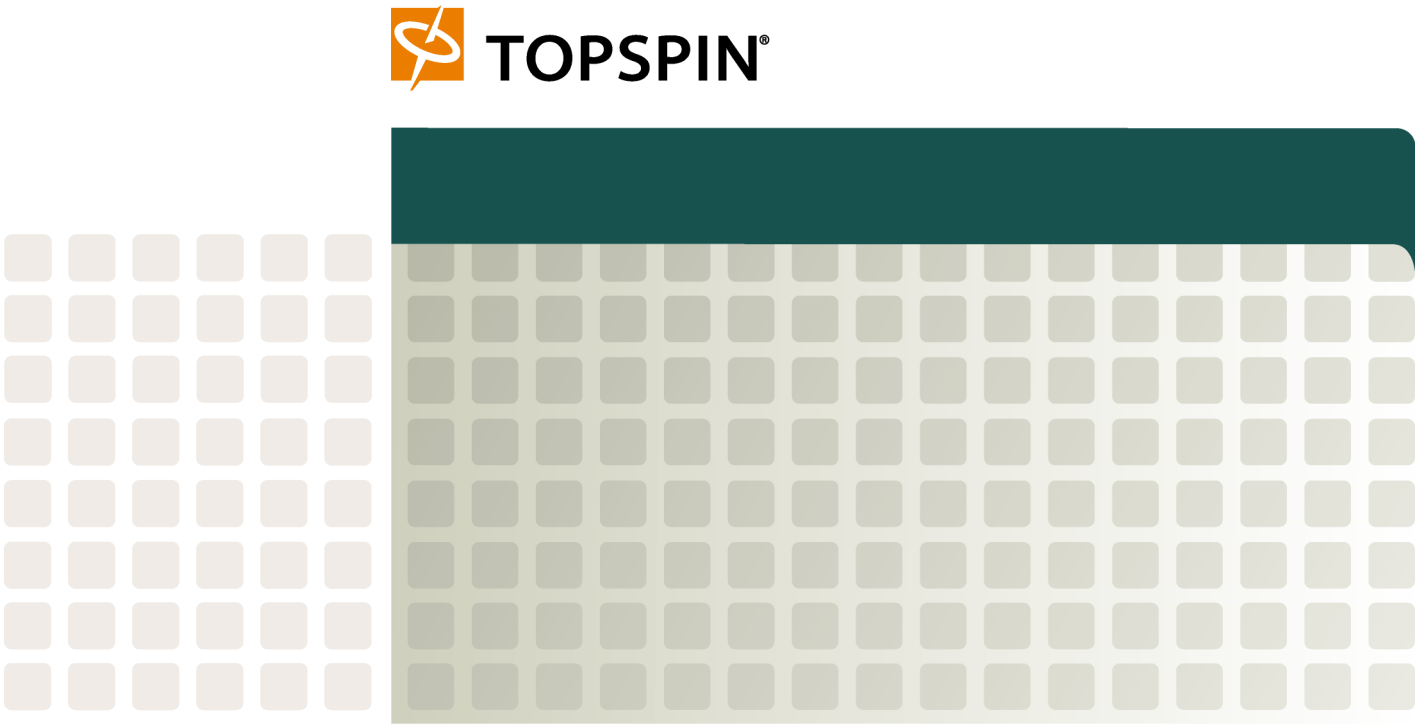

Chassis Manager User Guide

Release 2.3.0

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Contents

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 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 Server Switch 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 Chassis Manager elements or text that you must enter as-is.
- Italics indicate emphasis.
- **Menu1 > Menu2 > Item…** series indicate a pop-up menu sequence to open a form or execute a desired function.

NOTE: This “note” formatting indicates an important point or aspect that you need to consider before continuing.

Contact Information

Table 3-1: Customer Contact Information

Address	Topspin Communications, Inc. 515 Ellis St. Mountain View, CA 94043
Telephone, Corporate Headquarters	(866) TOPSPIN or (650) 316-3300
Fax	(650) 316-3269
Telephone, Technical Support	(800) 499-1473
Email, Technical Support	support@topspin.com
Web site, Support	http://support.topspin.com

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About Chassis Manager

The following sections appear in this chapter:

Introduction

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

Anatomy of Chassis Manager

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

1. System frame
2. Tree frame
3. 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 the Chassis Manager System frame on a Topspin 360/Cisco SFS 3012.

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 **up**.
gray	Administrative status of **down**.
red	Operational status of **down**.

Tree Frame

The Tree frame appears on the lower-left-hand side of the Chassis Manager display and provides a navigation tree that groups the functional branches of your device under icons. Figure 1-2 displays the Tree frame on a Topspin 90/Cisco SFS 3001.

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

Tree Frame Branches

Click a plus-sign icon () to expand an icon and display the branches that you can configure. After you expand an icon, click an 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
Cards	Click this branch to display and configure controller, switch, and gateway cards.
Ports	Click this branch to display and configure all external IB, Ethernet, and Fibre Channel ports on your device.
Power Supplies (select hardware platforms only)	Click this branch to view the status of the power supplies on your device.
Fans (select hardware platforms only)	Click this branch to view the status of the fans on your device.
Sensors	Click this branch to view the status and readings on the temperature sensors on your device.
Backplane (select hardware platforms only)	Click this branch to view backplane details.

Table 1-3: Chassis Icon Branches (Continued)

Branch	Description
Management Ports	Expand the **Management Ports** icon to display the following branches: • Serial Displays the Serial Console port configuration. • Ethernet Displays the Ethernet Management port configuration. • InfiniBand Displays the InfiniBand Management port configuration.

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

Table 1-4: Maintenance Icon Branches

Branch	Description
System Information	Click this branch to view and configure the information that appears in the System frame.
Time	Click this branch to configure the time and date on your Server Switch and to assign NTP servers to your device.
File Management	Click this branch to view, import, export, and install files in the file system on your device.
Boot Configuration	Click this branch to select a configuration for your Server Switch to use when it boots.
Backup Configuration	Click this branch to save your running configuration to a file.
Save Config	Click this branch to save the running configuration as the startup configuration. When your Server Switch reboots, it runs the updated configuration.
Reboot	Click this branch when you want to reload your Server Switch.
Services	Expand the **Services** icon to display the following branches: • General Displays the following system services and lets you configure them: 1. DNS 2. FTP 3. telnet 4. syslog 5. RADIUS • HTTP Displays HTTP properties and configuration options. • Radius Servers Displays the RADIUS server(s) that your device can use to authenticate user logins and lets you configure attributes of the server(s). • Authentication Failures Lists CLI, SNMP, and HTTP authentication failures.
Diagnostics	Expand this branch to view Server Switch diagnostic data in the following branches: • POST • Fru Error

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

Table 1-5: InfiniBand Icon Branches

Branch	Description
Subnet Managers	Click this branch to view and configure the subnet managers in your fabric.
Services	Click this branch to view the IB fabric services that have registered with the subnet manager.
Topology	Expand the **Topology** icon to display the following branches: • Nodes Click this branch to view the IB nodes in your IB fabric. • Ports Click this branch to view the IB ports in your IB fabric. • Neighbors Click this branch to display the interconnecting IB nodes, and relevant ports, in your IB fabric.
Device Management (select hardware platforms only)	Expand the **Device Management** icon to display the following branches: • IOU Click this branch to view the I/O unit on your Server Switch. • IOCs Click this branch to view the controller(s) on your device. • IOC Services Click this branch to view the IB features on your device.

Table 1-6 lists and describes the configurable branches under the **Ethernet** icon.

Table 1-6: Ethernet Icon Branches

Branch	Description
Bridge Groups	Click this branch to view bridge groups on your Server Switch.
Trunk Groups	Click this branch to view trunk groups on your Server Switch.

Table 1-7 lists and describes the configurable branches under the **InfiniBand** icon.

Table 1-7: Fibre Channel Icon Branches

Branch	Description
Global Policies	Click this branch to view and configure the default attributes of new IB-to-FC connections.
SRP Hosts	Click this branch to view and configure SRP hosts that serve as initiators for SAN fabrics.
Targets	Click this branch to view and configure Fibre Channel targets that connect to your Server Switch through FC gateways.
Logical Units	Click this branch to view and configure Fibre Channel LUNs that connect to your Server Switch through FC gateways.
ITs	Click this branch to view and configure attributes of initiator-target connections.
ITLs	Click this branch to view and configure attributes of initiator-target-LUN connections.
Global Statistics	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
Help Index	Click this branch to launch Chassis Manager on-line help.
Support	Click this branch to open the 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.

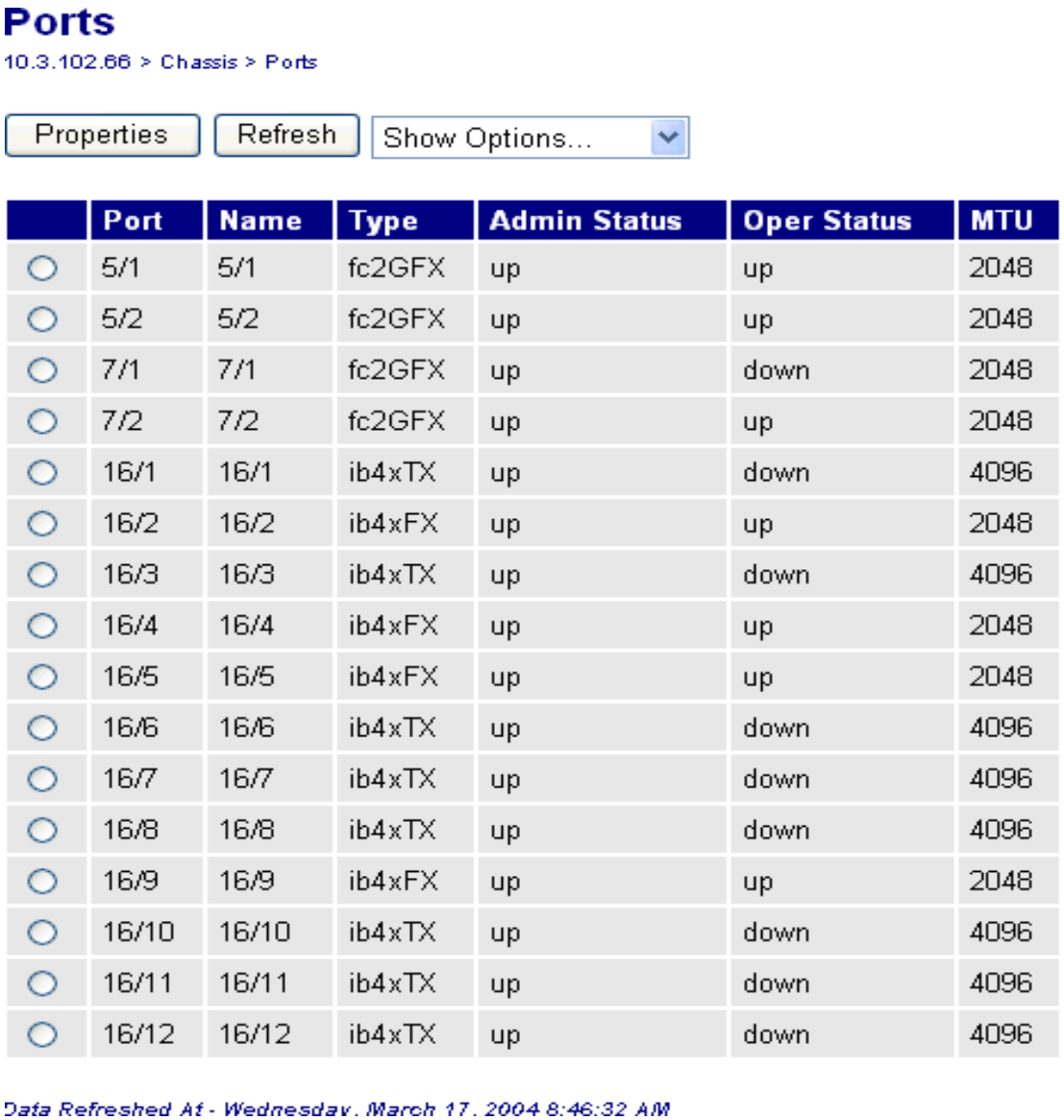


Figure 1-3: View Frame

Browser Requirements

Chassis Manager supports the following browsers:

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

Platform Requirements

Chassis Manager runs on the following platforms:

- Windows
- Solaris
- Linux

2

Getting Started

The following sections appear in this chapter:

Prepare Your Device

To launch Chassis Manager 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: Chassis Manager optionally supports Secure Sockets Layer (SSL) secure connections.

If your device meets these requirements, proceed to "Launch Chassis Manager" on page 11. Otherwise, to prepare your device, perform the following steps:

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

```
SFS-360> enable
SFS-360#
```

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

   Example

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

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

   Example

```
SFS-360(config)# interface mgmt-ethernet
SFS-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 Chassis Manager.

   Example

```
SFS-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

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

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

   Example

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

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

   Example

```
SFS-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

```
SFS-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

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

Launch Chassis Manager

Chassis Manager without SSL requires no additional setup. Chassis Manager with SSL requires additional steps based on your browser.

Launch Chassis Manager without SSL

To launch Chassis Manager, perform the following steps:

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 "Prepare Your Device" on page 9)

   A log-in window opens. Figure 2-1 displays the log-in window.

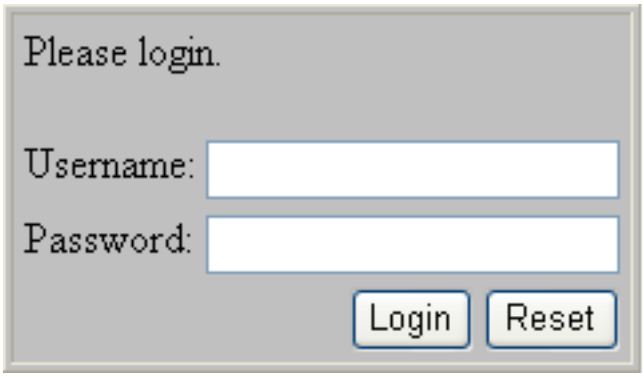


Figure 2-1: Chassis Manager Log-In Window

3. Enter your Server Switch user name and password in the log-in window and click the **OK** button. Chassis Manager loads in your browser window.

Launch Chassis Manager with SSL

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

Netscape/Mozilla

To launch a secure Chassis Manager connection, perform the following steps:

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 "Prepare Your Device" on page 9) A log-in 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 log-in window and click the **OK** button. Chassis Manager loads in your browser window.

Internet Explorer

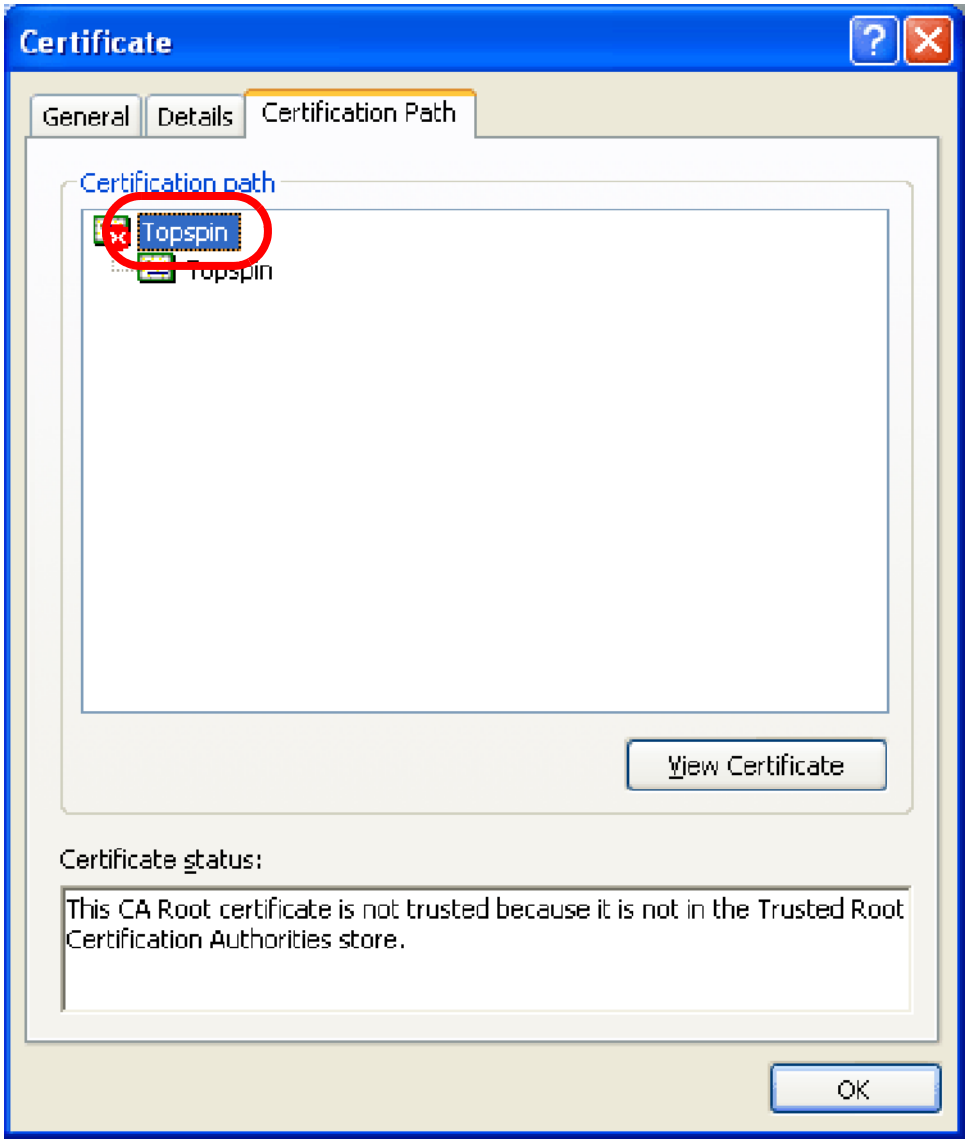
To launch a secure Chassis Manager connection, perform the following steps:

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 "Prepare 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.

5. Click the root certificate in the tree.

Example



6. Click the **View Certificate** button.
7. Click the **Install Certificate** button.
8. Click the **Next** button.
9. Click the **Place all certificates in the following store** radio button.
10. Click the **Browse** button. The **Select Certificate Store** window opens.
11. Click **Trusted Root Certification Authorities**, then click OK.
12. Click the **Next** button, then click the **Finish** button.

Avoid Error Messages

By default, SSL certificates map to the IP address of the Ethernet Management Port of a Server Switch. If you enter 1) the system name of your host (that you configure with the **hostname** command) or 2) the IP address of the InfiniBand Management Port of your Server Switch to launch Chassis Manager, your browser displays an alert. 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, perform the following steps:

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

   Example

```
Login: super
Password: xxxxx
```

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

   Example

```
SFS-270> enable
SFS-270#
```

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

   Example

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

4. Enter the **ip http** command with
   - the **secure-cert-common-name** keyword
   - the system name (hostname) of the Server Switch

   to configure your certificates to use the system name of your Server Switch.

   Example

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

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

Log Out of Chassis Manager

To log out of Chassis Manager, 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.

Navigate Chassis Manager

The Tree frame of the Web-based interface provides a high-level map of Chassis Manager. As you move from display to display in Chassis Manager, 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 Chassis Manager. 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 Chassis Manager, 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** function 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

Chassis Manager 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.

Understand Access Privileges

The functionality available to you from Chassis Manager 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.

View Device Status

Chassis Manager 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.

3

Chassis Icon Tasks

The following sections appear in this chapter:

View Cards on a Chassis

To view the cards on your chassis, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Cards** branch. A table that includes all cards on the chassis appears in the View frame. Table 3-1 lists and describes the fields in the Cards table.

Table 3-1: Cards Table Field Descriptions

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

Table 3-1: Cards Table Field Descriptions (Continued)

Field	Description
Operational State	Displays the general condition of the interface card. The general condition may appear as any of the following: • unknown • normal • bootFailed • tooHot • booting • checkingBootImage • wrongBootImage • rebooting • standby • recoveryImage A condition of **unknown** indicates an unsupported interface card. To address this condition, replace the card with a supported card. The operational state of a card must appear as **normal** for the current status of the card to appear as **up**. A **wrong-image** 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. A **bootFailed** 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. When your card overheats, the **tooHot** condition appears in the **show card** command output. Expand the **Chassis** icon and click the **Fans** branch to check to see if your fans failed. The **booting** condition indicates that the card has not finished loading necessary image data for internal configuration.
Boot Stage	Boot Stage appears as one of the following: • recovery • ipl • ppcboot • fpga • pic • ib • rootfs • kernel • exe • done

Table 3-1: Cards Table Field Descriptions (Continued)

Field	Description
Boot Status	Boot Status may appear as any of the following: • upgrading • success • failed • badVersion • badCrc • memoryError • outOfSpace • programmingError • hardwareError • fileNotFound • inProgress

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

View Card Properties

To view card properties, perform the following steps:

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 of the card whose properties you want to view.
4. Click the **Properties** button. A **Card Properties** window opens. Table 3-2 lists and describes the elements in the Card Properties window.

Table 3-2: Card Properties Window Element Descriptions

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

Table 3-2: Card Properties Window Element Descriptions (Continued)

Element	Description
Operational State field	Displays the general condition of the interface card. The general condition may appear as any of the following: • unknown • normal • wrong-image • bootFailed • tooHot • booting A condition of **unknown** indicates an unsupported interface card. To address this condition, replace the card with a supported card. The operational state of a card must appear as **normal** for the current status of the card to appear as **up**. A **wrong-image** 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. A **bootFailed** 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. When your card overheats, the **tooHot** condition appears in the **show card** command output. Enter the **show fan** command to check to see if your fans failed. The **booting** condition indicates that the card has not finished loading necessary image data for internal configuration.
Boot Stage field	Boot Stage appears as one of the following: • recovery • ipl • ppcboot • fpga • pic • ib • rootfs • kernel • exe • done • none

Table 3-2: Card Properties Window Element Descriptions (Continued)

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

View Card Inventory

To view memory and image information on a card, perform the following steps:

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 Element Descriptions

Element	Description
Slot ID field	Slot, on the Server Switch, in which the card resides.

Table 3-3: Card Inventory Window Element Descriptions (Continued)

Element	Description
Used Memory field	Used memory on the card, in kilobytes.
Free Memory field	Available memory on the device, in kilobytes.
Used Disk Space field	Used disk space on the card, in kilobytes.
Free Disk Space field	Available disk space on the device, in kilobytes.
Current Image Source field	Image that the card runs.
Image Source for Next Reboot field	Image that the card runs when you reboot.
Image One field	First image stored on the card.
Image Two field	Second image stored on the card.
CPU Description field	Description of the CPU on the card.
PIC Firmware Revision field (select cards)	Current PIC firmware version that the card runs.
FPGA Firmware Revision field (select cards)	Current FPGA firmware version that the card runs.
IB Firmware Revision field	Version of InfiniBand firmware on the card.  **NOTE:** Chassis Manager displays the device-id and version number of the IB chip for each card for Anafa 2 chips. This content appears in parentheses next to the firmware version. For original Anafa chips, no parenthetical text appears.
Close button	Closes the **Card Inventory** window.
Help button	Opens on-line help.

Configure Administrative Status of a Card

With Chassis Manager, you can bring up or shut down any card on your chassis. To configure the admin status of a card, perform the following steps:

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.

View Internal Gateway Ports

Each Fibre Channel 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, perform the following steps:

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.
4. From the **Show Options...** pulldown menu, select **Show Gateway Ports**. The **Gateway Ports** table opens in the View frame. For a description of the fields in the **Gateway Ports** table, refer to Table 3-4.

Table 3-4: Gateway Ports Table Field Descriptions

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

View Physical Ports on a Chassis

To view the physical ports on your device, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. 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 Field Descriptions

Field	Description
Port	Slot#/port# identifier of the port.
Name	User-configured port name.
Type	Displays the type of the port. Types begin with **fc** to indicate Fibre Channel, **en** to indicate Ethernet, and **ib** to indicate InfiniBand.
Admin Status	Displays **up** when you bring up the port, otherwise displays **down**.
Oper Status	Indicates whether or not the port is ready for use.
MTU	Maximum transmission unit (MTU) of the port, in bytes.

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

View Port Properties

To view port properties, perform the following steps:

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 of the port whose properties you want to view.
4. Click the **Properties** button. The **Port Properties** window opens. Each type of port displays different properties in this window.

NOTE: Available port types vary by hardware platform.

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

Table 3-6: Ethernet Port Properties Window Element Descriptions

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

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

Table 3-7: Fibre Channel Port Properties Window Element Descriptions

Element	Description
Port field	Displays the port number in slot#/port# notation.
Name field	Provides a port name that you can edit and apply to the port.
Type field	Displays the type of the port.
Admin Status field	Provides the **up** and **down** radio buttons so you can configure the administrative status of the port.
Oper Status field	Displays **up** to indicate that the port is physically ready for use, otherwise displays **down**.
Auto Negotiation Supported field	Displays **true** if the port supports auto-negotiation
Auto Negotiation field	Provide the **Enable** checkbox so you can enable or disable auto-negotiation on the port.
Set Port Speed field	Provides the **1G** and **2G** radio buttons so you can configure the port speed.
Current Speed field	Displays the speed of the port.
Current Connection Type field	Indicates the type of connection that the Server Switch dynamically discovered for this port.
MTU field	Displays the maximum transmission unit (MTU) of the port, in bytes.
WWNN field	Displays the world-wide node name (WWNN) of your device.
WWPN field	Displays the world-wide port name (WWPN) of the port.
FC ID field	Fibre Channel Protocol (FCP) identifier of the port.
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 **Port Properties** 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, Chassis Manager makes no changes to the port.
Help button	Opens on-line help.

Table 3-8 lists and describes the fields in the **Port Properties** window of an InfiniBand port.

Table 3-8: InfiniBand Port Properties Window Element Descriptions

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

Table 3-8: InfiniBand Port Properties Window Element Descriptions (Continued)

Element	Description
Oper Status field	Displays **up** to indicate that the port is physically ready for use, otherwise displays **down**.
Auto Negotiation Supported field	Displays **true** if the port supports auto-negotiation
Auto Negotiation field	Provide the **Enable** checkbox so you can enable or disable auto-negotiation on the port.
Set Port Speed field	Provides the **2500M**, **10G** and **30G** radio buttons so you can configure the port speed.
Current Speed field	Displays the speed of the port.
Physical State field	Displays the physical state of the port.
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 **Port Properties** 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, Chassis Manager makes no changes to the port.
Help button	Opens on-line help.

View Port Bridging Properties

To view the bridge to which a port belongs, perform the following steps:

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 Field Descriptions

Field	Description
Port	Port that you chose from the **Ports** 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.

View Port Statistics

To view port statistics, perform the following steps:

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 Field Descriptions

Field	Description
Port	Port number, as assigned by the subnet manager.
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.
In Multicast Packets	Cumulative number of incoming packets destined for the ports of a multicast group.
In Broadcast Packets	Cumulative number of incoming packets destined for all ports on the fabric.
In Discards	Cumulative number of inbound packets that the port discarded for a reason other than a packet error (e.g. lack of buffer space).
In Errors	Number of inbound packets with errors that the port discarded.
In Unknown Protocols	For packet-oriented interfaces, the number of packets received via the interface which 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 via the interface which were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter is always 0.
Out Octets	Total number of octets transmitted out of the interface, including framing characters.
Out Unicast Packets	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.
Out Multicast Packets	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.
Out Broadcast Packets	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.
Out Discards	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.
Out Errors	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.

Configure Ports

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

Configure a Port Name

To configure the administrative name of a port, perform the following steps:

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.

Enable or Disable a Port

To enable or disable a port, perform the following steps:

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.

Configure Auto-Negotiation on a Port

To enable or disable auto-negotiation on a port, perform the following steps:

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, click the **Enable** checkbox to check (enable) or uncheck (disable) it, then click the **Apply** button.
6. Click the **Close** button to close the Port Properties window.

Configure Port Speed

To configure the speed of a port, perform the following steps:

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.

View Power Supply Status

To view the status of the power supplies on your device, perform the following steps:

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 Field Descriptions

Field	Description
PS ID	Numeric identifier of the power supply. For more information on the power supplies in your device, refer to your hardware documentation.
Type	Type of power (AC or DC).
Admin Status	Displays **up** if you have activated your power supply or **down** (on select chassis) if you have disabled your power supply.
Current Status	Displays **up** to indicate that your power supply functions and currently supplies power to your device. Displays **down** for faulty power supplies.
Utilization	Percentage of total power supply resources in use.
Voltage	Voltage of the power supply.

View Power Supply Properties

To view the properties of the power supplies on your device, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Power Supplies** branch. The **Power Supplies** table appears in the View frame.
3. Click the radio button next to the power supply whose properties you want to view.
4. Click the **Properties** button. The **Power Supply Properties** window opens.

Table 3-12: Power Supply Property Window Field Descriptions

Field	Description
PS ID field	Numeric identifier of the power supply. For more information on the power supplies in your device, refer to your hardware documentation.
Type field	Type of power (AC or DC).
Current Status field	Displays **up** to indicate that your power supply functions and currently supplies power to your device. Displays **down** for faulty power supplies.

Table 3-12: Power Supply Property Window Field Descriptions (Continued)

Field	Description
Utilization field	Percentage of total power supply resources in use.
Voltage field	Voltage of the power supply.
Product Serial Num field	Product serial number of the power supply.
PCA Serial Num field	PCA serial number of the power supply.
PCA Assembly Num field	PCA assembly number of the power supply.
FRU Num field	FRU number of the power supply.
Apply button	Applies the changes that you make in the window to the port.
Reset button	Resets the fields in the window to match the properties of the element.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the element.
Help button	Launches on-line help.

View Fan Status

To view the status of the fans on your device, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Fans** branch. The **Fans** table appears in the View frame. Table 3-13 lists and describes the fields in the Fans table.

Table 3-13: Fan Table Field Descriptions

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

View Fan Properties

To view the properties of the power supplies on your device, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Fans** branch. The **Fans** table appears in the View frame.
3. Click the radio button next to the fan whose properties you want to view.
4. Click the **Properties** button. The **Fan Properties** window opens.

Table 3-14: Fan Properties Window Field Descriptions

Field	Description
Fan ID field	Numeric identifier of the fan. For more information on the fans in your device, refer to your hardware documentation.
Current Status field	Displays **up** if the fan functions properly; otherwise, displays **down**.
Speed field	Displays the speed of the fan in percentage of maximum speed.
Product Serial Num field	Product serial number of the fan.

Table 3-14: Fan Properties Window Field Descriptions (Continued)

Field	Description
PCA Serial Num field	PCA serial number of the fan.
PCA Assembly Num field	PCA assembly number of the fan.
FRU Num field	FRU number of the fan.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the element.
Help button	Launches on-line help.

View Temperature Sensor Status

To view the status of the power supplies on your device, perform the following steps:

1. Expand the **Chassis** icon in the Tree frame.
2. Click the **Sensors** branch. The **Sensors** table appears in the View frame. Table 3-15 lists and describes the fields in the Power Supplies table.

Table 3-15: Sensors Table Field Descriptions

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

View Backplane Information

To view backplane information, perform the following steps:

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 3-16 lists and describes the fields in this display.

Table 3-16: Backplane Display Field Descriptions

Field	Description
Serial Number	Factory-assigned product serial number.

Table 3-16: Backplane Display Field Descriptions

Field	Description
PCA Serial Number	Printed circuit assembly (PCA) serial number.
PCA Assembly Number	Printed circuit assembly (PCA) assembly number.
FRU Num	Field replaceable unit (FRU) number.
Chassis ID	GUID of the chassis
Base MAC Address	24-bit base MAC address of this chassis.
Chassis GUID	GUID of the chassis.

View Management Ports on a Chassis

To view the configurations of management ports on your device, perform the following steps:

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 3-17 lists and describes the fields in the **Serial Management Ports** display.

Table 3-17: Serial Management Ports Display Field Descriptions

Field	Description
Baud Rate	Transmission speed to which you must configure your serial connection.
Data Bits	Data bits value to which you must configure your serial connection.
Stop Bits	Stop bits setting to which you must configure your serial connection.
Parity	Parity setting to which you must configure your serial connection.

Table 3-18 lists and describes the fields in the **Ethernet Management Ports** display.

Table 3-18: Ethernet Management Ports Display Field Descriptions

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

Table 3-19 lists and describes the fields in the **InfiniBand Management Ports** display.

Table 3-19: InfiniBand Management Ports Display Field Descriptions

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

4

Maintenance Icon Tasks

The following sections appear in this chapter:

Configure Basic System Information

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

View System Information

To view basic system information, perform the following steps:

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: 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 System Information display.
Rack Locator UID field	Unique rack-locator ID.

Name Your InfiniBand Switch

To assign a hostname to your device, perform the following steps:

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.

Define Device Location

To add a physical device location description to your switch, perform the following steps:

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.

Define Technical Support Resource

The technical support email address that you define appears in the System frame when you refresh or restart Chassis Manager. To define a technical support resource, perform the following steps:

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, type the email address of your technical support provider, then click the **Apply** button.

Configure 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.

Configure Date and Time

To configure the date and time of the internal clock on your device, perform the following steps:

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, then click the **Apply** button.

Assign NTP Servers

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

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.

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

View Files in the File System

To view files, such as image files, log files, and configuration files, that reside on your device, perform the following steps:

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 Field Descriptions

Field	Description
Slot ID	Slot of the controller card on which the file resides.
Name	Name of the file.

Table 4-2: File Management Table Field Descriptions (Continued)

Field	Description
Type	Type of file. The following types may appear: • config • log • image
Size	Size of the file, in bytes.
Date	Most recent date and time that your device or a user updated the file.

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

Delete Files in the File System

To delete files from your file system, perform the following steps:

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 radio button next to the file that you want to delete, then click the **Delete** button.

Install Software Images

To install an image file, perform the following steps:

1. Expand the **Maintenance** icon in the Tree frame.
2. 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 "Import Configuration Files and Image Files with FTP" on page 39.

3. 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.

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

Import Configuration Files and Image Files with FTP

To import files to your Server Switch from remote devices, perform the following steps:

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 **Import** button. The **Import File** window opens.
4. 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 in to the FTP server in the **Remote FTP User Name** field.
6. Enter the password logs you in to 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.

Export Configuration Files and Log Files with FTP

To export files from your Server Switch to remote devices, perform the following steps:

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 the IP address of the server to which you want to export the file in the **Remote FTP IP Address** field.
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.

Customize the Boot Configuration

Customize the boot configuration to

- View the image that the switch will boot 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, perform the following steps:

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 boot 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 "Back Up Running Configuration File" on page 40.

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.

Back Up Running Configuration File

To save your running configuration file, perform the following steps:

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. Chassis Manager 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.

Save Configuration File

To back up your running configuration as your startup configuration (and to the standby controller on your chassis in dual-controller chassis), perform the following steps:

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.

Reboot

When you reboot your device, Element Manager gives you the optoin to reboot without saving your configuration or to save your configuration, then reboot. If you choose to reboot but not save, any differences between your running configuration file and startup configuration file do not persist after the reboot.

To reboot your Server Switch with Chassis Manager, perform the following steps:

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.

Configure Basic Services

Configure basic services to facilitate remote access to your device.

Assign a DNS Server

To assign a DNS server to your device, perform the following steps:

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.

Enable or Disable the FTP Access

To enable FTP transfers to and from your device, perform the following steps:

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.

Enable or Disable the Telnet Access

To enable telnet access to your device, perform the following steps:

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.

Assign a SYSLOG Server

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, perform the following steps:

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.

Assign an Authentication Method

To assign an authentication method to your device, perform the following steps:

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
local	Authenticates user logins with the local CLI user database only.
localThenRadius	Authenticates user logins with the local CLI user database; upon failure, authenticates with the RADIUS server.
radiusThenLocal	Authenticates user logins with the RADIUS server; upon failure, authenticates with the local CLI user database.

Configure HTTP and HTTPS

To configure HTTP and HTTPS services, perform the following steps:

1. Expand the **Maintenance** icon in the Tree frame.
2. Expand the **Services** sub-icon in the Tree frame.
3. Click the **HTTP** branch. The **System HTTP** display appears in the View frame.
4. (Optional) Check or uncheck the **Enable** checkbox in the **Polling** to enable or disable automatic polling.
5. (Optional) Click the radio button, in the **Secure Cert Common Name** field, of the identifier that you want to use for security certification.
6. Click the **Apply** button.

View RADIUS Servers

To view the RADIUS servers that you have configured your device to use to authenticate CLI and Chassis Manager logins, perform the following steps:

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 Field Descriptions

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

View and Configure RADIUS Server Properties

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

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
Address field	Displays the IP address of the RADIUS server.
UDP Port field	UDP authentication port of the RADIUS server. Edit this value and click the **Apply** 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.
Encryption Key field	Authentication key that the client and RADIUS server use. Enter a value and click the **Apply** 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.
Timeout field	Amount of time, in seconds, in which the server must authenticate a login before the login fails. Edit this value and click the **Apply** 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.
Max Retries 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 **Apply** 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.
Access Requests field	Number of authentication requests that the server has received from your device since your device booted.
Access Accepts field	Number of logins to your device that the server authenticated since your device booted.
Access Rejects field	Number of logins to your device that the server denied since your device booted.
Server Timeout field	Number of authentications that timed out on the server since your device booted.
Apply button	Applies the changes that you make in the Radius Server Properties window.
Reset button	Resets the fields in the window to match the server configuration.
Close button	Closes the Radius Server Properties window. If you close the window before you apply changes, Chassis Manager makes no changes to the configuration.
Help button	Opens on-line help.

Add RADIUS Servers

To configure a new RADIUS server on your device, perform the following steps:

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.

Delete RADIUS Servers

To remove a RADIUS server from your configuration, perform the following steps:

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: Chassis Manager will not prompt you to be sure that you want to delete this server.

5. Click the **Delete** button.

View Authentication Failures

To view a log of authentication failures for your Server Switch, perform the following steps:

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 Field Descriptions

Field	Description
CLI Access Violation Count	Cumulative number of failed CLI log-ins since the Server Switch booted.

Table 4-6: Authentication Failures Field Descriptions

Field	Description
CLI Last Violation Time	Time of the most recent failed CLI log-in.
SNMP Access Violation Count	Cumulative number of failed SNMP log-ins since the Server Switch booted.
SNMP Last Violation Time	Time of the most recent failed SNMP log-in.
HTTP Access Violation Count	Cumulative number of failed HTTP log-ins since the Server Switch booted.
HTTP Last Violation Time	Time of the most recent failed HTTP log-in.

View Diagnostic Test Results

Available test results vary by hardware platform.

View POST Test Results

To view POST test results, perform the following steps:

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 Field Descriptions

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

View FRU Errors

To view FRU test results, perform the following steps:

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 messages that apply to the FRU.

5

InfiniBand Icon Tasks

The following sections appear in this chapter:

View Subnet Managers

The subnet managers (SMs) display in Chassis Manager provides an abridged version of the output of the **show ib sm** CLI command. To view the subnet managers in your IB fabric, perform the following steps:

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 the Subnet Managers table.

Table 5-1: Subnet Managers Table Field Descriptions

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

View Subnet Manager Properties

To view SM properties, perform the following steps:

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 subnet manager 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 Fields

Element	Description
Subnet Prefix field	Displays the subnet prefix of the subnet manager.
GUID field	Displays the GUID of the networking device on which the SM runs.
Status field	Status of the subnet manager. It may appear as **master**, **standby**, **inactive**, or **discovery**.
Activity Count field	Activity counter that increments each time the subnet manager issues an subnet management packet (SMP) or performs other management activities.
SM Key field	64-bit subnet management key assigned to the subnet manager.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.
Priority field	Priority of the SM relative to other SMs in the IB network. The higher the number, the greater the priority.
Sweep Interval field	Specifies how frequently the SM queries the InfiniBand fabric for network changes.
Response Timeout 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.
Master Poll Interval field	Interval at which the slave SM polls the master to see if it still runs.
Master Poll Retries field	Number of unanswered polls that cause the slave to identify the master as dead.
Max Active SMs field	Maximum number of standby SMs that the master supports. A value of 0 indicates unlimited SMs.
LID Mask Control field	Number of path bits present in the base LID to each channel adapter port. Increasing the LMC value increases the number of LIDs assigned to each port to increase the number of potential paths to reach each port.
Apply button	Applies the changes that you make in the Subnet Manager Properties window to the SM.
Reset button	Resets the fields in the window to match the properties of the SM.
Close button	Closes the Subnet Manager Properties window. If you close the window before you apply changes, Chassis Manager makes no changes to the SM.
Help button	Opens on-line help.

Add a Subnet Manager

To add a subnet manager, perform the following steps:

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), between 0 and 15, 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.

Delete a Subnet Manager

To delete a subnet manager, perform the following steps:

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.

Configure Subnet Manager Properties

To configure SM properties, perform the following steps:

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 subnet manager 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 higher 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 low long the SM waits for a response from a connection before it identifies a connection as faulty.
7. (Optional) Enter an integer in the **Master Poll Interval** field to configure the interval at which the slave SM polls the master to see if the master still runs.
8. (Optional) Enter an integer in the **Master Poll Retries** field to configure the number of unanswered polls that cause the slave to identify the master as dead.
9. (Optional) Enter an integer value in the **Max Active SMs** field to configure the maximum number of standby SMs that the master supports. This value defaults to 0, which indicates unlimited SMs.
10. (Optional) Enter an integer value in the **LID Mask Control** field to configure LID mask control on your SM.
11. Click the **Apply** button to apply your change(s) to your Server Switch.

View 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, perform the following steps:

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 the Subnet Managers table.

Table 5-3: Services Table Fields

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

View 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.
3. 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
Subnet Prefix	Subnet prefix of the service.
Service ID	ID of the service.
Service GID	GID of the service.
PKey	Partition key of the service.
Lease	Lease period of the service.
Key	Service key of the service.
Name	Name of the service.
Data (8 bit)	8-bit service data.
Data (16 bit)	16-bit service data.
Data (32 bit)	32-bit service data.
Data (64 bit)	64-bit service data.

View InfiniBand Nodes

Both IB switches and IB hosts qualify as InfiniBand nodes. To view the nodes in your IB fabric, perform the following steps:

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. Table 5-5 lists and describes the fields in the Nodes table.

Table 5-5: Nodes Table Field Descriptions

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

View Node Properties

To view the properties of a switch or host in your IB fabric, perform the following steps:

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.
4. 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 Field Descriptions

Field	Description
Subnet Prefix	64-bit value that identifies the InfiniBand subnet to which this node belongs.
Node GUID	GUID of this node.
Base Version	Supported base management datagram (MAD) version. Indicates that this channel adapter, switch, or router supports versions up to and including this version. See section 13.4.2, Management Datagram Format, in “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Class Version	Supported MAD class format version. Indicates that this channel adapter, switch, or router supports versions up to, and including, this version.
Type	Type of node being managed. The value is channel adapter, switch, router, or error. An **error** entry indicates an unknown type.
Num Ports	Number of physical ports on this node.
Port GUID	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 (i.e., not swappable).
Partition Cap	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.
Device ID	Manufacturer-assigned device identification.
Revision	Manufacturer-assigned device revision.

Table 5-6: Topology Node Properties Window Field Descriptions (Continued)

Field	Description
Local Port Num	The link port number from which this subnet management packet (SMP) arrived. The value is the same for all ports on the node.
Vendor ID	Device vendor ID. The value is the same for all ports on the node.
Description	Description of the node.
System Image GUID	The system image GUID of this node. All nodes within a particular system (chassis) are assigned the same system image GUID.

Table 5-7 lists and describes the **Switch Properties** fields in the window.

Table 5-7: Topology Node Properties Window Field Descriptions, Switch Properties

Field	Description
Linear FDB Cap	Maximum number of entries allowed in the linear unicast forwarding table. 0 (zero) indicates that there is no linear forwarding database.
Random FDB Cap	Maximum number of entries allowed in the random unicast forwarding table. 0 (zero) indicates that there is no random forwarding database.
MCast FDB Cap	Maximum number of entries allowed in the multicast forwarding table.
Linear FDB Top	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.
Default Port	Specifies the default port to which to forward all the unicast packets from other ports whose destination local identifier (DLID) does not exist in the random forwarding table.
Default Primary MCast Port	Specifies the default port to which to forward all the multicast packets from other ports whose DLID does not exist in the multicast forwarding table.
Default Non-Primary MCast Port	Specifies the port to which to forward all the multicast packets from default-pri-mcast-port whose DLID does not exist in the multicast forwarding table.
Lifetime Value	Specifies the duration a packet can live in the switch. Time units are in milliseconds. See section 18.2.5.4, Transmitter Queueing, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Switch Port State Change	Indicates a change in port state. The value changes from NotInTransition to PortInTransition anytime the State parameter of a port changes from down to initialize, initialize to down, armed to down, or active to down, as a result of link state machine logic.

Table 5-7: Topology Node Properties Window Field Descriptions, Switch Properties

Field	Description
LID Per Port	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.
Partition Enforce Cap	Number of entries in this partition enforcement table per physical port. 0 (zero) indicates that partition enforcement is not supported by the switch.
In Enforce Cap	Indicates if the switch is capable of partition enforcement on received packets. The value is true (1) or false.
Out Enforce Cap	Indicates if the switch is capable of partition enforcement on transmitted packets. The value is true (1) or false.
In Filter Raw Packet Cap	Indicates if the switch is capable of raw packet enforcement on received packets. The value is true (1) or false.
Out Filter Raw Packet Cap	Indicates if the switch is capable of raw packet enforcement on transmitted packets. The value is true (1) or false.

View Node Ports

To view the IB ports on a node in your IB fabric, perform the following steps:

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.
4. 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 "View InfiniBand Ports" on page 53 or see Table 5-8.

View Node Neighbors

To view the neighbors of an IB node on your fabric, perform the following steps:

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.
4. 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 "View Neighboring IB Devices" on page 58 or see Table 5-10.

View InfiniBand Ports

To view the InfiniBand ports on your IB fabric, perform the following steps:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Topology** icon in the Tree frame.

3. 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 the InfiniBand Ports table.

Table 5-8: InfiniBand Ports Table Field Descriptions

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

View InfiniBand Port Properties

To view the properties of an InfiniBand port, perform the following steps:

1. Expand the **InfiniBand** icon in the Tree frame.
2. Expand the **Topology** icon in the Tree frame.
3. 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 the Topology Port Properties window.

Table 5-9: Topology Port Properties Window Field Descriptions

Field	Description
Subnet Prefix	64-bit value that identifies the InfiniBand subnet to which this port belongs.
Node GUID	64-bit GUID of the node to which this port belongs.
Port	Port number (integer) on the node (host).
MKey	64-bit management key for this port. See section 14.2.4, Management Key and 3.5.3, Keys, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
GID Prefix	64-bit GID prefix for this port. This prefix is assigned by the subnet manager, based upon the port router and the rules for local identifiers. See section 4.1.3, Local Identifiers, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
LID	16-bit base-LID of this port.
Master SM LID	16-bit base LID of the master subnet manager managing this port.

Table 5-9: Topology Port Properties Window Field Descriptions (Continued)

Field	Description
Cap Mask	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.
Diag Code	16-bit diagnostic code. See 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.
MKey Lease Period	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 subnet manager 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 <italic>InfiniBand Architecture, Vol. 1, Release 1.0, section 14.2.4, “Management Key.”
Link Width Enabled	Enabled link width (bandwidth). The value is an integer that indicates the enabled link-width sets for this port. The value may be • 0 (no state change), • 1 (1x), • 2 (4x), • 3 (1x or 4x), • 8 (12x), • 9 (1x or 12x), • 10 (4x or 12x), • 11 (1x, 4x or 12x), • 255 (set this parameter to the link-width-supported value).
Link Width Supported	Supported link width. The value is 1 (1x), 3 (1x or 4x), or 11 (1x, 4x, or 12x).
Link Width Active	Active link width. Used in conjunction with LinkSpeedActive to determine the link rate between two nodes. The value is 1 (1x), 2 (4x), or 8 (12x).
Link Speed Supported	Supported link speed. The value is 1 (2.5 Gbps).

Table 5-9: Topology Port Properties Window Field Descriptions (Continued)

Field	Description
State	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.
Physical State	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 power-up is polling.
Link Down Def State	Default LinkDown state to return to. The value is noStateChange, sleeping, or polling. See section 5.5.2, Status Outputs (MAD GET), “InfiniBand® Architecture, Vol. 2, Release 1.0”, for more information.
MKey Protocol Bits	Management key protection bits for the port. The bits are 0, 1, 2, and 3. See section 14.2.4.1, Levels of Protection, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
LMC	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. See sections 3.5.10, Addressing, and 4.1.3, Local Identifiers, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Link Speed Active	Speed of an active link. The value is 1 (2.5 Gbps).
Link Speed Enabled	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).
Neighbor MTU	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.
Master SM SL	Administrative service level required for this port to send a non-SMP message to the subnet manager.
VL Cap	Maximum range of data virtual lanes supported by this port. The value is vl0, vl0ToVl1, vl0ToVl3, vl0ToVl7, or vl0ToVl14. See also oper-VL. Each port can support up to fifteen virtual lanes (VLs 0 - 15). The VL-cap field displays the range of those lanes (e.g. lanes 0 - 7) that the port currently supports.
VL High Limit	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.

Table 5-9: Topology Port Properties Window Field Descriptions (Continued)

Field	Description
VL Arb High Cap	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. See section 14.2.5.9, VL Arbitration Table, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Vl Arb Low Cap	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. See section 14.2.5.9, VL Arbitration Table, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
MTU Cap	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
VL Stall Count	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. See section 18.2.5.4, Transmitter Queuing, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for a description of HLL.
HOQ Life	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.
Oper VL	Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VL-cap value. The value is vl0, vl0-Vl1, vl0-Vl3, vl0-Vl7, or vl0-Vl14.
In Part Enforce	Boolean value that indicates whether or not to support optional partition enforcement for the packets received by this port. There is no default value.
Out Part Enforce	Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. There is no default value.
In Filter Raw Packet Enforce	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.
Out Filter Raw Packet Enforce	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.
MKey Violation	Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial power up or the last reset. See section 14.2.4, Management Key, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
PKey Violation	Number of subnet management packets that have been received on this port with invalid P_Keys since initial power up or the last reset. See section 9.2.7, partition key (P_KEY), “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.

Table 5-9: Topology Port Properties Window Field Descriptions (Continued)

Field	Description
QKey Violation	Number of subnet management packets that have been received on this port with invalid Q_Keys since initial power up or the last reset. See section 10.2.4, Q Keys, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
GUID Cap	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. See section 14.2.5.5, GUIDCap, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Subnet Timeout	Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at with 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 ms * 2^SubnetTimeout).
Response Time	Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. See section 13.4.6.2, Timers and Timeouts, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Local Physical Error	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. See section 7.12.2, Error Recovery Procedures, “InfiniBand® Architecture, Vol. 1, Release 1.0”, for more information.
Local Overrun Error	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.

View Neighboring IB Devices

To view the InfiniBand devices that directly connect to your device, perform the following steps:

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 Field Descriptions

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

Table 5-10: InfiniBand Neighbors Table Field Descriptions (Continued)

Field	Description
Remote Port ID	Port ID of the neighboring InfiniBand node to which the local node is linked. The value is an integer between 0 and 255.

View IB Neighbor Properties

To view IB neighbor properties, perform the following steps:

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 Element Descriptions

Element	Description
Subnet Prefix field	Subnet prefix of the neighbor node.
Local Node GUID field	GUID of the neighbor that you selected.
Local Port ID field	Local port on the neighbor that you selected that connects to your Server Switch.
Local Node Type field	Node type of the neighbor node.
Remote Node GUID field	GUID of the physical switch within your Server Switch that connects to the neighbor node.
Remote Port ID field	Port on the physical switch within your Server Switch that connects to the neighbor node.
Remote Node Type field	Node type of the physical switch within your Server Switch that connects to the neighbor node.
Link State field	State of the connection between the neighbor and the switch within your Server Switch.
Link Width Active field	Bandwidth of the connection between the neighbor and the switch within your Server Switch.
Close button	Closes the window.
Help button	Opens on-line help.

View IOUs

To view the I/O Units (IOUs) on your device, perform the following steps:

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 Field Descriptions

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

View IOCs

To view the I/O controllers (IOCs) on your device, perform the following steps:

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 **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 Field Descriptions

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

View IOC Properties

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

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 **IOCs** branch. The **IOCs** display appears in the View frame.

4. 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 Field Descriptions

Field	Description
GUID	GUID of the controller.
Vendor ID	Organization Unique Identifier (OUI) of the vendor.
Device ID	Vendor-assigned device identifier.
Device Version	Vendor-assigned device version.
Subsystem Vendor ID	Vendor-assigned subsystem vendor identifier
Subsystem ID	Vendor-assigned subsystem identifier.
IO Class	I/O class that the IOC supports.
IO Subclass	Subclass of the I/O class protocol of the IOC.
Protocol	Standard protocol definition that the IOC supports.
Protocol Version	Protocol version that the IOC supports.
Send Msg Queue Depth	Maximum number of messages that the send message queue supports.
RDMA Read Queue Depth	Maximum depth of the per-channel RDMA Read Queue.
Send Msg Size	Maximum size, in bytes, of send messages.
RDMA Transfer Size	Maximum size, in bytes, of outbound RDMA transfers that the IOC initiates.
Controller Op Cap Mask	Integer value (from 8 cumulative bits) between 1 and 255 that represents the operation type(s) that the IOC supports. • bit 0: ST; Send Messages To IOCs • bit 1: SF; Send Messages From IOCs • bit 2: RT; RDMA Read Requests To IOCs • bit 3: RF; RDMA Read Requests From IOCs • bit 4: WT; RDMA Write Requests To IOCs • bit 5: WF; RDMA Write Requests From IOCs • bit 6: AT; Atomic Operations To IOCs • bit 7: AF; Atomic Operations From IOCs
Service Entries	Number of services that the IOC provides.

View IOC Services

To view the IOC services on your device, perform the following steps:

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 Field Descriptions

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

View Properties of IOC Services

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

To view the properties of IOC services on your device, perform the following steps:

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 Element Descriptions

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

6

Ethernet Icon Tasks

The following sections appear in this chapter:

View Bridge Groups

To view the bridge groups on your Server Switch, perform the following steps:

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 Field Descriptions

Field	Description
ID	Bridge group ID number.
Name	Bridge group name.
Ethernet Port	Displays the trunk group and ports available that the bridge group uses to connect to the Ethernet switch.
IB Port	Displays the internal gateway slot#/port# that is associated with the bridge-group.
IB P_KEY	InfiniBand partition key of the bridge group.
Broadcast Forwarding	Broadcast forwarding configuration of the bridge group.

View Bridge Group Properties

To view the properties of a bridge group, perform the following steps:

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 Element Descriptions

Element	Description
ID field	ID number of the bridge group.
Name field	Name of the bridge group.
Broadcast Forwarding field	Displays a checked box when broadcast forwarding runs.
Redundancy Group ID field	ID of the redundancy group to which the bridge group belongs.
Admin Failover Priority field	Failover priority of the bridge group.
Oper Failover Priority field	Active failover priority of the bridge group.
Broadcast Forwarding Mode field	Active broadcast forwarding mode.
IP Multicast Mode field	Active IP multicast mode.
Loop Protection Method field	Displays the loop protection method of the group.
IP Multicast field	Displays a checked box when IP multicasting runs.
Ethernet Port pulldown menu	Displays the trunk or ports that the bridge group uses to connect to the Ethernet switch.
Vlan field	Virtual LAN (VLAN) identifier of the group.
IB Port pulldown menu	Displays the IB port that the bridge group uses.
IB P_KEY field	Partition key of the bridge group.
Apply button	Applies the changes that you make in the window.
Reset button	Resets the fields in the window to match the properties of the bridge group.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the bridge group.
Help button	Opens on-line help.

Add Bridge Groups

To create a new bridge group, perform the following steps:

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. (Optional) Enter a subnet prefix in the **Subnet Prefix** field or leave the field as **0.0.0.0** to enable auto-detection.

7. (Optional) Enter the length of the subnet prefix in the **Subnet Prefix Len** field.
8. (Optional) Enter the next Ethernet hop address in the Ethernet Next Hop field.
9. (Optional) 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.

Configure Bridge Groups

To configure the properties of a bridge group, perform the following steps:

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) Check (or uncheck) the **Enable** checkbox in the **Broadcast Forwarding** field.
6. (Optional) Enter an integer value in the **Redundancy Group ID** field.
7. (Optional) Enter an integer value in the **Admin Failover Priority** 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.

Delete Bridge Groups

To delete a bridge group, perform the following steps:

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.

View Bridge Subnets

To view bridge subnets, perform the following steps:

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 Field Descriptions

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

Add Bridge Subnet

To add a bridge subnet, perform the following steps:

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.

Delete Bridge Subnet

To delete a bridge subnet, perform the following steps:

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.

View Bridge Forwarding

To view bridge forwarding, perform the following steps:

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 Field Descriptions

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

Table 6-4: Bridge Forwarding Field Descriptions (Continued)

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

Add Bridge Forwarding

To add a bridge subnet, perform the following steps:

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. Inter 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.

Delete Bridge Forwarding

To delete a bridge subnet, perform the following steps:

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.

View Redundancy Groups

To view the redundancy groups on your Server Switch, perform the following steps:

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

Table 6-5: Redundancy Group Field Descriptions

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

Create a Redundancy Group

To create a redundancy group, perform the following steps:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Redundancy Group** branch.
3. Click the **Add** button. An **Add Ethernet Redundancy Group** window opens.
4. Enter an integer in the **ID** field.
5. Enter an ASCII text name in the **Name** field.
6. (Optional) Check the **Enable** checkbox in the **Load Balancing** field.
7. (Optional) Check the **Enable** checkbox in the **Broadcast Forwarding Mode** field.
8. (Optional) Check the **Enable** checkbox in the **Ip Multicast Mode** field.
9. Click the **Apply** button.

Delete a Redundancy Group

To delete a redundancy group, perform the following steps:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Redundancy Group** branch.
3. Click the radio button next to the redundancy group whose properties you want to view.
4. Click the **Delete** button.

View Redundancy Group Properties

To view redundancy group properties, perform the following steps:

1. Expand the **Ethernet** icon in the Tree frame.
2. Click the **Redundancy Group** branch.
3. Click the radio button next to the redundancy group whose properties you want to view.
4. Click the Properties button. A Redundancy Group Properties window opens. Table 6-6 lists and describes the fields in this window.

Table 6-6: Redundancy Group Properties Field Descriptions

Field	Description
ID field	ID number of the redundancy group.
Name field	Name of the redundancy group.
Multicast PKey field	Partition key of the multicast group to which the redundancy group belongs.
Load Balancing field	Displays enabled if load balancing runs, otherwise displays disabled.
Members field	Number of members in the redundancy group.
Action field	Provides a pull-down menu of actions to execute with the group.
Result field	Result of the action that you apply in the **Action** field.
Broadcast Forwarding Mode field	Displays a checked or unchecked **Enable** checkbox.
Ip Multicast Mode field	Displays a checked or unchecked **Enable** checkbox.
Apply button	Applies the changes that you make in the window.

Table 6-6: Redundancy Group Properties Field Descriptions (Continued)

Field	Description
Reset button	Resets the fields in the window to match the properties of the bridge group.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the bridge group.
Help button	Opens on-line help.

View Trunk Groups

To view the trunk groups on your Server Switch, perform the following steps:

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 6-7 lists and describes the fields in this table.

Table 6-7: Trunk Groups Table Field Descriptions

Field	Description
ID	ID number of the trunk group.
Name	Name of the trunk group.
Port Members	Ports that belong to the trunk group.

Table 6-7: Trunk Groups Table Field Descriptions (Continued)

Field	Description
Distribution Type	Distribution type of the trunk group. This field displays one of the following types: • srcMac 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. • dstMac 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. • srcDstMac Bases load distribution on the MAC address of the source logic gate (XOR) destination. • srcIp 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. • dstIp 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. • srcDstIp Bases load distribution on the IP address of the source logic gate (XOR) destination.
Trunk Group Enabled	Displays a checked **Enable** checkbox to indicate an active trunk group.
MTU	Displays the maximum transmission unit (MTU) of the group.
MAC Address	MAC address of the trunk group.
IfIndex	Interface index of the trunk group.

Add a Trunk Group

To add a trunk group, perform the following steps:

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.

View Trunk Group Properties

To view the properties of a trunk group, perform the following steps:

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 6-8 lists and describes the elements in this window.

Table 6-8: Ethernet Trunk Group Properties Window Element Descriptions

Element	Description
ID field	ID number of the trunk group.
Name field	Name of the trunk group.
Port Members field	Ports that belong to the trunk group.

Table 6-8: Ethernet Trunk Group Properties Window Element Descriptions (Continued)

Element	Description
Distribution Type field	Distribution type of the trunk group. This field displays one of the following types: • srcMac 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. • dstMac 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. • srcDstMac Bases load distribution on the MAC address of the source logic gate (XOR) destination. • srcIp 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. • dstIp 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. • srcDstlp Bases load distribution on the IP address of the source logic gate (XOR) destination.
Trunk Group Enabled field	Displays a checked **Enable** checkbox to indicate an active trunk group.
MTU field	Displays the maximum transmission unit (MTU) of the group.
MAC Address field	Displays the Media Access Control (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.
IfIndex field	Displays a management software unique identifier for all physical and logical (trunks, gateway-ports) interfaces.
Apply button	Applies the changes that you make in the window.
Reset button	Resets the fields in the window to match the properties of the trunk group.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the trunk group.
Help button	Opens on-line help.

Configure a Trunk Group

To configure an existing trunk group, perform the following steps:

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.

Delete a Trunk Group

To delete a trunk group, perform the following steps:

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.

7

Fibre Channel Icon Tasks

The following sections appear in this chapter:

Configure Global ITL Attributes

Configure global initiator, target, LUN (ITL) attributes to select the attributes that apply by default to all new ITLs. For detailed information about these attributes, refer to the *Fibre Channel Gateway User Guide*.

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

To configure global attributes, perform the following steps:

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, 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, 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.

View SRP Hosts (Initiators)

To view the SRP hosts that connect to your device and, with your Server Switch, behave as Fibre Channel initiators, perform the following steps:

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 Field Descriptions

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

View SRP Host (Initiator) Properties

To view the properties of a SRP host, perform the following steps:

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

View SRP Host (Initiator) World-Wide Port Names

To view the world-wide port names (WWPNs) of the virtual ports through which FC nodes communicate with SRP hosts, perform the following steps:

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 Field Descriptions

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

View IT Policies of the Host

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

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 "View IT Policies" on page 83 or see Table 7-8.

View ITL Policies of the Host

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

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 "View ITLs" on page 84 or see Table 7-10.

Add SRP Host

To add a SRP host to the configuration file, perform the following steps:

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.

Delete 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 host that you want to delete from the configuration file, then click the **Delete** button.

Configure SRP Host (Initiator) Properties

To configure properties of a SRP host, perform the following steps:

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.

View Fibre Channel Targets

To view the Fibre Channel targets in the configuration file of your Server Switch, perform the following steps:

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 Field Descriptions

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

View Fibre Channel Target Properties

To view the properties of a Fibre Channel target, perform the following steps:

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 Element Descriptions

Element	Description
WWPN field	World-wide port name (WWPN) of the port on the target through which your Server Switch accesses the target.
WWNN field	World-wide node name (WWNN) of the target.
FC Address field	Fibre Channel address of the target.
IOC GUID field	InfiniBand I/O controller (IOC) through which initiators access the target. On the Topspin 360/Cisco SFS 3012 and Topspin 90/Cisco SFS 3001 platforms, the IOC identifies a Fibre Channel gateway slot.
Physical Access field	Port on your Server Switch (in slot#/card# format) through which your Server Switch accesses the target.
MTU field	Maximum transmission unit, in bytes, of the target.
Connection Type field	Provides the **down** and **nlPort** radio buttons so you can assign a connection type to the target.
Description field	User-assigned target description.  **NOTE:** If no user has assigned a description, a default description appears.
Service Name field	Name of the service to associate with the WWPN.
Apply button	Applies the changes that you make in the window.
Reset button	Resets the fields in the window to match the properties of the target.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the target.
Help button	Opens on-line help.

Configure Fibre Channel Target Properties

To configure the properties of a Fibre Channel target, perform the following steps:

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.

View IT Policies of the Target

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

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 "View IT Policies" on page 83 or see Table 7-8.

View ITL Policies of the Target

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

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 "View ITLs" on page 84 or see Table 7-10.

View Fibre Channel LUNs

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

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 Field Descriptions

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

View Fibre Channel LUN Properties

To view Fibre Channel LUN properties, perform the following steps:

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.
3. 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 Element Descriptions

Element	Description
Logical ID field	Logical ID of the LUN.
Device Category field	Provides the **random** radio button and **sequential** radio button to identify disk devices and tape devices respectively.
Inquiry Data field	SCSI inquiry data retrieved about the LU.
Physical Access field	Ports on your Server Switch that can access the LUN.
Description field	User-assigned description of the LUN.
Hi Mark field	The maximum number of outstanding requests from the initiator to the storage that the ITL can maintain.
Max Retry field	Number of failed communication attempts that must occur before the LUN identifies the initiator as inaccessible.
Min IO Timeout field	Maximum amount of time that elapses before a SRP request times out.
Dynamic Pathing field	Provides the following radio buttons: • Path Affinity This feature locks a storage connection to a path for the duration of data transfer to increase speed and efficiency. • Gateway Port Load Balancing This feature distributes traffic evenly across both ports in an FC gateway card (when both of the ports can access the same storage). • Gateway Port Failover 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.
Apply button	Applies the changes that you make in the window to the LUN.
Reset button	Resets the fields in the window to match the properties of the LUN.
Close button	Closes the window. If you close the window before you apply changes, Chassis Manager makes no changes to the LUN.
Help button	Opens on-line help.

Configure Fibre Channel LUN Properties

To configure Fibre Channel LUN properties, perform the following steps:

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.

3. 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.
4. (Optional) Enter a description in the **Description** field.
5. (Optional) Enter an integer value in the **Hi Mark** field.
6. (Optional) Enter an integer value in the **Max Retry** field.
7. (Optional) Enter an integer value in the **Min IO Timeout** field.
8. (Optional) Click a radio button in the **Dynamic Pathing** field.
9. Click the **Apply** button, then click the **Close** button.

View ITL Policies of the LUN

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

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **Logical Units** branch. A **Logical Units** table that includes all FC targets that connect to the chassis appears in the View frame.
3. Click the radio button next to the LUN 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 LUN that you selected. For more information, refer to "View ITLs" on page 84 or see Table 7-10.

View IT Policies

To view Initiator-Target (IT) pair properties, perform the following steps:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. 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 Field Descriptions

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

View IT Properties

To view detailed Initiator-Target (IT) pair properties, perform the following steps:

1. Expand the **Fibre Channel** icon in the Tree frame.
2. Click the **ITs** branch. The **ITs** table appears in the View frame.

3. 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 Element Descriptions

Element	Description
SRP Initiator ID field	GUID of the host.
Target WWPN field	WWPN of the target.
Description field	User-assigned description of the IT.
Current Access field	Physical FC gateway port through which the host currently accesses the target.
Physical Access field	Physical FC gateway port(s) through which the host can access the target.
Port Mask 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.
Action pulldown menu	Discovers the ITLs that the initiator can form with the LUNs in the target.
Result field	Displays the status of the action if you select **Discover ITLs** from the **Action** pulldown menu and then click the **Apply** button.
Apply button	Applies any changes that you make in the window to the Server Switch.
Reset button.	Resets the window to match the settings on the Server Switch
Close button.	Closes the window.
Help button.	Opens on-line help.

View ITLs

To view Initiator-Target-LUN (ITL) properties, perform the following steps:

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 Field Descriptions

Field	Description
SRP Initiator ID	GUID of the initiator (host).
Target WWPN	WWPN of the target.
FC LUN ID	Fibre Channel 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.
LUN Logical ID	Logical ID of the disk or tape in the target.

View ITL Properties

To view detailed Initiator-Target-LUN (ITL) properties, perform the following steps:

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 Element Descriptions

Element	Description
SRP Initiator ID field	GUID of the initiator (host).
Target WWPN field	WWPN of the target.
FC LUN ID field	Fibre Channel 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.
LUN Logical ID field	Logical ID of the disk or tape in the target.
Device Category field.	Identifies a LUN as random (a disk) or sequential (a tape).
Description field.	User-assigned text identifier of the ITL.
SRP LUN ID 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.
Physical Access field	Physical FC gateway port through which the host currently accesses the LUN.
Current Access field	Physical FC gateway port(s) through which the host can access the LUN.
Port Mask 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.
Apply button	Applies any changes that you make in the window to the Server Switch.
Reset button	Resets the window to match the settings on the Server Switch
Close button	Closes the window.
Help button	Opens on-line help.

View Global Statistics

To view global SRP statistics, perform the following steps:

1. Expand the Fibre Channel 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 Field Descriptions

Field	Description
Link Events	Total number of link events (e.g., link up, link down) processed by the Fibre Channel interface gateway(s).
SRP Initiated IOs	Total number of I/O transactions requested by the SRP initiator.
SRP Commands Completed	Total number of SRP commands completed on the Fibre Channel interface gateway(s).
SRP Bytes Read	Total number of I/O bytes read by the SRP initiator that is connected to this chassis.
SRP Bytes Written	Total number of I/O bytes written by the SRP initiator.

Table 7-12: SRP Global Statistics Display Field Descriptions (Continued)

Field	Description
SRP Connections	Total number of connections used by the SRP initiator.
SRP Commands Outstanding	Total number of SRP commands outstanding on the Fibre Channel interface gateway(s).
SRP Errors	Total number of SRP errors encountered on the Fibre Channel interface gateway((s).
FCP Initiated IOs	Total number of I/O responses by the Fibre Channel device to SRP initiator requests.
FCP Commands Completed	Total number of FCP commands completed on the Fibre Channel interface gateway(s).
FCP Bytes Read	Total number of I/O bytes read by the target device.
FCP Bytes Written	Total number of I/O bytes written by the target device.
FCP Commands Outstanding	Total number of FCP commands outstanding on the Fibre Channel interface gateway(s).
FCP Errors	Total number of FCP errors encountered on the Fibre Channel interface gateway(s).

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