtual lane exits the VLStalled state (8 * HLL) units after entering it. Refer to section 18.2.5.4, Transmitter Queuing, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for a description of HLL.
<b>HOQ Life</b>	Maximum duration allowed to packets at the head of a virtual-lane queue. Used with VL-stall-count to determine the outgoing packets to discard.
<b>Oper VL</b>	Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VL-cap value. The value is v10, v10-V11, v10-V13, v10-V17, or v10-V114.

**Table 5-9:** Topology Port Properties Window Fields (Continued)

<b>Field</b>	<b>Description</b>
<b>In Part Enforce</b>	Boolean value that indicates whether or not to support optional partition enforcement for the packets received by this port. There is no default value.
<b>Out Part Enforce</b>	Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. There is no default value.
<b>In Filter Raw Packet Enforce</b>	Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets received by this port. There is no default value.
<b>Out Filter Raw Packet Enforce</b>	Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets transmitted by this port. There is no default value.
<b>MKey Violation</b>	Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial powerup or the last reset. Refer to section 14.2.4, Management Key, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>PKey Violation</b>	Number of SMPs that have been received on this port with invalid P_Keys since initial powerup or the last reset. Refer to section 9.2.7, partition key (P_KEY), “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>QKey Violation</b>	Number of SMPs that have been received on this port with invalid Q_Keys since initial powerup or the last reset. Refer to section 10.2.4, Q Keys, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>GUID Cap</b>	Number of GUID entries allowed for this port in the port table. Any entries that exceed this value are ignored on write and read back as zero. Refer to section 14.2.5.5, GUIDCap, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>Subnet Timeout</b>	Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at which traps can be sent from this port. Delay is affected by switch configuration. This parameter, along with resp-time, may be used by requestors to determine the interval to wait for a response to a request before taking other action. Duration is calculated as $(4.096 \text{ ms} * 2^{\text{SubnetTimeout}})$ .
<b>Response Time</b>	Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. Refer to section 13.4.6.2, Timers and Timeouts, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
<b>Local Physical Error</b>	Threshold at which ICRC, VCRC, FCCRC, and all physical errors result in an entry into the BAD PACKET or BAD PACKET DISCARD states of the local packet receiver. Refer to section 7.12.2, Error Recovery Procedures, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.

**Table 5-9:** Topology Port Properties Window Fields (Continued)

Field	Description
<b>Local Overrun Error</b>	Threshold at which the count of buffer overruns, across consecutive flow-control update periods, result in an overrun error. A possible cause of such errors is when an earlier packet has physical errors and the buffers are not immediately reclaimed.

## Viewing Neighboring IB Devices

To view the IB devices that directly connect to your device:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Topology** icon in the Tree frame.
3. Click the **Neighbors** branch in the Tree frame. The **InfiniBand Neighbors** table appears in the View frame. [Table 5-10](#) lists and describes the fields in this table.

**Table 5-10:** InfiniBand Neighbors Table Fields

Field	Description
<b>Subnet Prefix</b>	64-bit value that identifies the IB subnet to which this neighbor node belongs.
<b>Local Node GUID</b>	64-bit GUID of the IB node.
<b>Local Port ID</b>	Port ID of the IB node. The value is an integer between 0 and 255.
<b>Remote Node GUID</b>	64-bit GUID of the neighboring IB node to which the local node is linked.
<b>Remote Port ID</b>	Port ID of the neighboring IB node to which the local node is linked. The value is an integer between 0 and 255.

## Viewing IB Neighbor Properties

To view IB neighbor properties:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Topology** icon in the Tree frame.
3. Click the **Neighbors** branch. The **InfiniBand Neighbors** table appears in the View frame.
4. Click the radio button next to the neighbor whose properties you want to view, then click the **Properties** button. The **Topology Neighbor Properties** window opens. [Table 5-11](#) lists and describes the elements in this window.

**Table 5-11:** Topology Neighbor Properties Window Elements

Element	Description
<b>Subnet Prefix</b> field	Subnet prefix of the neighbor node.
<b>Local Node GUID</b> field	GUID of the neighbor that you selected.
<b>Local Port ID</b> field	Local port on the neighbor that you selected that connects to your Server Switch.
<b>Local Node Type</b> field	Node type of the neighbor node.
<b>Remote Node GUID</b> field	GUID of the physical switch within your Server Switch that connects to the neighbor node.

**Table 5-11:** Topology Neighbor Properties Window Elements (Continued)

Element	Description
<b>Remote Port ID</b> field	Port on the physical switch within your Server Switch that connects to the neighbor node.
<b>Remote Node Type</b> field	Node type of the physical switch within your Server Switch that connects to the neighbor node.
<b>Link State</b> field	State of the connection between the neighbor and the switch within your Server Switch.
<b>Link Width Active</b> field	Bandwidth of the connection between the neighbor and the switch within your Server Switch.
<b>Close</b> button	Closes the window.
<b>Help</b> button	Opens on-line help.

## Viewing IOUs

To view the I/O Units (IOUs) on your device:



**NOTE:** This feature is not available on all hardware platforms.

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Device Management** sub-icon in the Tree frame.
3. Click the **IOU** branch. The **IOU** display appears in the View frame. [Table 5-12](#) lists and describes the fields in this display.

**Table 5-12:** IOU Display Fields

Field	Description
<b>Change ID</b>	Cumulative number of changes to the controller list since the device last booted.
<b>Max Controllers</b>	Maximum number of controllers that your device can support.
<b>Diag Device ID</b>	Indicates that diagnostics can ( <b>1</b> ) or cannot ( <b>0</b> ) provide IOC details.
<b>Option ROM</b>	Indicates the presence or absence of Option ROM.
<b>Controller List</b>	Lists each slot on your device that can potentially contain a controller and identifies whether or not a controller resides in that slot.

## Viewing IOCs

To view the I/O controllers (IOCs) on your device:



**NOTE:** This feature is not available on all hardware platforms.

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Device Management** sub-icon in the Tree frame.

- Click the **IOCs** branch. The **IOCs** display appears in the View frame. [Table 5-13](#) lists and describes the fields in this display.

**Table 5-13: IOCs Display Fields**

Field	Description
<b>GUID</b>	GUID of the controller.
<b>Vendor ID</b>	Organization Unique Identifier (OUI) of the vendor.
<b>Device ID</b>	Vendor-assigned device identifier.
<b>Device Version</b>	Vendor-assigned device version.
<b>IO Class</b>	I/O class that the IOC supports.
<b>Protocol</b>	Standard protocol definition that the IOC supports.

## Viewing IOC Properties

To view the properties of the I/O controllers (IOCs) on your device:



**NOTE:** This feature is not available on all hardware platforms.

- Expand the **InfiniBand** icon in the Tree frame.
- Expand the **Device Management** sub-icon in the Tree frame.
- Click the **IOCs** branch. The **IOCs** display appears in the View frame.
- Click the radio button next to the IOC that you want to view, then click the **Properties** button. The **IOC Properties** window opens. [Table 5-14](#) lists and describes the fields in this window.

**Table 5-14: IOC Properties Window Fields**

Field	Description
<b>GUID</b>	GUID of the controller.
<b>Vendor ID</b>	Organization Unique Identifier (OUI) of the vendor.
<b>Device ID</b>	Vendor-assigned device identifier.
<b>Device Version</b>	Vendor-assigned device version.
<b>Subsystem Vendor ID</b>	Vendor-assigned subsystem vendor identifier
<b>Subsystem ID</b>	Vendor-assigned subsystem identifier.
<b>IO Class</b>	I/O class that the IOC supports.
<b>IO Subclass</b>	Subclass of the I/O class protocol of the IOC.
<b>Protocol</b>	Standard protocol definition that the IOC supports.
<b>Protocol Version</b>	Protocol version that the IOC supports.
<b>Send Msg Queue Depth</b>	Maximum number of messages that the send message queue supports.
<b>RDMA Read Queue Depth</b>	Maximum depth of the per-channel RDMA Read Queue.
<b>Send Msg Size</b>	Maximum size, in bytes, of send messages.
<b>RDMA Transfer Size</b>	Maximum size, in bytes, of outbound RDMA transfers that the IOC initiates.

**Table 5-14:** IOC Properties Window Fields (Continued)

Field	Description
<b>Controller Op Cap Mask</b>	Integer value (from 8 cumulative bits) between 1 and 255 that represents the operation type(s) that the IOC supports. <ul style="list-style-type: none"> <li>bit 0: ST—Send Messages To IOCs</li> <li>bit 1: SF—Send Messages From IOCs</li> <li>bit 2: RT—RDMA Read Requests To IOCs</li> <li>bit 3: RF—RDMA Read Requests From IOCs</li> <li>bit 4: WT—RDMA Write Requests To IOCs</li> <li>bit 5: WF—RDMA Write Requests From IOCs</li> <li>bit 6: AT—Atomic Operations To IOCs</li> <li>bit 7: AF—Atomic Operations From IOCs</li> </ul>
<b>Service Entries</b>	Number of services that the IOC provides.

## Viewing IOC Services

To view the IOC services on your device:



**NOTE:** This feature is not available on all hardware platforms.

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Device Management** sub-icon in the Tree frame.
3. Click the **IOC Services** branch in the Tree frame. The **IOC Services** table appears in the View frame. [Table 5-15](#) lists and describes the fields in this table.

**Table 5-15:** IOC Services Table Fields

Field	Description
<b>GUID</b>	GUID of the node that provides the service.
<b>Service Name</b>	ASCII identifier of the service.
<b>Service ID</b>	Numeric identifier that nodes use to call the service.

## Viewing Properties of IOC Services



**NOTE:** This feature is not available on all hardware platforms.

To view the properties of IOC services on your device:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Device Management** sub-icon in the Tree frame.
3. Click the **IOC Services** branch in the Tree frame. The **IOC Services** table appears in the View frame.

4. Click the radio button next to the service whose properties you want to view, then click the **Properties** button. The **Infiniband Service Properties** window opens. [Table 5-16](#) lists and describes the elements in this window.

**Table 5-16:** Infiniband Service Properties Window Elements

<b>Element</b>	<b>Description</b>
<b>Subnet Prefix</b> field	Subnet prefix of the service.
<b>Service ID</b> field	Numeric identifier that nodes use to call the service.
<b>Service GID</b> field	Global ID (GID) of the service.
<b>PKey</b> field	Partition key of the service.
<b>Lease</b> field	Lease period of the service.
<b>Key</b> field	Subnet management key of the service.
<b>Name</b> field	ASCII identifier of the service.
<b>Data (8 bit)</b> field	8-bit descriptor of the service.
<b>Data (16 bit)</b> field	16-bit descriptor of the service.
<b>Data (32 bit)</b> field	32-bit descriptor of the service.
<b>Data (64 bit)</b> field	64-bit descriptor of the service.
<b>Close</b> button	Closes the window.
<b>Help</b> button	Opens context-sensitive on-line help.

## Ethernet Icon Tasks

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The following sections appear in this chapter:

- [“Viewing Bridge Groups” on page 61](#)
- [“Viewing Bridge Subnets” on page 64](#)
- [“Viewing Bridge Forwarding” on page 64](#)
- [“Viewing Redundancy Groups” on page 65](#)
- [“Viewing Trunk Groups” on page 66](#)

## Viewing Bridge Groups

To view the bridge groups on your Server Switch:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Groups** branch. The **Bridge Groups** table appears in the View frame. [Table 6-1](#) lists and describes the fields in this table.

**Table 6-1:** Bridge Groups Table Fields

Field	Description
<b>ID</b>	Bridge group ID number.
<b>Name</b>	Bridge group name.
<b>Subnet Prefix</b>	Subnet prefix of the bridge group.
<b>Ethernet Port</b>	Displays the trunk group and ports available that the bridge group uses to connect to the Ethernet switch.
<b>IB Port</b>	Displays the internal gateway slot#/port# that is associated with the bridge-group.

**Table 6-1:** Bridge Groups Table Fields

Field	Description
<b>Ethernet Next Hop</b>	Displays the Ethernet next hop address that the administrator configured with the <b>bridge-group</b> command.
<b>IB Next Hop</b>	Default next-hop for packets entering from the IB fabric.

## Viewing Bridge Group Properties

To view the properties of a bridge group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Groups** branch. The **Bridge Groups** table appears in the View frame.
3. Click the radio button next to the bridge group whose properties you want to view, then click the **Properties** button. The **Ethernet Chassis Manager** window opens and displays the properties of the bridge group. [Table 6-2](#) lists and describes the elements in this window.

**Table 6-2:** Ethernet Chassis Manager Window Elements

Element	Description
<b>ID</b> field	ID number of the bridge group.
<b>Name</b> field	Name of the bridge group.
<b>Subnet Prefix</b> field	Subnet prefix of the bridge group.
<b>Subnet Prefix Len</b> field	Length of the bridge group subnet prefix.
<b>Ethernet Next Hop</b> field	IP address of the next hop (from the Ethernet side) of the bridge group.
<b>IB Next Hop</b> field	Default next-hop for packets entering from the IB fabric.
<b>Broadcast Forwarding</b> field	Displays a checked box when broadcast forwarding runs.
<b>Loop Protection Method</b> field	Displays the loop protection method of the group.
<b>IP Multicast</b> field	Displays a checked box when IP multicasting runs.
<b>Ethernet Port</b> pulldown menu	Displays the trunk or ports that the bridge group uses to connect to the Ethernet switch.
<b>Vlan</b> field	Virtual LAN (VLAN) identifier of the group.
<b>IB Port</b> pulldown menu	Displays the IB port that the bridge group uses.
<b>IB P_KEY</b> field	Partition key of the bridge group.
<b>Apply</b> button	Applies the changes that you make in the window.
<b>Reset</b> button	Resets the fields in the window to match the properties of the bridge group.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the bridge group.
<b>Help</b> button	Opens on-line help.

## Adding Bridge Groups

To create a new bridge group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Groups** branch. The **Bridge Groups** table appears in the View frame.
3. Click the **Add** button. The **Add Ethernet Bridge Group** window appears.

4. Enter a bridge group ID number in the **ID** field.
5. (Optional) Enter a name in the **Name** field.
6. Enter a subnet prefix in the **Subnet Prefix** field or leave the field as **0.0.0.0** to enable auto-detection.
7. Enter the length of the subnet prefix in the **Subnet Prefix Len** field.
8. Enter the next Ethernet hop address in the Ethernet Next Hop field.
9. Enter the next IB hop address in the IB Next Hop field.
10. (Optional) Check the **Enable** checkbox in the **Broadcast Forwarding** field to enable broadcast forwarding.
11. Click the **none** radio button or the **one** radio button in the **Loop Protection Method** to choose a protection method.
12. (Optional) Check the **Enable** checkbox in the **IP Multicast** field to enable IP multicasting.
13. Select a port from the **Ethernet Port** pulldown menu.
14. Enter a virtual LAN in the **Vlan** field.
15. Select an IB gateway port from the **IB Port** pulldown menu.
16. (Optional) Enter a partition key in the **IB P\_KEY** field.
17. Click the **Apply** button.

## Configuring Bridge Groups

To configure the properties of a bridge group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Groups** branch. The **Bridge Groups** table appears in the View frame.
3. Click the radio button next to the bridge group whose properties you want to view, then click the **Properties** button. The **Ethernet Chassis Manager** window opens.
4. (Optional) Enter a name for the bridge group in the **Name** field.
5. (Optional) Enter the IP address of the next Ethernet hop of the bridge group in the **Ethernet Next Hop** field.
6. (Optional) Enter the IP address of the next destination for packets that enter from the IB fabric in the **IB Next Hop** field.
7. (Optional) Check (or uncheck) the **Enable** checkbox in the **Broadcast Forwarding** field.
8. (Optional) Click the **none** radio button or **one** radio button in the **Loop Protection Method** field.
9. (Optional) Check (or uncheck) the **Enable** checkbox in the **IP Multicast** field.
10. (Optional) Select a port from the **Ethernet Port** pulldown menu.
11. (Optional) Enter a virtual LAN ID in the **Vlan** field.
12. (Optional) Select a gateway port from the **IB Port** pulldown menu.
13. (Optional) Enter a partition key in the **IB P\_KEY** field.
14. Click the **Apply** button.

## Deleting Bridge Groups

To delete a bridge group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Groups** branch. The **Bridge Groups** table appears in the View frame.
3. Click the radio button next to the bridge group that you want to delete, then click the **Delete** button.

## Viewing Bridge Subnets

To view bridge subnets:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Subnet** branch. The **Bridge Subnet** display appears in the View frame. [Table 6-3](#) lists and describes the fields in this display.

**Table 6-3:** Bridge Subnets Fields

Field	Descriptions
<b>ID</b>	Subnet ID number.
<b>Subnet Prefix</b>	Subnet prefix, in A.B.C.D format.
<b>Subnet Prefix Len</b>	Length of the subnet prefix.

## Adding Bridge Subnet

To add a bridge subnet:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Subnet** branch.
3. Click the **Add** button. The **Add Ethernet Bridge Group Subnet** window opens.
4. Enter an integer value in the **ID** field to assign an ID number to the subnet.
5. Enter the subnet prefix in the **Subnet Prefix** field, in A.B.C.D format.
6. Enter an integer value in the **Subnet Prefix Len** field to configure a length for the subnet prefix.
7. Click the **Apply** button.

## Deleting Bridge Subnet

To delete a bridge subnet:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Subnet** branch.
3. Click the radio button next to the subnet that you want to delete, then click the **Delete** button.

## Viewing Bridge Forwarding

To view bridge forwarding:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Forwarding** branch. The **Bridge Forwarding** display appears in the View frame. [Table 6-4](#) lists and describes the fields in this display.

**Table 6-4:** Bridge Forwarding Fields

Field	Description
<b>ID</b>	Displays the integer-value identifier of the bridge group.
<b>Port Type</b>	Displays <b>eth</b> for IP and <b>ib</b> for IPoIB.
<b>Dest Address</b>	Final destination of the packets.
<b>Dest Length</b>	Number of hops to the destination.

**Table 6-4:** Bridge Forwarding Fields (Continued)

Field	Description
<b>Next Hop</b>	First hop out of the Server Switch to forward packets that you ultimately want to arrive at the destination.
<b>Subnet Prefix</b>	Subnet prefix of the bridge group.
<b>Prefix Length</b>	Subnet prefix length, in bits, of the bridge group.

## Adding Bridge Forwarding

To add a bridge subnet:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Forwarding** branch.
3. Click the **Add** button. The **Add Ethernet Bridge Group Forwarding** window opens.
4. Enter the ID of the bridge group in the **ID** field.
5. Click the **eth** or **ib** radio button to specify IP or IPoIB respectively.
6. Enter an IP address in the **Destination Address** field.
7. Enter the destination length in the **Dest Length** field.
8. Enter the IP address of the next hop in the **Next Hop** field.
9. Enter the subnet prefix in the **Subnet Prefix** field.
10. Enter the subnet prefix length, in bits, in the **Prefix Length** field.
11. Click the **Apply** button.

## Deleting Bridge Forwarding

To delete a bridge subnet:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Bridge Forwarding** branch.
3. Click the radio button next to the forwarding group that you want to delete, then click the **Delete** button.

## Viewing Redundancy Groups

To view the redundancy groups on your Server Switch:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Redundancy Group** branch. The **Redundancy Group** display appears in the View frame. [Table 6-5](#) lists and describes the fields in this display.

**Table 6-5:** Redundancy Group Fields

Field	Description
<b>ID</b>	ID number of the redundancy group.
<b>Name</b>	Name of the redundancy group.
<b>Multicast PKey</b>	Partition key of the multicast group to which the redundancy group belongs.
<b>Load balancing</b>	Displays <b>enabled</b> if load balancing runs, otherwise displays <b>disabled</b> .
<b>Members</b>	Number of members in the redundancy group.

## Viewing Trunk Groups

To view the trunk groups on your Server Switch:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Trunk Groups** branch. The **Trunk Groups** table appears in the View frame. [Table 6-6](#) lists and describes the fields in this table.

**Table 6-6:** Trunk Groups Table Fields

Field	Description
<b>ID</b>	ID number of the trunk group.
<b>Name</b>	Name of the trunk group.
<b>Port Members</b>	Ports that belong to the trunk group.
<b>Distribution Type</b>	Distribution type of the trunk group. This field displays one of the following types: <ul style="list-style-type: none"> <li>• <b>srcMac</b>—bases load distribution on the source MAC address of the incoming packet. Packets from different hosts use different ports in the channel, but packets from the same host use the same port in the trunk group.</li> <li>• <b>dstMac</b>—bases the load distribution on the destination host MAC address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the trunk group.</li> <li>• <b>srcDstMac</b>—bases load distribution on the MAC address of the source logic gate (XOR) destination.</li> <li>• <b>srcIp</b>—bases the load distribution on the source IP address. Packets from the same source travel on the same port, but packets from different sources travel on different ports in the trunk group.</li> <li>• <b>dstIp</b>—bases the load distribution on the destination IP address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the trunk group.</li> <li>• <b>srcDstIp</b>—bases load distribution on the IP address of the source logic gate (XOR) destination.</li> </ul>
<b>Trunk Group Enabled</b>	Displays a checked <b>Enable</b> checkbox to indicate an active trunk group.
<b>MTU</b>	Displays the MTU of the group.
<b>MAC Address</b>	MAC address of the trunk group.
<b>IfIndex</b>	Interface index of the trunk group.

## Adding a Trunk Group

To add a trunk group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Trunk Groups** branch. The **Trunk Groups** table appears in the View frame.
3. Click the **Add** button. The **Add Ethernet Trunk Group** window opens.
4. Enter a trunk group ID number in the **ID** field.
5. Enter a name for the trunk group in the **Name** field.

6. Check, in the **Port Members** field, the checkboxes of the ports that you want to include.



**NOTE:** Check the checkbox of a particular card to automatically check all ports on that card.

7. Click the radio button of the distribution type to apply to the trunk group in the **Distribution Type** field.
8. Click the **Apply** button.

## Viewing Trunk Group Properties

To view the properties of a trunk group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Trunk Groups** branch. The **Trunk Groups** table appears in the View frame.
3. Click the radio button next to the trunk group whose properties you want to view, then click the **Properties** button. The **Ethernet Trunk Group Properties** window opens. [Table 6-7](#) lists and describes the elements in this window.

**Table 6-7:** Ethernet Trunk Group Properties Window Elements

Element	Description
<b>ID</b> field	ID number of the trunk group.
<b>Name</b> field	Name of the trunk group.
<b>Port Members</b> field	Ports that belong to the trunk group.
<b>Distribution Type</b> field	Distribution type of the trunk group. This field displays one of the following types: <ul style="list-style-type: none"> <li>• <b>srcMac</b>—bases load distribution on the source MAC address of the incoming packet. Packets from different hosts use different ports in the channel, but packets from the same host use the same port in the channel.</li> <li>• <b>dstMac</b>—bases the load distribution on the destination host MAC address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the channel.</li> <li>• <b>srcDstMac</b>—bases load distribution on the MAC address of the source logic gate (XOR) destination.</li> <li>• <b>srcIp</b>—bases the load distribution on the source IP address. Packets from the same source travel on the same port, but packets from different sources travel on different ports in the channel.</li> <li>• <b>dstIp</b>—bases the load distribution on the destination IP address of the incoming packet. Packets to the same destination travel on the same port, but packets to different destinations travel on different ports in the channel.</li> <li>• <b>srcDstIp</b>—bases load distribution on the IP address of the source logic gate (XOR) destination.</li> </ul>
<b>Trunk Group Enabled</b> field	Displays a checked <b>Enable</b> checkbox to indicate an active trunk group.
<b>MTU</b> field	Displays the MTU of the group.

**Table 6-7: Ethernet Trunk Group Properties Window Elements (Continued)**

<b>Element</b>	<b>Description</b>
<b>MAC Address</b> field	Displays the MAC address of the trunk group, such as 00:05:ad:01:59:30. This is a unique physical address associated with the trunk (link-aggregated) interface. This address is separate from the individual port MAC addresses.
<b>IfIndex</b> field	Displays a management software unique identifier for all physical and logical (trunks, gateway ports) interfaces.
<b>Apply</b> button	Applies the changes that you make in the window.
<b>Reset</b> button	Resets the fields in the window to match the properties of the trunk group.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the trunk group.
<b>Help</b> button	Opens on-line help.

## Configuring a Trunk Group

To configure an existing trunk group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Trunk Groups** branch. The **Trunk Groups** table appears in the View frame.
3. Click the radio button next to the group that you want to delete, then click the **Properties** button. The **Ethernet Trunk Group Properties** window opens.
4. (Optional) Create or change the name of the trunk group in the **Name** field.
5. (Optional) Check or uncheck checkboxes in the **Port Members** field to add or remove ports from the group.
6. (Optional) Click a radio button in the **Distribution Type** field to change the type.
7. (Optional) Check or uncheck the **Enabled** checkbox in the **Trunk Group Enabled** field to enable or disable the trunk group.
8. Click the **Apply** button.

## Deleting a Trunk Group

To delete a trunk group:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Trunk Groups** branch. The **Trunk Groups** table appears in the View frame.
3. Click the radio button next to the group that you want to delete, then click the **Delete** button.

## Fibre Channel Icon Tasks

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The following sections appear in this chapter:

- [“Configuring Global ITL Attributes” on page 69](#)
- [“Viewing SRP Hosts \(Initiators\)” on page 70](#)
- [“Viewing Fibre Channel Targets” on page 73](#)
- [“Viewing Fibre Channel LUNs” on page 75](#)
- [“Viewing IT Policies” on page 77](#)
- [“Viewing ITLs” on page 78](#)
- [“Viewing Global Statistics” on page 79](#)

## Configuring Global ITL Attributes

Configure global initiator, target, LUN (ITL) attributes to select the attributes that apply by default to all new ITLs.



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**NOTE:** If you change ITL attributes, the changes only apply to ITLs that you create thereafter. Existing ITLs do not change.

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To configure global attributes:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Global Policies** branch. The **Global Policies** display appears in the View frame.
3. Configure host attributes:
  - a. (Optional) Click the **Restricted** checkbox in the **Gateway Port Access** field to
    - Check the checkbox and deny all new initiators access to ports.

- Uncheck the checkbox and grant all new initiators access to ports.
  - b. (Optional) Click the **Restricted** checkbox in the **LUN Access** field to:
    - Check the checkbox and deny all new initiators access to LUNs.
    - Uncheck the checkbox and grant all new initiators access to LUNs.
4. Configure random access device attributes:
    - a. (Optional) Enter an integer value between 1 and 256 in the **ITL HI Mark** field.
    - b. (Optional) Enter an integer value between 1 and 100 in the **ITL Max Retries** field.
    - c. (Optional) Enter an integer value between 1 and 1800 in the **ITL Min I/O Timeout** field.
    - d. (Optional) Click one of the following, in the **ITL Dynamic Loading** field:
      - The **Path Affinity** radio button to enable dynamic path affinity on all new ITLs
      - The **Gateway Port Load Balancing** radio button to enable load balancing between Fibre Channel gateway ports on all new ITLs
      - The **Gateway Port Failover** radio button to enable FC gateway port failover for all new ITLs
  5. Configure sequential access device attributes:
    - a. (Optional) Enter an integer value between 1 and 256 in the **ITL HI Mark** field.
    - b. (Optional) Enter an integer value between 1 and 100 in the **ITL Max Retries** field.
    - c. (Optional) Enter an integer value between 1 and 1800 in the **ITL Min I/O Timeout** field.
    - d. (Optional) Click one of the following, in the **ITL Dynamic Loading** field:
      - The **Path Affinity** radio button to enable dynamic path affinity on all new ITLs
      - The **Gateway Port Load Balancing** radio button to enable load balancing between Fibre Channel gateway ports on all new ITLs
      - The **Gateway Port Failover** radio button to enable FC gateway port failover for all new ITLs
  6. Click the **Apply** button.

## Viewing SRP Hosts (Initiators)

To view the SRP hosts that connect to your device and, with your Server Switch, behave as FC initiators:

7. Expand the **Fibre Channel** icon in the Tree frame.
8. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame. [Table 7-1](#) lists and describes the fields in this table.

**Table 7-1:** SRP Hosts Table Fields

Field	Description
<b>Description</b>	User-assigned text description of the SRP host.
<b>SRP Initiator ID</b>	Host GUID and GUID extension.
<b>WWNN</b>	Worldwide node name (WWNN) of the SRP host.
<b>Ports Registered With</b>	Port(s) on your Server Switch that connect to the host.

## Viewing SRP Host (Initiator) Properties

To view the properties of a SRP host:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the SRP host whose properties you want to view, then click the **Properties** button. The **SRP Host Properties** window opens. [Table 7-2](#) lists and describes the elements of this window.

**Table 7-2:** SRP Host Properties Window Elements

Element	Description
<b>SRP Initiator ID</b> field	Host GUID and GUID extension.
<b>Ports Registered With</b> field	Port(s) on your Server Switch that connect to the host.
<b>WWNN</b> field	WWNN of the SRP host.
<b>Description</b> field	User-assigned text description of the SRP host.
<b>PKeys</b> field	Partition key(s) of the SRP host.
<b>Boot Target</b> field	WWPN of the target that contains the image that the SRP host uses to boot.
<b>Boot LUN</b> field	LUN ID of the LUN that contains the image that the SRP host uses to boot.
<b>Action</b> field	Provides a pulldown menu of actions that you can perform on the host. Select an action, then click the <b>Apply</b> button to perform the action.
<b>Result</b> field	Displays the result of the action that you performed with the pulldown menu from the <b>Action</b> field.
<b>Apply</b> button	Applies the changes that you make in the window to the host.
<b>Reset</b> button	Resets the fields in the window to match the properties of the host.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the host.
<b>Help</b> button	Opens on-line help.

## Viewing SRP Host (Initiator) Worldwide Port Names

To view the (WWPNs of the virtual ports through which FC nodes communicate with SRP hosts:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the SRP host whose WWPNs you want to view.

4. Select **Show WWPNS** from the **Show Options** pulldown menu. A **SRP Host Wwpns** table appears in the View frame. [Table 7-3](#) lists and describes the fields in this table.

**Table 7-3:** SRP Host Wwpns Table Fields

Field	Description
<b>GUID</b>	GUID of the SRP host.
<b>Extension</b>	GUID extension of the SRP host.
<b>Slot/Port</b>	Physical FC gateway port (in slot#/port# format) that passes traffic (addressed to the virtual port WWPNS) to the SRP host.
<b>WWPN</b>	WWPN of the virtual FC port.
<b>FC Address</b>	FC address of the virtual FC port.

## Viewing IT Policies of the Host

To view the details of the initiator-target (IT) pairs to which a host (initiator) belongs:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the SRP host whose ITs you want to view.
4. Select **Show IT Policies** from the **Show Options** pulldown menu. The **Show IT** display appears in the View frame, but lists only ITs that include the initiator that you selected. For more information, refer to [“Viewing IT Policies” on page 77](#) or see [Table 7-8](#).

## Viewing ITL Policies of the Host

To view the details of the initiator-target-LUN (ITL) groups to which a host (initiator) belongs:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the SRP host whose ITLs you want to view.
4. Select **Show ITL Policies** from the **Show Options** pulldown menu. The **Show ITL** display appears in the View frame, but lists only ITLs that include the initiator that you selected. For more information, refer to [“Viewing ITLs” on page 78](#) or see [Table 7-10](#).

## Adding SRP Host

To add an SRP host to the configuration file:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the **Add** button. The **Add SRP Host** window opens.
4. Enter the GUID of the new initiator in the **Host GUID** field.
5. (Optional) Enter a description for the new initiator in the **Description** field.
6. Click the **Apply** button.

## Deleting SRP Host

To delete an SRP host from the configuration file:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the host that you want to delete from the configuration file, then click the **Delete** button.

## Configuring SRP Host (Initiator) Properties

To configure properties of an SRP host:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **SRP Hosts** table that includes all SRP hosts that connect to the chassis appears in the View frame.
3. Click the radio button next to the SRP host whose properties you want to view, then click the **Properties** button. The **SRP Host Properties** window opens.
4. (Optional) Enter a text description for the SRP host in the **Description** field.
5. (Optional) Enter a partition key (or comma-separated keys) in the **PKeys** field.
6. (Optional) Enter the world-wide port name (WWPN) of a target that holds a boot image in the **Boot Target** field.
7. (Optional) Enter the LUN ID of a disk that holds a boot image in the **Boot LUN** field.
8. Click the **Apply** button, then click the **Close** button.

## Viewing Fibre Channel Targets

To view the FC targets in the configuration file of your Server Switch:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Targets** branch. A **Targets** table that includes all targets in your configuration file appears in the View frame. [Table 7-4](#) lists and describes the fields in this table.

**Table 7-4:** Targets Table Fields

Field	Description
<b>WWPN</b>	WWPN of the port on the target through which your Server Switch accesses the target.
<b>Description</b>	User-assigned target description.  _____ <b>NOTE:</b> If no user has assigned a description, a default description appears.
<b>Physical Access</b>	Port on your Server Switch (in slot#/card# format) through which your Server Switch accesses the target.
<b>Connection Type</b>	Displays <b>nlport</b> to indicate a virtual FC port, or <b>down</b> to indicate a faulty connection.

## Viewing Fibre Channel Target Properties

To view the properties of a Fibre Channel target:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Targets** branch. A **Targets** table that includes all targets in your configuration file appears in the View frame.
3. Click the radio button next to the target whose properties you want to view, then click the **Properties** button. The **SRP Target Properties** window opens. [Table 7-5](#) lists and describes the elements of this window.

**Table 7-5:** SRP Target Properties Window Elements

Element	Description
<b>WWPN</b> field	WWPN of the port on the target through which your Server Switch accesses the target.
<b>WWNN</b> field	WWNN of the target.
<b>FC Address</b> field	FC address of the target.
<b>IOC GUID</b> field	InfiniBand I/O controller (IOC) through which initiators access the target.
<b>Physical Access</b> field	Port on your Server Switch (in slot#/card# format) through which your Server Switch accesses the target.
<b>MTU</b> field	Maximum transmission unit, in bytes, of the target.
<b>Connection Type</b> field	Provides the <b>down</b> and <b>nlPort</b> radio buttons so you can assign a connection type to the target.
<b>Description</b> field	User-assigned target description.  <b>NOTE:</b> If no user has assigned a description, a default description appears.
<b>Service Name</b> field	Name of the service to associate with the WWPN.
<b>Apply</b> button	Applies the changes that you make in the window.
<b>Reset</b> button	Resets the fields in the window to match the properties of the target.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the target.
<b>Help</b> button	Opens on-line help.

## Configuring Fibre Channel Target Properties

To configure the properties of a FB target:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Targets** branch. A **Targets** table that includes all targets in your configuration file appears in the View frame.
3. Click the radio button next to the target whose properties you want to view, then click the **Properties** button. The **SRP Target Properties** window opens.
4. (Optional) Click the **down** radio button or **nlPort** radio button to configure the connection type of the target.
5. (Optional) Enter a description in the **Description** field.

6. (Optional) Enter a serve name in the **Service Name** field.
7. Click the **Apply** button, then click the **Close** button.

## Viewing IT Policies of the Target

To view the details of the initiator-target (IT) pairs to which a target belongs:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Targets** branch. A **Targets** table that includes all FC targets that connect to the chassis appears in the View frame.
3. Click the radio button next to the target whose ITs you want to view.
4. Select **Show IT Policies** from the **Show Options** pulldown menu. The **ITs** display appears in the View frame, but lists only ITs that include the target that you selected. For more information, refer to [“Viewing IT Policies” on page 77](#) or see [Table 7-8](#).

## Viewing ITL Policies of the Target

To view the details of the initiator-target-LUN (ITL) groups to which a target belongs:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **SRP Hosts** branch. A **Targets** table that includes all FC targets that connect to the chassis appears in the View frame.
3. Click the radio button next to the target whose ITLs you want to view.
4. Select **Show ITL Policies** from the **Show Options** pulldown menu. The **ITLs** display appears in the View frame, but lists only ITLs that include the target that you selected. For more information, refer to [“Viewing ITLs” on page 78](#) or see [Table 7-10](#).

## Viewing Fibre Channel LUNs

To view the logical units (FC storage disks) in the configuration file of your Server Switch:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Logical Units** branch. A **Logical Units** table that includes all LUs in your configuration file appears in the View frame. [Table 7-6](#) lists and describes the fields in this table.

**Table 7-6:** Logical Units Table Fields

Field	Description
<b>Logical ID</b>	Logical ID of the logical unit (disk).
<b>Description</b>	User-assigned logical unit description.  _____ <b>NOTE:</b> If no user has assigned a description, a default description appears.
<b>Physical Access</b>	Physical FC gateway port(s) through which your Server Switch accesses the LU.

## Viewing Fibre Channel LUN Properties

To view FB LUN properties:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Logical Units** branch. A **Logical Units** table that includes all LUs in your configuration file appears in the View frame.

- Click the radio button next to the LUN whose properties you want to view, then click the **Properties** button. The **SRP LUN Properties** window opens. [Table 7-7](#) lists and describes the elements in this window.

**Table 7-7:** SRP LUN Properties Window Elements

Element	Description
<b>Logical ID</b> field	Logical ID of the LUN.
<b>Device Category</b> field	Provides the <b>random</b> radio button and <b>sequential</b> radio button to identify disk devices and tape devices respectively.
<b>Inquiry Data</b> field	SCSI inquiry data retrieved about the LU.
<b>Physical Access</b> field	Ports on your Server Switch that can access the LUN.
<b>Description</b> field	User-assigned description of the LUN.
<b>Hi Mark</b> field	The maximum number of outstanding requests from the initiator to the storage that the ITL can maintain.
<b>Max Retry</b> field	Number of failed communication attempts that must occur before the LUN identifies the initiator as inaccessible.
<b>Min IO Timeout</b> field	Maximum amount of time that elapses before a SRP request times out.
<b>Dynamic Pathing</b> field	Provides the following radio buttons: <ul style="list-style-type: none"> <li><b>Path Affinity</b>—this feature locks a storage connection to a path for the duration of data transfer to increase speed and efficiency.</li> <li><b>Gateway Port Load Balancing</b>—this feature distributes traffic evenly across both ports in an FC gateway card (when both of the ports can access the same storage).</li> <li><b>Gateway Port Failover</b>—this feature leaves one port on an FC gateway dormant so it can adopt the traffic of the other port (when both of the ports can access the same storage) if that port goes down.</li> </ul>
<b>Apply</b> button	Applies the changes that you make in the window to the LUN.
<b>Reset</b> button	Resets the fields in the window to match the properties of the LUN.
<b>Close</b> button	Closes the window. If you close the window before you apply changes, CM makes no changes to the LUN.
<b>Help</b> button	Opens on-line help.

## Configuring Fibre Channel LUN Properties

To configure FB LUN properties:

- Expand the **Fibre Channel** icon in the Tree frame.
- Click the **Logical Units** branch. A **Logical Units** table that includes all LUs in your configuration file appears in the View frame.
- Click the radio button next to the LUN whose properties you want to view, then click the **Properties** button. The **SRP LUN Properties** window opens.
- (Optional) Enter a description in the **Description** field.
- (Optional) Enter an integer value in the **Hi Mark** field.
- (Optional) Enter an integer value in the **Max Retry** field.
- (Optional) Enter an integer value in the **Min IO Timeout** field.
- (Optional) Click a radio button in the **Dynamic Pathing** field.

- Click the **Apply** button, then click the **Close** button.

## Viewing ITL Policies of the LUN

To view the details of the initiator-target-LUN (ITL) groups to which a LUN belongs:

- Expand the **Fibre Channel** icon in the Tree frame.
- Click the **Logical Units** branch. A **Logical Units** table that includes all FC targets that connect to the chassis appears in the View frame.
- Click the radio button next to the LUN whose ITLs you want to view.
- Select **Show ITL Policies** from the **Show Options** pulldown menu. The **ITLs** display appears in the View frame, but lists only ITLs that include the LUN that you selected. For more information, refer to “[Viewing ITLs](#)” on page 78 or see [Table 7-10](#).

## Viewing IT Policies

To view Initiator-Target (IT) pair properties:

- Expand the **Fibre Channel** icon in the Tree frame.
- Click the **ITs** branch. The **ITs** table appears in the View frame. [Table 7-8](#) lists and describes the fields in this table.

**Table 7-8:** ITs Table Fields

Field	Description
<b>SRP Initiator ID</b>	GUID of the initiator (host).
<b>Target WWPN</b>	WWPN of the target.
<b>Current Access</b>	Physical FC gateway port through which the host currently accesses the target.
<b>Physical Access</b>	Physical FC gateway port(s) through which the host can access the target.

## Viewing IT Properties

To view detailed IT pair properties:

- Expand the **Fibre Channel** icon in the Tree frame.
- Click the **ITs** branch. The **ITs** table appears in the View frame.
- Click the radio button next to the IT pair whose properties you want to view, then click the **Properties** button. The **SRP IT Properties** window opens. [Table 7-9](#) lists and describes the elements in this window.

**Table 7-9:** SRP IT Properties Window Elements

Element	Description
<b>SRP Initiator ID</b> field	GUID of the host.
<b>Target WWPN</b> field	WWPN of the target.
<b>Description</b> field	User-assigned description of the IT.
<b>Current Access</b> field	Physical FC gateway port through which the host currently accesses the target.
<b>Physical Access</b> field	Physical FC gateway port(s) through which the host can access the target.

**Table 7-9:** SRP IT Properties Window Elements (Continued)

Element	Description
<b>Port Mask</b> field	Displays a checkbox for every FC gateway card and FC gateway port on the chassis. Ports with a checked checkbox grant the initiator access to the target.
<b>Action</b> pulldown menu	Discovers the ITLs that the initiator can form with the LUNs in the target.
<b>Result</b> field	Displays the status of the action if you select <b>Discover ITLs</b> from the <b>Action</b> pulldown menu and then click the <b>Apply</b> button.
<b>Apply</b> button	Applies any changes that you make in the window to the Server Switch.
<b>Reset</b> button.	Resets the window to match the settings on the Server Switch
<b>Close</b> button.	Closes the window.
<b>Help</b> button.	Opens on-line help.

## Viewing ITLs

To view ITL properties:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **ITLs** branch. The **ITLs** table appears in the View frame. [Table 7-10](#) lists and describes the fields in this table.

**Table 7-10:** ITLs Table Fields

Field	Description
<b>SRP Initiator ID</b>	GUID of the initiator (host).
<b>Target WWPN</b>	WWPN of the target.
<b>FC LUN ID</b>	FB ID of the disk or tape in the target. The ID of the first LUN always appears as 00:00:00:00:00:00:00:00, and the IDs for subsequent LUNs increment by 1, in hexadecimal.
<b>LUN Logical ID</b>	Logical ID of the disk or tape in the target.

## Viewing ITL Properties

To view detailed ITL properties:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **ITLs** branch. The **ITLs** table appears in the View frame.
3. Click the radio button next to the ITL whose properties you want to view, then click the **Properties** button. The **SRP ITL Properties** window opens. [Table 7-11](#) lists and describes the elements in this window.

**Table 7-11:** SRP ITL Properties Window Elements

Element	Description
<b>SRP Initiator ID</b> field	GUID of the initiator (host).
<b>Target WWPN</b> field	WWPN of the target.
<b>FC LUN ID</b> field	FB ID of the disk or tape in the target. The ID of the first LUN always appears as 00:00:00:00:00:00:00:00, and the IDs for subsequent LUNs increment by 1, in hexadecimal notation.

**Table 7-11: SRP ITL Properties Window Elements (Continued)**

Element	Description
<b>LUN Logical ID</b> field	Logical ID of the disk or tape in the target.
<b>Device Category</b> field.	Identifies a LUN as random (a disk) or sequential (a tape).
<b>Description</b> field.	User-assigned text identifier of the ITL.
<b>SRP LUN ID</b> field	SRP ID of the disk or tape in the target. The ID of the first LUN always appears as 00:00:00:00:00:00:00:00, and the IDs for subsequent LUNs increment by 1, in hexadecimal notation.
<b>Physical Access</b> field	Physical FC gateway port through which the host currently accesses the LUN.
<b>Current Access</b> field	Physical FC gateway port(s) through which the host can access the LUN.
<b>Port Mask</b> field	Displays a checkbox for every FC gateway card and FC gateway port on the chassis. Ports with a checked checkbox grant the initiator access to the LUN.
<b>Apply</b> button	Applies any changes that you make in the window to the Server Switch.
<b>Reset</b> button	Resets the window to match the settings on the Server Switch
<b>Close</b> button	Closes the window.
<b>Help</b> button	Opens on-line help.

## Viewing Global Statistics

To view global SRP statistics:

1. Expand the FB icon in the Tree frame.
2. Click the **Global Statistics** branch. The **SRP Global Statistics** display appears in the View frame. [Table 7-12](#) lists and describes the fields in this display.

**Table 7-12: SRP Global Statistics Display Fields**

Field	Description
<b>Link Events</b>	Total number of link events (e.g., link up, link down) processed by the FB interface gateway(s).
<b>SRP Initiated IOs</b>	Total number of I/O transactions requested by the SRP initiator.
<b>SRP Commands Completed</b>	Total number of SRP commands completed on the FB interface gateway(s).
<b>SRP Bytes Read</b>	Total number of I/O bytes read by the SRP initiator that is connected to this chassis.
<b>SRP Bytes Written</b>	Total number of I/O bytes written by the SRP initiator.
<b>SRP Connections</b>	Total number of connections used by the SRP initiator.
<b>SRP Commands Outstanding</b>	Total number of SRP commands outstanding on the FB interface gateway(s).
<b>SRP Errors</b>	Total number of SRP errors encountered on the FB interface gateway(s).
<b>FCP Initiated IOs</b>	Total number of I/O responses by the FB device to SRP initiator requests.

**Table 7-12: SRP Global Statistics Display Fields (Continued)**

<b>Field</b>	<b>Description</b>
<b>FCP Commands Completed</b>	Total number of FCP commands completed on the FB interface gateway(s).
<b>FCP Bytes Read</b>	Total number of I/O bytes read by the target device.
<b>FCP Bytes Written</b>	Total number of I/O bytes written by the target device.
<b>FCP Commands Outstanding</b>	Total number of FCP commands outstanding on the FB interface gateway(s).
<b>FCP Errors</b>	Total number of FCP errors encountered on the FB interface gateway(s).

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