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Brocade FastIron SX, FCX, and ICX

Web Management Interface User Guide

Supporting FastIron Software Release 08.0.30

BROCADE

Contents

Preface

Document conventions

The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Brocade technical documentation.

Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used in the flow of the text to highlight specific words or phrases.

Format	Description
bold text	Identifies command names
	Identifies keywords and operands
	Identifies the names of user-manipulated GUI elements
	Identifies text to enter at the GUI
italic text	Identifies emphasis
	Identifies variables
	Identifies document titles
`Courier font`	Identifies CLI output
	Identifies command syntax examples

Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
italic text	Identifies a variable.
value	In Fibre Channel products, a fixed value provided as input to a command option is printed in plain text, for example, **--show** WWN.

Convention	Description
[ ]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{ **x** | **y** | **z** }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options. In Fibre Channel products, square brackets may be used instead for this purpose.
x | **y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	Indicates a “soft” line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE
A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An Attention statement indicates a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.

CAUTION
A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

DANGER
A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Brocade resources

Visit the Brocade website to locate related documentation for your product and additional Brocade resources.

You can download additional publications supporting your product at www.brocade.com. Select the Brocade Products tab to locate your product, then click the Brocade product name or image to open the individual product page. The user manuals are available in the resources module at the bottom of the page under the Documentation category.

To get up-to-the-minute information on Brocade products and resources, go to MyBrocade. You can register at no cost to obtain a user ID and password.

Release notes are available on MyBrocade under Product Downloads.

White papers, online demonstrations, and data sheets are available through the Brocade website.

Contacting Brocade Technical Support

As a Brocade customer, you can contact Brocade Technical Support 24x7 online, by telephone, or by e-mail. Brocade OEM customers contact their OEM/Solutions provider.

Brocade customers

For product support information and the latest information on contacting the Technical Assistance Center, go to http://www.brocade.com/services-support/index.html.

If you have purchased Brocade product support directly from Brocade, use one of the following methods to contact the Brocade Technical Assistance Center 24x7.

Online	Telephone	E-mail
Preferred method of contact for non-urgent issues: • My Cases through MyBrocade • Software downloads and licensing tools • Knowledge Base	Required for Sev 1-Critical and Sev 2-High issues: • Continental US: 1-800-752-8061 • Europe, Middle East, Africa, and Asia Pacific: +800-AT FIBREE (+800 28 34 27 33) • For areas unable to access toll free number: +1-408-333-6061 • Toll-free numbers are available in many countries.	support@brocade.com Please include: • Problem summary • Serial number • Installation details • Environment description

Brocade OEM customers

If you have purchased Brocade product support from a Brocade OEM/Solution Provider, contact your OEM/Solution Provider for all of your product support needs.

- OEM/Solution Providers are trained and certified by Brocade to support Brocade® products.
- Brocade provides backline support for issues that cannot be resolved by the OEM/Solution Provider.

- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information, contact Brocade or your OEM.
- For questions regarding service levels and response times, contact your OEM/Solution Provider.

Document feedback

To send feedback and report errors in the documentation you can use the feedback form posted with the document or you can e-mail the documentation team.

Quality is our first concern at Brocade and we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you. You can provide feedback in two ways:

- Through the online feedback form in the HTML documents posted on www.brocade.com.
- By sending your feedback to documentation@brocade.com.

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

About This Document

Supported hardware

This guide supports the web management interface for the following hardware platforms:

- FCX Series
- FastIron X Series (FSX 800 and FSX 1600)
- ICX 6610 Series
- ICX 6430 Series (ICX 6430, ICX 6430-C12)
- ICX 6450 Series (ICX 6450, ICX 6450-C12-PD)
- ICX 6650 Series
- ICX 7750 Series
- ICX 7450 Series
- ICX 7250 Series

NOTE
The Brocade ICX 6430-C switch supports the same feature set as the Brocade ICX 6430 switch unless otherwise noted.

NOTE
The Brocade ICX 6450-C12-PD switch supports the same feature set as the Brocade ICX 6450 switch unless otherwise noted.

For information about the specific models and modules supported in a product family, refer to the hardware installation guide for that product family.

What's new in this document

The Web Management Interface support is added for Brocade ICX 7250.

Getting Started with the GUI

Access requirements

The Web Management Interface is a browser-based interface that allows administrators to manage and monitor a single Brocade device or a group of Brocade devices connected together. For many of the features on a Brocade device, the Web Management Interface can be used as an alternate to the CLI for creating new configurations, modifying existing ones, and monitoring the traffic on a device.

The Web Management Interface can be accessed from a management station using a web browser through an HTTP connection. The management options can be accessed from a menu tree or a list. The menu tree view is available when you use the Web Management Interface with the following web browsers:

- Netscape 4.0 or higher
- Internet Explorer 4.0 or higher
- Safari 3.1
- Google Chrome
- Mozilla Firefox
- Opera

For all the other older browsers, the Web Management Interface displays only the list view.

The following requirements must be met for accessing the Web Management Interface:

- A management station, such as a PC, with a web browser, that is either connected directly to the Brocade device or is on the network of the device to be managed.
- The device must have an IP address. The IP address can be assigned using the CLI. For more information on IP addresses for a device, refer to the respective *FastIron Ethernet Switch Layer 3 Routing Configuration Guide*
- The device must be powered on before you begin management activities.

Logging in to the Web Management Interface

To log in to the Web Management Interface, perform the following steps.

1. Open a web browser and enter the IP address of the Brocade device in the Location or Address field.

   The web browser contacts the Brocade device and displays the login page, as shown in the figure below.

FIGURE 1 Web Management Interface login page

NOTE
If you are unable to connect with the device through a web browser due to a proxy problem, it may be necessary to set your web browser for direct Internet access instead of using a proxy. For information on how to change a proxy setting, refer to the online help provided with your web browser.

2. Click **Login**. The dialog box as shown in the figure below is displayed.

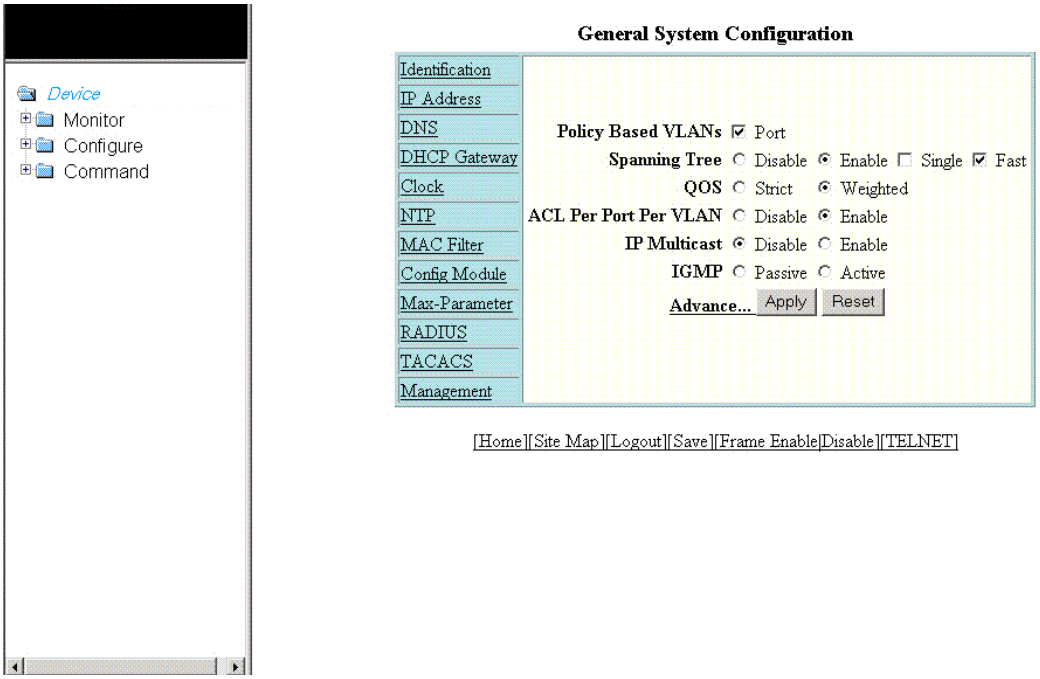
FIGURE 2 User name and password dialog box

3. Perform one of the following procedures:
   - For read-only access, enter the user name as **get** and a read-only community string for the password. The community string **public** is the default read-only community string.
   - For read-write access, enter the user name as **set** and a read-write community string for the password. There is no default read-write community string.

NOTE
If you have configured the device to secure the Web Management Interface using local user accounts, you must enter the user name and password of one of the user accounts.

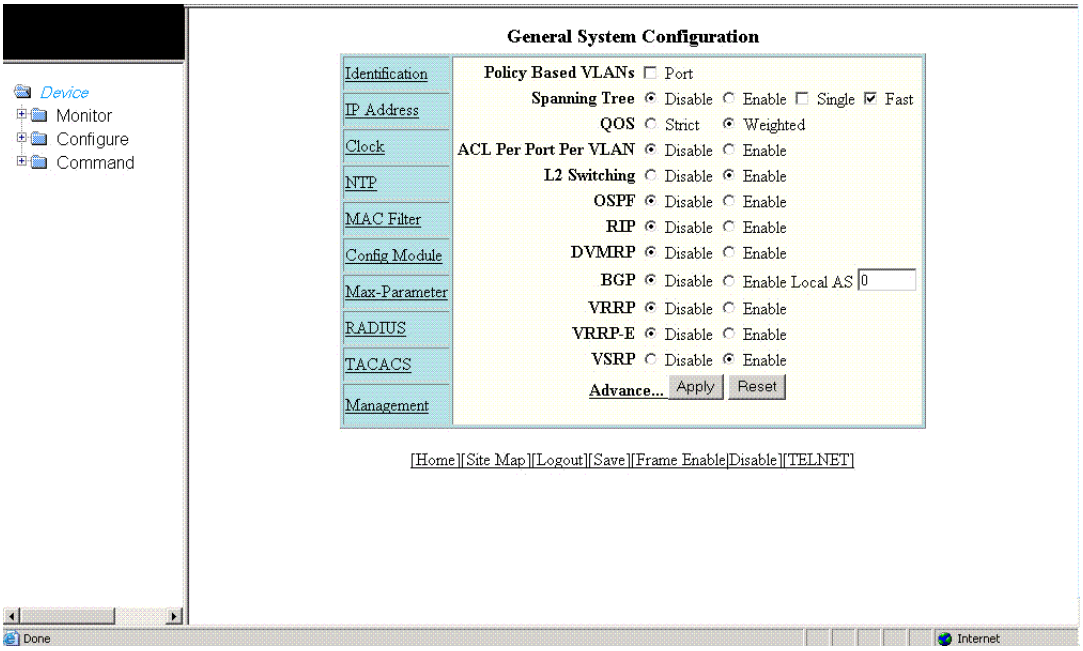
The figure below displays the home page of the Web Management Interface for a Layer 2 switch.

FIGURE 3 Home page for Layer 2 switch features



The figure below displays the home page of the Web Management Interface for a Layer 3 switch.

FIGURE 4 Home page for Layer 3 switch features



NOTE
If you are using Internet Explorer 6.0 to view the Web Management Interface, make sure the version you are running includes the latest service packs. Otherwise, the navigation tree (the left-most pane

in the two figures above) will not display properly. For information on how to load the latest service packs, refer to the online help provided with your web browser.

Logging out of the Web Management Interface

You can log out of the Web Management Interface in two ways:

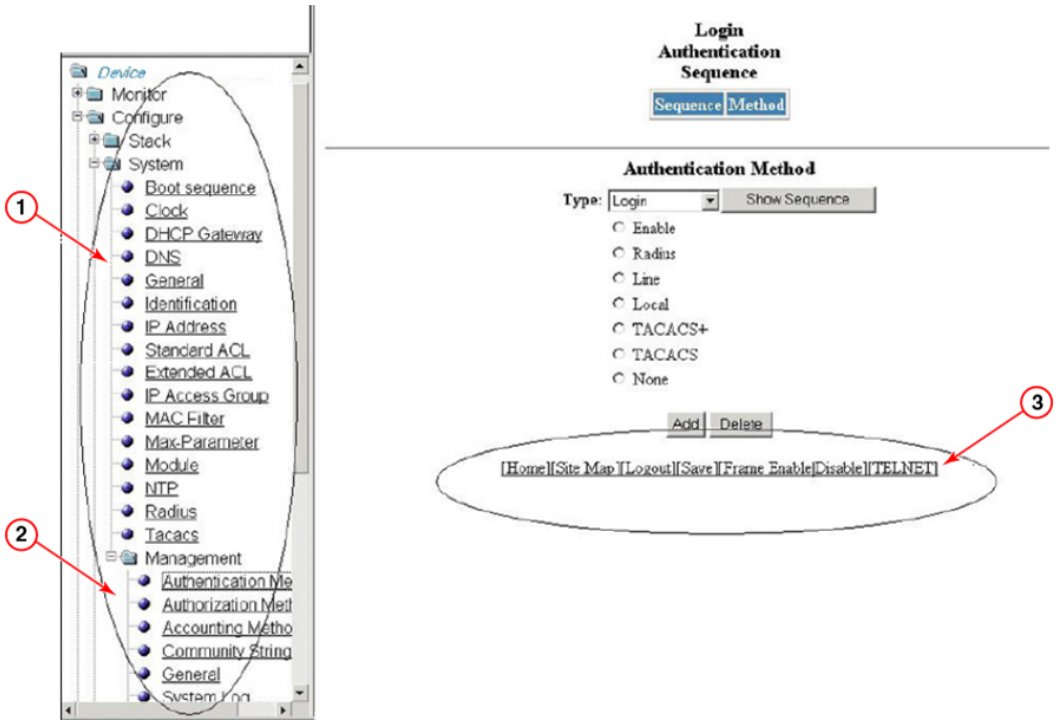
- Click **Logout** on the window.
- Click **Command** in the left pane and select **Logout**.

Using the Web Management Interface

The following procedure explains in detail about using the Web Management Interface.

1. Click the plus sign (+) next to **Configure** in the tree view to expand the list of configuration options.
2. Click the plus sign (+) next to **System** in the tree view to expand the list of system configuration links.
3. Click the plus sign (+) next to **Management** in the tree view to expand the list of system management links.
4. Click **Authentication Methods** to display the **Authentication Method** panel.
5. Enable or disable elements on the Web Management Interface by clicking the appropriate options on the panel. The figure below identifies the elements you can change.

FIGURE 5 Web Management Interface elements



1. Menu Type (Tree view)
2. Menu Frame
3. Shortcut links

NOTE
The tree view is available when you use the Web Management Interface with Netscape 4.0 or higher or Internet Explorer 4.0 or higher. If you use the Web Management Interface with an older browser, the Web Management Interface displays the list view only, and the Web Management Preferences panel does not include an option to display the tree view.

6. When you have finished, click **Add** on the panel to add the authentication types. Click **Delete** to remove authentication types.
7. To save the configuration, click the plus sign (+) next to the **Command** folder, and then click **Save to Flash**.

NOTE
The only changes that become permanent are the settings to the Menu Type and the Panel Frame. Any other elements you enable or disable will go back to their default settings the next time you start the Web Management Interface.

Web Management Interface areas

The following sections describe the Web Management Interface areas and how to use them.

Menu tree or list

The left panel shows the menu tree or list of options. The interface can be set up to display a menu tree or a list of options. You can enable or disable the menu tree view in two ways:

- Click **Frame Enable|Disable** on the bottom of the window.
- Click **Command** and select **Disable Frame**
- .

Configuration panel

The configuration panel consists of the tables with the field elements that display information or the input fields for which the values have to be entered. The input fields can be of four types:

- Fields into which data must be entered using the keyboard.
- Lists from which one of several options can be chosen.
- Options allow you to select only one of the settings or features of a set of options.
- Check boxes allow you to turn on or off a parameter and you can also make multiple selections.

After entering the values, you must click the appropriate button to configure the values.

Shortcuts to functions and other panels

All the pages in the Web Management Interface provide shortcut links to the functions that are specific to that page and to other panels. All of the Web Management Interface panels have the following links:

- [Home] --Returns you to the home page of the Web Management Interface.
- [Site Map] **--** Lists all options available from the Web Management Interface with links to the panels for those options. Use the **Site Map** link to move through the interface if the menu is not displayed.
- [Logout] **--** Logs you out of the Web Management Interface.
- [Save] **--** Saves the changes you entered on the panels.
- [TELNET] **--** Opens a Telnet session to the device.
- [Frame Enable|Disable] --Enables or disables the bookmark options available in the left panel. If frames are disabled, you will not be able to choose any of the options on the web preference panel that use frames.

Monitoring Basic Device Information

Displaying the ARP cache

The Address Resolution Protocol (ARP) cache table contains entries that map IP addresses to Media Access Control (MAC) addresses. There are two types of ARP entries: static (user-configured) and dynamic (learned).

To display the **ARP cache** information, click **Monitor** on the left pane and select **ARP Cache.**

The **ARP Cache** window is displayed as shown in the figure below.

FIGURE 6 Monitoring the ARP cache

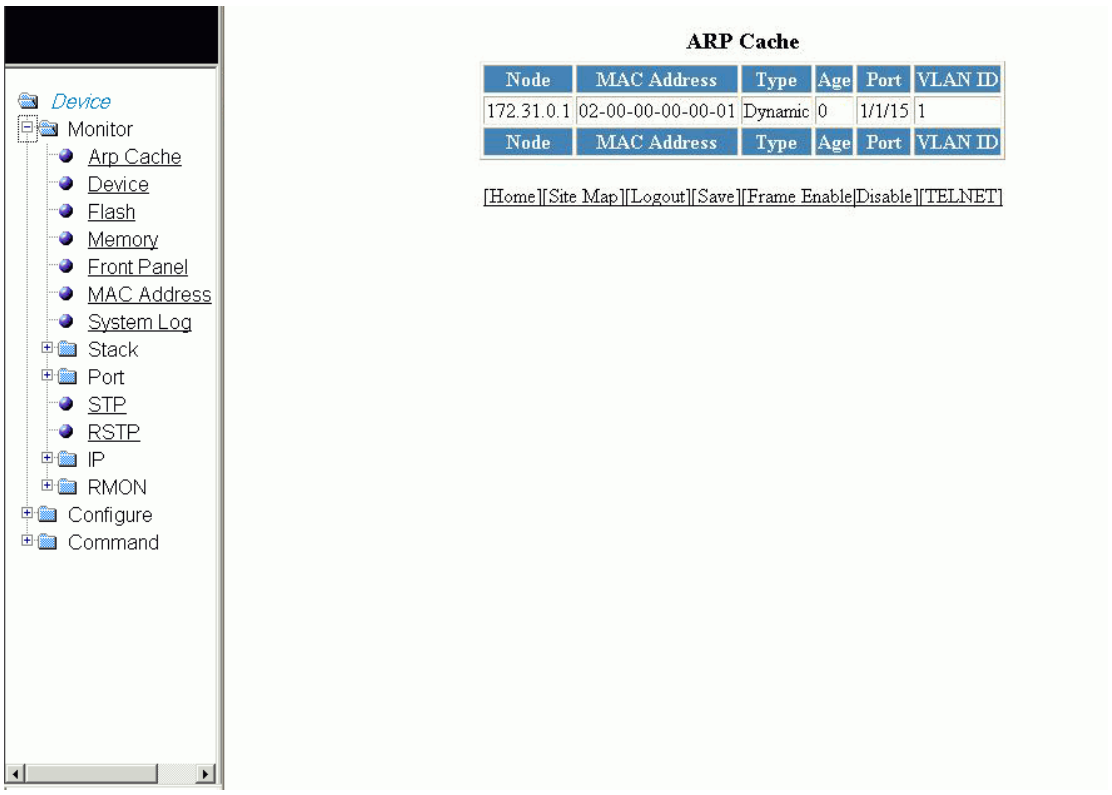


TABLE 1 Description of the fields in the **ARP Cache** window

Field	Description
Node	Displays the IP address of the device.
MAC Address	Displays the MAC address of the device.
Type	Displays the type of ARP entry, which can be one of the following: • *Dynamic* --The Layer 3 switch learned the entry from an incoming packet. • *Static* --The Layer 3 switch loaded the entry from the static ARP table when the device for the entry was connected to the Layer 3 switch.
Age	Displays the number of minutes the entry has remained unused. If this value reaches the ARP aging period, the entry is removed from the cache. **NOTE** Static entries do not age out.
Port	Displays the port attached to the device for which the entry was made. For dynamic entries, this is the port on which the entry was learned. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
VLAN ID	Displays the VLAN Identifier of the port, which learned the entry. **NOTE** This field is not available in the **ARP Cache** window for the Brocade FastIron SX devices.

Displaying the device information

To display the device information, perform the following steps.

1. Click **Monitor** on the left pane and select **Device**.
2. For the Brocade FCX and Brocade ICX devices, select a stack Identifier from the **Stack Unit ID** list and click **Display** to view the information for any device in an IronStack.

NOTE
The **Stack Unit ID** list is not available in the **Device Information** window for the Brocade FastIron SX devices.

The **Device Information** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.

FIGURE 7 Monitoring the device information

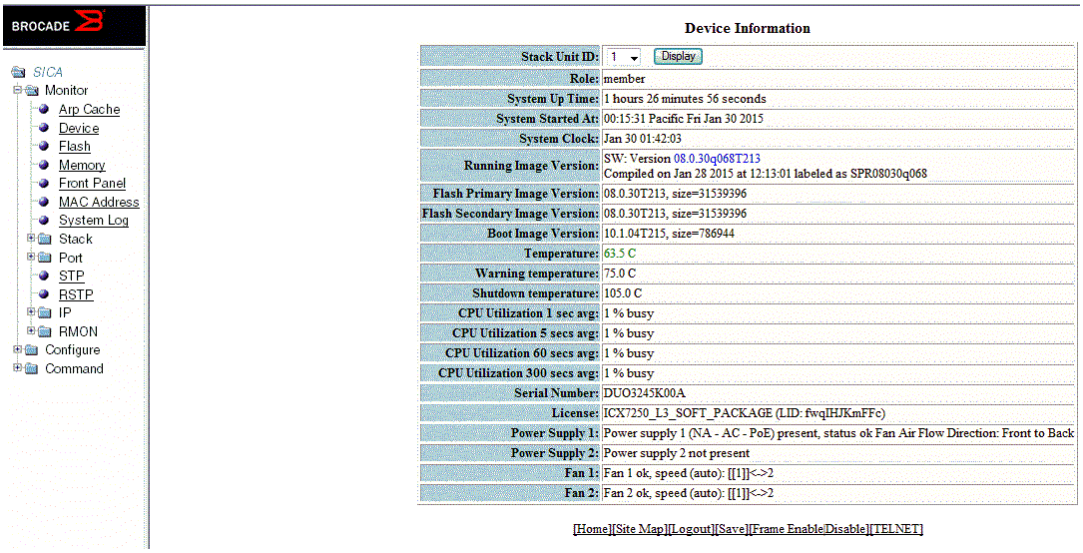


TABLE 2 Description of the fields in the **Device Information** window

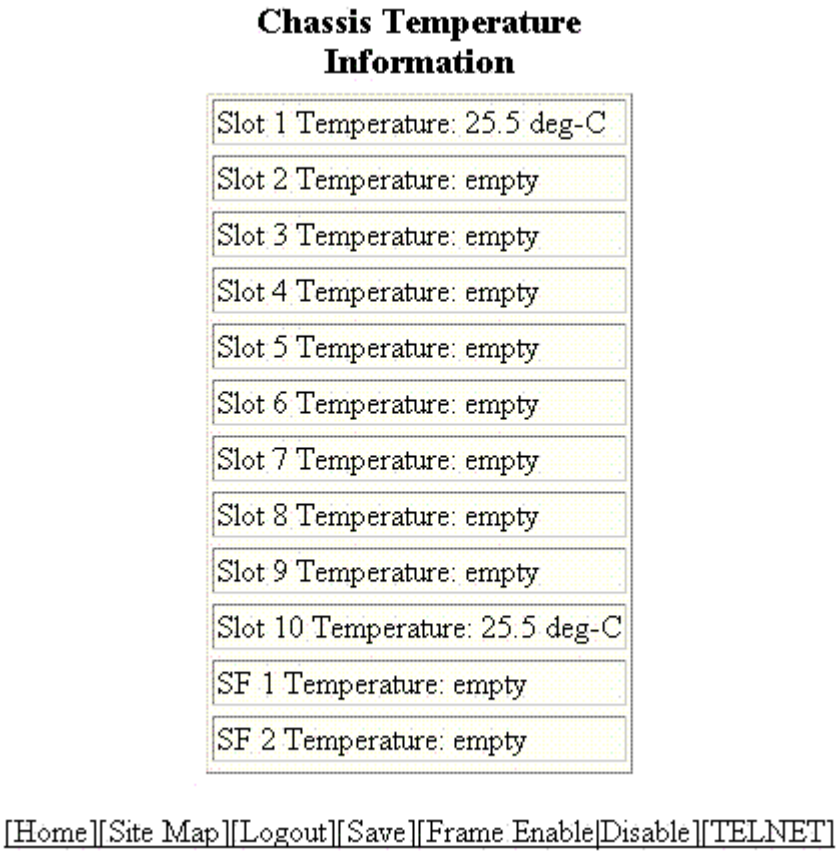
Field	Description
Stack Unit ID	Displays the number of the unit within a stack. **NOTE** This field is not available in the **Device Information** window for the Brocade FastIron SX devices.
Role	Displays the role of the device, which can be *Active*, *Standby*, *Member*, or *alone*. If the role is *alone*, the device is operating as a standalone device. **NOTE** This field is not available in the **Device Information** window for the Brocade FastIron SX devices.
System Up Time	Displays the quantity of time the system has been running since the last restart.
System Started At	Displays the time when the system started.
System Clock	Displays the time configured in the system.
Running Image Version	Displays the software version currently running and some details on the version.
Flash Primary Image Version	Displays the release number and size of the software loaded on the primary flash.
Flash Secondary Image Version	Displays the release number and size of the software loaded on the secondary flash.
Boot Image Version	Displays the release number and size of the boot image.

TABLE 2 Description of the fields in the **Device Information** window (Continued)

Field	Description
Temperature	For the Brocade FCX and Brocade ICX devices, this field displays the actual temperature. The color of the degrees provides a visual indicator for the device: • Green—The temperature is within the normal operating range. • Orange—The temperature has reached the warning level. • Red—The temperature has reached the shutdown level. For the Brocade FastIron SX devices, click **Temperature** in the right pane to display the **Chassis Temperature Information** window, which shows the temperature of each slot (from 1 through 10) and the switch fabric modules SF 1 and SF 2. Figure 8 shows the **Chassis Temperature Information** window.
Warning temperature	Displays the warning level temperature. **NOTE** This field is not available in the **Device Information** window for the Brocade FastIron SX devices.
Shutdown temperature	Displays the shutdown level temperature. **NOTE** This field is not available in the **Device Information** window for the Brocade FastIron SX devices.
CPU Utilization	Displays the percentage of CPU being used by the device at 1-second, 5-second, 1-minute, and 5-minute intervals.
Serial Number	Displays the serial number of the device.
License	Displays the software license and License ID (LID) of the device. **NOTE** This field is not available in the **Device Information** window for the Brocade FastIron SX devices.
Power Supply 1	Displays the status of the primary power supply.
Power Supply 2	Displays the status of the secondary power supply, if present.
Fan 1	Displays the status of the primary cooling fan.
Fan 2	Displays the status of the secondary cooling fan, if present. **NOTE** There is an entry for each fan in the device.

The figure below shows the **Chassis Temperature Information** window for the Brocade FastIron SX devices.

FIGURE 8 Monitoring the chassis temperature



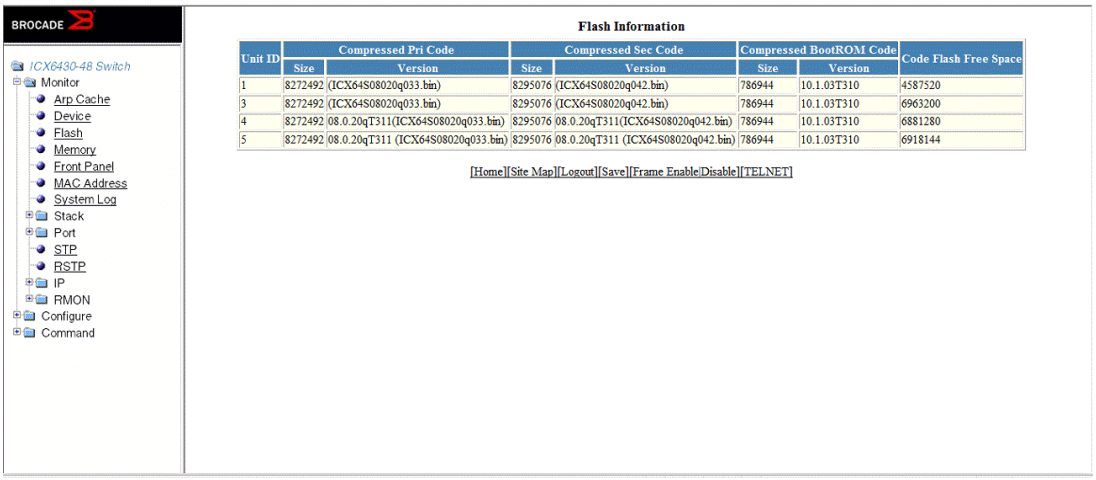
Displaying flash information

NOTE
This feature is applicable only for the Brocade FCX and Brocade ICX devices.

To display the flash information, click **Monitor** on the left pane and select **Flash.**

The **Flash Information** window is displayed as shown in the figure below.

FIGURE 9 Monitoring the flash information



The table below describes the fields in the **Flash Information** window.

TABLE 3 Description of the fields in the **Flash Information** window

Field	Description
Unit ID	Displays the number of the unit within a stack.
Compressed Pri Code	Displays the compressed size and version for the primary code.
Compressed Sec Code	Displays the compressed size and version for the secondary code.
Compressed BootROM Code	Displays the compressed size and version for the BootROM code.
Code Flash Free Space	Displays the amount of free space available on the flash memory.

Displaying memory information

NOTE
This feature is applicable only for the Brocade FCX and Brocade ICX devices.

To display the memory information of the device, click **Monitor** on the left pane and select **Memory**.

The **Memory Information** window is displayed as shown in the figure below.

FIGURE 10 Monitoring the memory information

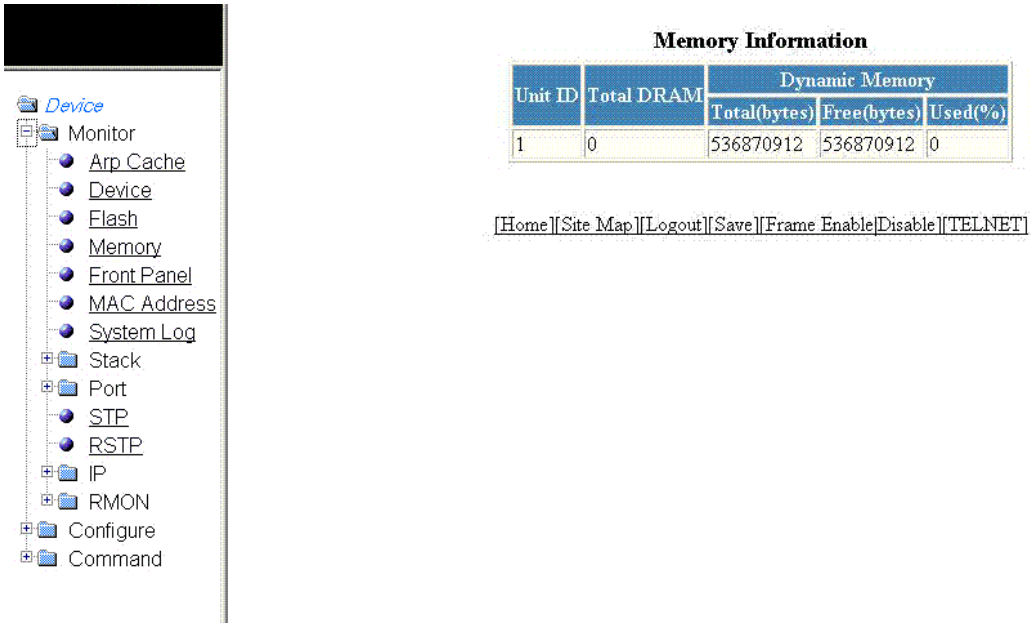


TABLE 4 Description of the fields in the **Memory Information** window

Field	Description
Unit ID	Displays the number of the unit within a stack.
Total DRAM	Displays the size (in bytes) of dynamic random access memory (DRAM).
Dynamic Memory	Displays the total number of bytes in dynamic memory, including the number of bytes that are available (free or unused), and the percentage of memory used.

Displaying the front panel

The front panel of the device allows you to view the modules in each device and the ports within each module.

The front panel shows the status of devices using colors. Green ports are connected, and gray ports are not connected. Ports of the same color on two units are connected with cables. A gray uplink port is not connected to a device. Ports with amber LEDs linked up have downgraded speeds from their default speeds.

Status LED display

The status LEDs that appear on the front panel provide information about system activity. The figure below shows the LEDs that appear on the front panel of ICX 7750 device.

FIGURE 11 Front panel LEDs

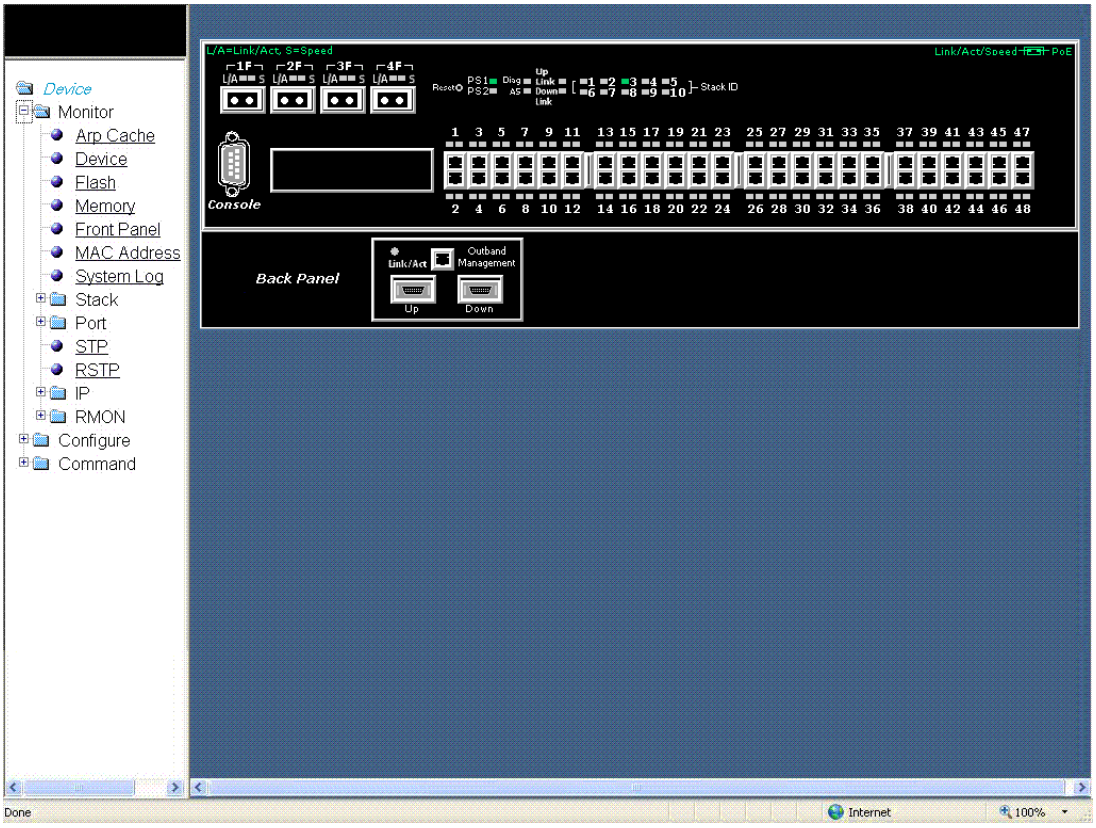
For more information about the LED labels and status indicators in Brocade devices, refer respective Hardware Installation Guides.

Displaying the front panel for the Brocade FCX devices

To display the front panel, click **Monitor** on the left pane and select **Front Panel**.

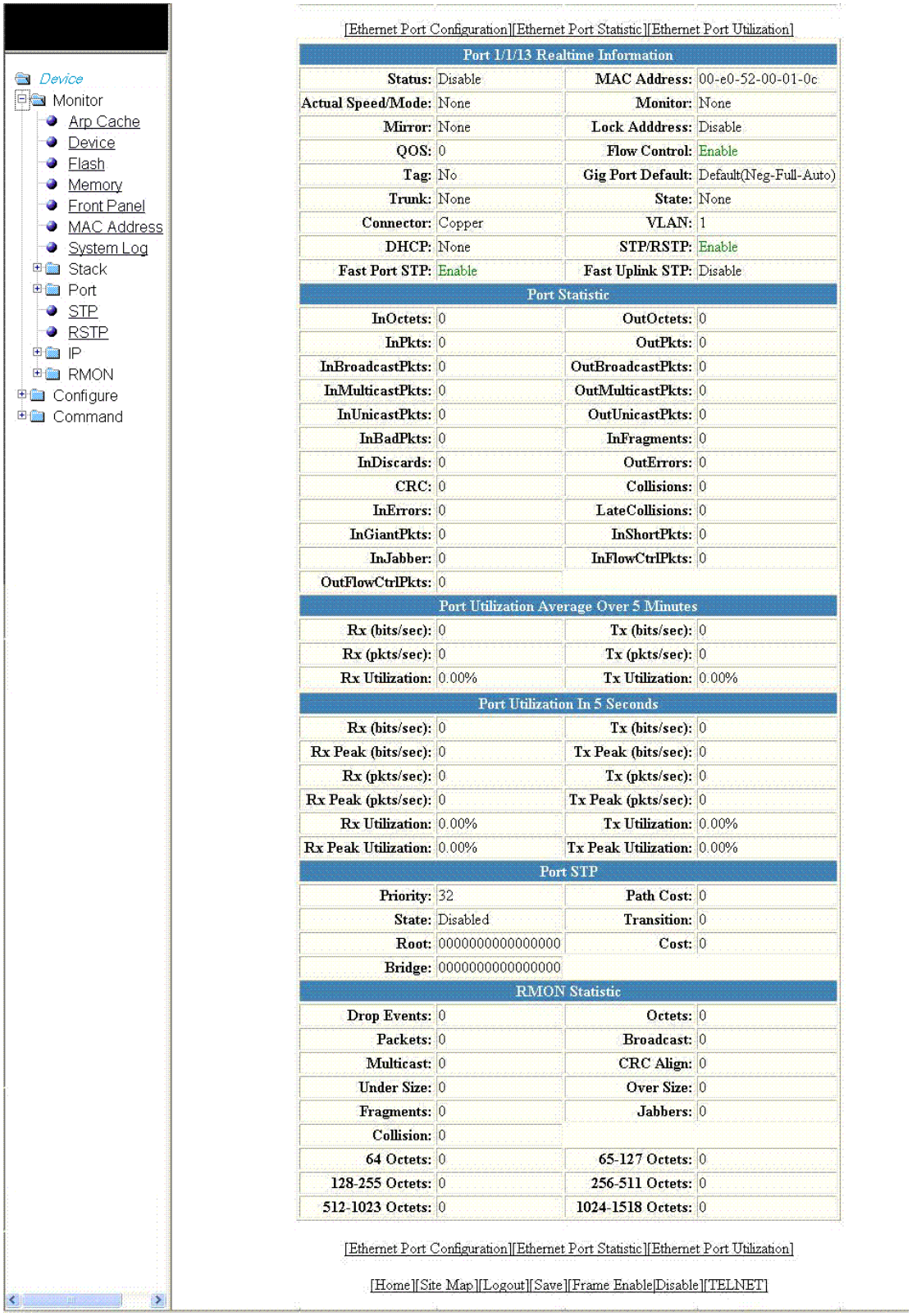
The figure below shows the front panel for the Brocade FCX 648 device.

FIGURE 12 Brocade FCX 648 front panel



Click any port to display the real-time port information for that port. The figure below shows the **Port Realtime Information** window. Clicking elsewhere on the panel opens the **Device Information** window. For more information, refer to Displaying the device information on page 22.

FIGURE 13 Monitoring the real-time port information



The **Port Realtime Information** window provides links to configure and monitor port parameters:

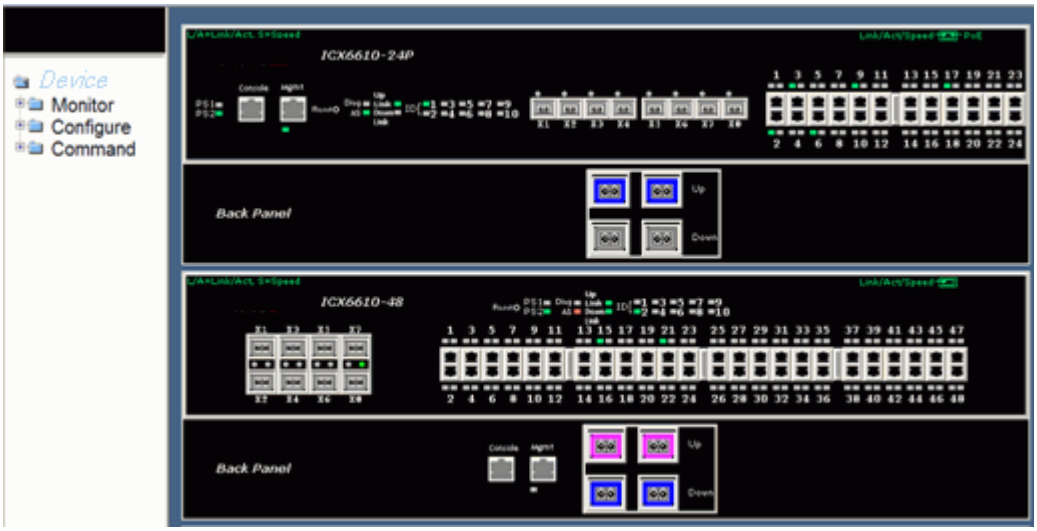
- To configure an Ethernet port, click **Ethernet Port Configuration**. For more information, refer to Configuring an Ethernet port on page 143.
- To view the total number of packets, number of collisions, and number of errors that have occurred on a port, click **Ethernet Port Statistic**. For more information, refer to Displaying Ethernet port statistics on page 51.
- To view the traffic that is received and transmitted on a port, click **Ethernet Port Utilization** . For more information, refer to Displaying Ethernet port utilization on page 55.

Displaying the front panel for the Brocade ICX 6610 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 6610 device.

FIGURE 14 Brocade ICX 6610 front panel



Displaying the front panel for the Brocade ICX 6430 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 6430-24 device.

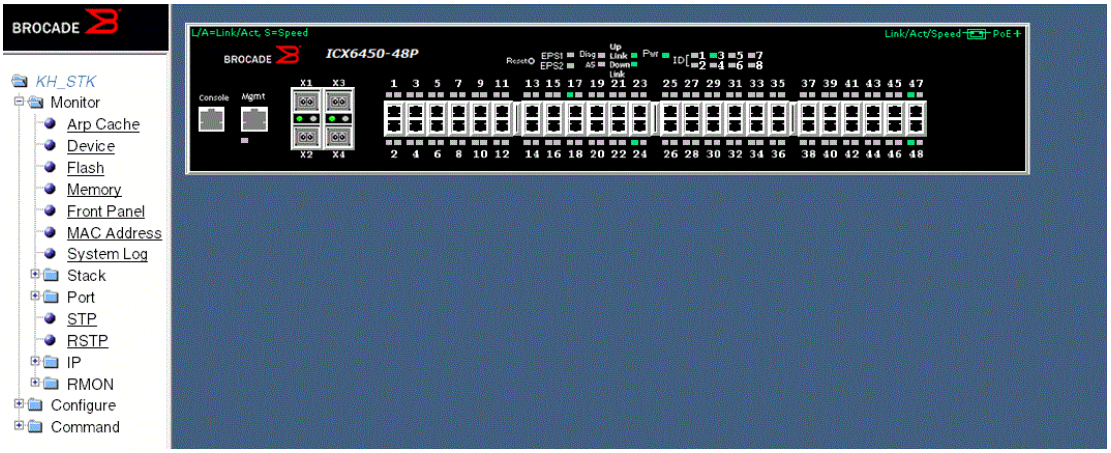
FIGURE 15 Brocade ICX 6430 front panel

Displaying the front panel for the Brocade ICX 6450 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 6450-48P device.

FIGURE 16 Brocade ICX 6450 front panel

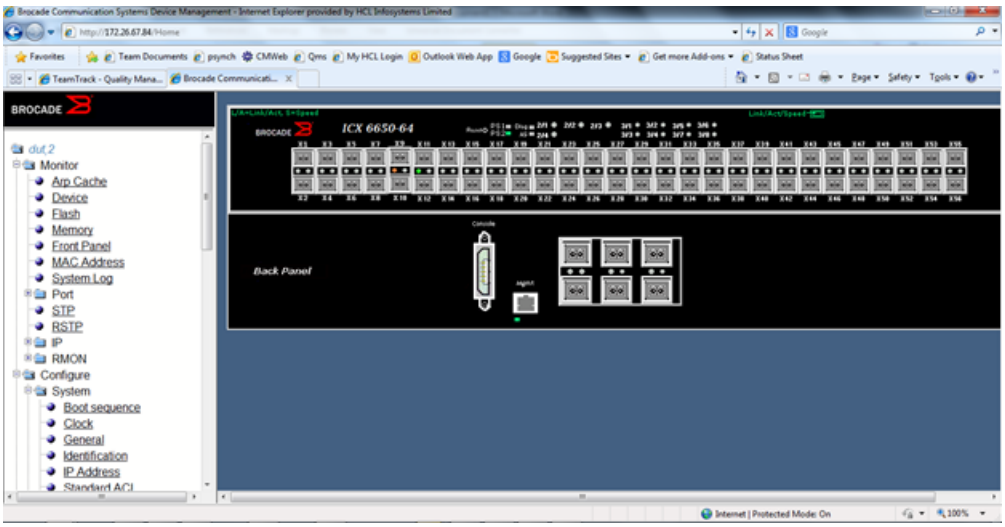


Displaying the front panel for the Brocade ICX 6650 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 6650 device.

FIGURE 17 Brocade ICX 6650 device front panel

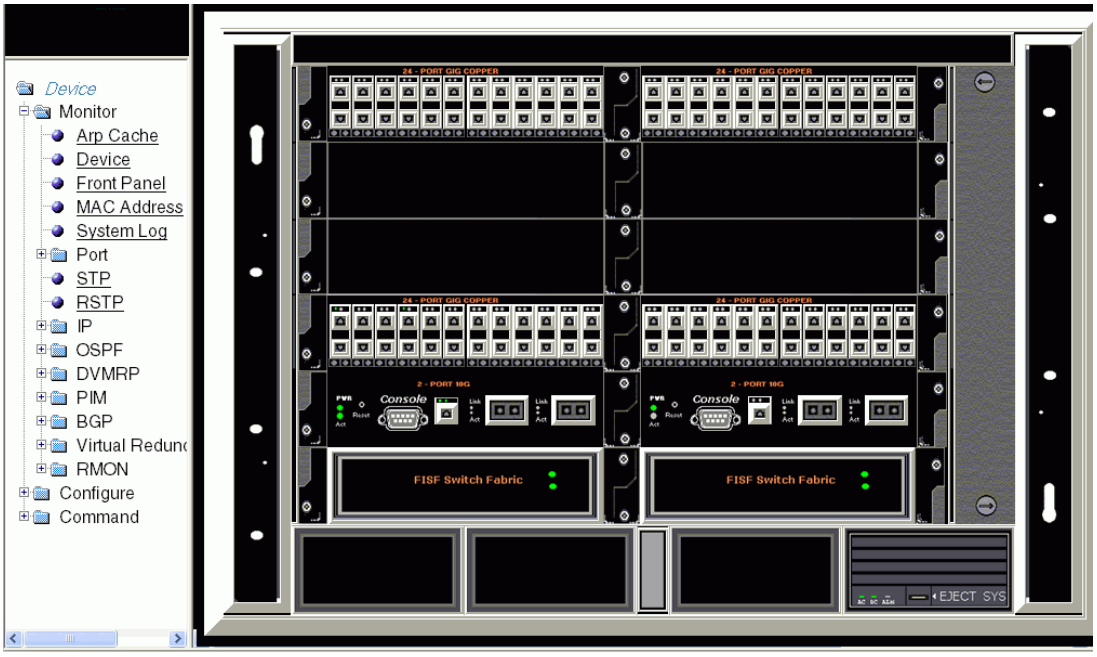


Displaying the front panel for the Brocade FastIron SX devices

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel for the Brocade FastIron SX device.

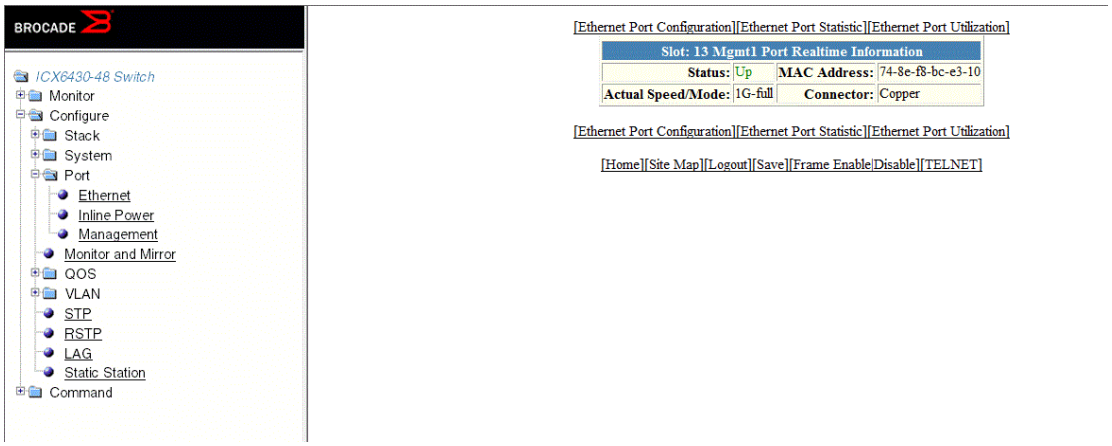
FIGURE 18 Brocade FastIron SX device front panel



You can perform the following tasks in the panel:

- Click the **Console** port to display the **Device Information** window. For more information, refer to Displaying the device information on page 22.
- Click management port to display the current management port real-time information. The figure below shows the **mgmt1 Port Realtime Information** window. For more information, refer to Displaying the management port information on page 56.
- Click any port to display the real-time port information for that port. Figure 13 on page 29 shows the **Port Realtime Information** window.
- Click elsewhere on the panel to display the **Device Information** window.

FIGURE 19 Monitoring the real-time port information of the management port

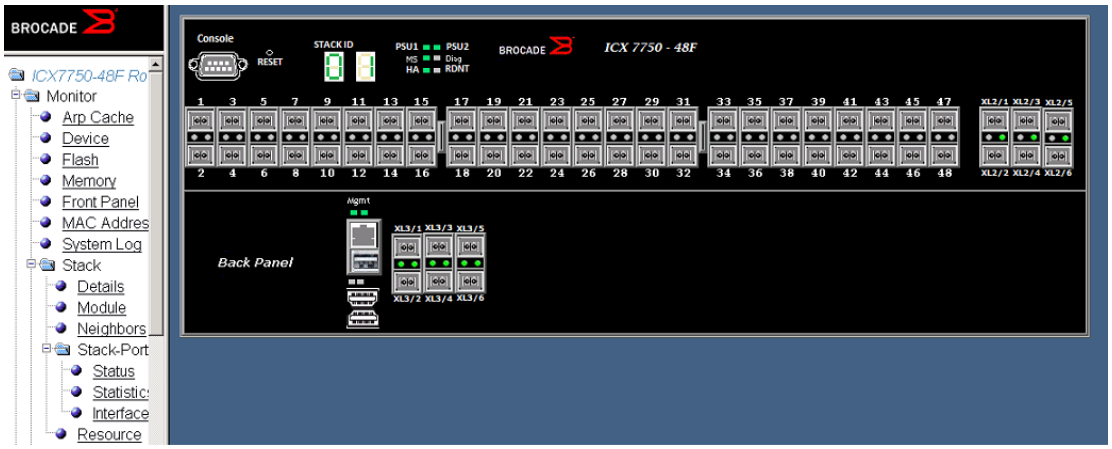


Displaying the front panel for the Brocade ICX 7750 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 7750 device.

FIGURE 20 Brocade ICX 7750 device front panel

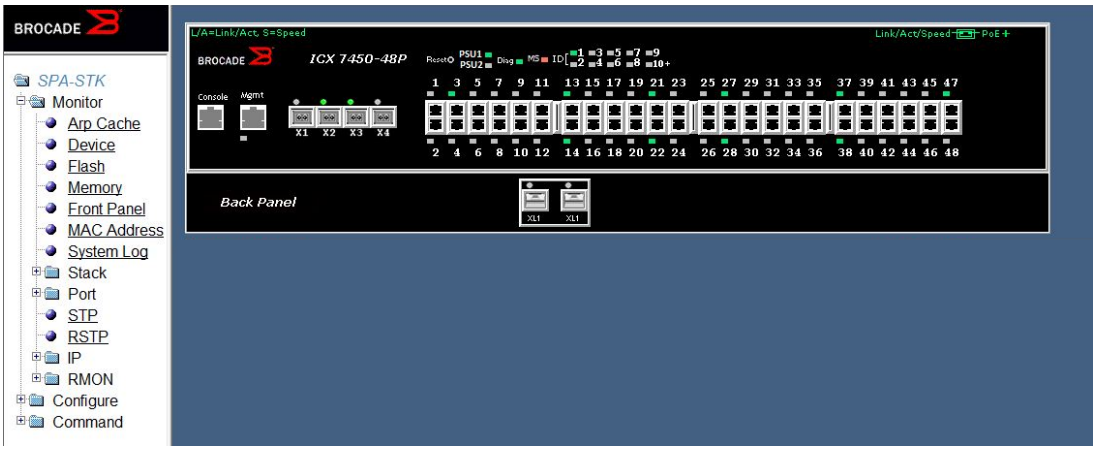


Displaying the front panel for the Brocade ICX 7450 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 7450 device.

FIGURE 21 Brocade ICX 7450 device front panel

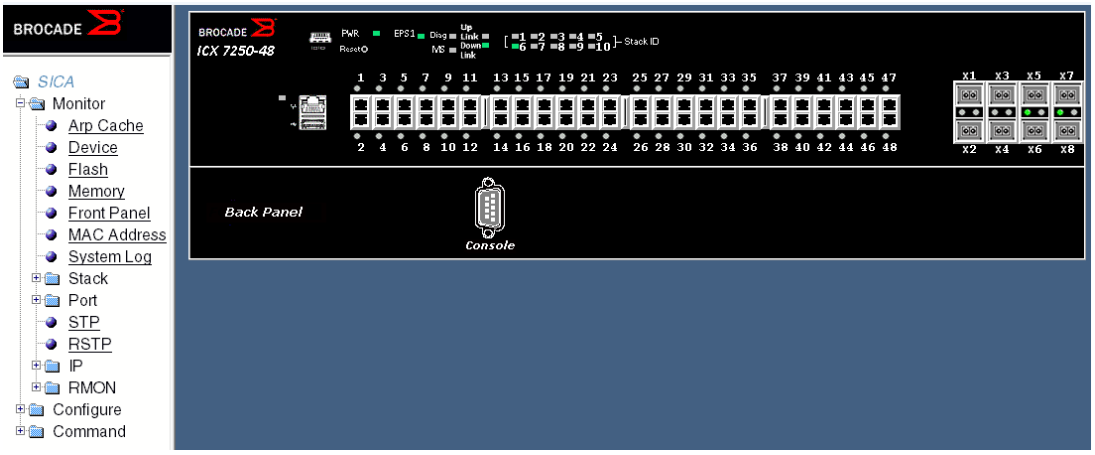


Displaying the front panel for the Brocade ICX 7250 device

To display the front panel, click **Monitor** on the left panel and select **Front Panel**.

The figure below shows the front panel of the Brocade ICX 7250-48 device.

FIGURE 22 Brocade ICX 7250 device front panel

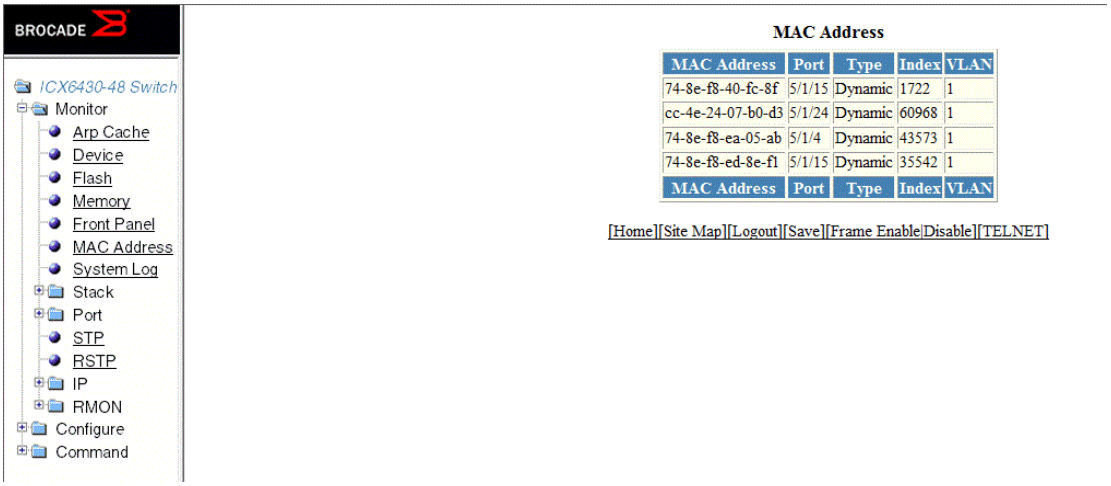


Displaying MAC addresses

To display the list of MAC addresses that have been learned by the device, click **Monitor** on the left pane and select **MAC Address**.

The **MAC Address** window is displayed as shown in the figure below.

FIGURE 23 Monitoring the MAC address



The table below describes the fields in the **MAC Address** window.

TABLE 5 Description of the fields in the **MAC Address** window

Field	Description
MAC Address	Displays the MAC address of the device.
Port	Displays the port attached to the device for which the entry was made. For dynamic entries, this is the port on which the entry was learned. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Type	Displays the type of the entry, which can be one of the following: • *Dynamic*—The MAC address changes if the Active Controller changes. • *Static*—The MAC address will not change if the Active Controller changes.
Index	Displays the index of the entry in the MAC address table.
VLAN	Displays the port-based VLAN that contains this (instance of) spanning tree. VLAN 1 is the default VLAN. If you have not configured port-based VLANs on this device, all STP information is for VLAN 1.

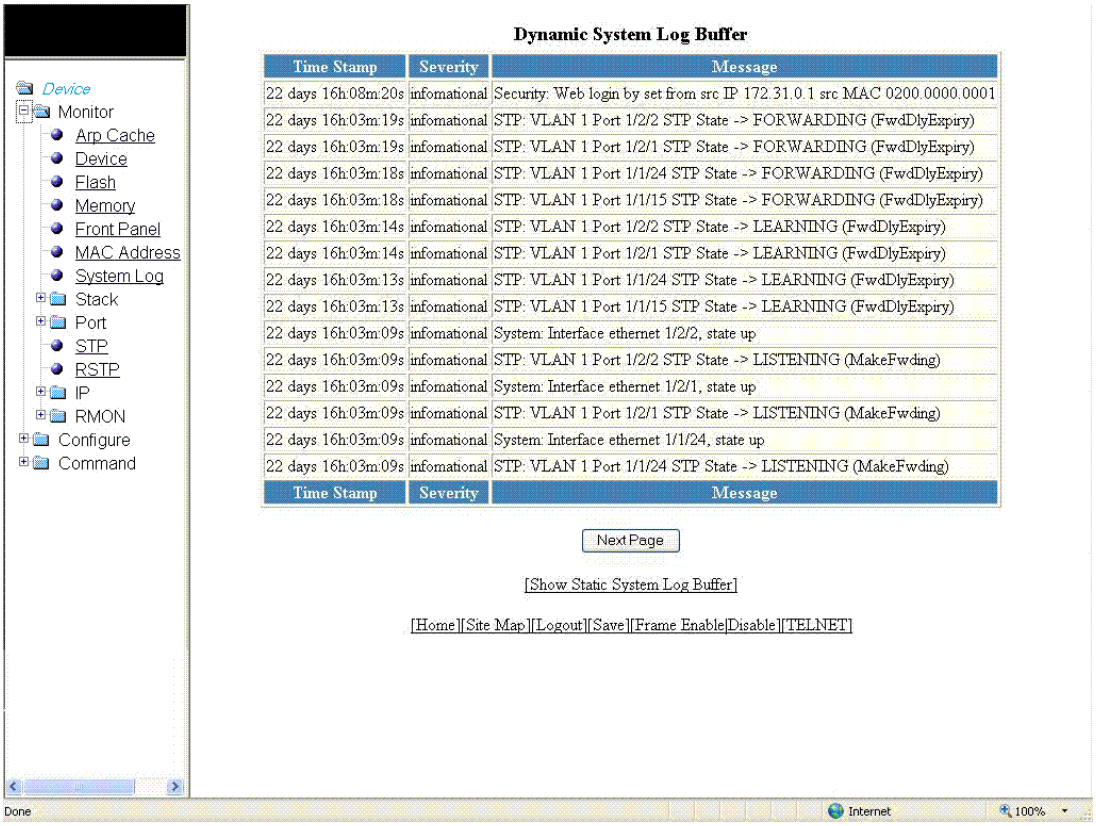
Displaying the system log

The software provides two types of system log buffers:

- Static—Logs power supply failures, fan failures, and temperature warning or shutdown messages.
- Dynamic—Logs all other message types.

To display the current information of the system log buffer, click **Monitor** on the left pane and select **System Log**.

The **Dynamic System Log Buffer** window is displayed as shown in the figure below.



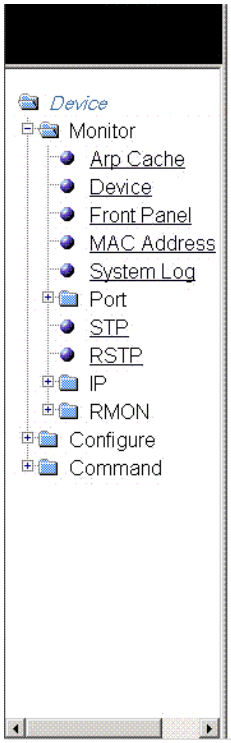
The table below describes the fields in the **Dynamic System Log Buffer** window.

TABLE 6 Description of the fields in the **Dynamic System Log Buffer** window

Field	Description
Time Stamp	Displays the system uptime in DD:HH:MM:SS or the actual time if the date and time was set.
Severity	Displays the severity of the event.
Message	Displays the description of the event.

To view the next set of the **Dynamic System Log Buffer** entries, click **Next Page**. To display the static system log buffer information, click **Show Static System Log Buffer**.

The **Static System Log Buffer** window is displayed as shown in the figure below.



Static System Log Buffer

Time Stamp	Severity	Message
00 days 00h:00m:21s	alert	System: Fan 1 (bottom row, leftmost), failed
00 days 00h:00m:21s	alert	System: Fan 2 (bottom row, middle), failed
00 days 00h:00m:21s	alert	System: Fan 3 (bottom row, rightmost), failed
00 days 00h:00m:21s	alert	System: Fan 4 (top row, leftmost), failed
00 days 00h:00m:21s	alert	System: Fan 5 (top row, middle), failed
00 days 00h:00m:21s	alert	System: Fan 6 (top row, rightmost), failed
Time Stamp	Severity	Message

[Show Dynamic System Log Buffer]

[Home][Site Map][Logout][Save][Frame Enable|Disable][TELNET]

For information on the **Static System Log Buffer** fields, refer to the table above.

Monitoring Stacks

Displaying the stack details

To display current stack details, stack port status, and stack neighbors information, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Details**.

   The **Stack Details** window is displayed in the figure below.

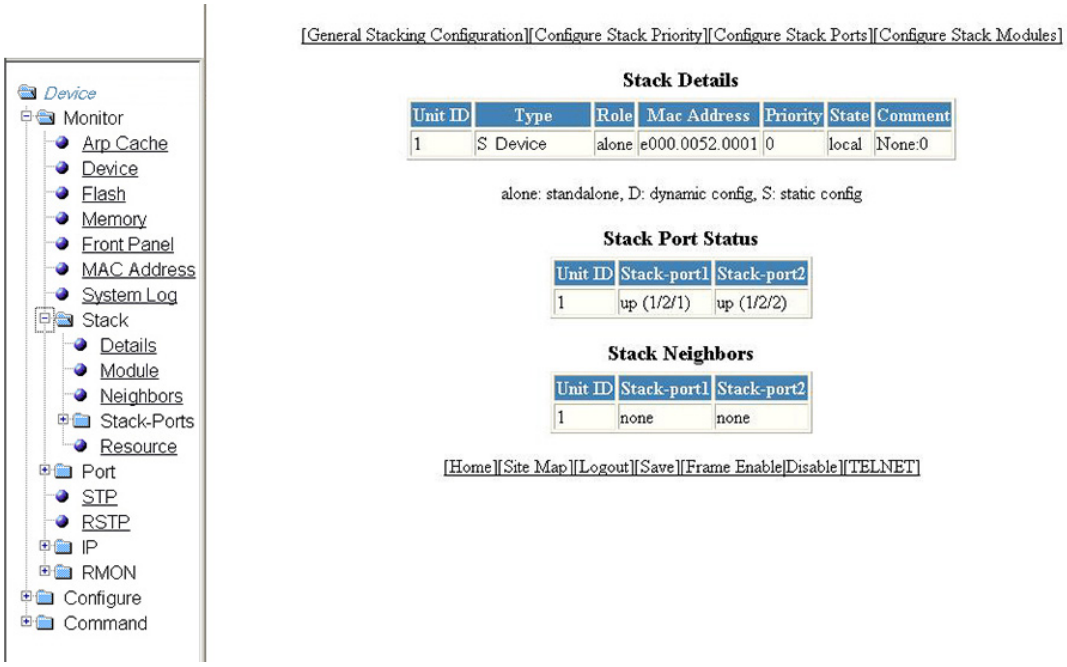


TABLE 7 Description of the fields in the **Stack Details** window

Field	Description
Stack Details parameters	
Unit ID	Displays the number of the unit within a stack.
Type	Displays the type of configuration and the device model. The types of configuration are as follows: • *alone* --Indicates that the device is operating as a standalone device. • *S* --Indicates that the configuration for this unit is static. • *D* --Indicates that the configuration for this unit is dynamic and may be overwritten by a new stack unit.
Role	Displays the role of this unit within the stack: *Active*, *Standby*, *Member*, or *alone*.
Mac Address	Displays the MAC address of the device.
Priority	Displays the priority assigned to this unit.
State	Displays the operational state of this unit: *local* or *remote*.
Comment	Displays additional information about this unit.
Stack Port Status parameters	
Unit ID	Displays the number of the unit within a stack.
Stack-port1	Displays the port state and the port number for stack-port1. The port states are as follows: • *up* --Each end is connected. • *down* --Port is configured as a stacking port, but not connected. • *none* --Port is not configured as a stacking port.
Stack-port2	Displays the port state and the port number for stack-port2. The port states are as follows: • *up* --Each end is connected. • *down* --Port is configured as a stacking port, but not connected. • *none* --Port is not configured as a stacking port.
Stack Neighbors parameters	
Unit ID	Displays the number of the unit within a stack.
Stack-port1	Displays the neighbor stack unit for stack-port1 for this unit ID.
Stack-port2	Displays the neighbor stack unit for stack-port2 for this unit ID.

The **Stack Details** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration**. For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority**. For more information, refer to the “Modifying stack priority” section.

- To configure a stack port, click **Configure Stack Ports**. For more information, refer to the “Modifying stack ports” section.
- To configure a stack module, click **Configure Stack Modules**. For more information, refer to the “Configuring a stack module” section.

Displaying a stack module

To display current information about the stack unit modules, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Module**.

The **Stack Modules** window is displayed as shown in the figure below.

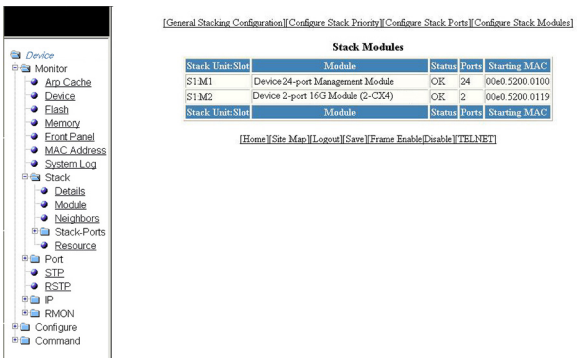


TABLE 8 Description of the fields in the **Stack Modules** window

Field	Description
Stack Unit: Slot	Displays the number of the unit within the stack and the slot number.
Module	Displays the device information, such as module number and module type.
Status	Displays the status, which can be one of the following: • *OK* **--** The module came up and is operating normally. • *CFG* --The module is configured, but does not physically exist within the units of the stack.
Ports	Displays the number of ports on the module.
Starting MAC	Displays the starting MAC address for this module.

The **Stack Modules** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration**. For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority**. For more information, refer to the “Modifying a stack priority” section.
- To configure a stack port, click **Configure Stack Ports**. For more information, refer to the “Modifying stack ports” section.
- To configure a stack module, click **Configure Stack Modules**. For more information, refer to the “Configuring Stack Components” section.

Displaying stack neighbors

To display information of the stack member neighbors, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Neighbors**.

The **Stack Neighbors** window is displayed as shown in the figure below.

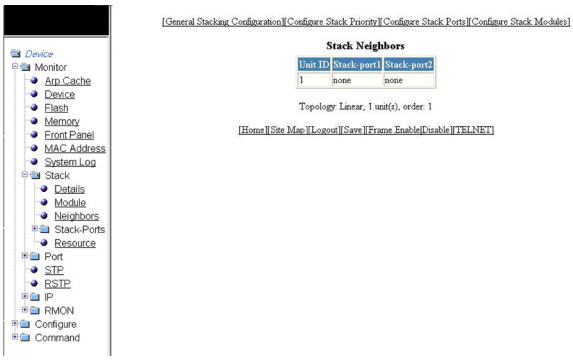


TABLE 9 Description of the fields in the **Stack Neighbors** window

Field	Description
Unit ID	Displays the number of the unit within the stack.
Stack-port1	Displays the neighbor stack unit for stack-port1 for this unit ID.
Stack-port2	Displays the neighbor stack unit for stack-port2 for this unit ID.
Topology	Displays either *Linear* or *Ring* stack topology of the connected devices.
unit(s)	Displays the number of units within the stack.
order	Displays the order of the unit IDs within the stack.

The **Stack Neighbors** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration** . For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority** . For more information, refer to the “Modifying a stack priority” section.
- To configure a stack port, click **Configure Stack Ports** . For more information, refer to the “Modifying stack ports” section.
- To configure a stack module, click **Configure Stack Modules** . For more information, refer to “Configuring a stack module” section.

Displaying stack ports information

To display the information of the stack ports, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack** .
2. Click **Stack-Ports** and then select **Status** .

The **Stack Port Status** window is displayed as shown in the figure below.

FIGURE 24 Monitoring stack port status

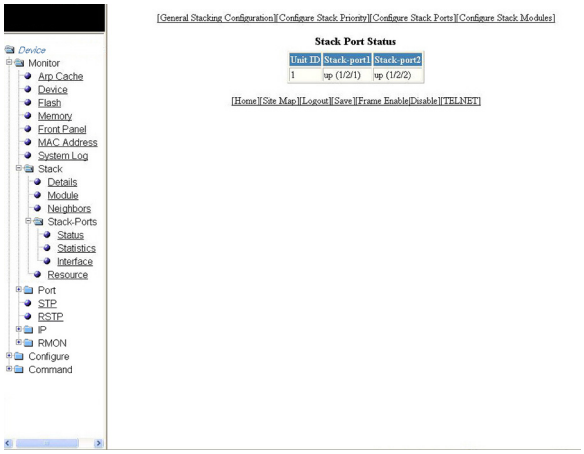


TABLE 10 Description of the fields in the **Stack Port Status** window

Field	Description
Unit ID	Displays the number of the unit within the stack.
Stack-port1	Displays the port state and the port number for stack-port1 for this unit ID. The port states are as follows: • *up* --Each end is connected. • *down* --Port is configured as a stacking port, but not connected. • *none* --Port is not configured as a stacking port. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Stack-port2	Displays the port state and the port number for stack-port2 for this unit ID. The port states are: • *up* --Each end is connected. • *down* --Port is configured as a stacking port, but not connected. • *none* --Port is not configured as a stacking port. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum

The **Stack Port Status** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration** . For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority** . For more information, refer to Modifying stack priority on page 96.

- To configure a stack port, click **Configure Stack Ports** . For more information, refer to Modifying stack ports on page 98.
- To configure a stack module, click **Configure Stack Modules** . For more information, refer to Configuring a stack module on page 99.

Displaying stack port statistics

To display stack port information for all ports in an IronStack topology, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack** .
2. Click **Stack-Ports** and then select **Statistics** .

   The **Stack Port Statistics** window is displayed as shown in the figure below.

FIGURE 25 Monitoring stack port statistics

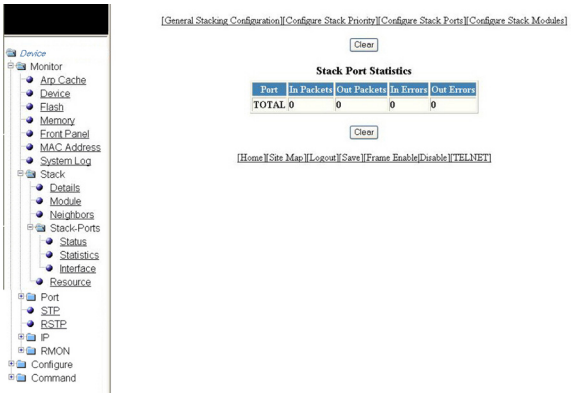


TABLE 11 Description of the fields in the **Stack Port Statistics** window

Field	Description
Port	Displays the stack identification number for this port.
In Packets	Displays the number of incoming packets on this port.
Out Packets	Displays the number of outgoing packets on this port.
In Errors	Displays the number of errors on the incoming packets on this port.
Out Errors	Displays the number of errors on the outgoing packets on this port.

To clear the information and begin a new monitoring cycle, click **Clear** . The **Stack Port Statistics** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration** . For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority** . For more information, refer to Modifying stack priority on page 96.

- To configure a stack port, click **Configure Stack Ports** . For more information, refer to Modifying stack ports on page 98.
- To configure a stack module, click **Configure Stack Modules** . For more information, refer to Configuring a stack module on page 99.

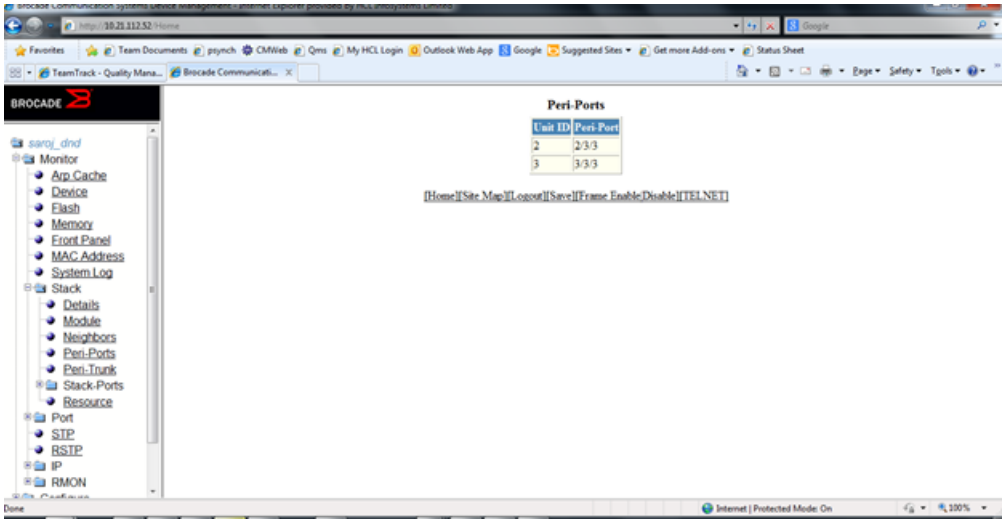
Monitoring peri-ports

To display peri-port information, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Peri-Ports**.

   The **Peri-Ports window** is displayed.

FIGURE 26 Peri-ports



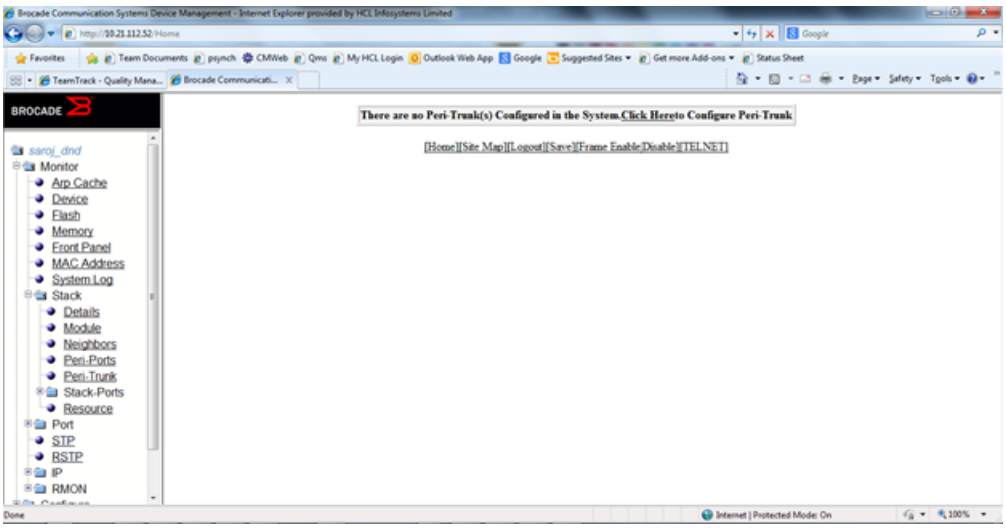
Monitoring peri-trunks

To display peri-trunk information, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Peri-Trunks**.

   The **Peri-trunks** window is displayed.

FIGURE 27 Peri-trunks



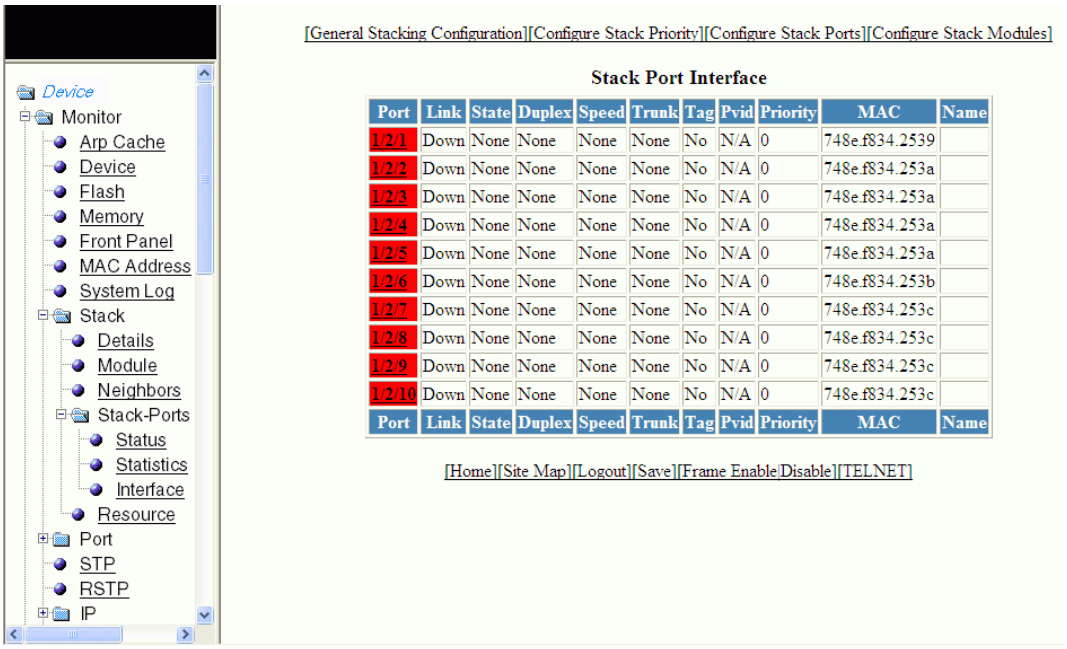
Displaying stack port interfaces

To display information about stack port interfaces, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack** .
2. Click **Stack-Ports** and then select **Interface** .

   The **Stack Port Interface** window is displayed as shown in the figure below.

FIGURE 28 Monitoring stack port interfaces



Port	Link	State	Duplex	Speed	Trunk	Tag	Pvid	Priority	MAC	Name
1/2/1	Down	None	None	None	None	No	N/A	0	748e.f834.2539	
1/2/2	Down	None	None	None	None	No	N/A	0	748e.f834.253a	
1/2/3	Down	None	None	None	None	No	N/A	0	748e.f834.253a	
1/2/4	Down	None	None	None	None	No	N/A	0	748e.f834.253a	
1/2/5	Down	None	None	None	None	No	N/A	0	748e.f834.253a	
1/2/6	Down	None	None	None	None	No	N/A	0	748e.f834.253b	
1/2/7	Down	None	None	None	None	No	N/A	0	748e.f834.253c	
1/2/8	Down	None	None	None	None	No	N/A	0	748e.f834.253c	
1/2/9	Down	None	None	None	None	No	N/A	0	748e.f834.253c	
1/2/10	Down	None	None	None	None	No	N/A	0	748e.f834.253c	
Port	Link	State	Duplex	Speed	Trunk	Tag	Pvid	Priority	MAC	Name

TABLE 12 Description of the fields in the **Stack Port Interface** window

Field	Description
Port	Displays the stack identification number for this port.
Link	Displays whether the link is up or down.
State	Displays the state of the stack unit.
Duplex	Displays whether the port is configured as half or full duplex.
Speed	Displays the port speed as 10 Mbps, 100 Mbps, or 1000 Mbps.
Trunk	Displays the trunk group number, if the port is a member of a trunk group.
Tag	Displays whether the port is tagged or untagged.
Priority	Displays the port priority.
MAC	Displays the MAC address of the port.
Name	Displays the name assigned to the port.

The **Stack Port Interface** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration** . For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority** . For more information, refer to Modifying stack priority on page 96.
- To configure a stack port, click **Configure Stack Ports** . For more information, refer to Modifying stack ports on page 98 .
- To configure a stack module, click **Configure Stack Modules** . For more information, refer to Configuring a stack module on page 99.

Displaying stack resources

To display information about stack resources, perform the following steps.

1. Click **Monitor** on the left pane and select **Stack**.
2. Click **Resource**.

   The **Stack Resource** window is displayed as shown in the figure below.

FIGURE 29 Monitoring stack resources

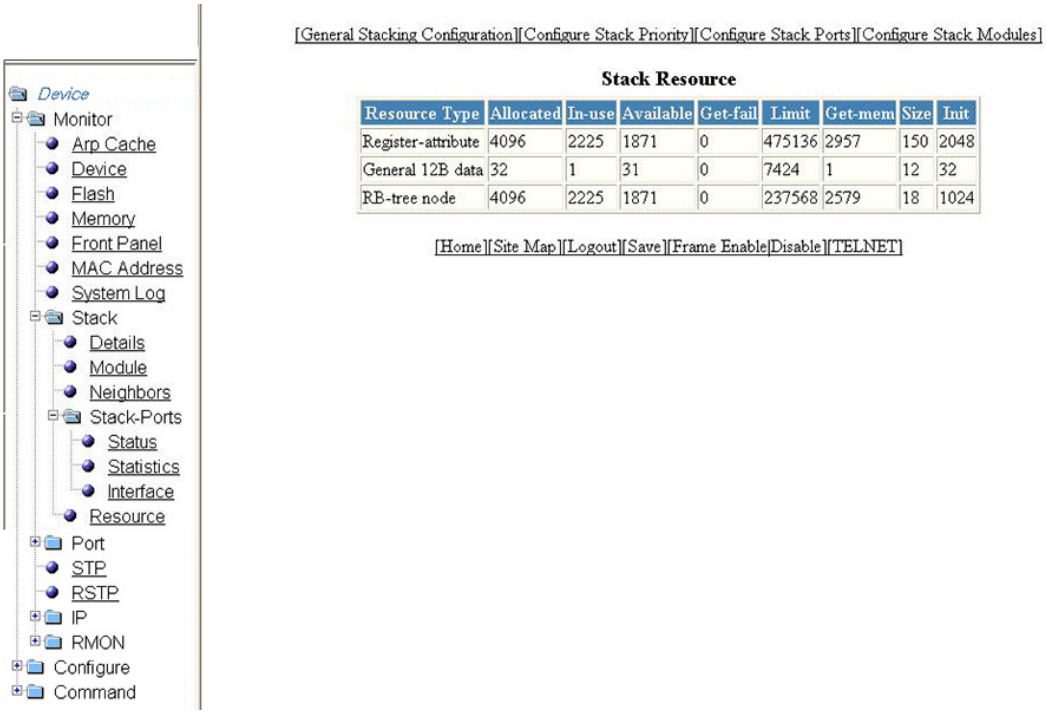


TABLE 13 Description of the fields in the **Stack Resource** window

Field	Description
Resource Type	Displays the resource type as *Register-attributes*, *General 12B data*, or *RB-tree node*.
Allocated	Displays the amount of memory allocated for the stack.
In-use	Displays the amount of memory used by the stack.
Available	Displays the amount of free memory available.
Get-fail	Displays the number of get requests that have failed.
Limit	Displays the maximum amount of memory the system could allocate for a stack.
Get-mem	Displays the number of get-memory requests.
Size	Displays the size (bytes) for each stack resource.
Init	Displays the number of requests initiated.

The **Stack Resource** window provides links to configure the stack components:

- To change the stack settings, click **General Stacking Configuration**. For more information, refer to Configuring the general settings for a traditional stack on page 95.
- To configure the priority of units within a stack, click **Configure Stack Priority**. For more information, refer to the “Modifying stack priority” section.

- To configure a stack port, click **Configure Stack Ports**. For more information, refer to the “Modifying stack ports” section.
- To configure a stack module, click **Configure Stack Modules** . For more information, refer to the “Configuring a stack module” section.

Monitoring Ports

Displaying Ethernet port statistics

The **ETHERNET Port Statistic** window lists the total number of packets, number of collisions, and number of errors that have occurred on a port. To display the Ethernet port statistics, perform the following steps.

1. Click **Monitor** on the left pane and select **Port**.
2. Click **Statistic** and then select **Ethernet**.

   The **ETHERNET Port Statistic** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.
3. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available on the **ETHERNET Port Statistic** window for the Brocade FastIron SX devices.

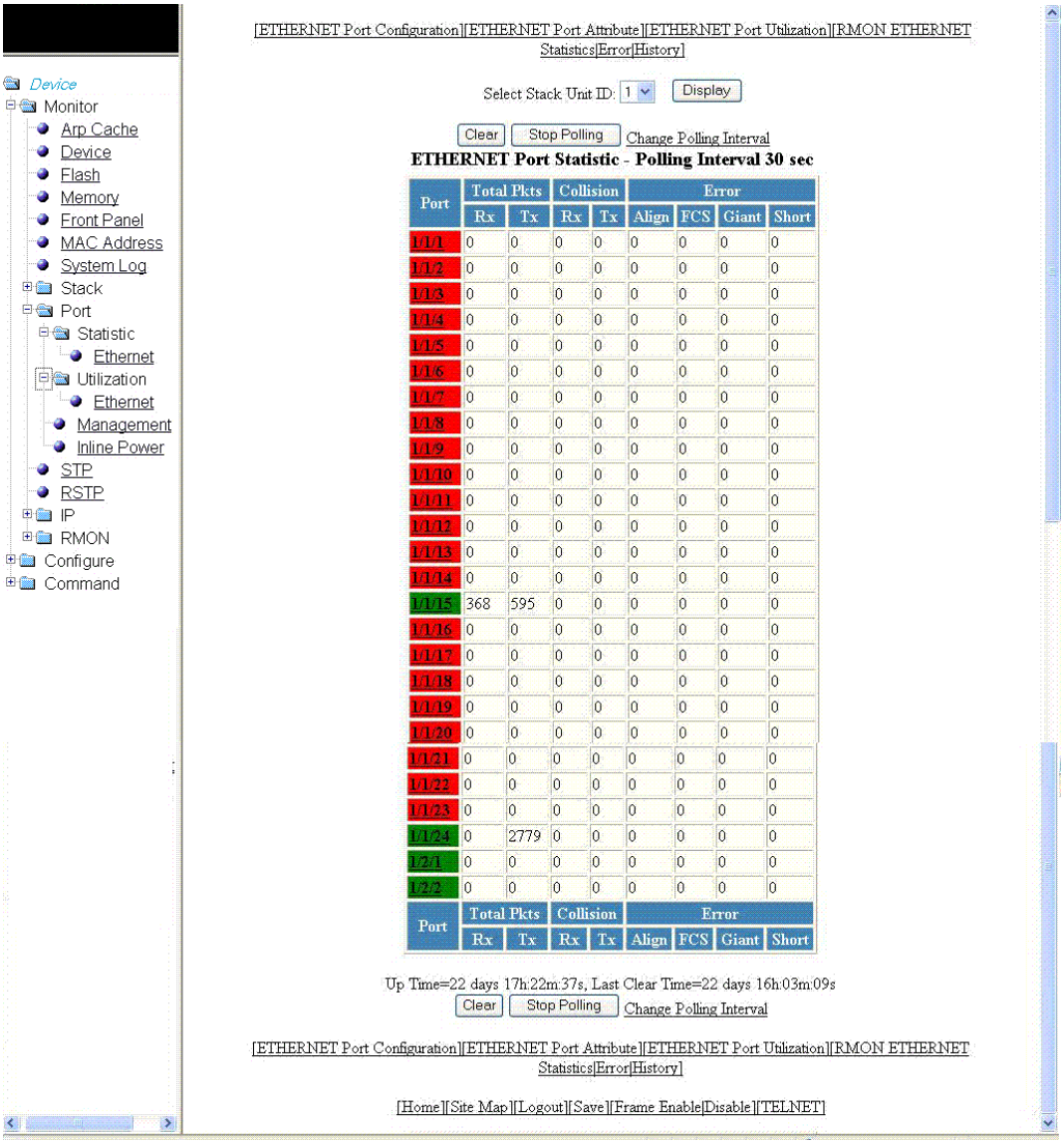


TABLE 14 Description of the fields in the **ETHERNET Port Statistic** window

Field	Description
Port	Displays the port number for which the statistics were collected.
Total Packets	Displays the total number of packets received (**Rx**) and transmitted (**Tx**) on the port.
Collision	Shows the number of received (**Rx**) and transmitted (**Tx**) collisions on the port.
Error	Displays the number of errors on the port for the following types: • *Alignment* --Packets with frame alignment errors. • *FCS* --Packets with frame check sequence errors. • *Giant* --Packets that were longer than the configured MTU. • *Short* **--** Packets that were shorter than the minimum valid length.

To remove the current data and restart the monitoring process, click **Clear**. To stop the polling process, click **Stop Polling.** You can also change the current polling interval by clicking **Change Polling Interval**.

The **ETHERNET Port Statistic** window provides links to configure the port parameters:

- To configure an Ethernet port, click **ETHERNET Port Configuration**. For more information on how to configure an Ethernet port, refer to the “Configuring an Ethernet port” section.
- To monitor the Ethernet port attributes, click **ETHERNET Port Attribute**. For more information, refer to the “Displaying Ethernet port attributes” section.
- To monitor the Ethernet port utilization, click **ETHERNET Port Utilization**. For more information, refer to the “Displaying Ethernet port utilization” section.
- To monitor Remote Monitoring (RMON) Ethernet statistics, click **RMON ETHERNET Statistics Error**. For more information, refer to the “Displaying RMON Ethernet statistics” section.
- To monitor RMON history, click **RMON ETHERNET Statistics History**. For more information, refer to the “Displaying RMON history” section.

Displaying Ethernet port attributes

The **Port Attributes** window lists the number, state, media, connector, and MAC address of the port. To display the Ethernet port attribute information, perform the following steps.

1. Click **Monitor** on the left pane and select **Port** .
2. Click **Statistic** and then select **Ethernet** .
3. Click **ETHERNET Port Attribute** on the **ETHERNET Port Statistic** window.
4. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available on the **Port Attributes** window for the Brocade FastIron SX devices.

The **Port Attributes** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.

FIGURE 30 Monitoring Ethernet port attributes

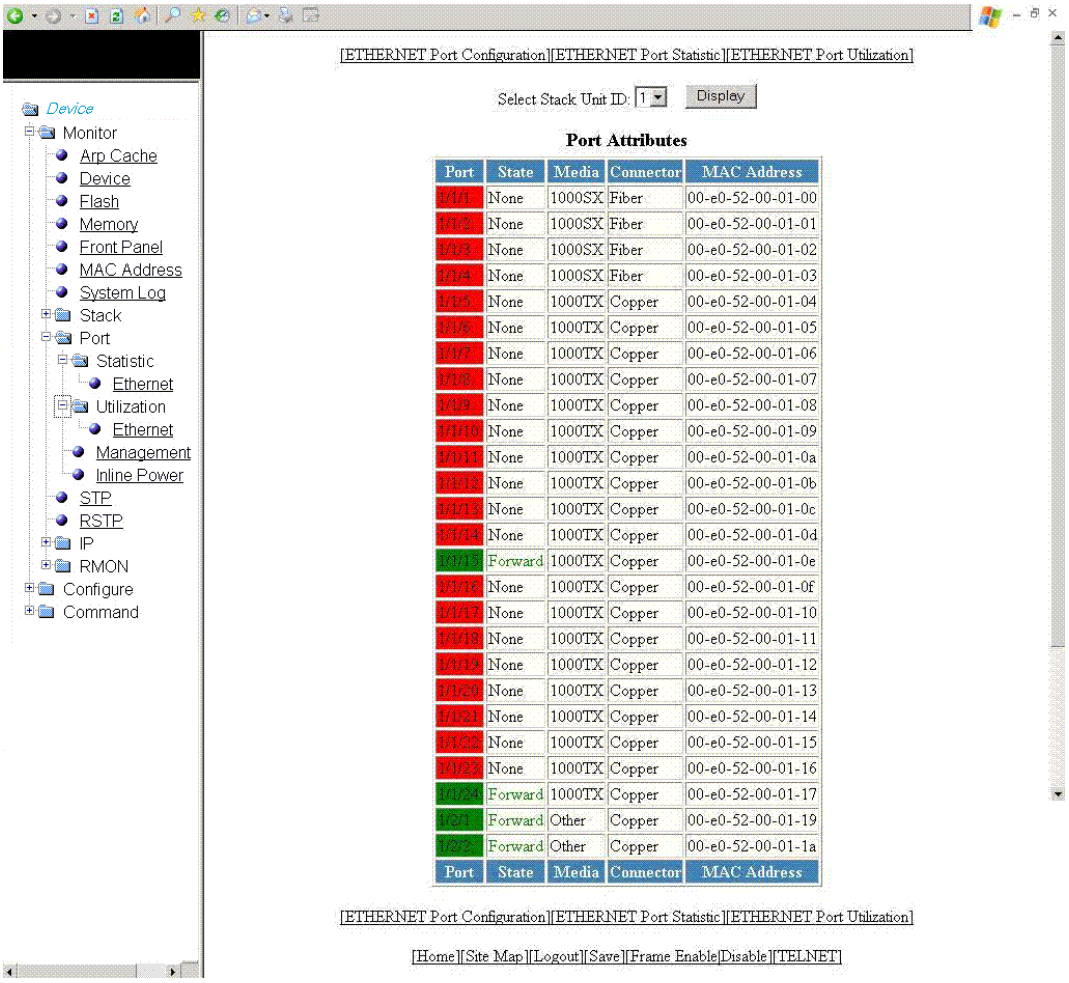


TABLE 15 Description of the fields in the **Port Attributes** window

Field	Description
Port	Displays the port number.
State	Displays the status of the port.
Media	Displays the type of the Ethernet cable used.
Connector	Displays the physical type of connector.
MAC Address	Displays the Media Access Control (MAC) address of the port.

The **Port Attributes** window provides links to configure the port parameters:

- To configure an Ethernet port, click **ETHERNET Port Configuration** . For more information on how to configure an Ethernet port, refer to Configuring an Ethernet port on page 143.
- To monitor the Ethernet port statistics, click **ETHERNET Port Statistic** . For more information, refer to Displaying Ethernet port statistics on page 51.
- To monitor the Ethernet port utilization, click **ETHERNET Port Utilization** . For more information, refer to Displaying Ethernet port utilization on page 55.

Displaying Ethernet port utilization

The **ETHERNET Port Utilization** window lists the traffic that is received and transmitted on a port. To display the Ethernet port utilization information, perform the following steps.

1. Click **Monitor** on the left pane and select **Port**.
2. Click **Utilization** and then select **Ethernet**.

   The **ETHERNET Port Utilization** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.
3. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available on the **ETHERNET Port Utilization** window for the Brocade FastIron SX devices.

FIGURE 31 Ethernet port utilization

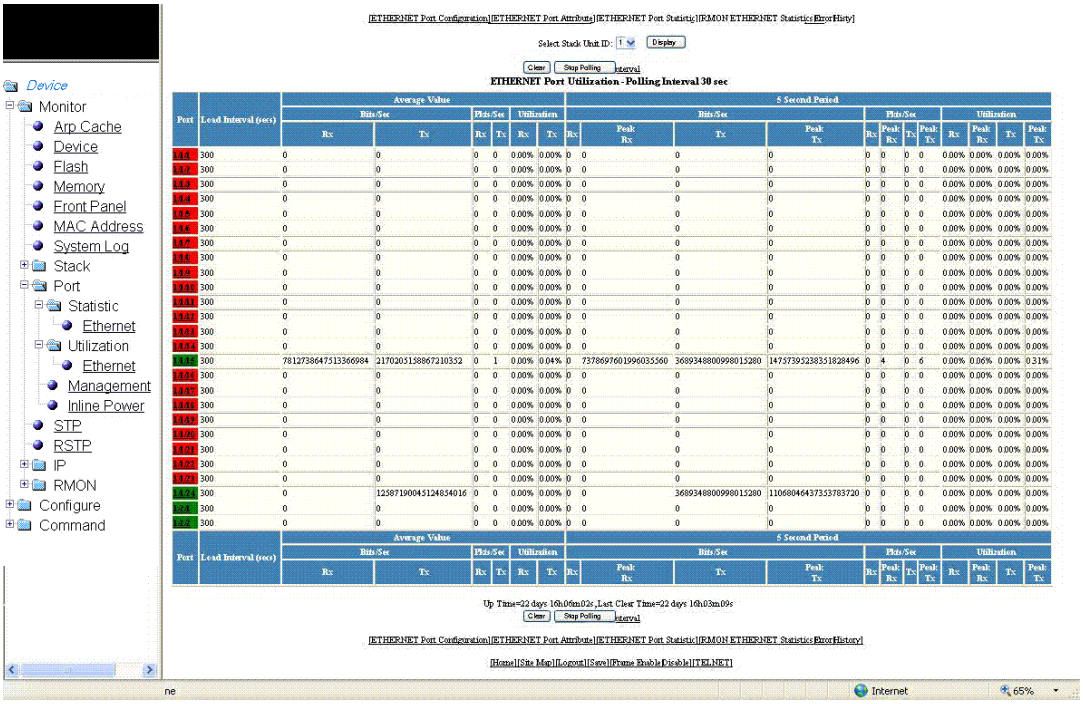


TABLE 16 Description of the fields in the **ETHERNET Port Utilization** window

Field	Description
Port	Displays the port number. Each entry has a link to detailed information about the port.
Load Interval (secs)	Displays the number of seconds for which average port utilization should be calculated. This object can have a value from 30 through 300, in 30-second increments. The default value is 300 seconds.
Average Value	Displays the following information: • *Bits/Sec* --The average number of bits per second received and transmitted on the port. • *Pkts/Sec* --The average number of packets per second received and transmitted on the port. • *Utilization* **--** The average percent utilization received and transmitted on the port.
5 Second Period	This set of columns show the number of bits per second (**Bits/Sec**), number of packets per second (**Pkts/Sec**), and utilization percentages (**Utilization**) received and transmitted on a port at each 5-second interval. Peak activities for each category are also provided.

To remove the current data and restart the monitoring process, click **Clear** . To stop the statistics polling process, click **Stop Polling.** You can also change the current polling interval by clicking **Change Polling Interval** .

The **ETHERNET Port Utilization** window provides links to configure the port parameters:

- To configure an Ethernet port, click **ETHERNET Port Configuration**. For more information on how to configure an Ethernet port, refer to Configuring an Ethernet port on page 143.
- To monitor the Ethernet port attributes, click **ETHERNET Port Attribute**. For more information, refer to the “Displaying Ethernet port attributes” section.
- To monitor the Ethernet port statistics, click **ETHERNET Port Statistic**. For more information, refer to the “Displaying Ethernet port statistics” section.
- To monitor Remote Monitoring (RMON) statistics, click **RMON ETHERNET Statistics Error**. For more information, refer to the “Displaying RMON Ethernet statistics” section.
- To monitor RMON history, click **RMON ETHERNET Statistics History** . For more information, refer to the “Displaying RMON history” section.

Displaying the management port information

To display the current management port configuration information, perform the following steps.

1. Click **Monitor** on the left pane and select **Port**.
2. Click **Management**.

   The **Management Port Configuration** window is displayed as shown in the figure below.

FIGURE 32 Management port configuration

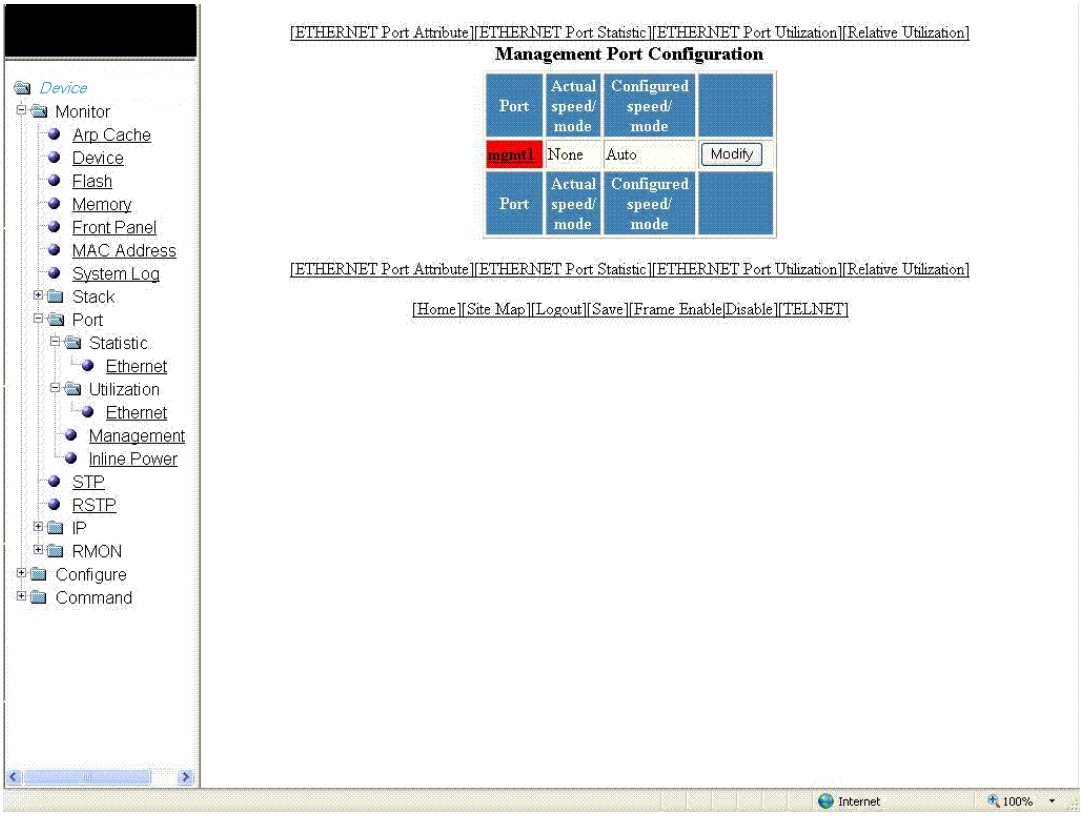


TABLE 17 Description of the fields in the **Management Port Configuration** window

Field	Description
Port	Displays the name of the management port. Each entry has a link to detailed real-time information about the port. Refer to the “Displaying the management port real-time information” section.
Actual speed/mode	Shows whether the actual speed matches the configured speed. If the configured speed is set to *Auto*, then the speed is set by the software.
Configured speed/mode	The speed duplex set for the port.

To configure a management port or change the configuration of a current management port, click **Modify**. For more information, refer to the “Configuring a management port” section.

The **Management Port Configuration** window provides links to configure the port parameters:

- To monitor the Ethernet port attributes, click **ETHERNET Port Attribute**. For more information, refer to the “Displaying Ethernet port attributes” section.
- To monitor the Ethernet port statistics, click **ETHERNET Port Statistic**. For more information, refer to the “Displaying Ethernet port statistics” section.
- To monitor the Ethernet port utilization, click **ETHERNET Port Utilization**. For more information, refer to the “Displaying Ethernet port utilization” section.
- To configure the port uplink utilization list, click **Relative Utilization**. For more information, refer to the “Configuring the port uplink relative utilization” section.

Displaying the management port real-time information

To display the real-time information of a port, click on the management port (for example, **mgmt1**).

The **Port Realtime Information** window is displayed as shown in the figure below.

FIGURE 33 Monitoring management port real-time information

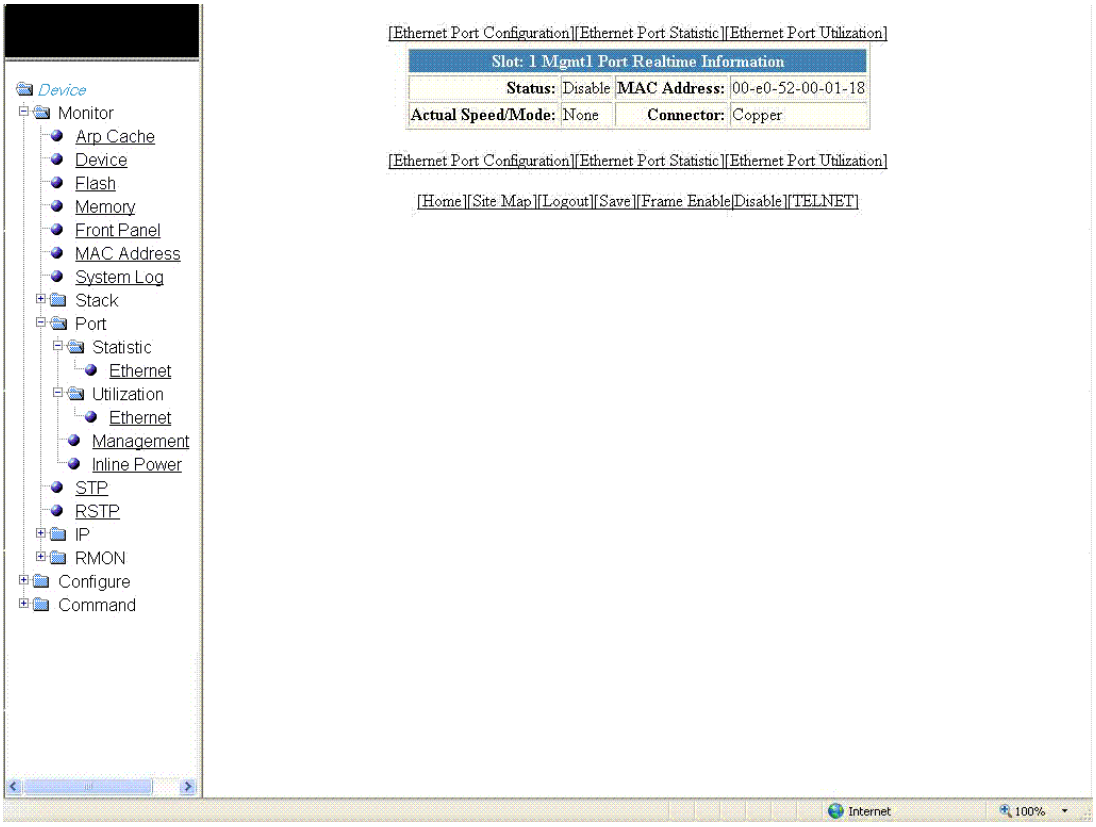


TABLE 18 Description of the fields in the **Port Realtime Information** window

Field	Description
Status	Displays the status of the port.
MAC Address	Displays the MAC address of the port.
Actual Speed/Mode	Shows whether the actual speed matches the configured speed. If the configured speed is set to Auto, then the speed is set by the software.
Connector	Displays the physical type of connector.

The **Port Realtime Information** window provides links to configure the port parameters:

- To configure an Ethernet port, click **ETHERNET Port Configuration**. For more information on how to configure an Ethernet port, refer to the “Configuring an Ethernet port” section.
- To monitor the Ethernet port statistics, click **ETHERNET Port Statistic**. For more information, refer to the “Displaying Ethernet port statistics” section.
- To monitor the Ethernet port utilization, click **ETHERNET Port Utilization**. For more information, refer to the “Displaying Ethernet port utilization” section .

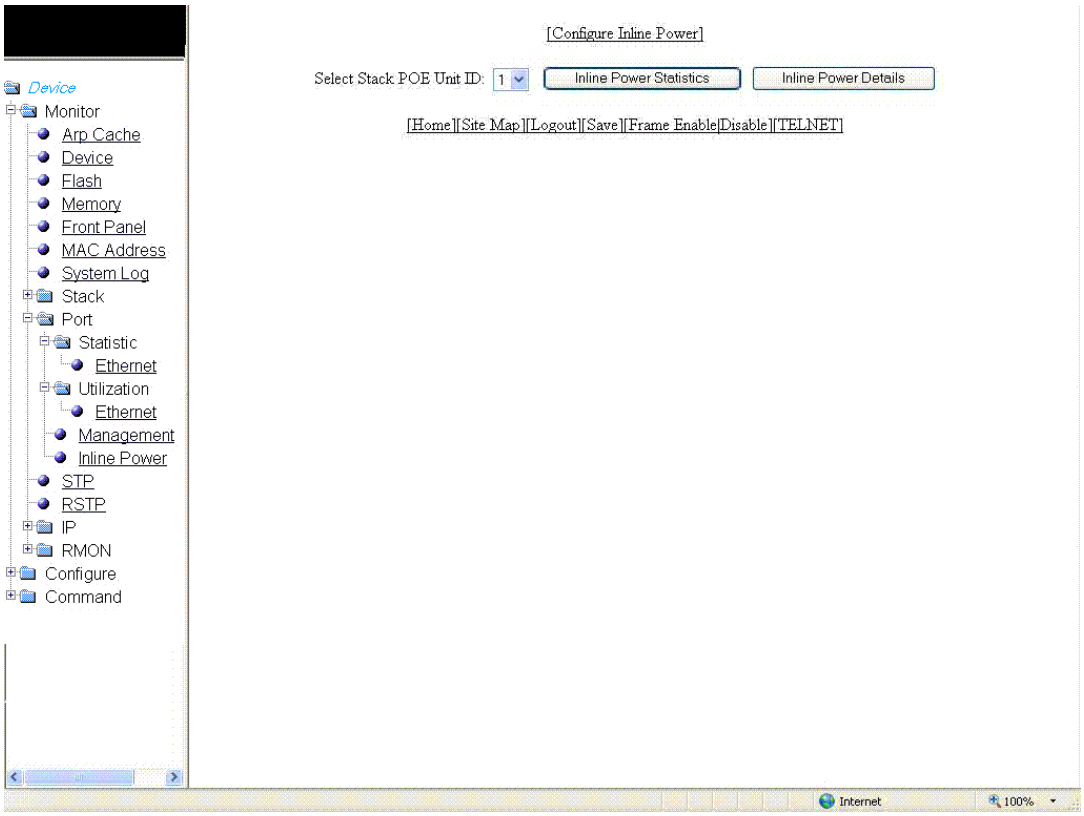
Displaying port inline power for the Brocade FCX and Brocade ICX devices

The port inline power statistics allow you to monitor Power over Ethernet (PoE), the ability to transfer electrical power and data to remote devices over standard twisted-pair cable in an Ethernet network. To display the inline power statistics for a PoE stack device, perform the following steps.

1. Click **Monitor** on the left pane and select **Port**.
2. Click **Inline Power**.

   The port inline power window is displayed.
3. Select a unit ID in the **Select Stack POE Unit ID** list and click either **Inline Power Statistics** or **Inline Power Details**.

FIGURE 34 Monitoring inline power



NOTE
Only PoE-capable units are displayed in the **Select Stack POE Unit ID** list. If there are no PoE units, you will receive `No units with POE modules` as an error message.

Displaying inline power statistics

To display the inline power statistics, select the unit ID in the **Select Stack POE Unit ID** list and click **Inline Power Statistics** .

The **Inline Power Statistics** window is displayed as shown in the figure below.

FIGURE 35 Monitoring inline power statistics

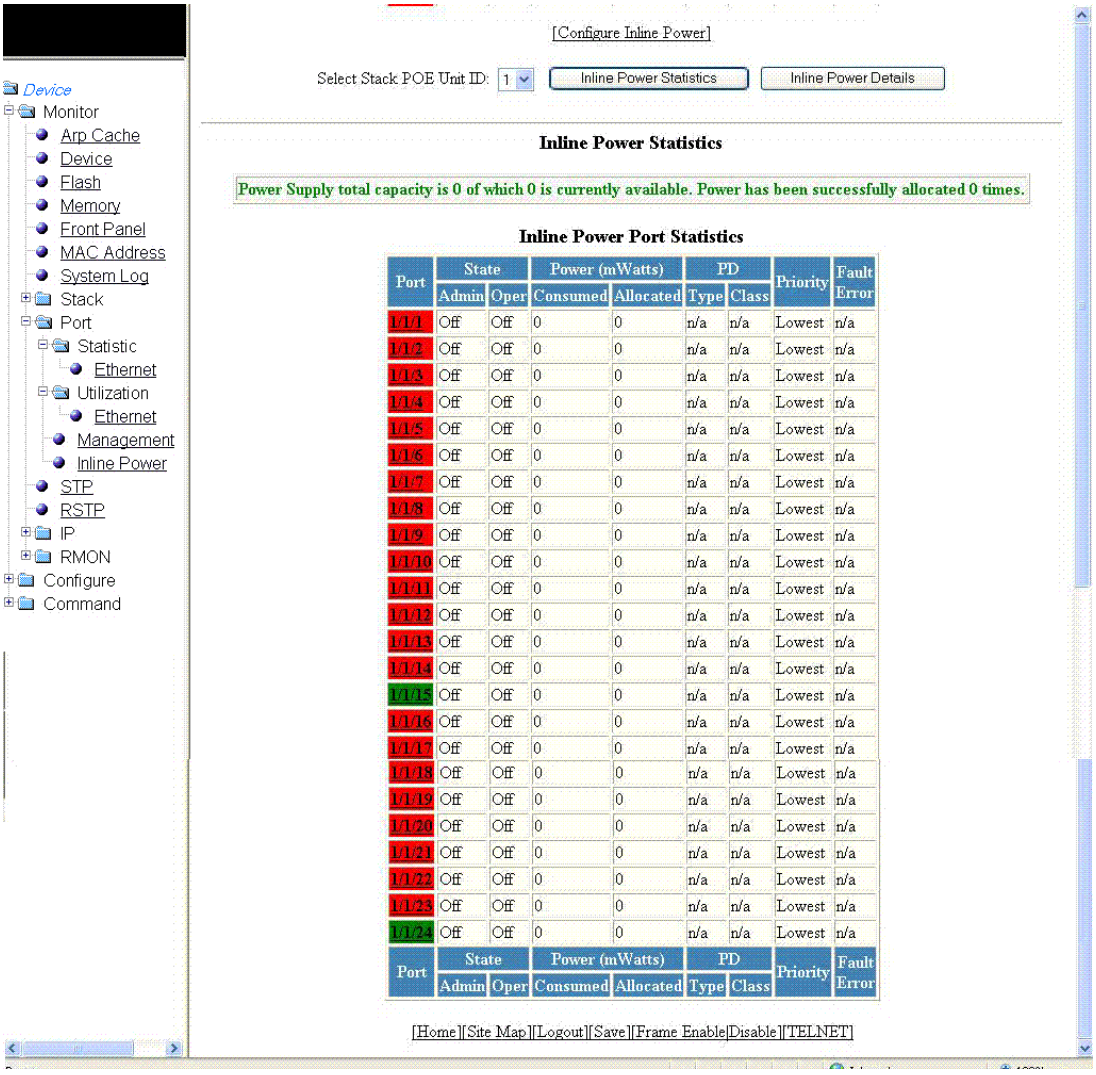


TABLE 19 Description of the fields in the **Inline Power Statistics** window

Field	Description
Port	Displays the stack port identification of the port as stack#/slot#/port#.
State: Admin	Specifies whether PoE has been enabled on the port, using one of the following values: • *ON* --The inline power command was issued on the port. • *OFF* --The inline power command has not been issued on the port.
State: Oper	Displays the status of inline power on the port, using one of the following values: • *ON* --The PoE power supply is delivering inline power to the powered device. • *OFF* --The PoE power supply is not delivering inline power to the powered device. • *DENIED* --The port is in standby mode waiting for power because currently there is not enough available power for the port.
Power (mWatts) Consumed	Displays the amount of current (milliwatts) the powered device is consuming.
Power (mWatts) Allocated	Displays the amount of current (milliwatts) allocated to the port. This value is either the default or configured maximum power level, or the power class that was automatically detected.
PD Type	Displays the type of powered device connected to the port. This value can be one of the following: • *802.3at* --The PD connected to this port is 802.3at-compliant. • *802.3af* --The PD connected to this port is 802.3af-compliant. • *LEGACY* --The powered device connected to this port is a legacy product (not 802.3af-compliant). • *n/a*-- One of the following is true: - The device connected to this port is a non-powered device. - No device is connected to this port. - The port is in standby or denied mode (waiting for power).
PD Class	Displays the maximum amount of power received by a powered device. This value can be one of the following: • *Class1* --Receives 4 watts maximum. • *Class2* --Receives 7 watts maximum. • *Class3* --Receives 15.4 watts maximum. • *Class 4* --Receives 30 watts maximum. • *n/a* --The device attached to the port cannot advertise its class.
Priority	Displays the inline power priority of the port, which determines the order in which the port receives power while in standby mode (waiting for power). Ports with a higher priority receive power before ports with a low priority. The value of priority can be one of the following: • *1* --Critical priority • *2* --High priority • *3* --Low priority

TABLE 19 Description of the fields in the **Inline Power Statistics** window (Continued)

Field	Description
Fault Error	Displays the fault or error that occurred on the port, if applicable. Otherwise, *n/a* is displayed. The value can be one of the following: • *critical temperature* --The PoE chip temperature limit rose above the safe operating level, thereby powering down the port. • *detection failed* --The port failed capacitor detection (legacy PD detection) because of a discharged capacitor. This can occur when connecting a non-PD on the port. • *detection failed* --The port failed capacitor detection (legacy PD detection) because of an out-of-range capacitor value. This can occur when connecting a non-PD on the port. • *internal h/w fault* --A hardware problem has hindered port operation. • *lack of power* --The port has shut down due to lack of power. • *main supply voltage high* --The voltage was higher than the maximum voltage limit, thereby tripping the port. • *main supply voltage low* --The voltage was lower than the minimum voltage limit, thereby tripping the port. • *overload state* --The PD consumed more power than the maximum limit configured on the port, based on the default configuration, user configuration, or CDP configuration. • *over temperature* --The port temperature rose above the temperature limit, thereby powering down the port. • *PD DC fault* --A succession of underload and overload states, or a PDDC/DC fault, caused the port to shutdown. • *short circuit* --A short circuit was detected on the port delivering power. • *underload state* --The PD consumes less power than the minimum limit specified in the 802.3af standard. • *voltage applied from ext src* --The port failed capacitor detection (legacy PD detection) because the voltage applied to the port was from an external source.

Displaying inline power details

To display the inline power details, select the unit ID in the **Select Stack POE Unit ID** list and click **Inline Power Details** .

The **Inline Power Details** window is displayed as shown in the figure below.

FIGURE 36 Monitoring inline power details

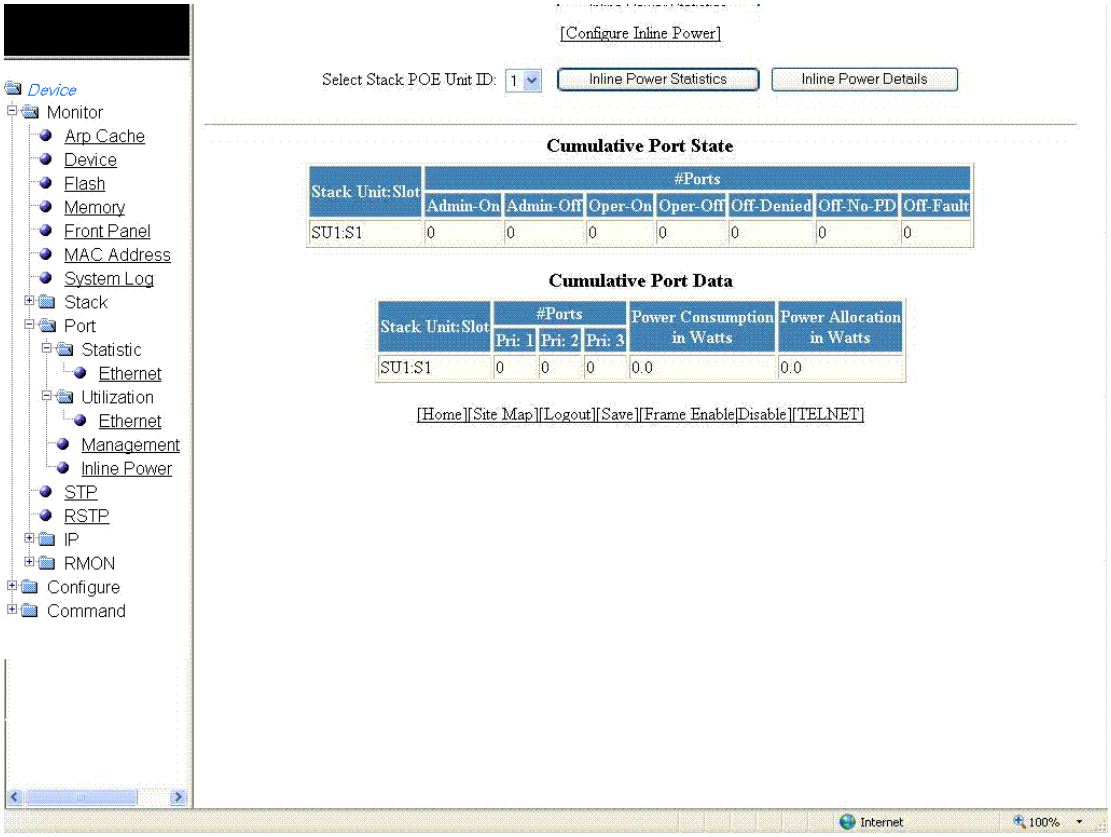


TABLE 20 Description of the fields in the **Inline Power Details** window

Field	Description
Cumulative Port State parameters	
Stack Unit: Slot	Displays the stack ID and slot ID (1 or 2). The PoE-capable slots are available on PoE stack units.
# Ports Admin-On	Displays the number of ports on the interface module on which the inline power was configured.
# Ports Admin-Off	Displays the number of ports on the interface module on which the inline power was not configured.
# Port Oper-On	Displays the number of ports on the interface module that are receiving inline power from the PoE power supply.
# Port Oper-Off	Displays the number of ports on the interface module that are not receiving inline power from the PoE power supply.
# Ports Off-Denied	Displays the number of ports on the interface module that were denied power because of insufficient power.

TABLE 20 Description of the fields in the **Inline Power Details** window (Continued)

Field	Description
# Ports Off No-PD	Displays the number of ports on the interface module to which no powered devices (PDs) are connected.
# Ports Off-Fault	Displays the number of ports on the interface module that are not receiving power because of a subscription overload.
Cumulative Port Data parameters	
Stack Unit: Slot	Displays the stack ID and slot ID (1 or 2). The PoE-capable slots are available on PoE stack units.
# Ports	Displays the total number of available ports in each level of priority.
Power Consumption in Watts	Displays the total number of watts consumed by both PoE power-consuming devices and the PoE module (daughter card) attached to the interface module.
Power Allocation in Watts	Displays the number of watts allocated to the interface module PoE ports. This value is the sum of port default or configured maximum power levels, or power classes automatically detected by the PoE device.

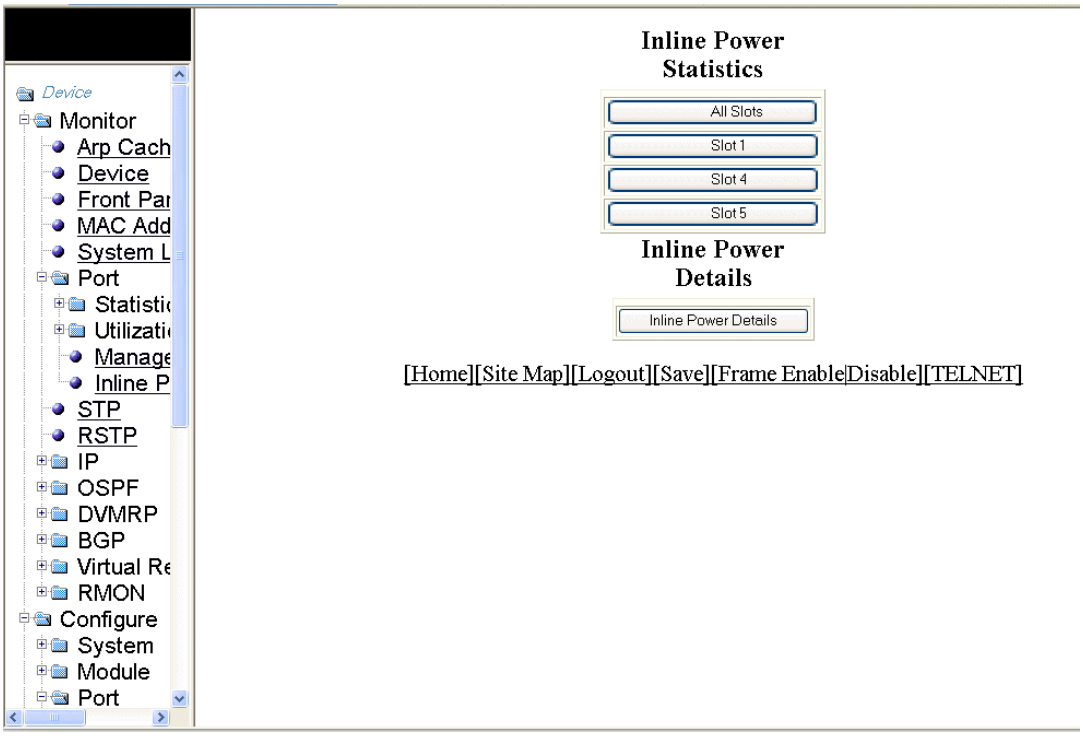
Displaying port inline power for the Brocade FastIron SX devices

To display the inline power statistics for a Brocade FastIron SX device, perform the following steps.

1. Click **Monitor** on the left pane and select **Port**.
2. Click **Inline Power**.

   The port inline power window is displayed.

FIGURE 37 Monitoring inline power



3. Click **All Slots** to display the inline power statistics of all the slots.
4. Click **Slot 1**, **Slot 4**, or **Slot 5** to display the inline power statistics for the individual slot.
5. Click **Inline Power Details** to display detailed operational information about the PoE power supplies.

Monitoring STP

Displaying STP information

Brocade Layer 2 switches and Layer 3 switches support standard Spanning Tree Protocol (STP) as described in the IEEE 802.1D specification. By default, STP is enabled on Layer 2 switches and disabled on Layer 3 switches. To display the STP information, perform the following steps.

1. Click **Monitor** on the left pane and select **STP** .

   By default, STP is disabled on Layer 3 switches and therefore the message `STP is disabled. Go to system to enable STP` is displayed.

2. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the STP window for the Brocade FastIron SX devices.

The STP window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.

FIGURE 38 Monitoring the STP bridge and port

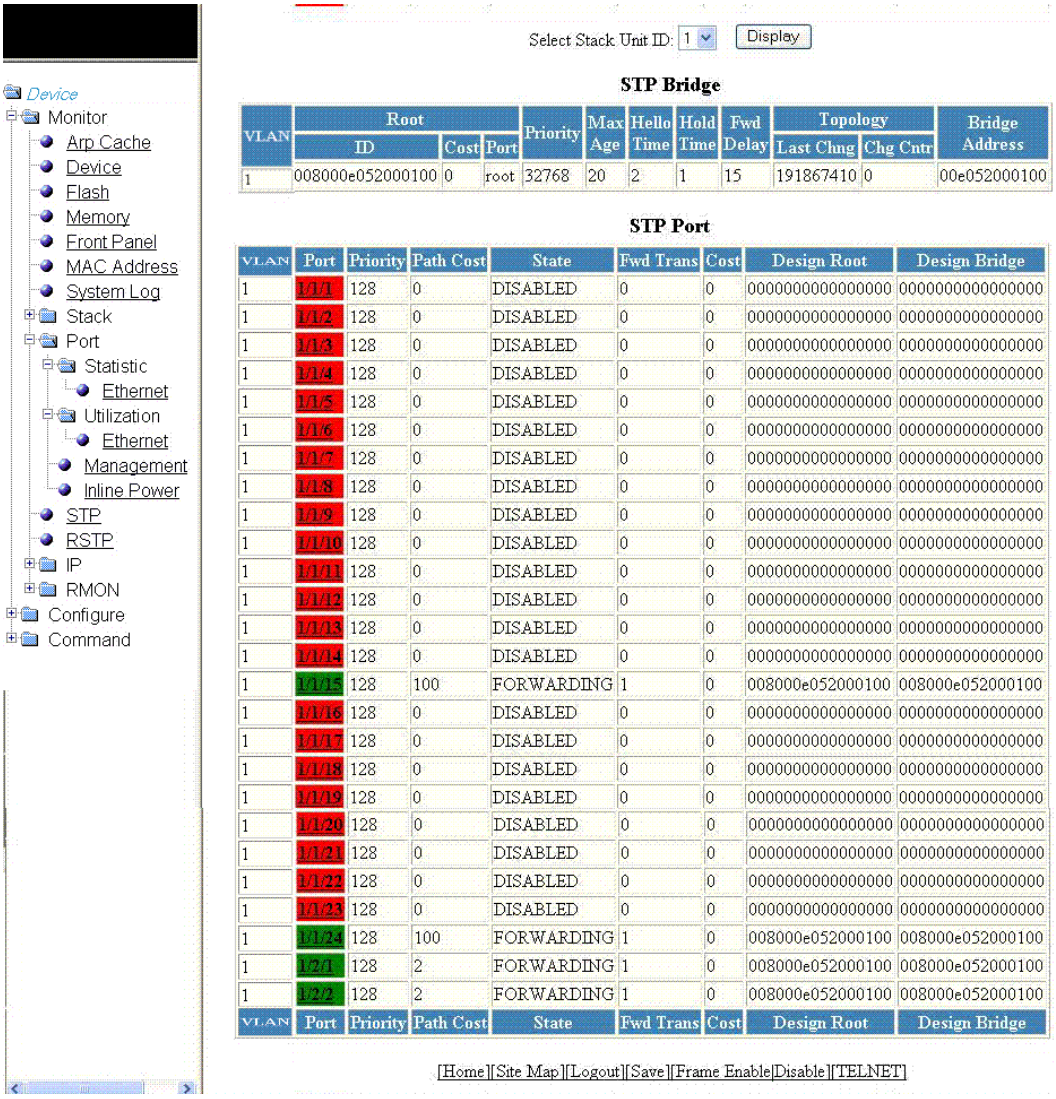


TABLE 21 Description of the fields in the STP window

Field	Description
STP Bridge parameters (global parameters)	
VLAN	Displays the port-based virtual local area network (VLAN) that contains this spanning tree (instance of STP). VLAN 1 is the default VLAN. If you have not configured port-based VLANs on this device, all STP information is for VLAN 1.
Root ID	Displays the ID assigned by STP to the root bridge for this spanning tree.
Root Cost	Displays the cumulative cost from this bridge to the root bridge. If this device is the root bridge, then the root cost is 0.
Root Port	Displays the port on this device that connects to the root bridge. If this device is the root bridge, then the value is *root* instead of a port number.

TABLE 21 Description of the fields in the STP window (Continued)

Field	Description
Priority	Displays the STP priority of this device or VLAN. The value is shown in hexadecimal format.
Max Age	Displays the number of seconds this device or VLAN waits for a Hello message from the root bridge before deciding that the root has become unavailable and performing a reconvergence.
Hello Time	Displays the interval between each configuration Bridge Packet Data Unit (BPDU) sent by the root bridge.
Hold Time	Displays the minimum number of seconds that must elapse between transmissions of consecutive configuration BPDUs on a port.
Fwd Delay	Displays the number of seconds this device or VLAN waits following a topology change and consequent reconvergence.
Topology Last Chng	Displays the number of seconds since the last time a topology change occurred.
Topology Chg Cntr	Displays the number of times the topology has changed since the device was reloaded.
Bridge Address	Displays the STP address of this device or VLAN.
STP Port parameters	
VLAN	Displays the VLAN that the port is in. This field displays only when port VLAN is enabled.
Port	Displays the port number. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Priority	Displays the STP priority of the port in hexadecimal format.
Path Cost	Displays the STP path cost of the port.
State	Displays the STP state of the port. The state can be one of the following: • *BLOCKING* --STP has blocked Layer 2 traffic on this port to prevent a loop. The device or VLAN can reach the root bridge using another port, whose state is FORWARDING. When a port is in the BLOCKING state, the port does not transmit or receive user frames, but the port does continue to receive STP BPDUs. • *DISABLED* --The port is not participating in STP. This can occur when the port is disconnected or STP is disabled on the port. • *FORWARDING* --STP is allowing the port to send and receive frames. • *LISTENING* --STP is responding to a topology change and this port is listening for a BPDU from neighboring bridges in order to determine the new topology. No frames are transmitted or received during this state. • *LEARNING* --The port has passed through the LISTENING state and will change to the BLOCKING or FORWARDING state depending on the results of STP's reconvergence. The port does not transmit or receive frames during this state. However, the device can learn the MAC addresses of frames that the port receives during this state and make corresponding entries in the MAC table.

TABLE 21 Description of the fields in the STP window (Continued)

Field	Description
Fwd Trans	Displays the number of times STP has changed the state of this port between BLOCKING and FORWARDING.
Cost	Displays the cost to the root bridge as advertised by the designated bridge that is connected to this port. If the designated bridge is the root bridge itself, then the cost is 0.
Design Root	Displays the root bridge as recognized on this port. The value is the same as the root bridge ID listed in the **Root ID** field.
Design Bridge	Displays the designated bridge to which this port is connected. The designated bridge is the device that connects the network segment on the port to the root bridge.

Monitoring RSTP

Displaying RSTP information

To view current Rapid Spanning Tree Protocol (RSTP) information for a device, you must configure RSTP. For more information on how to configure RSTP, refer to Monitoring RSTP on page 71. By default, RSTP is enabled on Layer 2 switches and disabled on Layer 3 switches.

To display RSTP bridge and port information, click **Monitor** on the left pane and select **RSTP** .

The RSTP window is displayed as shown in the figure below.

FIGURE 39 Monitoring the RSTP bridge and port

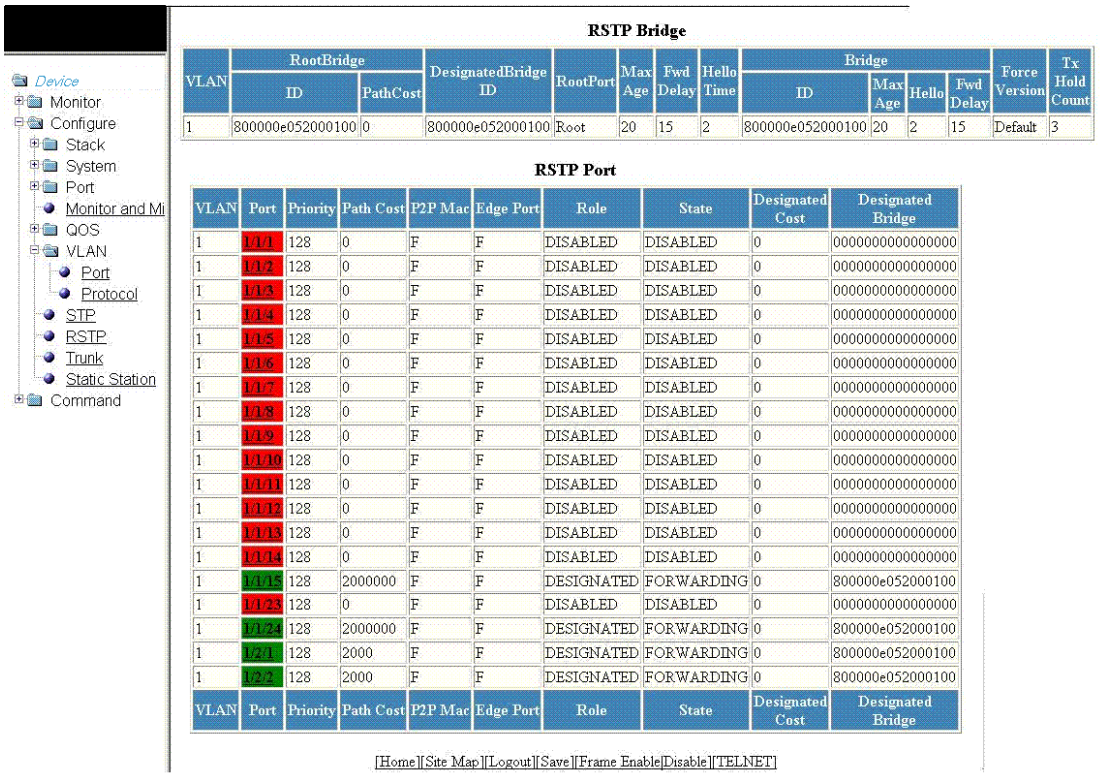


TABLE 22 Description of the fields in the RSTP window

Field	Description
RSTP Bridge parameters	

TABLE 22 Description of the fields in the RSTP window (Continued)

Field	Description
VLAN	Displays the port-based VLAN that owns the STP instance. VLAN 1 is the default VLAN. If you have not configured port-based VLANs on this device, all RSTP information is for VLAN 1.
RootBridge ID	Displays the ID of the root bridge that is associated with this bridge.
RootBridge PathCost	Displays the cumulative cost from this bridge to the root bridge. If this device is the root bridge, then the root cost is 0.
DesignateBridge ID	Displays the bridge from where the root information was received. It can be from the root bridge itself or from another bridge.
RootPort	Displays the port on this device that connects to the root bridge. If this device is the root bridge, then the value is *root* instead of a port number.
Max.Age	Displays the number of seconds this device or VLAN waits for a Hello message from the root bridge before deciding the root has become unavailable and performing a reconvergence.
Fwd Delay	Displays the number of seconds a non-edge designated port waits until it can apply any of the following transitions, if the received RST BPDU does not have an agreed flag: • Discarding state to learning state • Learning state to forwarding state When a non-edge port receives the RST BPDU, it goes into forwarding state within 4 seconds or after two hello timers expire on the port. Forward delay is also the number of seconds that a root port waits for an RST BPDU with a proposal flag before it applies the state transitions listed above. If the port is operating in 802.1D-compatible mode, then forward delay functionality is the same as in 802.1D (STP).
Hello Time	Displays the duration (secs) between two Hello packets.
Bridge ID	Displays the ID of the bridge.
Bridge Max Age	Displays the configured maximum age for this bridge. The default is 20.
Bridge Hello	Displays the configured hello time for this bridge.The default is 2.
Bridge Fwd Delay	Displays the configured forward delay time for this bridge. The default is 15.
Force Version	Displays the configured force version value, which can be one of the following: • *0* --The bridge has been forced to operate in an STP compatibility mode. • *2* --The bridge has been forced to operate in an RSTP mode. This is the default.
Tx Hold Count	Displays the number of BPDUs that can be transmitted per Hello interval. The default is 3.
RSTP Port parameters	

TABLE 22 Description of the fields in the RSTP window (Continued)

Field	Description
VLAN	Displays the port-based VLAN that owns the STP instance. VLAN 1 is the default VLAN. If you have not configured port-based VLANs on this device, all RSTP information is for VLAN 1.
Port	Displays the port number. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Priority	Displays the configured priority of the port. The default is 128 or 0x80.
Path Cost	Displays the configured path cost on a link connected to this port.
P2P Mac	Displays whether the point-to-point-MAC parameter is configured to be a point-to-point link: • *T* **--** The link is configured as a point-to-point link. • *F* --The link is not configured as a point-to-point link. This is the default.
Edge Port	Displays whether the port is configured as an operational edge port: • *T* --The port is configured as an edge port. • *F* --The port is not configured as an edge port. This is the default.
Role	Displays the current role of the port, which can be one of the following: • *ROOT* --Provides the lowest cost path to the root bridge from a specific bridge. • *DESIGNATED* --Provides the lowest cost path to the root bridge from a LAN to which it is connected. • *ALTERNATE* --Provides an alternate path to the root bridge when the root port goes down. • *BACKUP* --Provides a backup to the LAN when the Designated port goes down. • *DISABLED* --Has no role in the topology. For more information, refer to "Bridges and bridge port roles" of the appropriate *FastIron Ethernet Switch Platform and Layer 2 Switching Configuration Guide*.
State	Displays the RSTP state of the port, which can be one of the following: • *DISCARDING* **--** RSTP has blocked data traffic on this port to prevent a loop. The device or VLAN can reach the root bridge using another port, whose state is FORWARDING. When a port is in this state, the port does not transmit or receive user frames, but the port does continue to receive STP BPDUs. This state corresponds to the listening and blocking states of 802.1D. • *DISABLED* **--** The port is not participating in RSTP. This can occur when the port is disconnected or STP is disabled on the port. • *FORWARDING* --RSTP is allowing the port to send and receive frames. • *LEARNING* --RSTP is allowing MAC entries to be added to the filtering database but does not permit forwarding of data frames. The device can learn the MAC addresses of frames that the port receives during this state and make corresponding entries in the MAC table.
Designated Cost	Displays the best root path cost that this port received, including the best root path cost that it can transmit.

TABLE 22 Description of the fields in the RSTP window (Continued)

Field	Description
Designated Bridge	Displays the ID of the bridge that sent the best RST BPDU that was received on this port.

Monitoring IP

Displaying IP cache

NOTE
The IP cache is specific to the Brocade FCX-ADV, Brocade ICX, and Brocade FastIron SX devices running Layer 3 code.

To display the IP forwarding cache information, perform the following steps.

1. Click **Monitor** on the left pane and select **IP** .
2. Click **Cache** .

   The **IP Cache** window is displayed as shown in the figure below.

FIGURE 40 Monitoring the IP cache

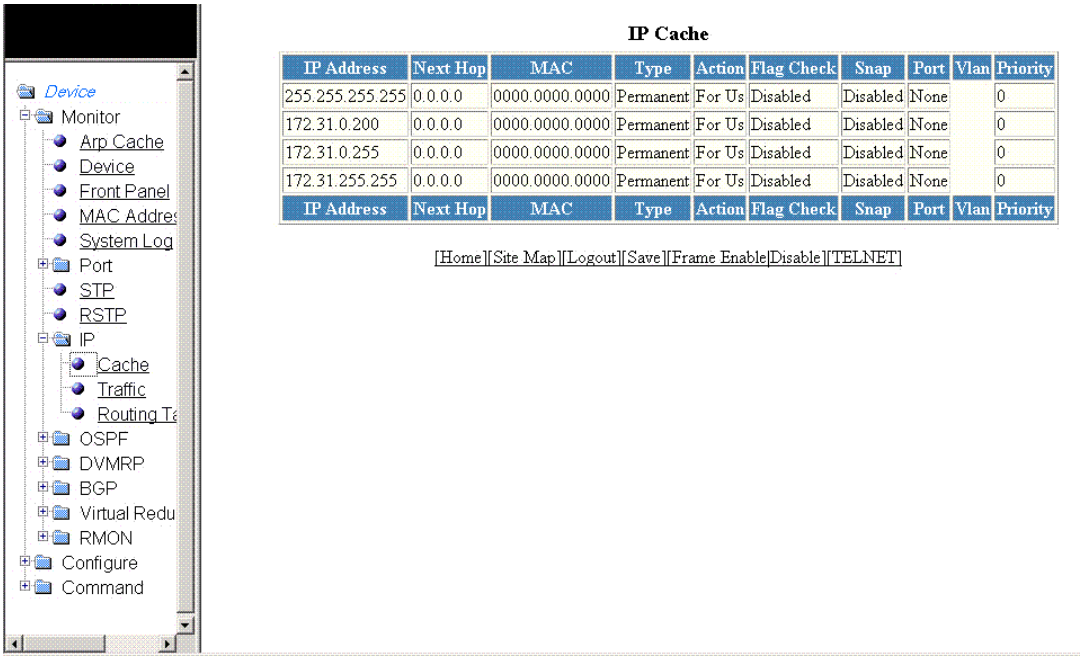


TABLE 23 Description of the fields in the **IP Cache** window

Field	Description
IP Address	Displays the IP address of the destination.

TABLE 23 Description of the fields in the **IP Cache** window (Continued)

Field	Description
Next Hop	Displays the IP address of the next hop router to the destination. This field contains either an IP address or the value DIRECT. DIRECT means the destination is either directly attached or the destination is an address on this Brocade device.
MAC	Displays the MAC address of the destination. **NOTE** If the entry is type Us (indicating that the destination is this Brocade device), the address consists of zeroes.
Type	Displays the type of host entry, which can be one of the following: • *Dynamic* • *Permanent* • *Forward* • *Us* • *Complex Filter* • *Wait ARP* • *ICMP Deny* • *Drop* • *Fragment* • *Snap Encap*
Action	Displays the action the router takes for the packet.
Flag Check	Displays whether the flag check has been enabled or disabled.
Snap	Displays whether the snap encapsulation has been enabled or disabled.
Port	Displays the port through which this device reaches the destination. For destinations that are located on this device, the port number is shown as "n/a".
Vlan	Displays the VLAN the port is in.
Priority	Displays the Quality of Service (QoS) priority of the port or the VLAN.

Displaying IP traffic information for devices running Layer 2 code

To display the IP traffic statistics for the Brocade FCX, Brocade ICX, and Brocade FastIron SX devices running Layer 2 code, perform the following steps.

1. Click **Monitor** on the left pane and select **IP**.
2. Click **Traffic**.

   The **IP Traffic** window is displayed as shown in the figure below.

FIGURE 41 Monitoring the IP traffic for devices running Layer 2 code

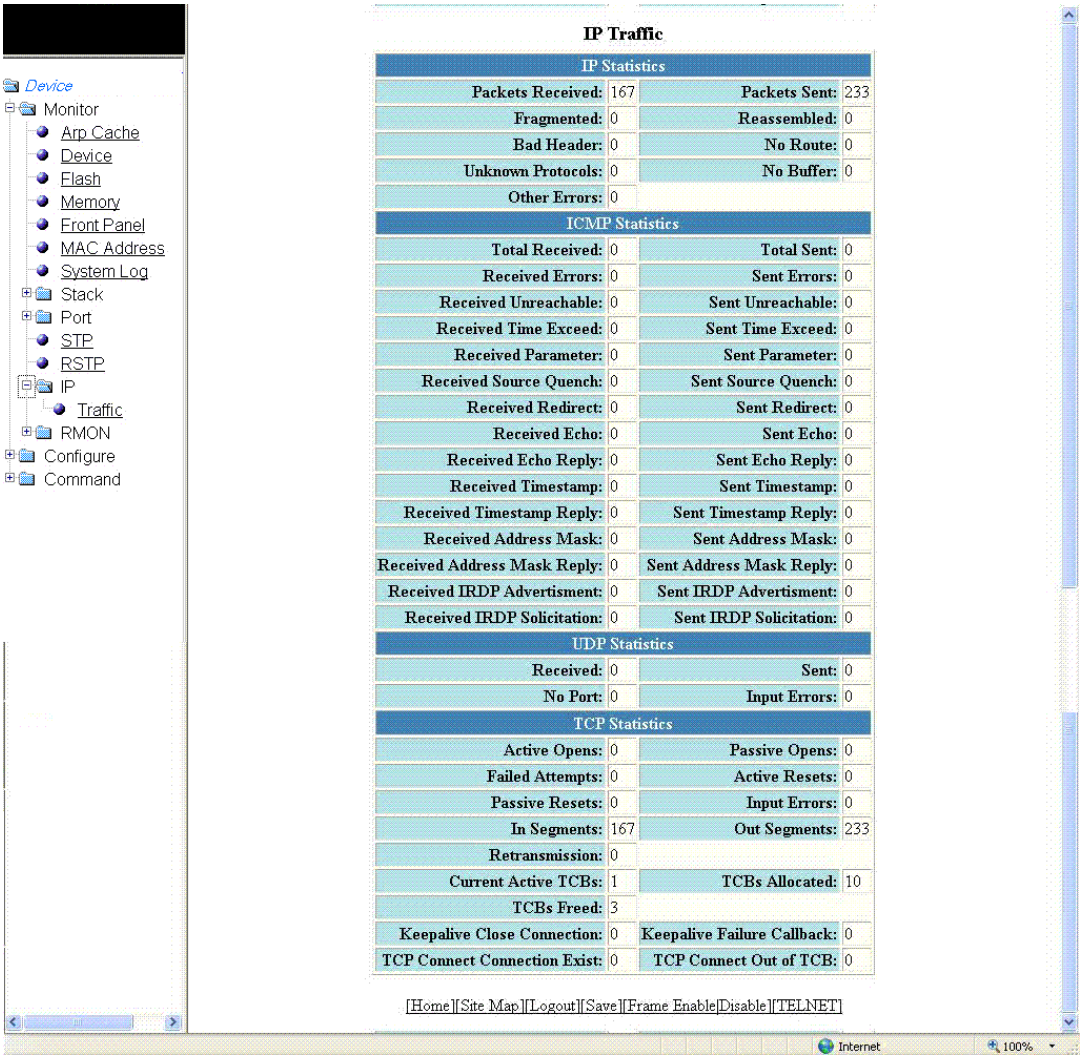


TABLE 24 Description of the fields in the **IP Traffic** window

Field	Description
IP Statistics parameters	
Packets Received	Displays the number of IP packets received by the device.
Packets Sent	Displays the number of IP packets originated and sent by the device.
Fragmented	Displays the number of IP packets fragmented by this device before sending or forwarding them.
Reassembled	Displays the number of fragmented IP packets received and re-assembled by the device.
Bad Header	Displays the number of IP packets dropped because they had a bad header.

TABLE 24 Description of the fields in the **IP Traffic** window (Continued)

Field	Description
No Route	Displays the number of packets dropped by the device because they had no route information.
Unknown Protocols	Displays the number of packets dropped by the device because the value in the protocol field of the packet header is unrecognized by this device.
No Buffer	Displays the number of packets dropped because the device ran out of buffer space.
Other Errors	Displays the number of packets dropped due to errors other than the ones already indicated in the **IP Statistics** parameters.
ICMP Statistics parameters	
Total Received	Displays the number of Internet Control Message Protocol (ICMP) packets received by the device.
Total Sent	Displays the number of ICMP packets sent by the device.
Received Errors	Displays the number of errors received by the device. This information is used by Brocade customer support.
Sent Errors	Displays the number of errors sent by the device. This information is used by Brocade customer support.
Received Unreachable	Displays the number of Destination Unreachable messages received by the device.
Sent Unreachable	Displays the number of Destination Unreachable messages sent by the device.
Received Time Exceed	Displays the number of Time Exceeded messages received by the device.
Sent Time Exceed	Displays the number of Time Exceeded messages sent by the device.
Received Parameter	Displays the number of Parameter Problem messages received by the device.
Sent Parameter	Displays the number of Parameter Problem messages sent by the device.
Received Source Quench	Displays the number of Source Quench messages received by the device.
Sent Source Quench	Displays the number of Source Quench messages sent by the device.
Received Redirect	Displays the number of Redirect messages received by the device.
Sent Redirect	Displays the number of Redirect messages sent by the device.
Received Echo	Displays the number of Echo messages received by the device.
Sent Echo	Displays the number of Echo messages sent by the device.
Received Echo Reply	Displays the number of Echo Reply messages received by the device.

TABLE 24 Description of the fields in the **IP Traffic** window (Continued)

Field	Description
Sent Echo Reply	Displays the number of Echo Reply messages sent by the device.
Received Timestamp	Displays the number of Timestamp messages received by the device.
Sent Timestamp	Displays the number of Timestamp messages sent by the device.
Received Timestamp Reply	Displays the number of Timestamp Reply messages received by the device.
Sent Timestamp Reply	Displays the number of Timestamp Reply messages sent by the device.
Received Address Mask	Displays the number of Address Mask Request messages received by the device.
Sent Address Mask	Displays the number of Address Mask Request messages sent by the device.
Received Address Mask Reply	Displays the number of Address Mask Reply messages received by the device.
Sent Address Mask Reply	Displays the number of Address Mask Reply messages sent by the device.
Received IRDP Advertisement	Displays the number of ICMP Router Discovery Protocol (IRDP) Advertisement messages received by the device.
Sent IRDP Advertisement	Displays the number of IRDP Advertisement messages sent by the device.
Received IRDP Solicitation	Displays the number of IRDP Solicitation messages received by the device.
Sent IRDP Solicitation	Displays the number of IRDP Solicitation messages sent by the device.
UDP Statistics parameters	
Received	Displays the number of User Datagram Protocol (UDP) packets received by the device.
Sent	Displays the number of UDP packets sent by the device.
No Port	Displays the number of UDP packets dropped because the packet did not contain a valid UDP port number.
Input Errors	Displays the number of errors on the incoming packets. This information is used by Brocade customer support.
TCP Statistics parameters	
Active Opens	Displays the number of Transmission Control Protocol (TCP) connections opened by this device by sending a TCP SYN to another device.
Passive Opens	Displays the number of TCP connections opened by this device in response to connection requests (TCP SYNs) received from other devices.
Failed Attempts	Displays the number of failed attempts. This information is used by Brocade customer support.

TABLE 24 Description of the fields in the **IP Traffic** window (Continued)

Field	Description
Active Resets	Displays the number of TCP connections this device reset by sending a TCP RESET message to the device at the other end of the connection.
Passive Resets	Displays the number of TCP connections this device reset because the device at the other end of the connection sent a TCP RESET message.
Input Errors	Displays the number of incoming errors. This information is used by Brocade customer support.
In Segments	Displays the number of TCP segments received by the device.
Out Segments	Displays the number of TCP segments sent by the device.
Retransmission	Displays the number of segments that this device retransmitted because the retransmission timer for the segment had expired before the device at the other end of the connection had acknowledged receipt of the segment.
Current Active TCBs	Displays the number of TCP Control Blocks (TCBs) that are currently active.
TCBs Allocated	Displays the number of TCBs that have been allocated.
TCBs Freed	Displays the number of TCBs that have been freed.

Displaying IP traffic information for devices running Layer 3 code

To display the IP traffic statistics for the Brocade FCX, Brocade ICX, and Brocade FastIron SX devices running Layer 3 code, perform the following steps.

1. Click **Monitor** on the left pane and select **IP** .
2. Click **Traffic**

   The **IP Traffic** window is displayed as shown in the figure below.

FIGURE 42 Monitoring the IP traffic information for devices running Layer 3 code

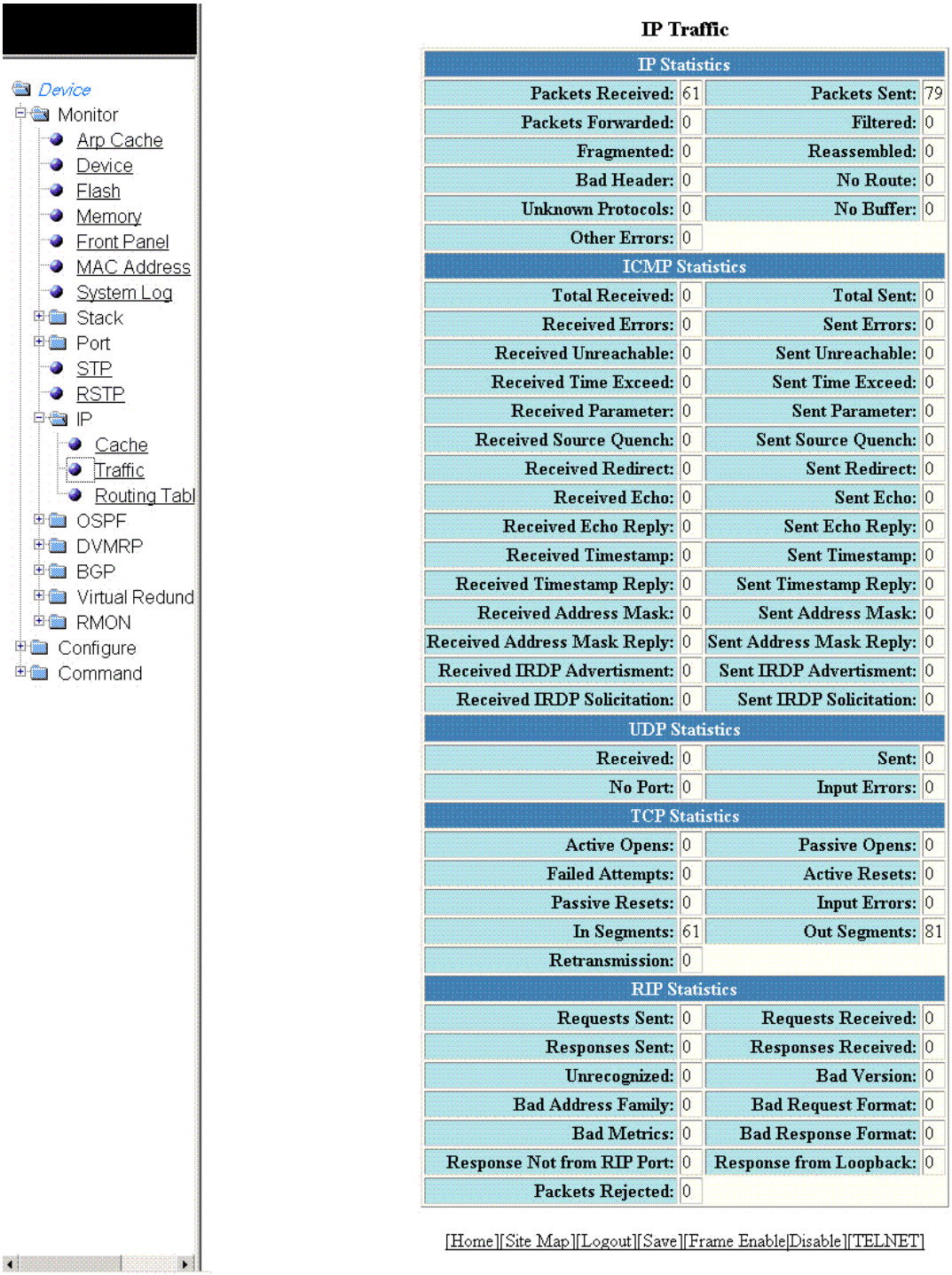


TABLE 25 Description of the fields in the **IP Traffic** window

Field	Description
IP Statistics parameters	

TABLE 25 Description of the fields in the **IP Traffic** window (Continued)

Field	Description
Packets Received	Displays the number of IP packets received by the device.
Packets Sent	Displays the number of IP packets originated and sent by the device.
Packets Forwarded	Displays the total number of IP packets received by the device and forwarded to other devices.
Filtered	Displays the total number of IP packets filtered by the device.
Fragmented	Displays the number of IP packets fragmented by this device before sending or forwarding them.
Reassembled	Displays the number of fragmented IP packets received and re-assembled by the device.
Bad Header	Displays the number of IP packets dropped because they had a bad header.
No Route	Displays the number of packets dropped by the device because they had no route information.
Unknown Protocols	Displays the number of packets dropped by the device because the value in the protocol field of the packet header is unrecognized by this device.
No Buffer	Displays the number of packets dropped because the device ran out of buffer space.
Other Errors	Displays the number of packets dropped due to errors other than the ones already indicated in the **IP Statistics** parameters.
ICMP Statistics	Refer to Displaying IP traffic information for devices running Layer 2 code on page 76.
UDP Statistics	Refer to Displaying IP traffic information for devices running Layer 2 code on page 76.
TCP Statistics parameters	
Active Opens	Displays the number of TCP connections opened by this device by sending a TCP SYN to another device.
Passive Opens	Displays the number of TCP connections opened by this device in response to connection requests (TCP SYNs) received from other devices.
Failed Attempts	Displays the number of failed attempts. This information is used by Brocade customer support.
Active Resets	Displays the number of TCP connections this device reset by sending a TCP RESET message to the device at the other end of the connection.
Passive Resets	Displays the number of TCP connections this device reset because the device at the other end of the connection sent a TCP RESET message.

TABLE 25 Description of the fields in the **IP Traffic** window (Continued)

Field	Description
Input Errors	Displays the number of incoming errors. This information is used by Brocade customer support.
In Segments	Displays the number of TCP segments received by the device.
Out Segments	Displays the number of TCP segments sent by the device.
Retransmission	Displays the number of segments that this device retransmitted because the retransmission timer for the segment had expired before the device at the other end of the connection had acknowledged receipt of the segment.
RIP Statistics parameters	
Requests Sent	Displays the number of requests this device has sent to another Routing Information Protocol (RIP) Layer 3 switch for all or part of its RIP routing table.
Requests Received	Displays the number of requests this device has received from another RIP Layer 3 switch for all or part of this device's RIP routing table.
Responses Sent	Displays the number of responses this device has sent to another RIP Layer 3 switch's request for all or part of this device's RIP routing table.
Responses Received	Displays the number of responses this device has received to requests for all or part of another RIP Layer 3 switch's routing table.
Unrecognized	Displays the number of RIP packets that were not recognized by the device.
Bad Version	Displays the number of RIP packets dropped by the device because the RIP version was either invalid or is not supported by this device.
Bad Address Family	Displays the number of RIP packets dropped because the value in the Address Family Identifier field of the packet's header was invalid.
Bad Request Format	Displays the number of RIP request packets this Layer 3 switch dropped because the format was bad.
Bad Metrics	Displays the number of responses to RIP request packets this Layer 3 switch dropped because of the bad metric value. This information is used by Brocade customer support.
Bad Response Format	Displays the number of responses to RIP request packets this Layer 3 switch dropped because the format was bad.
Response Not from RIP Port	Displays the number of RIP responses received from non-RIP ports. This information is used by Brocade customer support.
Response from Loopback	Displays the number of RIP responses received from loopback interfaces.
Packets Rejected	Displays the number of RIP packets rejected by the device.

Monitoring RMON

Displaying RMON history

By default, all active ports generate two history control data entries per active port. An active port is defined as one with a link up. If the link goes down, the two history entries are automatically cleared.

The following history entries are generated for each device:

- A sampling of statistics every 30 seconds
- A sampling of statistics every 30 minutes

To display Remote Monitoring (RMON) history, perform the following steps.

1. Click **Monitor** on the left pane and select **RMON** .
2. Click **History** .

   The **RMON Ethernet History** window is displayed as shown in the figure below.

   FIGURE 43 Monitoring the RMON Ethernet history

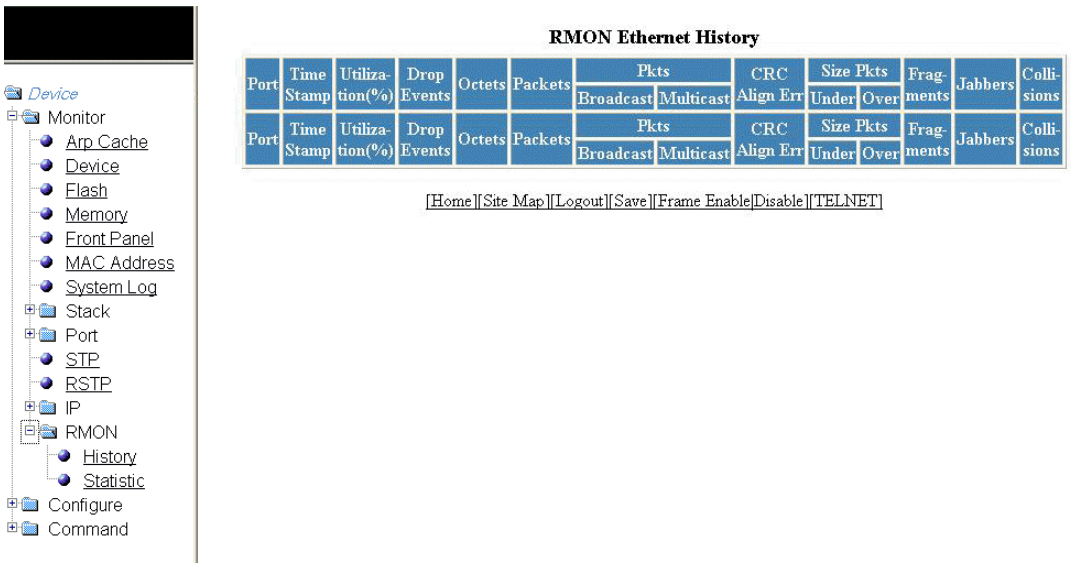


TABLE 26 Description of the fields in the **RMON Ethernet History** window

Field	Description
Port	Displays the port for which the history data is being presented. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Time Stamp	Displays the day and time when the data was collected.
Utilization(%)	Displays the percentage of the port that was being utilized when the data was taken.
Drop Events	Displays the total number of events in which packets were dropped by the RMON probe due to lack of resources. This number is not necessarily the number of packets dropped, but is the number of times an overrun condition has been detected.
Octets	Displays the total number of octets of data received on the network. This number includes octets in bad packets. This number does not include framing bits but does include Frame Check Sequence (FCS) octets.
Packets	Displays the total number of packets received. This number includes bad packets, broadcast packets, and multicast packets.
Packets: Broadcast	Displays the total number of good packets received that were directed to the broadcast address. This number does not include multicast packets.
Packets: Multicast	Displays the total number of good packets received that were directed to a multicast address. This number does not include packets directed to the broadcast address.
CRC Alignment Errors	Displays the total number of packets received that were from 64 through 1518 octets long, but had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). The packet length does not include framing bits but does include FCS octets.
Size Packets: Under	Displays the total number of packets received that were less than 64 octets long and were otherwise well formed. This number does not include framing bits but does include FCS octets.
Size Packets: Over	Displays the total number of packets received that were longer than 1518 octets and were otherwise well formed. This number does not include framing bits but does include FCS octets.
Fragments	Displays the total number of packets received that were less than 64 octets long and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). It is normal for this counter to be incremented, because it counts both runts (which are normal occurrences due to collisions) and noise hits. This number does not include framing bits but does include FCS octets.

TABLE 26 Description of the fields in the **RMON Ethernet History** window (Continued)

Field	Description
Jabbers	Displays the total number of packets received that were longer than 1518 octets and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). **NOTE** This definition of jabber is different from the definition in IEEE-802.3 section 8.2.1.5 (10BASE5) and section 10.3.1.4 (10BASE2). These documents define jabber as the condition where any packet exceeds 20 ms. The allowed range to detect jabber is between 20 ms and 150 ms. This number does not include framing bits but does include FCS octets.
Collisions	Displays the best estimate of the total number of collisions on this Ethernet segment.

Displaying RMON Ethernet statistics

RMON statistics provide count information on multicast and broadcast packets. This information includes total packets sent, undersized and oversized packets, CRC alignment errors, jabbers, collisions, fragments, and dropped events for each port on the system. RMON statistics collection is activated automatically during system startup, and requires no configuration.

To display RMON statistics, perform the following steps.

1. Click **Monitor** on the left pane and select **RMON**.
2. Click **Statistic**.
3. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the **RMON Ethernet Statistics** window for the Brocade FastIron SX devices.

The **RMON Ethernet Statistics** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.

FIGURE 44 Monitoring RMON Ethernet statistics

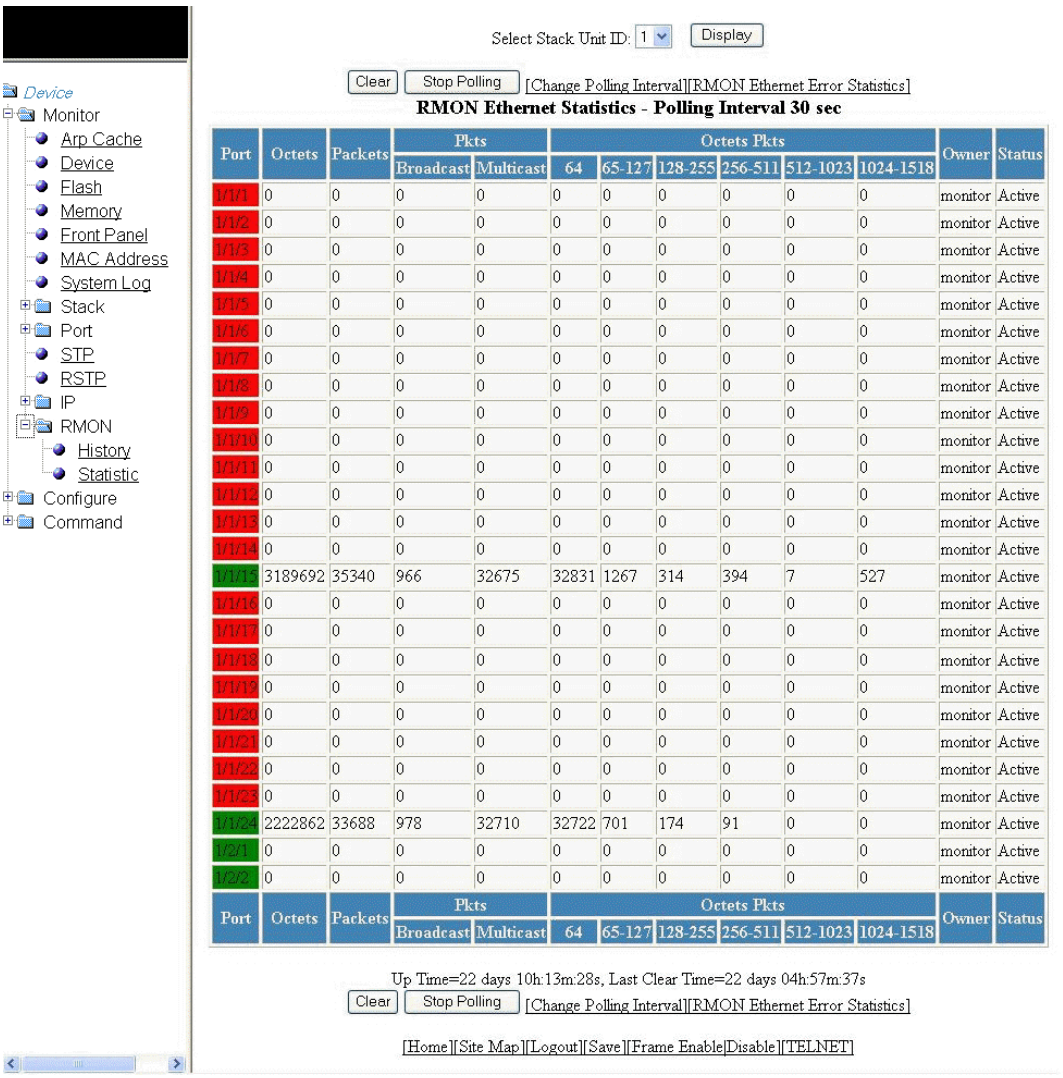


TABLE 27 Description of the fields in the **RMON Ethernet Statistics** window

Field	Description
Port	Displays the port number. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Octets	Displays the total number of octets of data received on the network. This number includes octets in bad packets. This number does not include framing bits but does include Frame Check Sequence (FCS) octets.
Packets	Displays the total number of packets received. This number includes bad packets, broadcast packets, and multicast packets.

TABLE 27 Description of the fields in the **RMON Ethernet Statistics** window (Continued)

Field	Description
Packets: Broadcast	Displays the total number of good packets received that were directed to the broadcast address. This number does not include multicast packets.
Packets: Multicast	Displays the total number of good packets received that were directed to a multicast address. This number does not include packets directed to the broadcast address.
Octet Packets: 64	Displays the total number of packets received that were 64 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Octet Packets: 65 - 127	Displays the total number of packets received that were from 65 through 127 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Octet Packets: 128 - 255	Displays the total number of packets received that were from 128 through 255 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Octet Packets: 256 - 511	Displays the total number of packets received that were from 256 through 511 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Octet Packets: 512 - 1023	Displays the total number of packets received that were from 512 through 1023 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Octet Packets: 1024 - 1518	Displays the total number of packets received that were from 1024 through 1518 octets long. This number includes bad packets. This number does not include framing bits but does include FCS octets.
Owner	Displays the owner of the packets.
Status	Displays the status of the port.
Up Time	Displays the length of time the device has been available.
Last Clear Time	Displays the length of time data has been accumulating in the current table.

To remove the current data in the table and restart monitoring, click **Clear**. To stop reporting the statistics, click **Stop Polling**.

The **RMON Ethernet Statistics** window contains the following links:

- To change the polling interval, click **Change Polling interval**. For more information, refer to the “Changing polling interval” section.
- To display the RMON Ethernet error statistics, click **RMON Ethernet Error Statistics**. For more information, refer to the “Displaying RMON Ethernet error statistics” section.

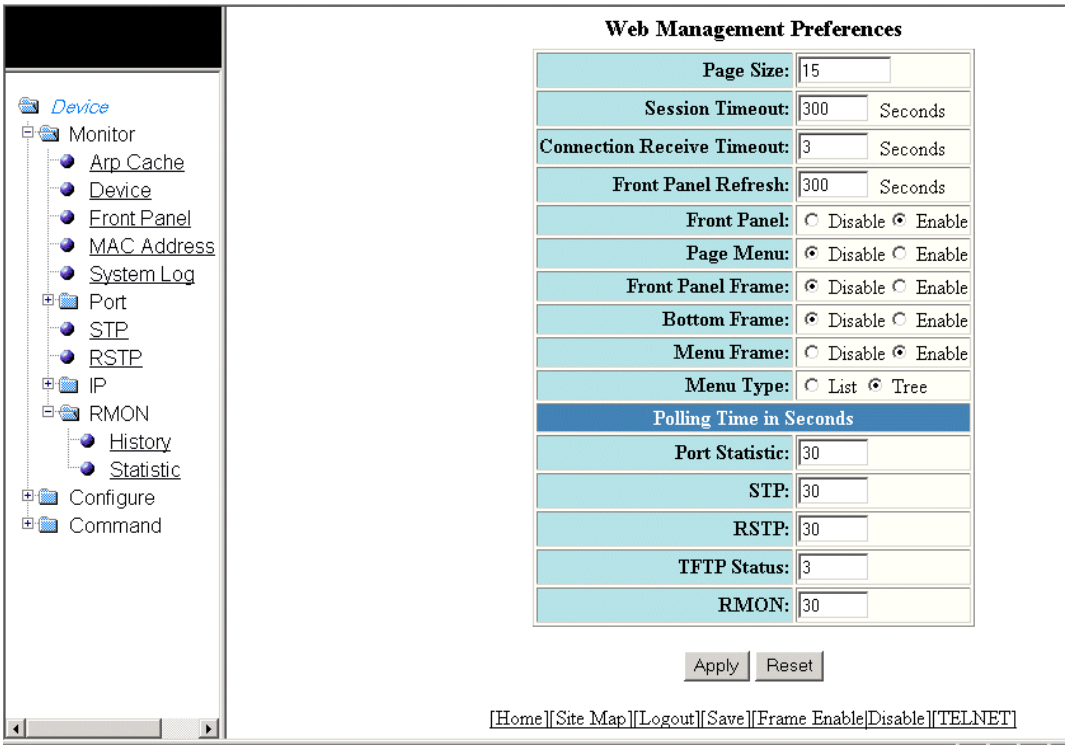
Changing polling interval

To change the number of seconds between reporting the RMON Ethernet statistics, perform the following steps.

1. Click **Change Polling interval** on the **RMON Ethernet Statistics** window.

   The **Web Management Preferences** window is displayed as shown in the figure below.

   FIGURE 45 Modifying web management preferences



2. Specify the RMON polling interval in the **RMON** field.
3. Click **Apply** .

   The message `The change has been made` is displayed at the top of the window. To undo the changes, click **Reset** . For more information on web management preferences, refer to Configuring the web management preferences on page 137.

Displaying RMON Ethernet error statistics

To display RMON error information, perform the following steps.

1. Click **RMON Ethernet Error Statistics** on the **RMON Ethernet Statistics** window.
2. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to view information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the **RMON Ethernet Error Statistics** window for the Brocade FastIron SX devices.

The **RMON Ethernet Error Statistics** window for the Brocade FCX and Brocade ICX devices is displayed as shown in the figure below.

FIGURE 46 Monitoring the RMON Ethernet error statistics

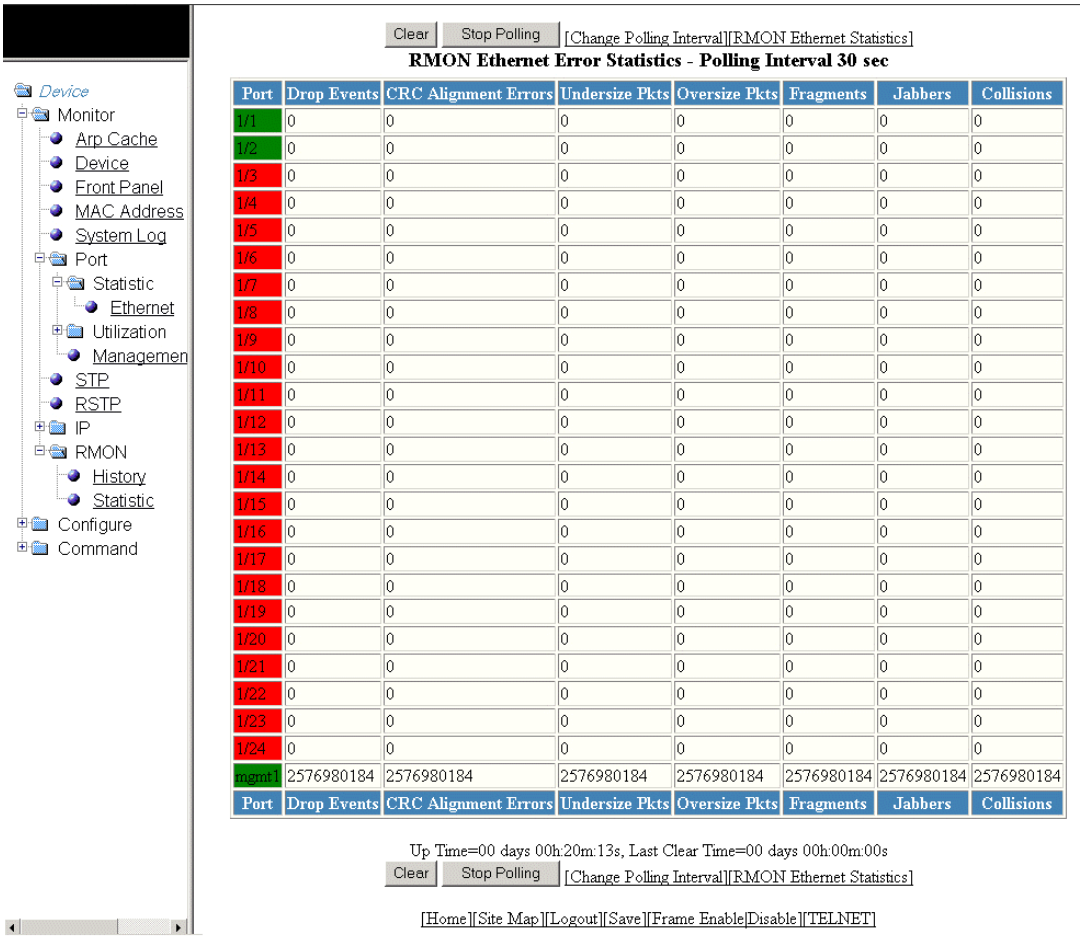


TABLE 28 Description of the fields in the **RMON Ethernet Error Statistics** window

Field	Description
Port	Displays the port number. The port number varies based on the product: • For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum • For Brocade FastIron SX devices - slotnum/portnum
Drop Events	Displays the total number of events in which packets were dropped by the RMON probe due to lack of resources. This number is not necessarily the number of packets dropped, but is the number of times an overrun condition has been detected.
CRC Alignment Errors	Displays the total number of packets received that were from 64 through 1518 octets long, but had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). The packet length does not include framing bits but does include FCS octets.
Undersize Pkts	Displays the total number of packets received that were less than 64 octets long and were otherwise well formed. This number does not include framing bits but does include FCS octets.
Oversize Pkts	Displays the total number of packets received that were longer than 1518 octets and were otherwise well formed. This number does not include framing bits but does include FCS octets.
Fragments	Displays the total number of packets received that were less than 64 octets long and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). It is normal for this counter to increment, because it counts both runts (which are normal occurrences due to collisions) and noise hits. This number does not include framing bits but does include FCS octets.
Jabbers	Displays the total number of packets received that were longer than 1518 octets and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error). **NOTE** This definition of jabber is different from the definition in IEEE-802.3 section 8.2.1.5 (10BASE5) and section 10.3.1.4 (10BASE2). These documents define jabber as the condition where any packet exceeds 20 ms. The allowed range to detect jabber is between 20 ms and 150 ms. This number does not include framing bits but does include FCS octets.
Collisions	Displays the best estimate of the total number of collisions on this Ethernet segment.
Up Time	Displays the length of time the device has been available.
Last Clear Time	Displays the length of time data has been accumulating in the current table.

To remove the current data in the table and restart monitoring, click **Clear** . To stop reporting the statistics, click **Stop Polling** .

The **RMON Ethernet Error Statistics** window contains the following links:

- To change the polling interval, click **Change Polling interval** . For more information, refer to Changing polling interval on page 90.
- To display the RMON statistics, click **RMON Ethernet Statistics** . For more information, refer to Displaying RMON Ethernet statistics on page 87.

Configuring Stack Components

NOTE
This chapter is specific to the Brocade FCX and Brocade ICX devices.

Configuring the general settings for a traditional stack

To change the stack settings to improve performance and reliability of the device, perform the following steps.

1. Click **Configure** on the left pane and select **Stack**.
2. Click **General**.

   The **General Stacking Configuration** window is displayed as shown in the figure below.

   FIGURE 47 General stacking configuration

3. Enter the Media Access Control (MAC) address of the device in the **MAC Address** field and then click **Apply**.
4. Click **Disable** or **Enable** for **MAC Persistent Timer** and then click **Apply**.

If you click **Enable**, type the time delay before the stack MAC address changes in the **MAC Persistent Timer** field and then click **Apply**.

The **General Stacking Configuration** window provides links to monitor stack parameters:

- To display the current stack information, click **Show Stack Details** . For more information, refer to the “Displaying the stack details” section.
- To display the current information about the stack modules, click **Show Stack Modules** . For more information, refer to the “Displaying a stack module” section.

Modifying stack priority

The stack unit with the highest priority is the Active Controller (128 by default). The stack unit with the second highest priority is the Standby Controller, which takes over if the current Active Controller fails.

It is possible to assign the same priority for Active and Standby Controllers, or different priorities (Active highest and Standby second-highest). When the Active and Standby Controllers have the same priority, if the Active Controller fails, the Standby Controller takes over. If the original Active Controller becomes operational again, it will not be able to resume its original role.

When the priorities of the Active and Standby Controllers are different, if the Active Controller fails, the Standby Controller takes over. If the original Active Controller becomes operational again, the old Active Controller regains its role and resets the other units.

You can assign the same priority to the Active and Standby Controllers after the stack is formed. This prevents the intended Standby Controller from becoming the Active Controller during stack construction.

Changing the priority of a stack member triggers an election that takes effect immediately unless the Active Controller’s role changes. This change will not take effect until the next stack reload.

To configure the priority of the units within a stack, perform the following steps.

1. Click **Configure** on the left pane and select **Stack** .
2. Click **Priority** .

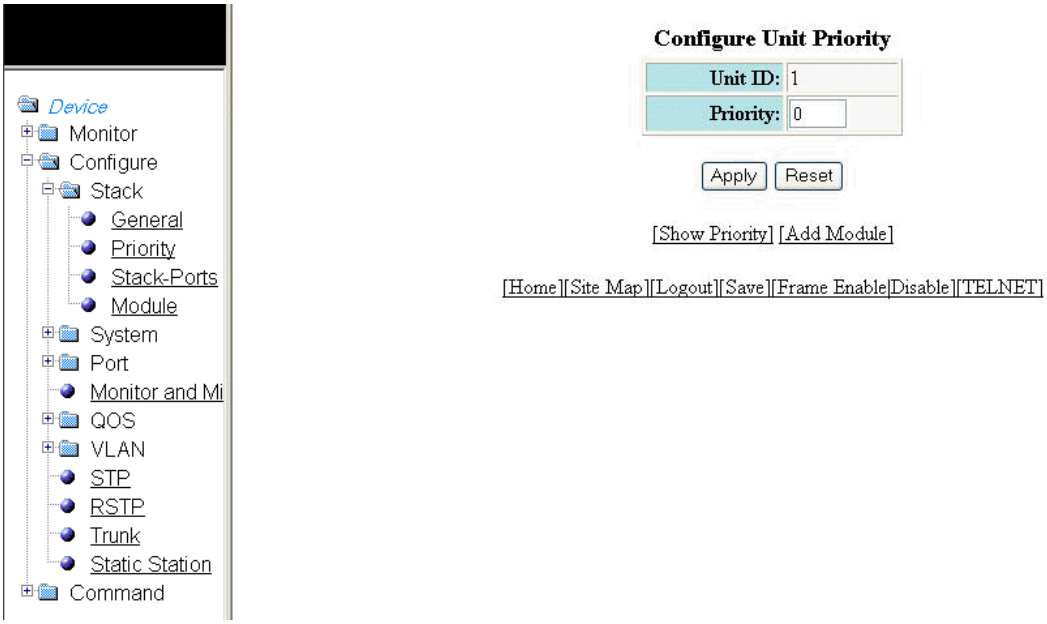
   The **Stack Unit Priority** window is displayed as shown in the figure below.

FIGURE 48 Stack unit priority

3. Click **Modify** .

   The **Configure Unit Priority** window is displayed as shown in the figure below.

FIGURE 49 Configuring unit priority



4. Type the priority (from 0 through 255) you want to assign to the stack unit in the **Priority** field.
5. Click **Apply** .

   The priority is assigned to the stack unit and the **Stack Unit Priority** window is displayed. To reset the data entered in the configuration pane, click **Reset** .

To display the priority of the stack units, click **Show Priority** . To add a new stack module, click **Add Module** . For more information on how to configure a stack module, refer to Configuring a stack module on page 99.

Modifying stack ports

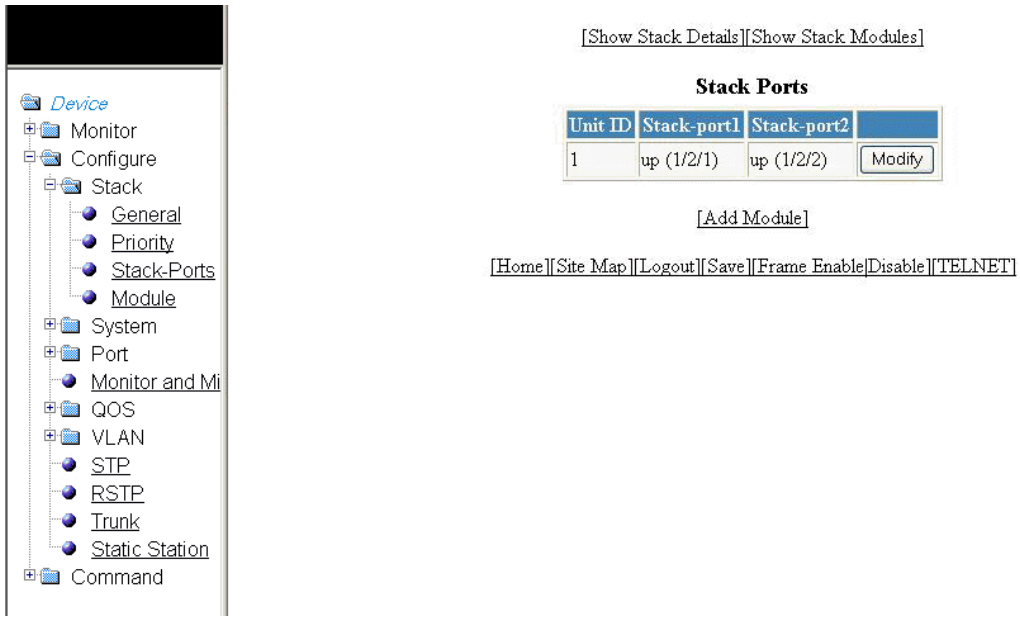
NOTE
You cannot change the stack ports for the Brocade ICX devices.

To modify the stack ports, perform the following steps.

1. Click **Configure** on the left pane and select **Stack**.
2. Click **Stack-Ports**.

   The **Stack Ports** window is displayed.

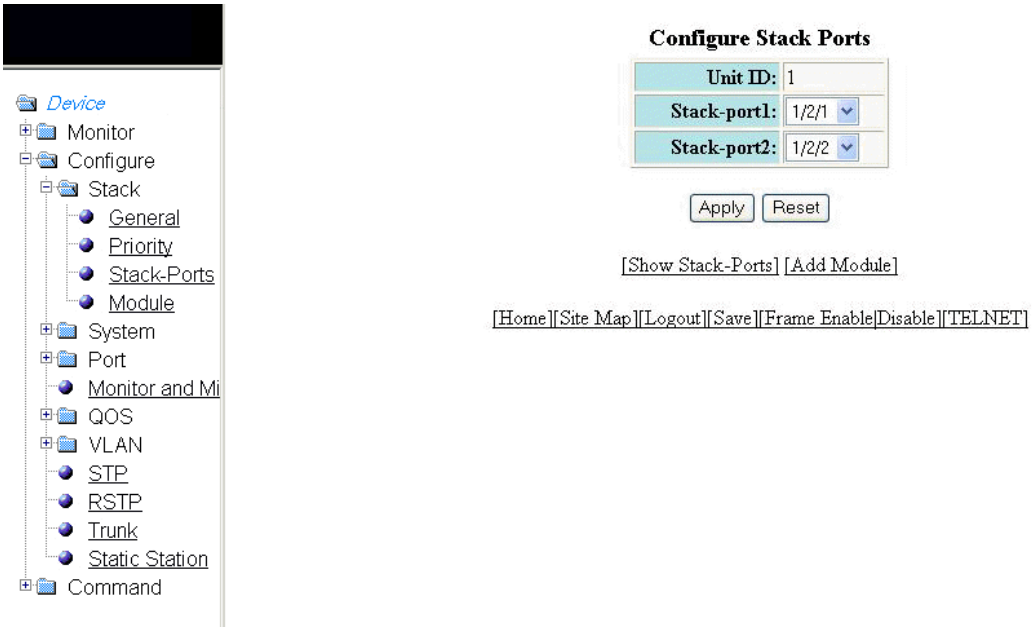
   FIGURE 50 Modifying stack ports



3. Click **Modify** .

   The **Configure Stack Ports** window is displayed as shown in the figure below.

FIGURE 51 Modifying stack ports



4. Select a port in the **Stack-port1** list.
5. Select a port in the **Stack-port2** list.
6. Click **Apply**.

   The stack ports are modified and the **Stack Ports** window is displayed.

   To reset the data entered in the configuration pane, click **Reset** . To display the configured stack port, click **Show Stack-Ports**.

   To configure a stack module, click **Add Module** . For more information on how to configure a stack module, refer to the “Configuring a stack module” section.

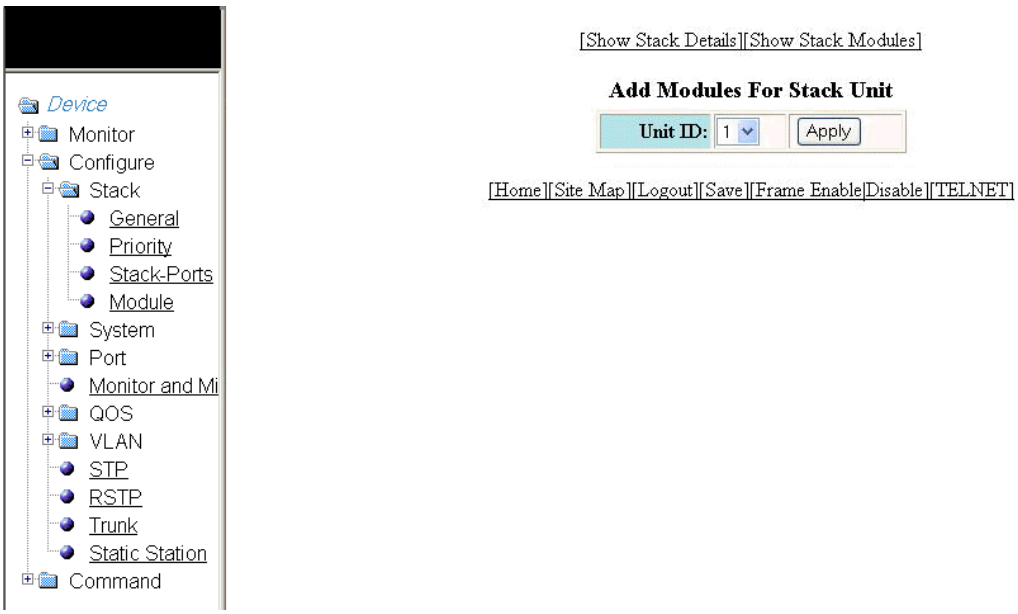
Configuring a stack module

To configure a stack module, perform the following steps.

1. Click **Configure** on the left pane and select **Stack** .
2. Click **Module** .

   The **Add Modules For Stack Unit** window is displayed as shown in the figure below.

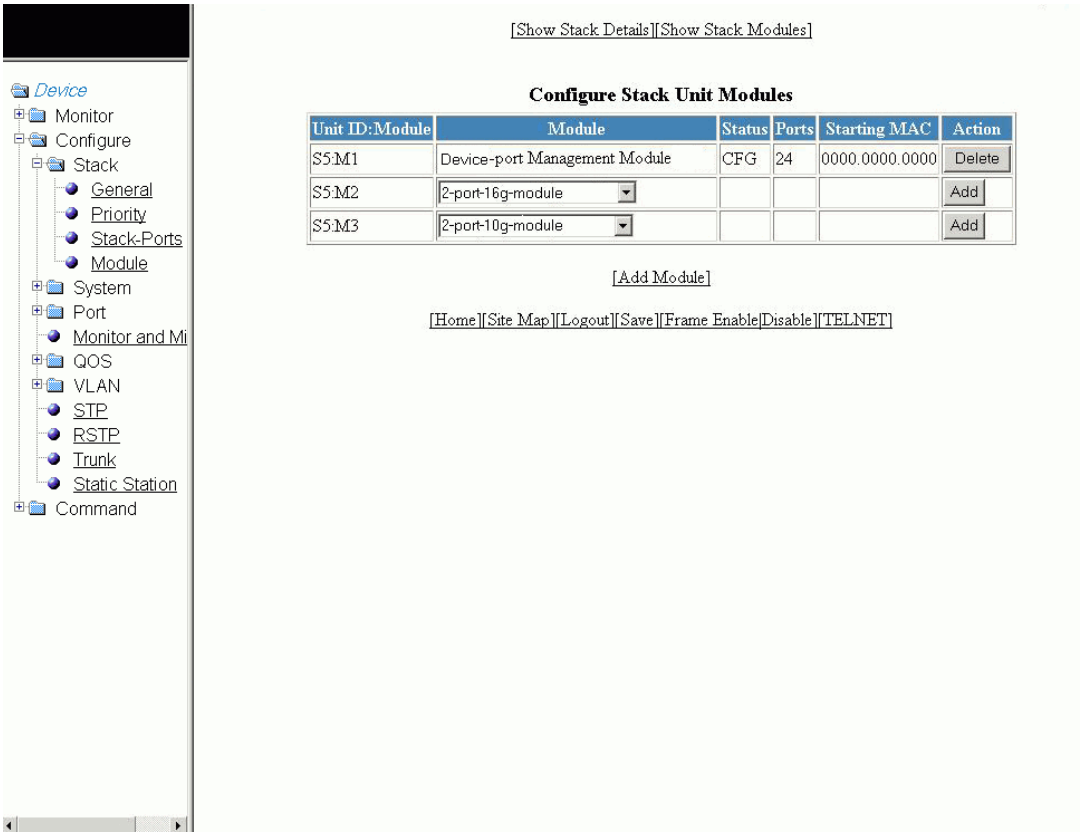
FIGURE 52 Adding modules for a stack unit



3. Select a stack unit identifier in the **Unit ID** list.
4. Click **Apply** .

   The **Configure Stack Unit Modules** window is displayed as shown in the figure below.

FIGURE 53 Adding and deleting a stack unit module



5. Select a stack module in the list on the **Module** column and then click **Add** .

   To display current stack details, stack port status, and stack neighbors information, click **Show Stack Details** . For more information, refer to Displaying the stack details on page 39. Click **Delete** to delete a stack unit module. You cannot delete the active modules.

   To display the stack unit modules, click **Show Stack Modules** . For more information, refer to Displaying a stack module on page 41.

Configuring peri-ports

To configure peri-ports, perform the following steps.

1. Click **Configure** on the left pane and select **Stack** .
2. Click **Peri-Ports**.

   The **Configure Stack-Unit Peri-Ports** window is displayed.

Configuring peri-trunks

To configure peri-trunks, perform the following steps.

1. Click **Configure** on the left pane and select **Stack**.
2. Click **Peri-Trunks**.

   The **Configure Peri-Trunks** window is displayed.

Configuring stack connect

To configure stack connect perform the following steps.

1. Click **Configure** on the left pane and select **Stack**.
2. Click **Stack-Connect**.

   The **Configure Stack-Unit Connect** window is displayed.

Configuring System Components

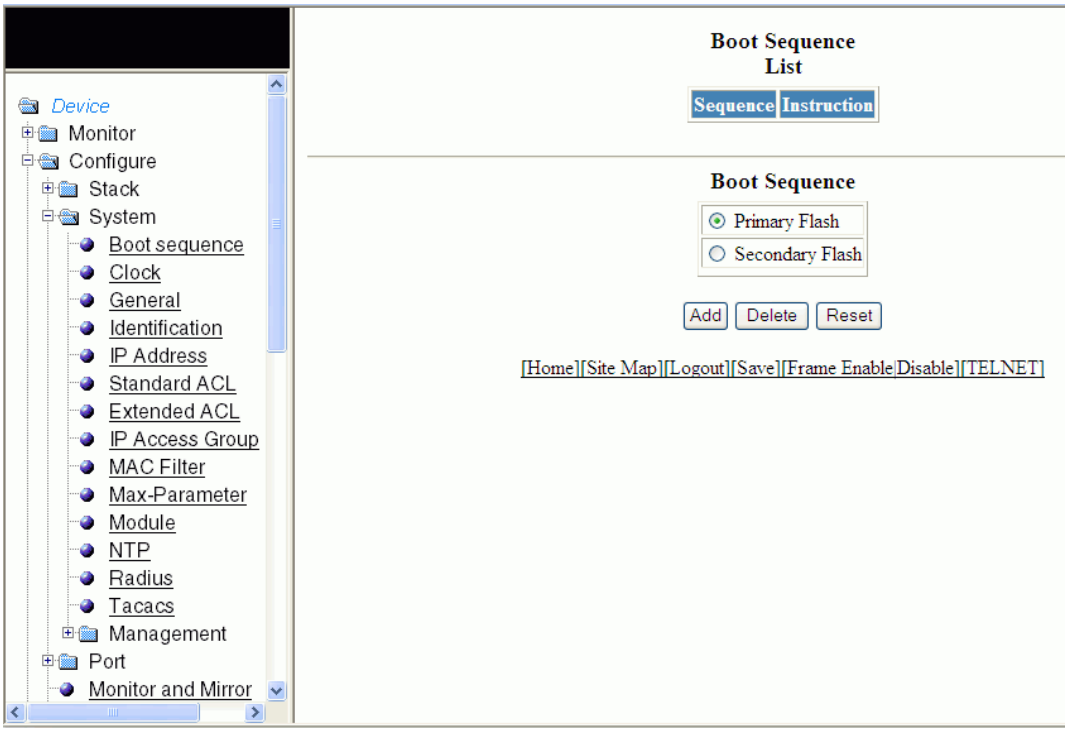
Configuring the system boot sequence for the Brocade FCX and Brocade ICX devices

To configure the system boot sequence for the Brocade FCX and Brocade ICX devices, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Boot sequence**.

   The **Boot Sequence** window is displayed as shown in the figure below.

FIGURE 54 Configuring system boot sequence for the Brocade FCX and Brocade ICX devices



3. There are two types of boot sequence operations:
   - Select **Primary Flash** to store the image files and configuration files in the local storage device. By default, **Primary Flash** is enabled.
   - Select **Secondary Flash** to store the redundant images for additional reload reliability or to preserve one software image while testing another one.
4. Click **Add**.

   The message `The change has been made` is displayed and the boot sequence is listed in the **Boot Sequence List** pane.

   To reset the data entered in the configuration pane, click **Reset** . You can also delete the boot sequence operation by clicking **Delete**.

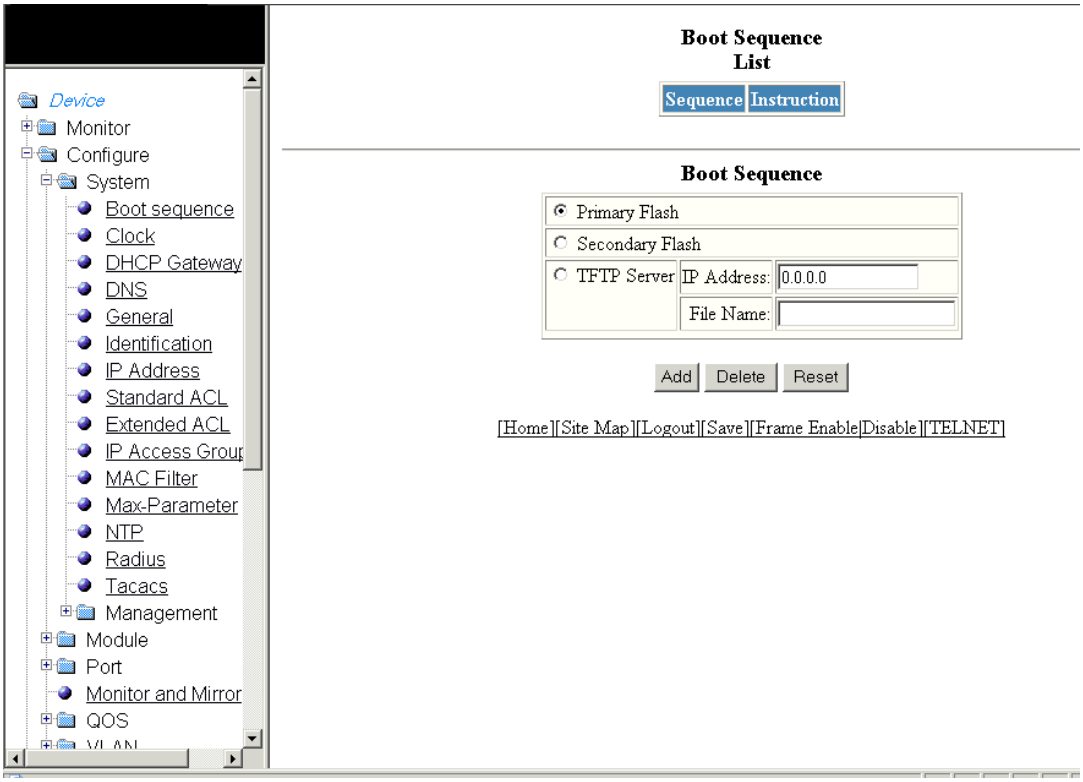
Configuring the system boot sequence for the Brocade FastIron SX devices

To configure the system boot sequence for the Brocade FastIron SX devices, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Boot sequence**.

   The **Boot Sequence** window is displayed as shown in the figure below.

FIGURE 55 Configuring system boot sequence for the Brocade FastIron SX devices



3. There are three types of boot sequence operations:
   - Select **Primary Flash** to store the image files and configuration files in the local storage device. By default, **Primary Flash** is enabled.
   - Select **Secondary Flash** to store the redundant images for additional reload reliability or to preserve one software image while testing another one.
   - Click **TFTP Server** to store configuration files to a Trivial File Transfer Protocol (TFTP) server. Provide the following information:
     - **IP Address** --Type the IP address of the TFTP server.
     - **File Name** --Type the file name.
4. Click **Add**.

   The message `The change has been made` is displayed and the boot sequence is listed in the **Boot Sequence List** pane.

   To reset the data entered in the configuration pane, click **Reset**. You can also delete the boot sequence operation by clicking **Delete**.

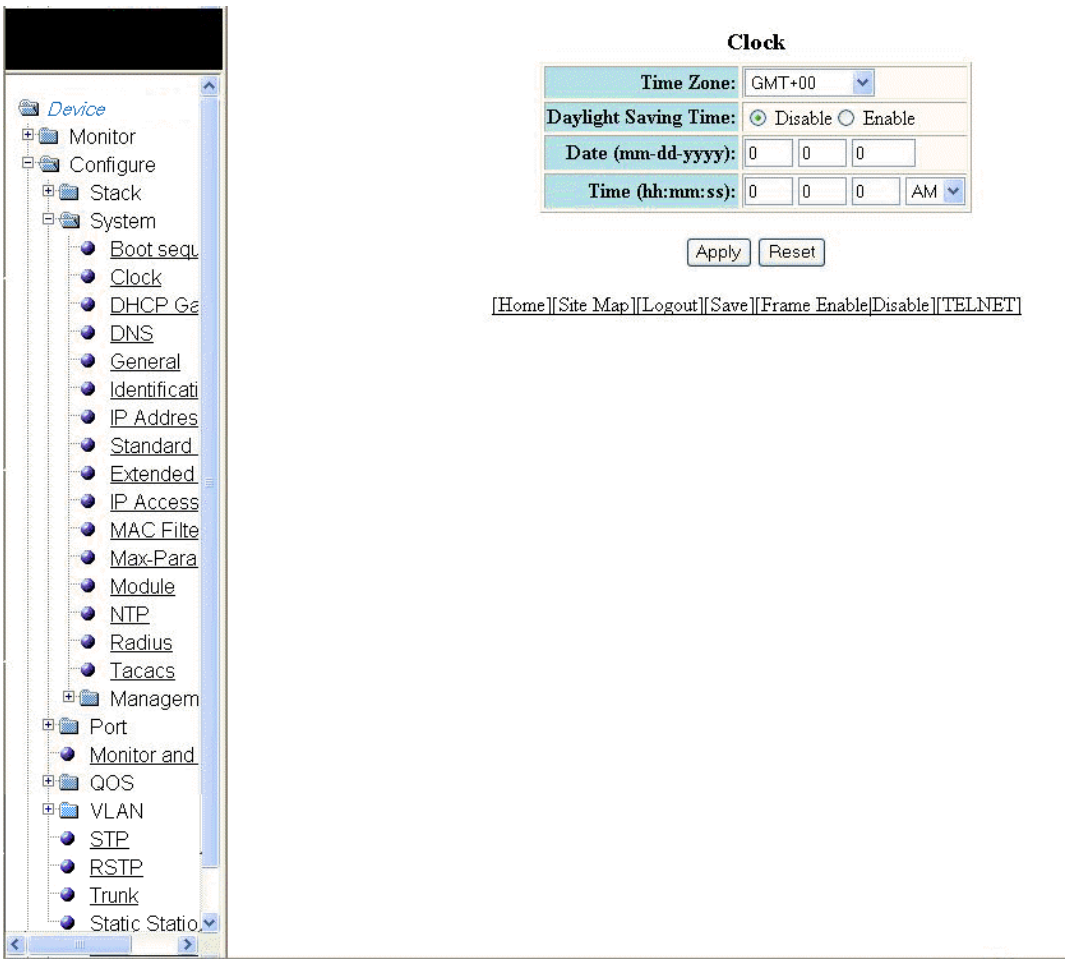
Configuring the system clock

To configure the system clock, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Clock** .

   The **Clock** window is displayed as shown in the figure below.

FIGURE 56 Configuring the system clock



3. Select the GMT time zone that you want to configure for the device in the **Time Zone** list.
4. Click **Disable** or **Enable** for **Daylight Saving Time** . Daylight Saving Time applies to the US time zone only.
5. Type the date in mm-dd-yyyy format in the **Date (mm-dd-yyyy)** field.
6. Type the time in hh:mm:ss format in the **Time (hh:mm:ss)** field and select **AM** or **PM** in the list.
7. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

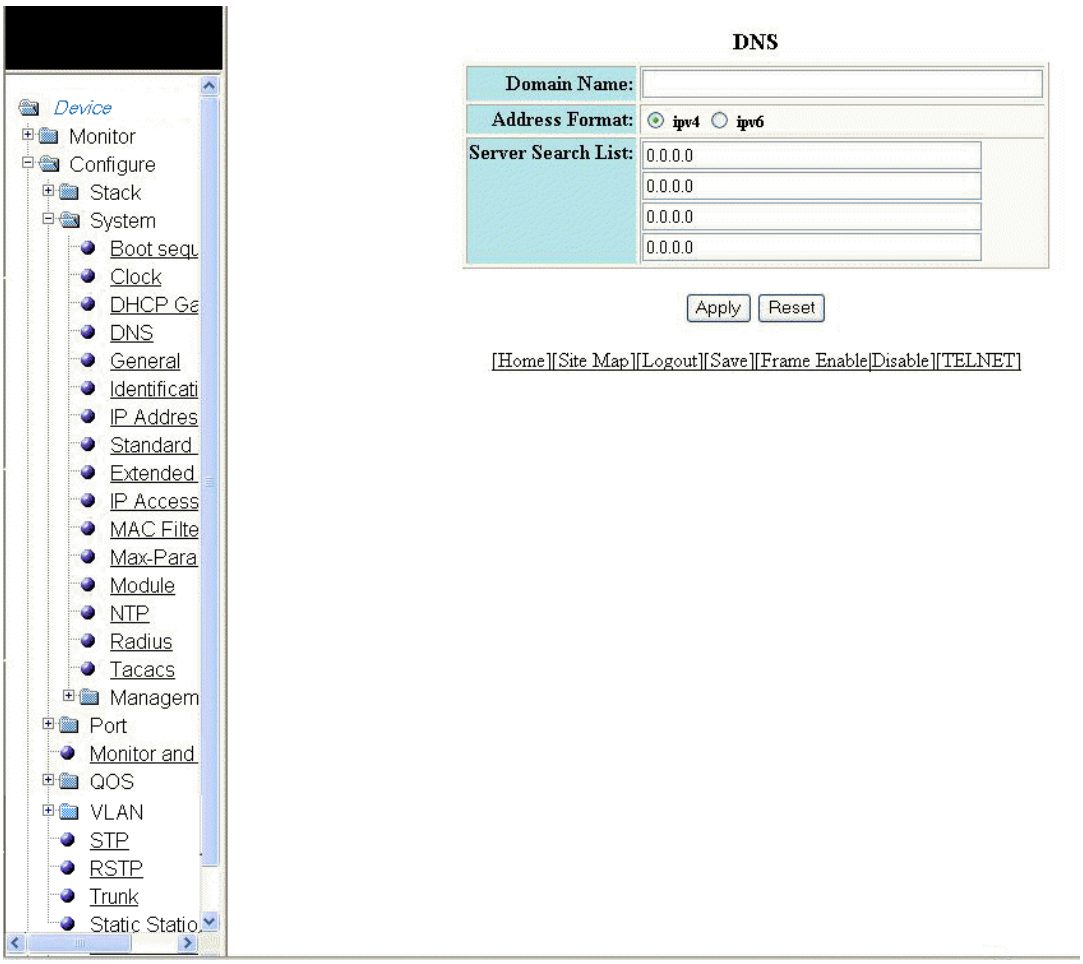
Configuring the system DNS

To configure the system Domain Name System (DNS), perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **DNS** .

   The **DNS** window is displayed as shown in the figure below.

FIGURE 57 Configuring the system DNS



3. Type the name of the domain that can be used to resolve host names in the **Domain Name** field.
4. Select **ipv4** or **ipv6** for the **Address Format** .
5. Type the server IP addresses in the **Server Search List** fields.

   You can configure a Brocade device to recognize up to four DNS servers. The first entry serves as the primary default address. If a query to the primary address fails to be resolved after three attempts, the next DNS address is queried (also up to three times). This process continues for each defined DNS address until the query is resolved. The order in which the default DNS addresses are polled is the same as the order in which you enter them.
6. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

Configuring the general system settings

To configure the general system settings, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **General**.

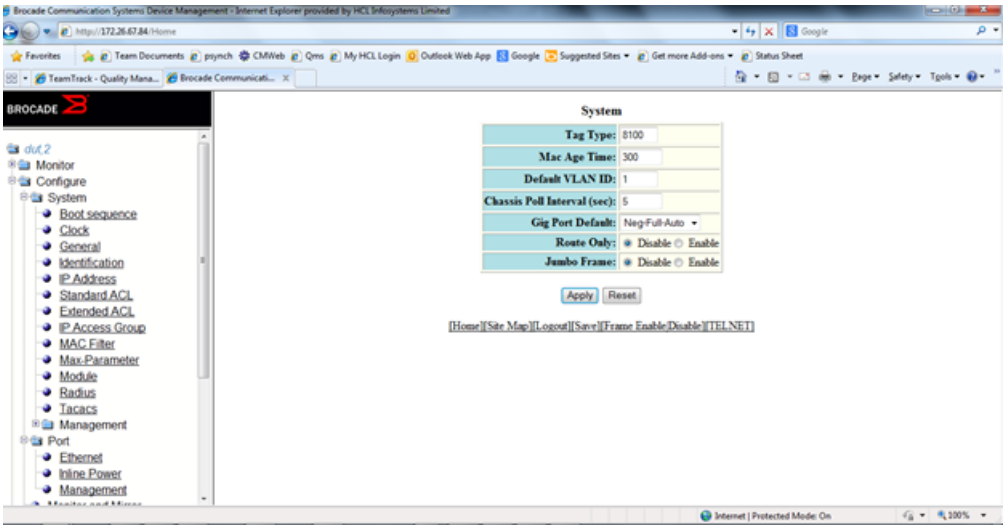
   The **General System Configuration** window is displayed.

   FIGURE 58 Configuring the general system

3. Select the **Port** check box for **Policy based VLANs** to enable configuration of port-based VLANs.
4. Click **Disable** or **Enable** for **Spanning Tree** . If you click **Enable**, select the **Single** or **Fast** check box.
5. Click **Strict** or **Weighted** for **QOS**.
6. Click **Disable** or **Enable** for **ACL Per Port Per VLAN**.
7. Click **Advance** to configure additional system parameters.

   The **System** window is displayed.

   FIGURE 59 Advance system information



8. Type the VLAN tag type in hexadecimal format from 0 through ffff in the **Tag Type** field. The default is 0081.

9. Type the number of seconds a port address remains active in the address table in the **Mac Age Time** field.
10. Type the default VLAN ID number in the **Default VLAN ID** field.
11. Type the interval, in seconds, in which the chassis is polled in the **Chassis Poll Interval (sec)** field.
12. Select a negotiation mode in the **Gig Port Default** list.
13. Click **Disable** or **Enable** for **Route Only**. If you click **Enable** , Layer 2 switching is disabled globally.
14. Click **Disable** or **Enable** for **Jumbo Frame**.

    Jumbo frames are Ethernet frames with more than 1,500 bytes MTU.
15. Click **Apply**.

    The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset**.

    The **General System Configuration** window provides the following links to configure the system parameters:

- **Identification**
- **IP Address**
- **DNS**
- **DHCP Gateway**
- **Clock**
- **MAC Filter**
- **Module**
- **Max-Parameter**
- **RADIUS**
- **TACACS**
- **Management**

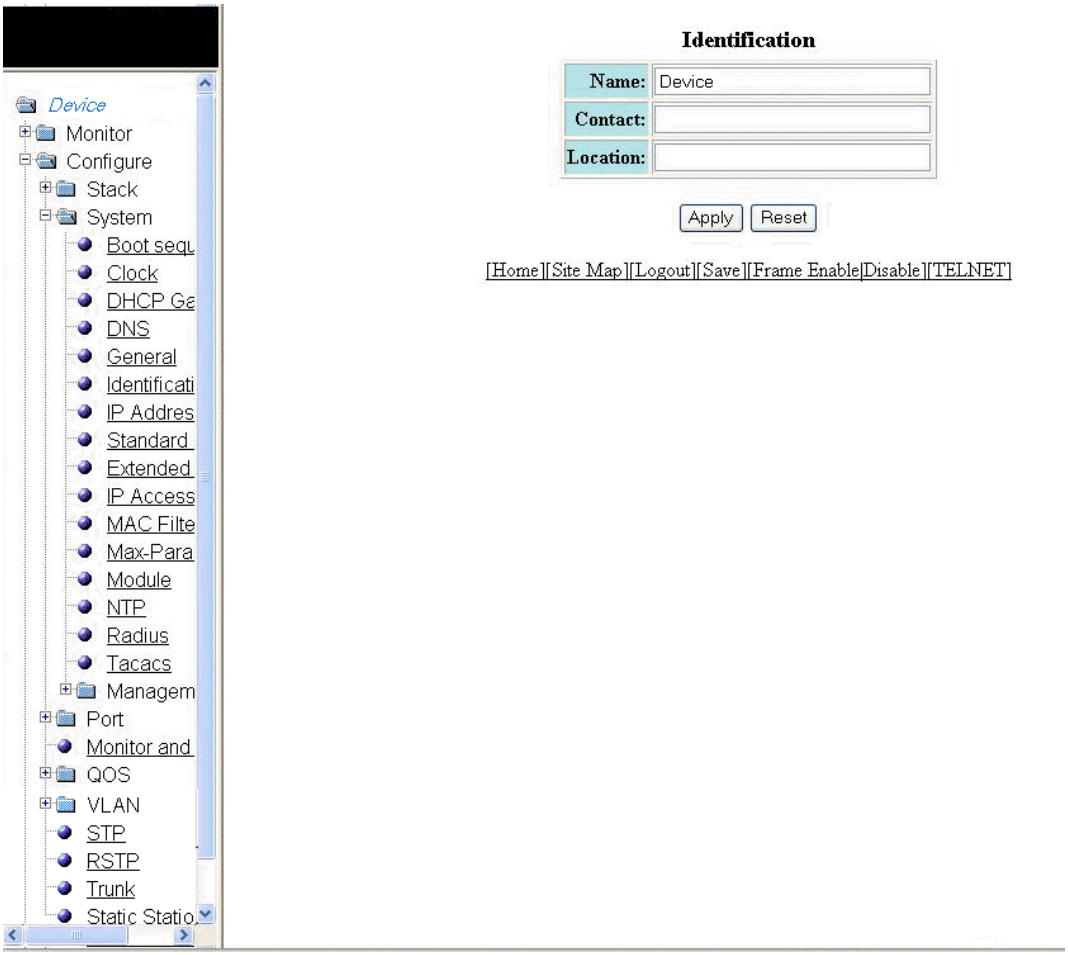
Configuring the system identification

To configure the system identification information, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Identification** .

   The **Identification** window is displayed as shown in the figure below.

FIGURE 60 Configuring the system identification



3. Type the name of the device in the **Name** field.
4. Type the contact information of the device in the **Contact** field.
5. Type the location of the device in the **Location** field.
6. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

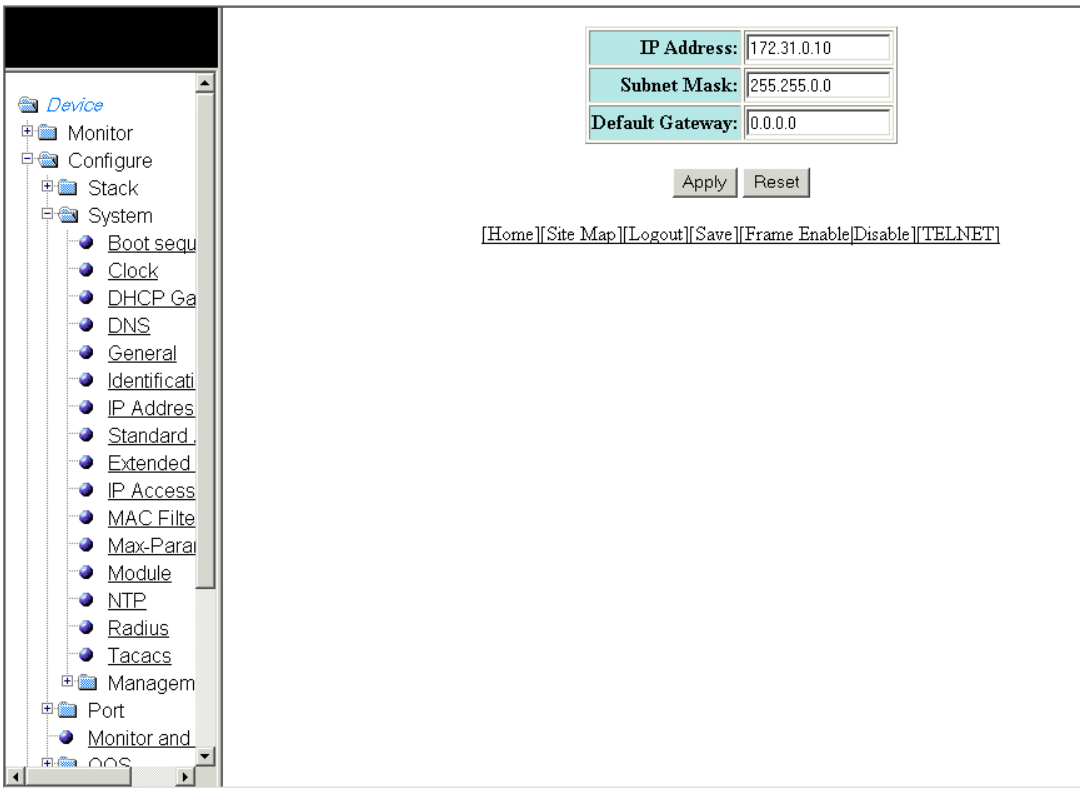
Configuring the system IP address

To configure the IP address of the system, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **IP Address** .

   The **IP address** window is displayed as shown in the figure below.

FIGURE 61 Configuring the system IP address



3. Type the IP address of the device in the **IP Address** field.
4. Type the network mask for the IP address in the **Subnet Mask** field.
5. Type the IP address of a locally attached Layer 3 switch (or a Layer 3 switch attached to the Layer 2 switch by bridges or other Layer 2 switches) in the **Default Gateway** field.
6. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

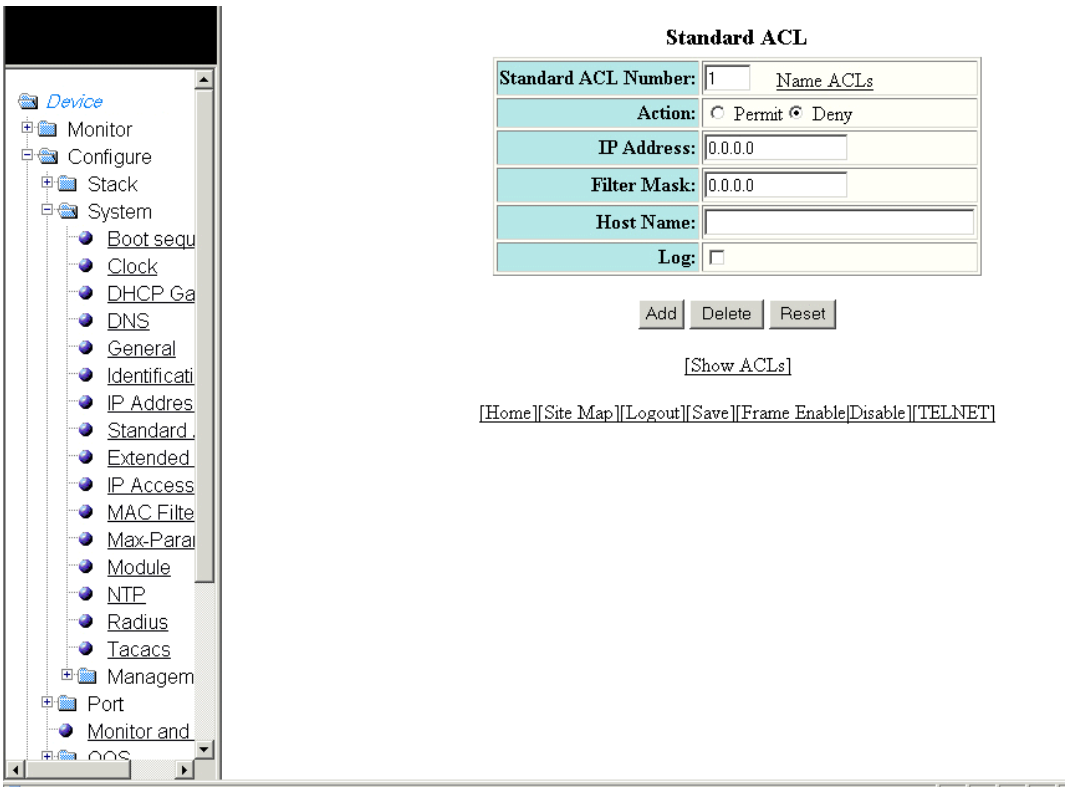
Configuring a standard ACL

To configure a standard Access Control List (ACL), perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Standard ACL** .

   The **Standard ACL** window is displayed as shown in the figure below.

FIGURE 62 Configuring a standard ACL



3. Type the standard ACL number from 1 through 99 in the **Standard ACL Number** field. If you want to type an ACL name, click **Name ACLs** . The field label changes to **Standard ACL Name** .
4. Click **Permit** or **Deny** for **Action** so that the ACL forwards or drops the packets that match the policy in the ACL.
5. Type the IP address of the route's destination in the **IP Address** field.
6. Type the masking bits in the **Filter Mask** field. This allows you to specify a range of IP addresses to include or exclude based on mask matching.
7. Type the host name in the **Host Name** field. The host name enables you to perform Telnet, ping, and trace route commands.
8. Select the **Log** check box to log the entries.
9. Click **Add** .

   The message `The change has been made` is displayed. To display the configured standard ACL, click **Show ACLs** . To delete the configured ACL, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

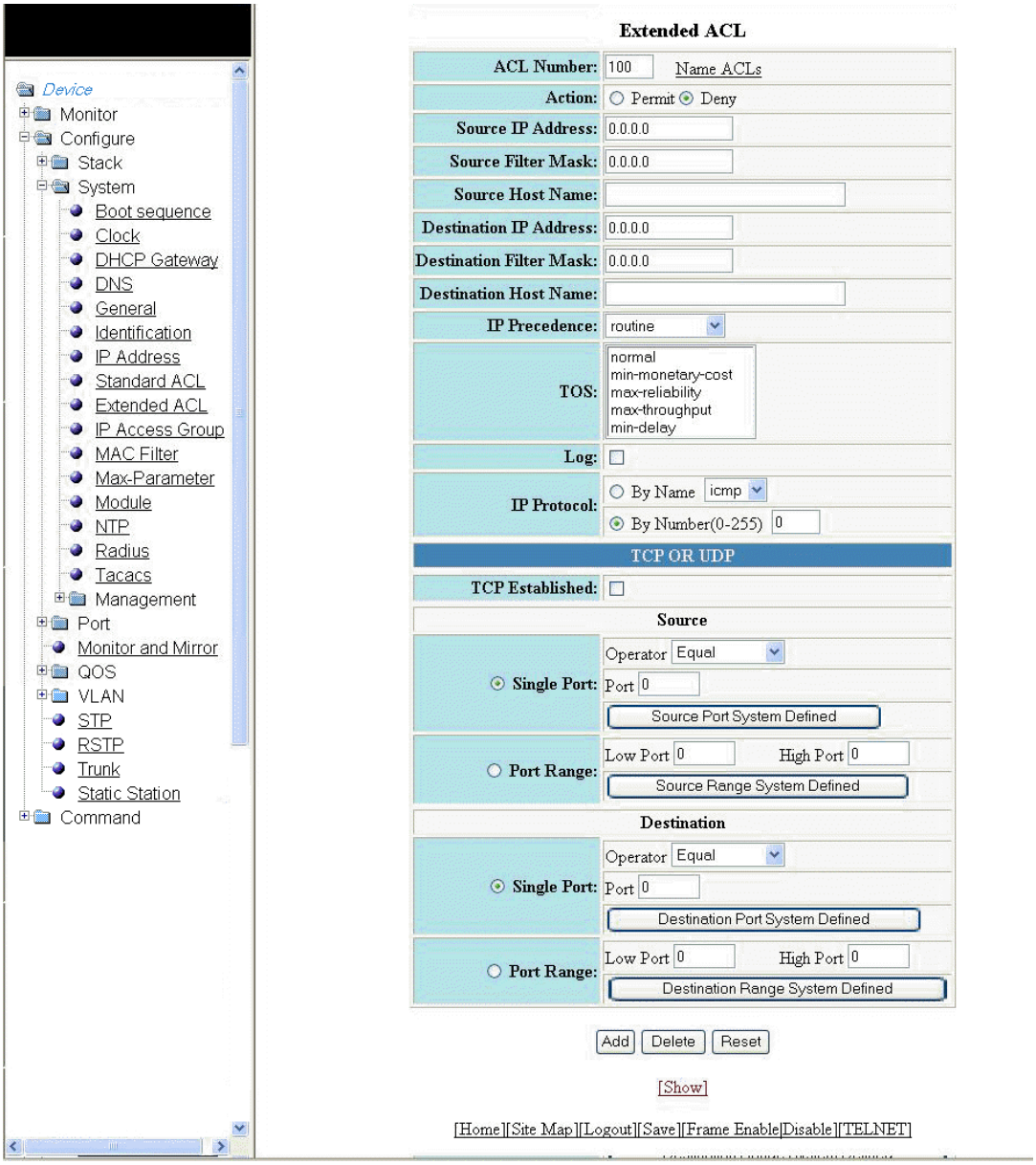
Configuring an extended ACL

To configure an extended Access Control List (ACL), perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Extended ACL**.

   The **Extended ACL** window is displayed as shown in the figure below.

FIGURE 63 Configuring an extended ACL



3. Type the extended ACL number (from 100 through 199) in the **ACL Number** field. If you want to specify an extended ACL name, click **Name ACLs**. The field label changes to **ACL Name**.
4. Click **Permit** or **Deny** for **Action** so that the packets that match the policy are forwarded or dropped.
5. Type the source IP address in the **Source IP Address** field.
6. Type the source mask in the **Source Filter Mask** field.
7. Type the source host name in the **Source Host Name** field.
8. Type the destination IP address in the **Destination IP Address** field.
9. Type the destination mask in the **Destination Filter Mask** field.
10. Type the destination host name in the **Destination Host Name** field.
11. Select one of the following options in the **IP Precedence** list:

- **routine** --The ACL matches packets that have the routine precedence.
- **priority** --The ACL matches packets that have the priority precedence.
- **immediate** --The ACL matches packets that have the immediate precedence.
- **flash** --The ACL matches packets that have the flash precedence.
- **flash-override** --The ACL matches packets that have the flash override precedence.
- **critical** --The ACL matches packets that have the critical precedence.
- **internet** --The ACL matches packets that have the internetwork control precedence.
- **network** --The ACL matches packets that have the network control precedence.

12. Select one of the following options in the **TOS** list:

- **normal** --The ACL matches packets that have the normal Type of Service (ToS).
- **min-monetary-cost** --The ACL matches packets that have the minimum monetary cost ToS.
- **max-reliability** --The ACL matches packets that have the maximum reliability ToS.
- **max-throughput** --The ACL matches packets that have the maximum throughput ToS.
- **min-delay** --The ACL matches packets that have the minimum delay ToS.

13. Select the **Log** check box to enable generation of SNMP traps and syslog messages for packets denied by the ACL.
14. Click **By Name** for I**P Protocol** to select the IP protocol by name or click **By Number** to specify the number (from 0 through 255).
15. Select the **TCP Established** check box so that the policy applies to TCP packets that have the ACK (Acknowledgment) or RST (Reset) bits set on (set to "1") in the Control Bits field of the TCP packet header. The policy applies only to the established TCP sessions, not to the new sessions.

NOTE
This field applies only to the destination TCP ports, not the source TCP ports.

16. Enter the following information for **Source**:
    a) To configure a single port, click **Single Port**.

       Select one of the following options for **Operator**:

       - **Equal** --The policy applies to the TCP or UDP port number or name you enter.
       - **NotEqual** --The policy applies to all the TCP or UDP port numbers except the port number or port name you enter.
       - **LessThan** --The policy applies to the TCP or UDP port numbers that are less than the port number or the numeric equivalent of the port name you enter.
       - **GreaterThan** --The policy applies to the TCP or UDP port numbers greater than the port number or the numeric equivalent of the port name you enter.

       Click **Source Port System Defined**.
    b) To configure a range of ports, click **Port Range**.

       Type the lower port number in the **Low Port** field and the highest port number in the **High Port** field.

       Click **Source Range System Defined**.
17. To configure the destination port settings under **Destination**, follow the procedure explained in step 16 .
18. Click **Add**.

The message `The change has been made` is displayed. To display the configured extended numbered ACL, click **Show**.

To delete the configured extended numbered ACL, click **Delete** . To reset the data entered in the configuration pane, click **Reset**.

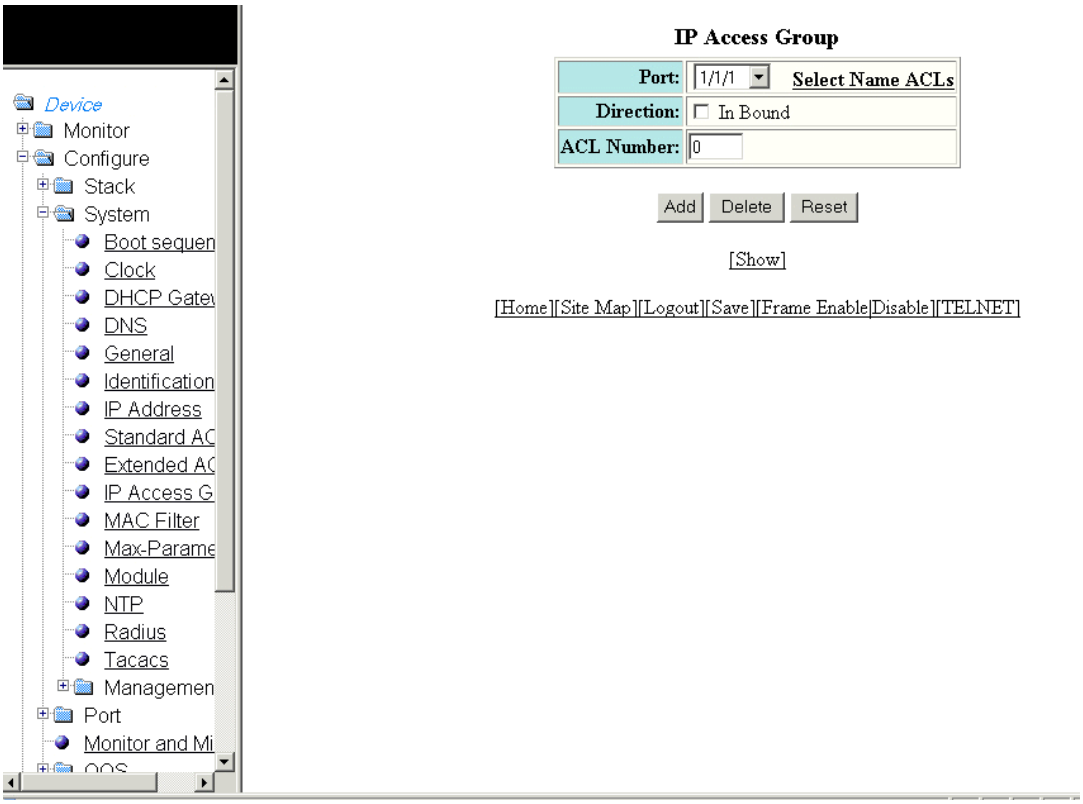
Configuring an IP access group

To configure an IP access group, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **IP Access Group**.

   The **IP Access Group** window is displayed as shown in the figure below.

   FIGURE 64 Configuring IP access groups



3. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Select the **In Bound** check box for **Direction** to enable incoming traffic on the interface to which you apply the ACL.
5. Type the ACL number in the **ACL Number** list. If you want to type an ACL name, click **Select Name ACLs**. The field label changes to **ACL Name** . Now, you can type the ACL name up to 256 alphanumeric characters.
6. Click **Add**.

   The message `The change has been made` is displayed. To display the configured IP access group, click **Show**.

   To delete the configured IP access group, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

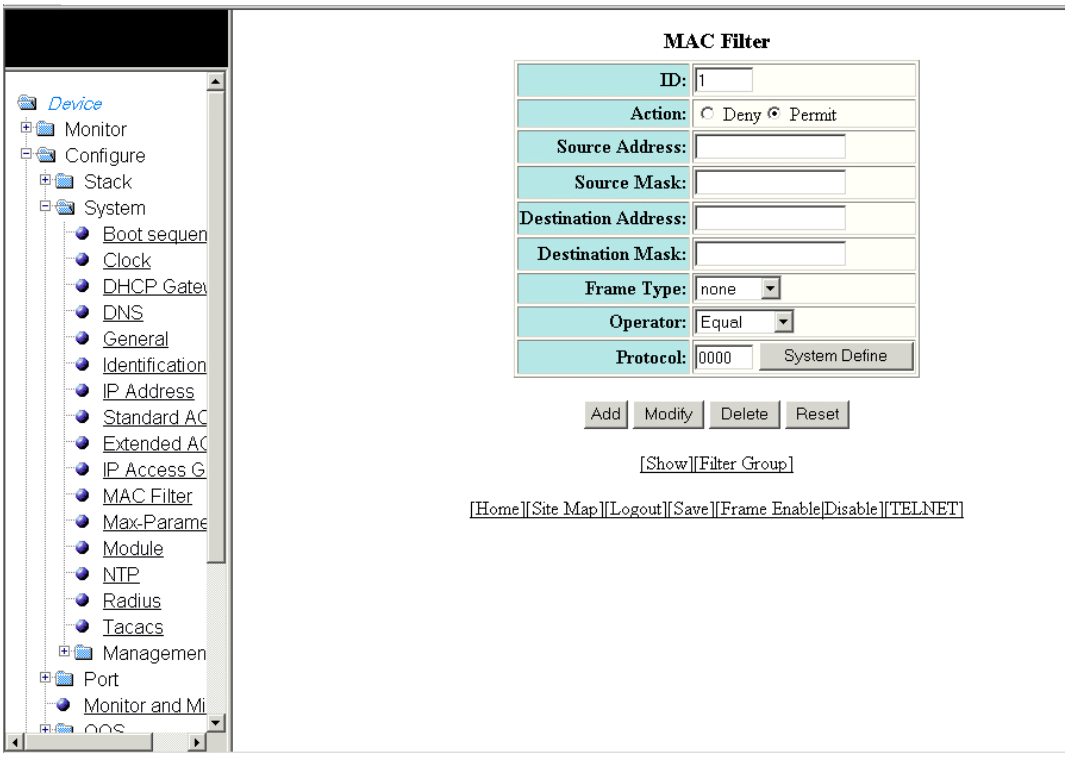
Configuring the system MAC filter

To configure the system MAC filter, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **MAC Filter**.

   The **MAC Filter** window is displayed as shown in the figure below.

   FIGURE 65 Configuring a MAC filter



3. Type the filter number in the **ID** field.
4. Click **Deny** or **Permit** for **Action**.
5. Type the source MAC address in xx.xx.xx.xx.xx.xx format in the **Source Address** field.
6. Type the source mask in the **Source Mask** field.
7. Type the destination MAC address in xx.xx.xx.xx.xx.xx format in the **Destination Address** field.
8. Type the destination mask in the **Destination Mask** field.
9. Select the type of frame in the **Frame Type** list.

NOTE
The **Frame Type** list is not available in the **MAC Filter** window for the Brocade FastIron SX devices.

10. Select the comparison operator in the **Operator** list.

NOTE
The **Operator** list is not available in the **MAC Filter** window for the Brocade FastIron SX devices.

11. Type the protocol identifier in the **Protocol** field. To select the system-defined protocol, click **System Define**.

NOTE
The **Protocol** field is not available in the **MAC Filter** window for the Brocade FastIron SX devices.

12. Click **Add**.

    The message `The change has been made` is displayed. To display the configured MAC filter, click **Show**.

    To change the configured MAC filter, click **Modify**. You can also delete the MAC filter by clicking **Delete** . To reset the data entered in the configuration pane, click **Reset**.

    To configure a filter group, click **Filter Group**. For more information on how to configure a filter group, refer to the “Configuring a filter group” section.

Configuring a filter group

To configure a system filter group, perform the following steps.

1. Click **Filter Group** on the right pane of the **MAC Filter** window.

   The **Filter Group** window is displayed as shown in the figure below.

FIGURE 66 Configuring a filter group

2. Select a port number in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
3. Type the filter identifier in the **Filter ID List** field.
4. Click **Add**.

   The message `The change has been made` is displayed. To display the configured filter group, click **Show**.

   To delete the configured filter group, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

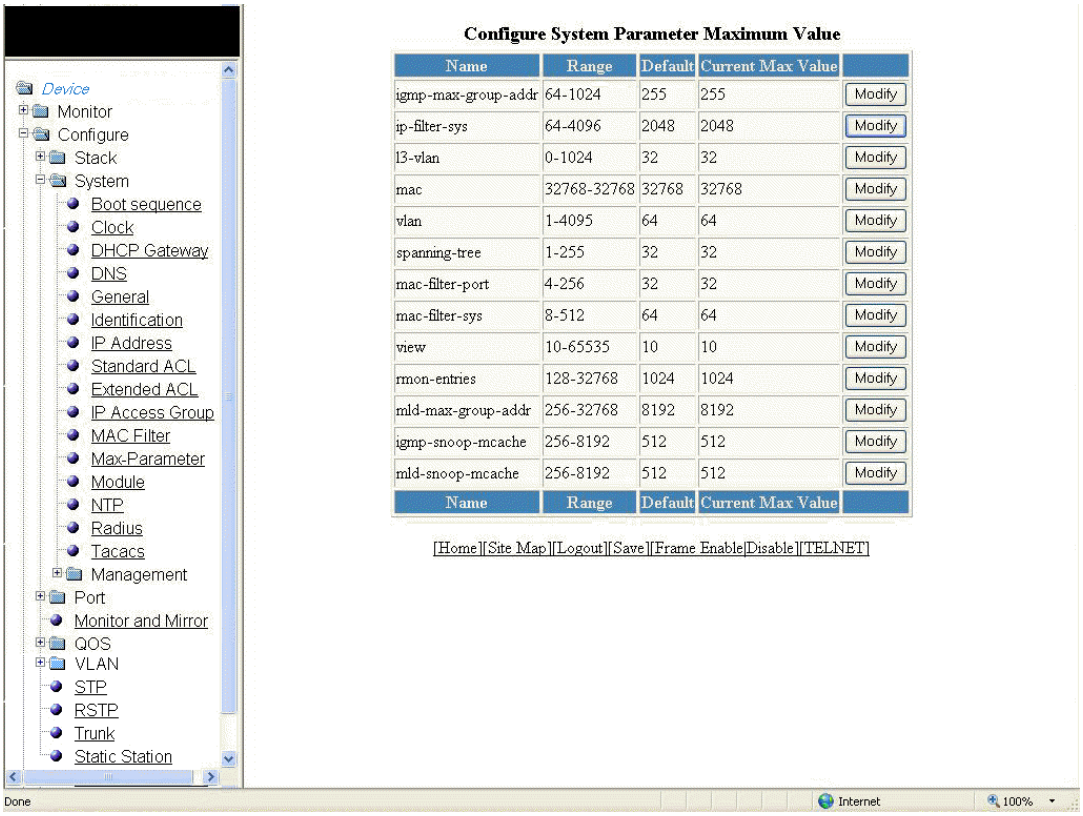
Configuring the maximum system parameter value

To configure the maximum system parameter value, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Max-Parameter** .

   The **Configure System Parameter Maximum Value** window is displayed as shown in the figure below.

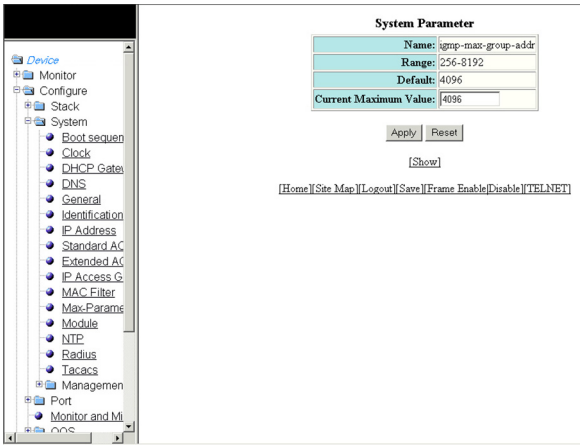
FIGURE 67 Configuring the maximum system parameter



3. To change the values for each system parameter, click **Modify** .

   The **System Parameter** window is displayed as shown in the figure below.

FIGURE 68 Modifying the maximum parameter value



4. Type the maximum value in the **Current Maximum Value** field.
5. Click **Apply** .

   The message `The change has been made` is displayed. To display the configured maximum system value, click **Show** . To reset the data entered in the configuration pane, click **Reset** .

Configuring a system module

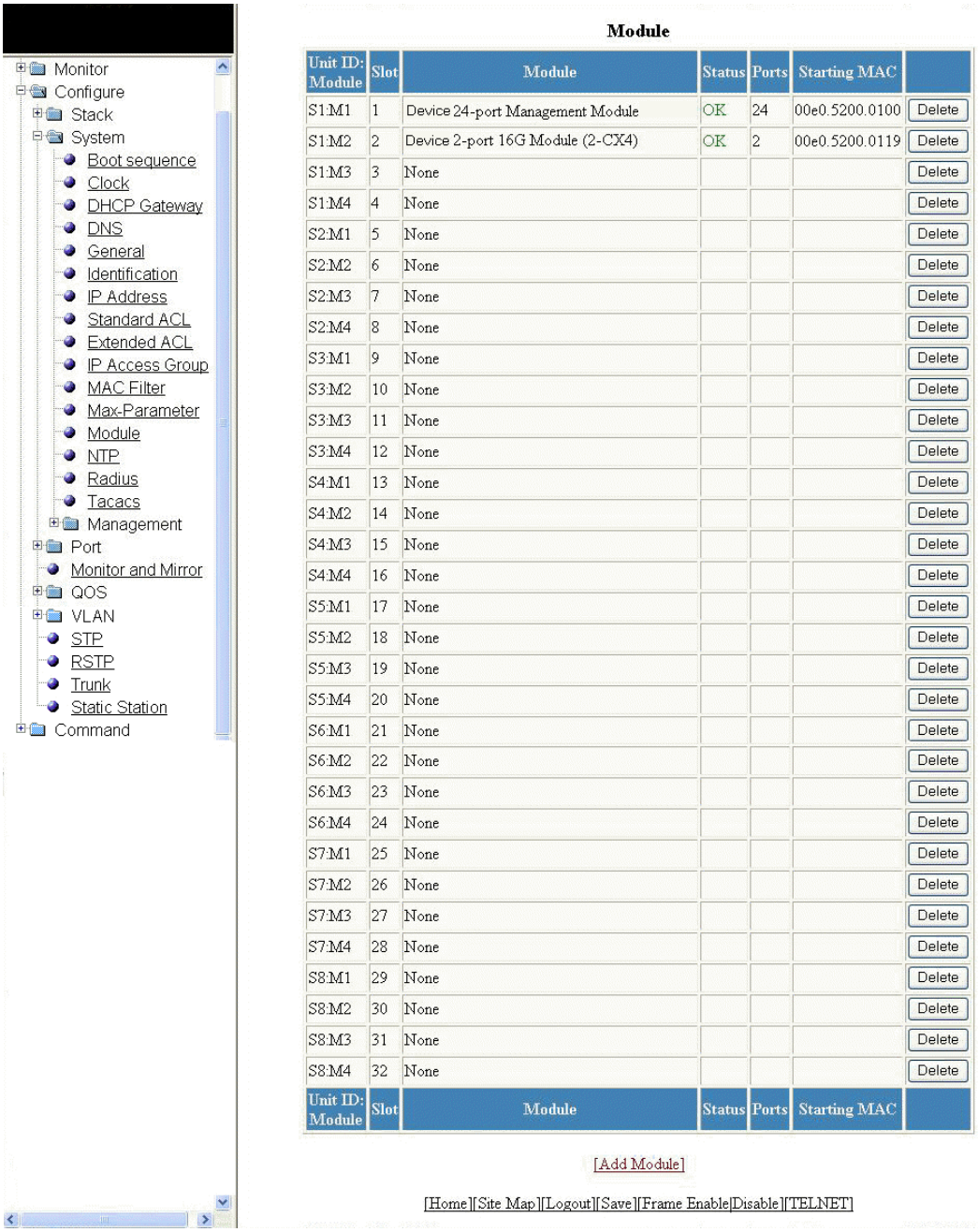
NOTE
The system module described here is specific to the Brocade FCX and Brocade ICX devices and is not available for the Brocade FastIron SX devices.

To configure a system module, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Module**.

   The **Module** window is displayed as shown in the figure below.

FIGURE 69 Configuring system modules

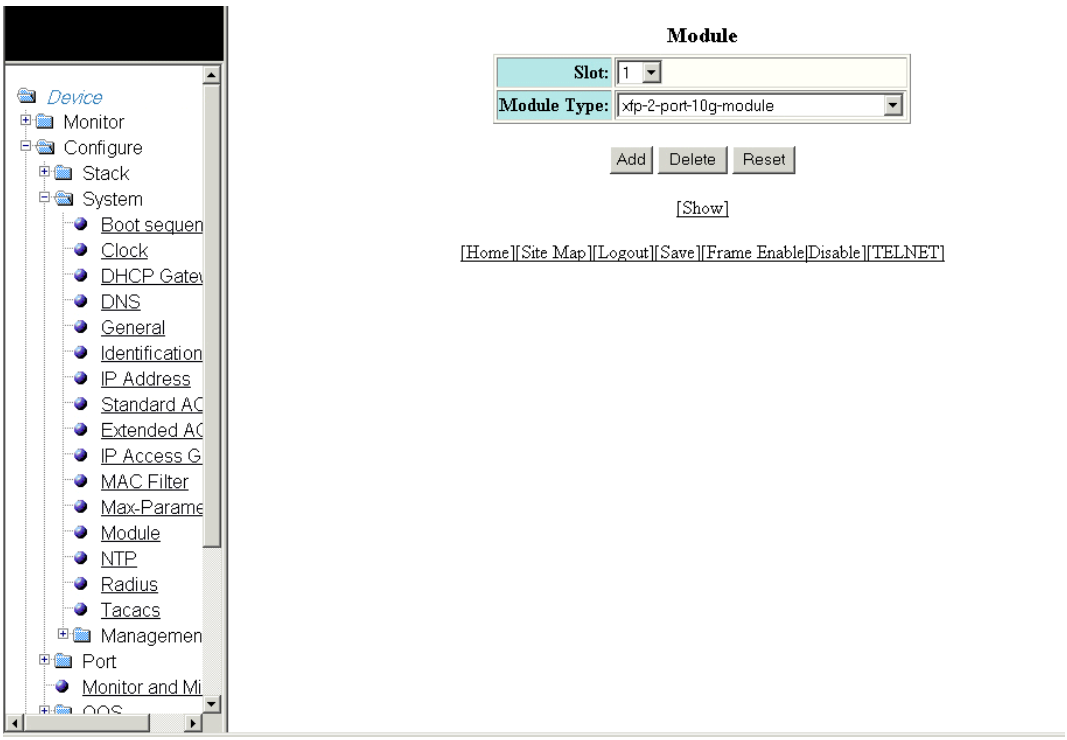


Unit ID: Module	Slot	Module	Status	Ports	Starting MAC	
S1:M1	1	Device 24-port Management Module	OK	24	00e0.5200.0100	Delete
S1:M2	2	Device 2-port 16G Module (2-CX4)	OK	2	00e0.5200.0119	Delete
S1:M3	3	None				Delete
S1:M4	4	None				Delete
S2:M1	5	None				Delete
S2:M2	6	None				Delete
S2:M3	7	None				Delete
S2:M4	8	None				Delete
S3:M1	9	None				Delete
S3:M2	10	None				Delete
S3:M3	11	None				Delete
S3:M4	12	None				Delete
S4:M1	13	None				Delete
S4:M2	14	None				Delete
S4:M3	15	None				Delete
S4:M4	16	None				Delete
S5:M1	17	None				Delete
S5:M2	18	None				Delete
S5:M3	19	None				Delete
S5:M4	20	None				Delete
S6:M1	21	None				Delete
S6:M2	22	None				Delete
S6:M3	23	None				Delete
S6:M4	24	None				Delete
S7:M1	25	None				Delete
S7:M2	26	None				Delete
S7:M3	27	None				Delete
S7:M4	28	None				Delete
S8:M1	29	None				Delete
S8:M2	30	None				Delete
S8:M3	31	None				Delete
S8:M4	32	None				Delete
Unit ID: Module	Slot	Module	Status	Ports	Starting MAC	

3. Click **Add Module**.

   The **Module** window is displayed as shown in the figure below.

FIGURE 70 Adding system modules



4. Select a slot number in the **Slot** list.
5. Select a chassis module type in the **Module Type** list.
6. Click **Add**.

   The message `The change has been made` is displayed. To display the configured module, click **Show**.

   To delete the configured module, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

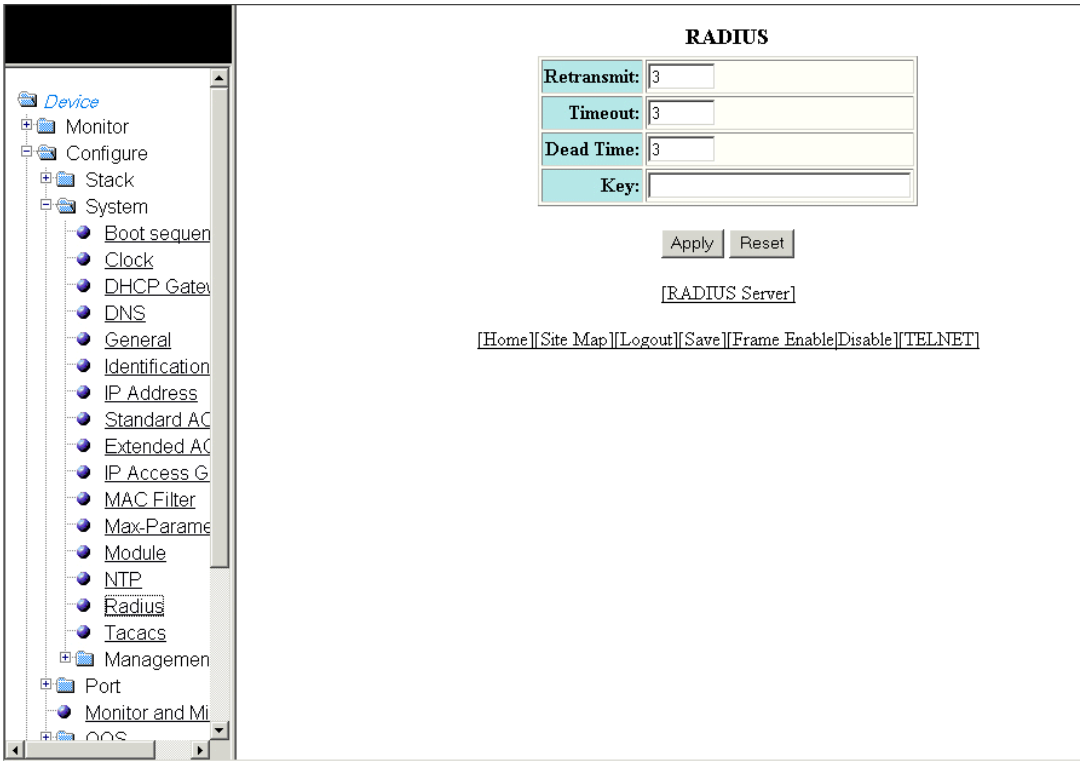
Configuring a RADIUS server

To configure a Remote Authentication Dial In User Service (RADIUS) server, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Radius** .

   The **RADIUS** window is displayed as shown in the figure below.

FIGURE 71 Configuring a RADIUS server



3. Type the retransmission interval, which specifies how many times the Brocade device resends an authentication request when the RADIUS server does not respond, in the **Retransmit** field. The range is from 1 through 5 times. The default is 3 times.
4. Type the timeout interval, which specifies how many seconds the Brocade device waits for a response from a RADIUS server before either retrying the authentication request or determining that the RADIUS servers are unavailable and moving on to the next authentication method in the authentication method list, in the **Timeout** field. The range is from 1 through 15 seconds. The default is 3 seconds.
5. Type the dead interval, which specifies how long the Brocade device waits for the primary authentication server to reply before deciding the server is dead and trying to authenticate using the next server, in the **Dead Time** field. The range is from 1 through 5 seconds. The default is 3 seconds.
6. Type the RADIUS key in the **Key** field. This is used to encrypt RADIUS packets before they are sent over the network. The value for the key parameter on the Brocade device should match the one configured on the RADIUS server. The key can be from 1 through 32 characters in length and cannot include any space characters.
7. Click **Apply** .

   The message `The change has been made` is displayed. To display the configured RADIUS server, click **RADIUS Server** . To reset the data entered in the configuration pane, click **Reset** .

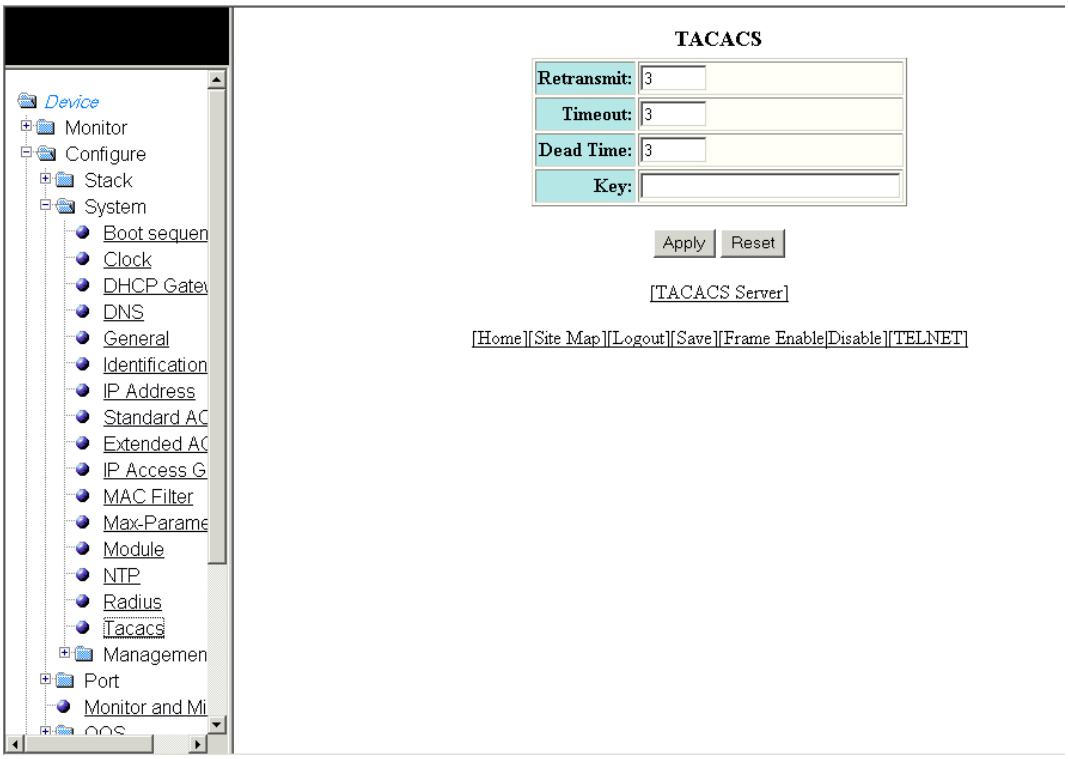
Configuring a TACACS/TACACS+ server

To configure a TACACS/TACACS+ server, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Tacacs** .

   The **TACACS** window is displayed as shown in the figure below.

   FIGURE 72 Configuring a TACACS/TACACS+ server



3. Type the retransmission interval, which specifies how many times the Brocade device resends an authentication request when the TACACS/TACACS+ server does not respond, in the **Retransmit** field. The range is from 1 through 5 times. The default is 3 times.
4. Type the timeout interval, which specifies how many seconds the Brocade device waits for a response from a TACACS/TACACS+ server before either retrying the authentication request or determining that the TACACS/TACACS+ servers are unavailable and moving on to the next authentication method in the authentication method list, in the **Timeout** field. The range is from 1 through 15 seconds. The default is 3 seconds.
5. Type the dead interval, which specifies how long the Brocade device waits for the primary authentication server to reply before deciding the server is dead and trying to authenticate using the next server, in the **Dead Time** field. The range is from 1 through 5 seconds. The default is 3 seconds.
6. Type the TACACS/TACACS+ key in the **Key** field. This is used to encrypt TACACS/TACACS+ packets before they are sent over the network. The value for the key parameter on the Brocade device should match the one configured on the TACACS/TACACS+ server. The key can be from 1 through 32 characters in length and cannot include any space characters.
7. Click **Apply** .

   The message `The change has been made` is displayed. To display the configured TACACS/TACACS+ server, click **TACACS Server** . To reset the data entered in the configuration pane, click **Reset** .

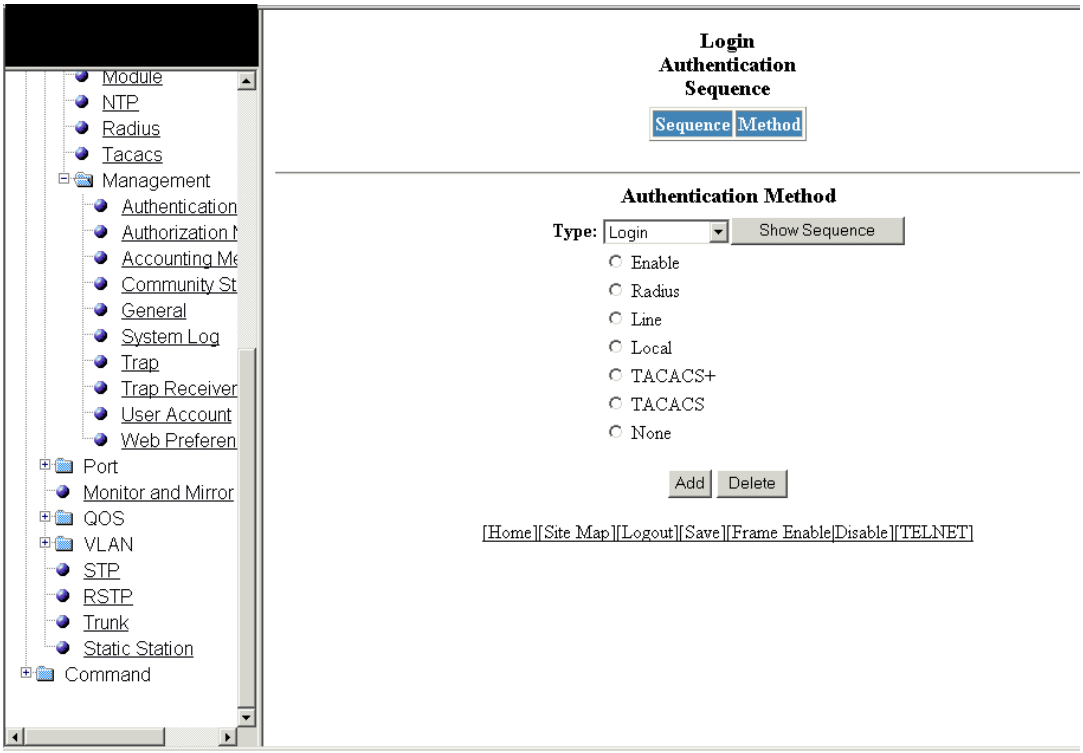
Configuring management authentication

To configure management authentication, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **Authentication Methods**.

   The **Authentication Method** window is displayed as shown in the figure below.

   FIGURE 73 Configuring management authentication



3. Select one of the following types of authentication in the **Type** list:
   - **Login**
   - **Enable**
   - **Web Server**
   - **SNMP Server**
4. Click one of the following servers:
   - **Enable**
   - **Radius**
   - **Line**
   - **Local**
   - **TACACS+**
   - **TACACS**
   - **None**
5. Click **Add**.

The message `The change has been made` is displayed and the configured authentication method is listed in the **Login Authentication Sequence** pane. Click **Show Sequence** to display the list of authentication methods added. To remove the configured management authentication, click **Delete**.

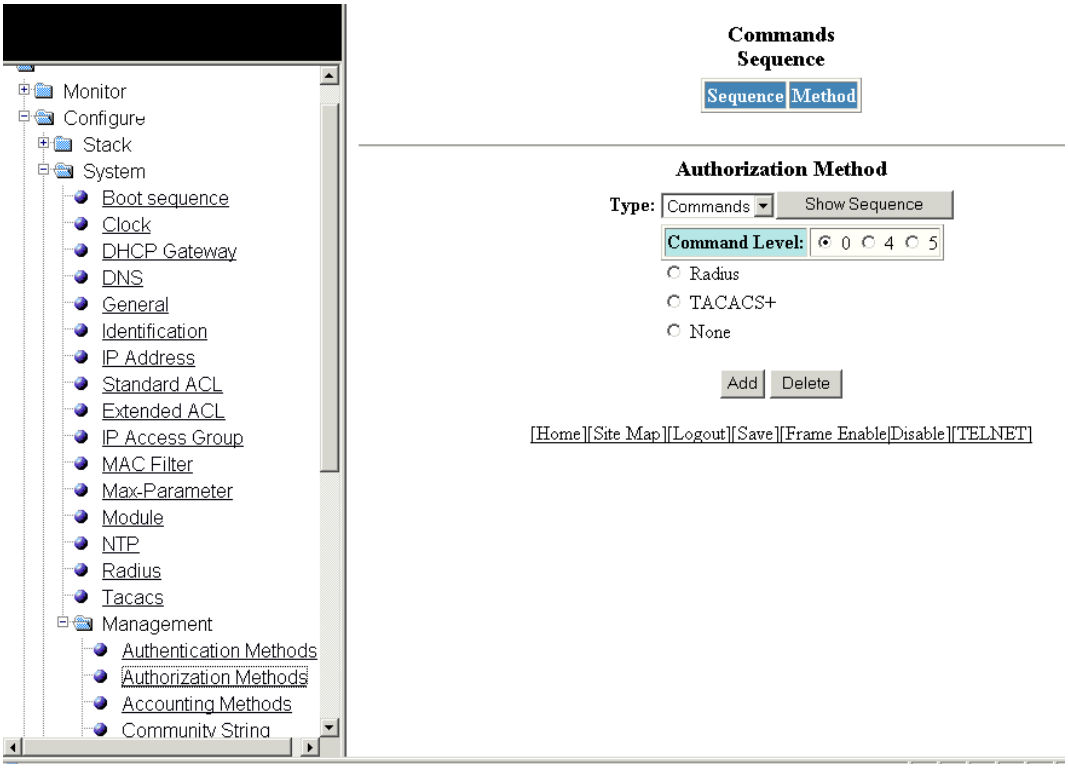
Configuring management authorization

To configure management authorization, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **Authorization Methods**.

   The **Authorization Method** window is displayed as shown in the figure below.

   FIGURE 74 Configuring management authorization



3. Select either of the following modes of authorization in the **Type** list:
   - **Commands**
   - **Exec**
4. Click **0** or **4** or **5** for **Command Level**.
5. Click one of the following servers:
   - **Radius**
   - **TACACS+**
   - **None**
6. Click **Add**.

The message `The change has been made` is displayed and the configured authorization method is listed in the **Commands Sequence** pane. Click **Show Sequence** to display the list of authentication methods added. To delete the configured management authorization, click **Delete**.

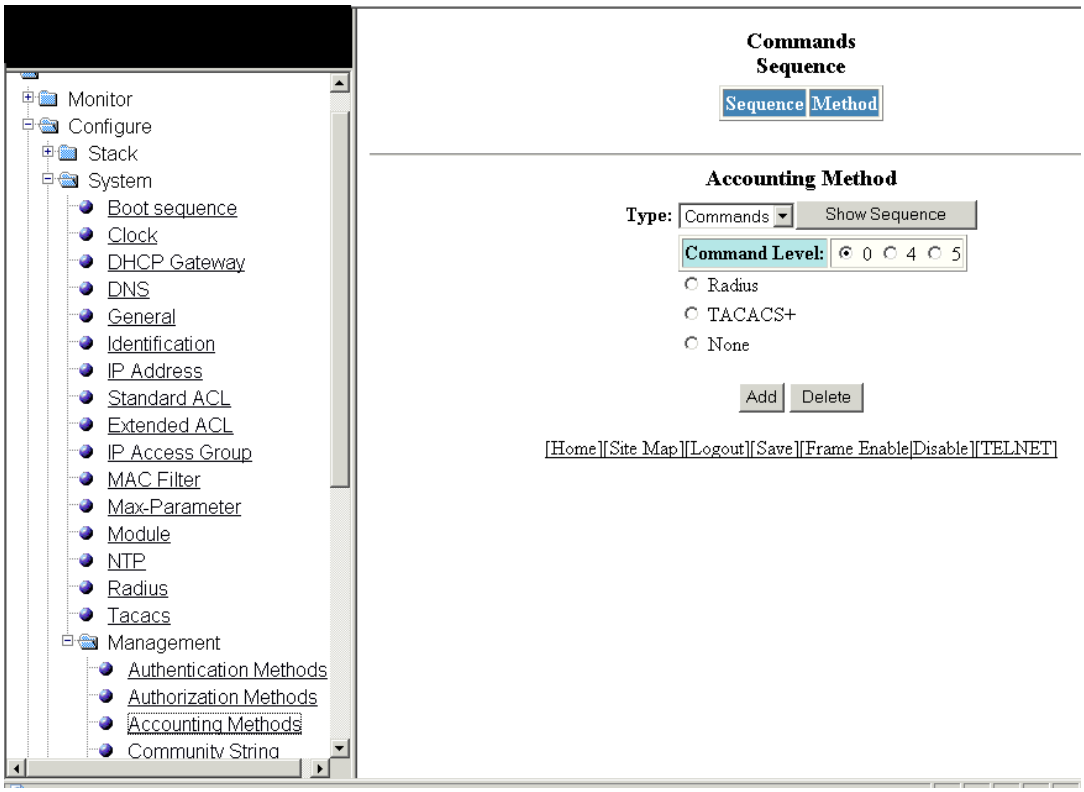
Configuring management accounting

To configure management accounting, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **Accounting Methods**.

   The **Accounting Method** window is displayed as shown in the figure below.

   FIGURE 75 Configuring management accounting methods



3. Select one of the following modes of authorization:
   - **Commands**
   - **Exec**
   - **System**
4. Click **0** or **4** or **5** for **Command Level** .
5. Click one of the following servers:
   - **Radius**
   - **TACACS+**
   - **None**
6. Click **Add**.

The message `The change has been made` is displayed and the configured accounting method is listed in the **Commands Sequence** pane. To delete the configured accounting method, click **Delete**.

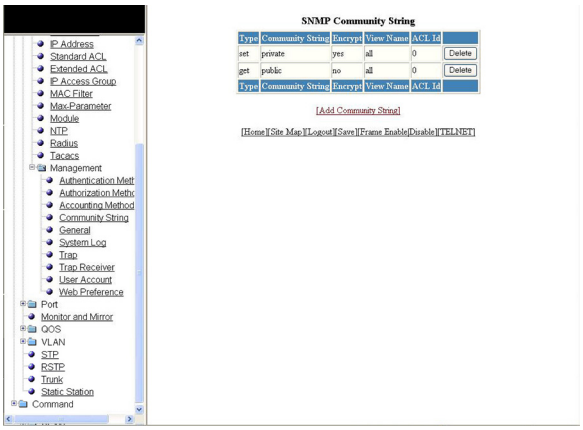
Configuring an SNMP community string

To configure an SNMP community string, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Management** and select **Community String.**

   The **SNMP Community String** window is displayed as shown in the figure below.

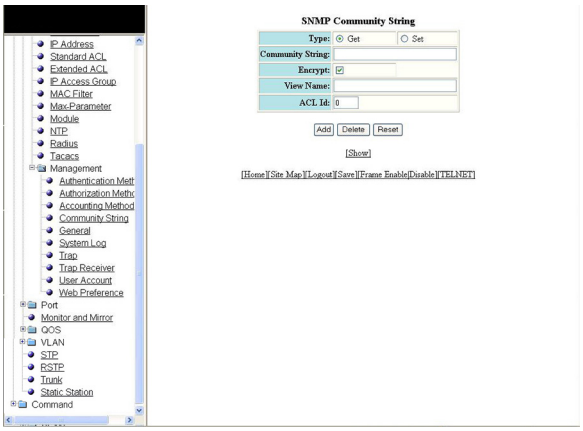
   FIGURE 76 Configuring an SNMP community string



3. Click **Add Community String** .

   The **SNMP Community String** window is displayed as shown in the figure below.

   FIGURE 77 Adding community strings



4. Click **Get** or **Set** for **Type** .
5. Type the user name to open a web management session in the **Community String** field.
6. Select the **Encrypt** check box to enable encryption for a particular string.

7. Type the name of the community string in the **View Name** field.
8. Type the ACL number in the **ACL Id** field.
9. Click **Add** .

   The message `The change has been made` is displayed. To display the configured community string, click **Show** .

   To delete the community string, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

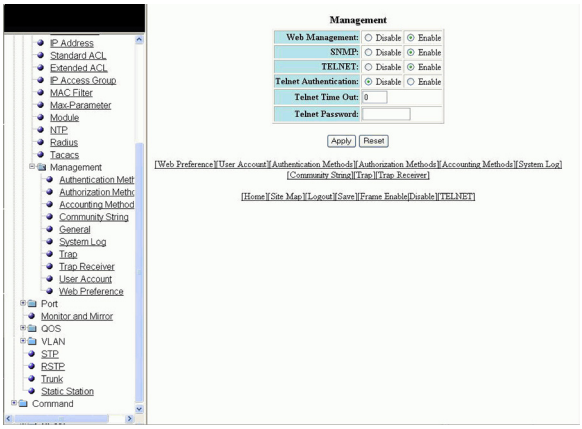
Configuring the general management parameters

To configure the general management parameters, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Management** and select **General** .

   The **Management** window is displayed as shown in the figure below.

   FIGURE 78 Configuring general management parameters



3. Click **Disable** or **Enable** for **Web Management** .
4. Click **Disable** or **Enable** for **SNMP** .
5. Click **Disable** or **Enable** for **TELNET** .
6. Click **Disable** or **Enable** for **Telnet Authentication** .
7. Type the timeout interval in seconds to wait for a response in the **Telnet Time Out** field.
8. Type an alphanumeric password in the **Telnet Password** field.
9. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

   The **Management** window provides links to configure other management parameters:

   - To configure the web management preferences, click **Web Preference** . For more information, refer to Configuring the web management preferences on page 137.
   - To configure a management user account, click **User Account** . For more information, refer to Configuring a management user account on page 136.
   - To configure management authentication, click **Authentication Methods** . For more information, refer to Configuring management authentication on page 127.

- To configure management authorization, click **Authorization Methods** . For more information, refer to Configuring management authorization on page 128.
- To configure management accounting, click **Accounting Methods** . For more information, refer to Configuring management accounting on page 129.
- To configure a system module, click **System** . For more information, refer to Configuring a system module on page 122.
- To configure an SNMP community string, click **Community String** . For more information, refer to Configuring a system module on page 122.
- To configure a trap, click **Trap** . For more information, refer to Configuring a trap on page 134.
- To configure a trap receiver, click **Trap Receiver** . For more information, refer to Configuring a trap receiver on page 135.

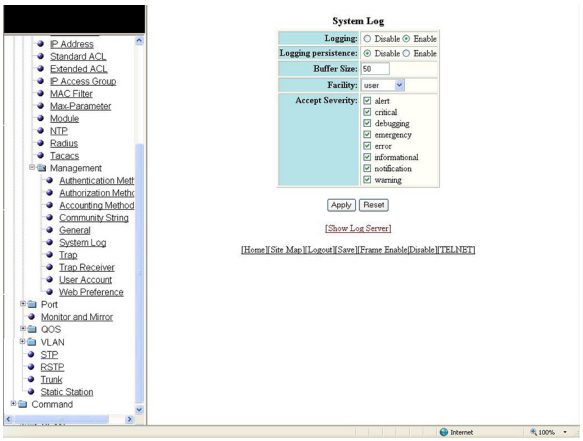
Configuring a management system log

To configure a management system log, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **System Log**.

   The **System Log** window is displayed as shown in the figure below.

   FIGURE 79 Configuring a system log



3. Click **Disable** or **Enable** for **Logging**. By default, the syslog buffer is enabled.
4. Click **Disable** or **Enable** for **Logging persistence**. By default, logging persistence is disabled.
5. Type the number of messages in the **Buffer Size** field.
6. Select a facility in the **Facility** list.
7. Select one of the following severity levels for **Accept Severity**:

   - **alert**
   - **critical**
   - **debugging**
   - **emergency**
   - **error**
   - **informational**

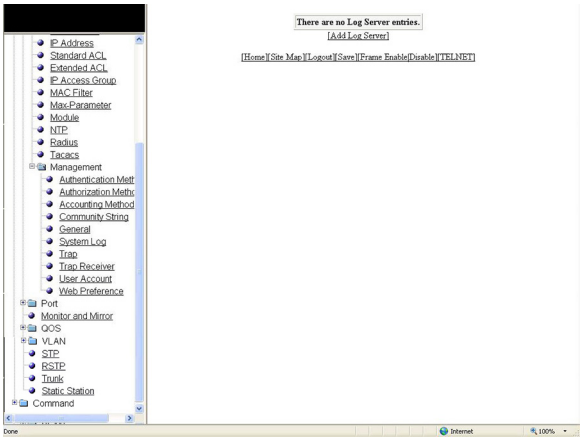
- **notification**
- **warning**

8. Click **Apply** .

   The message `The change has been made` is displayed. To display log server entries, click **Show Log Server**. To reset the data entered in the configuration pane, click **Reset**.

   If there are no log servers, the message `There are no Log Server entries` is displayed as shown in the figure below.

   FIGURE 80 Viewing log server entries



   To add extra log servers to your system log configuration, perform the following steps.

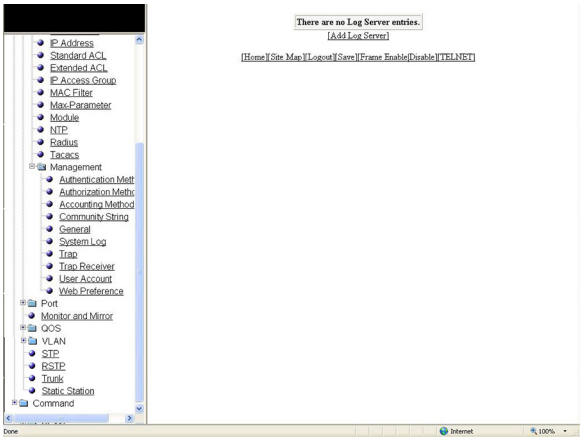
Adding a log server

To add a log sever, perform the following steps.

1. Click **Add Log Server**.

   The **System Log Server** window is displayed as shown in the figure below.

   FIGURE 81 Adding a Log Server



2. Click **ipv4** or **ipv6** and then type the IPv4 or IPv6 address in the **Server IP Address** field.

3. Type the application port that can be used for the syslog facility in the **Server Udp Port** field. The default value is 514.
4. Click **Add** .

   The message `The change has been made` is displayed. To display the log server entries, click **Show Log Server** . To display the system log window, click **Show System Log** .

   To delete the changes made, click **Delete**. To reset the data entered in the configuration pane **Reset**.

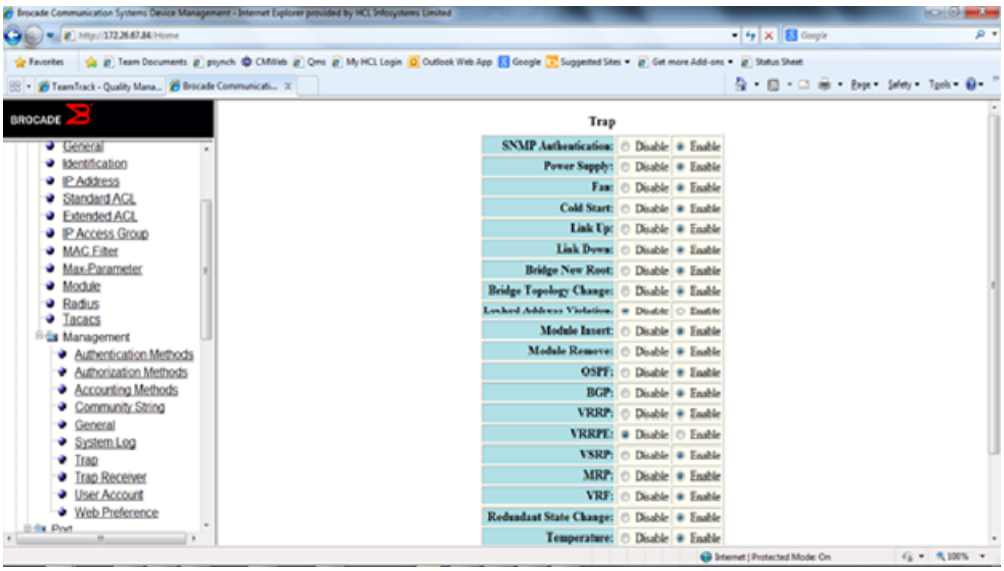
Configuring a trap

To configure a trap, perform the following steps.

1. Click **Configure** on the left pane and select **System** .
2. Click **Management** and select **Trap** .

   The **Trap** window is displayed as shown in the figure below.

   FIGURE 82 Configuring a trap



3. Click **Disable** or **Enable** for **SNMP Authentication** .
4. Click **Disable** or **Enable** for **Power Supply** .
5. Click **Disable** or **Enable** for **Fan** .
6. Click **Disable** or **Enable** for **Cold Start** .
7. Click **Disable** or **Enable** for **Link Up** .
8. Click **Disable** or **Enable** for **Link Down** .
9. Click **Disable** or **Enable** for **STP New Root** .
10. Click **Disable** or **Enable** for **STP Topology Change** .
11. Click **Disable** or **Enable** for **Locked Address Violation** .
12. Click **Disable** or **Enable** for **Module Inserted** .
13. Click **Disable** or **Enable** for **Module Removed** .
14. Click **Disable** or **Enable** for **OSPF** .

15. Click **Disable** or **Enable** for **Temperature warning** .
16. Click **Apply** .

    The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

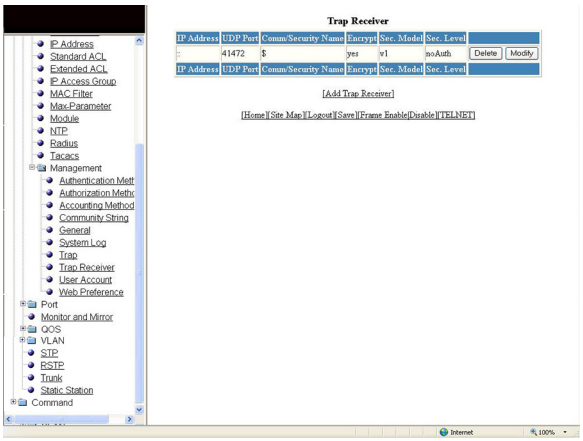
Configuring a trap receiver

To configure a trap receiver, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **Trap Receiver**.

   The **Trap Receiver** window is displayed as shown in the figure below.

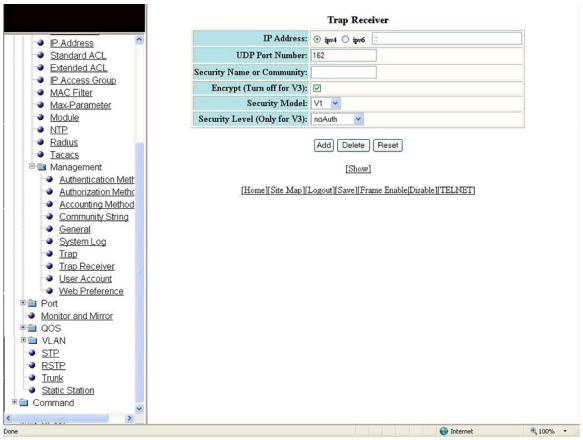
   FIGURE 83 Configuring a trap receiver



3. Click **Add Trap Receiver** to configure a new trap receiver.

   The **Trap Receiver** window is displayed as shown here.

   FIGURE 84 Adding a new trap receiver



4. Click **ipv4** or **ipv6** and then type the IP address of the destination of the route in the **IP Address** field.

5. Type the UDP port number of the host that will receive the trap in the **UDP Port Number** field.
6. Type an arbitrary value made of two five-digit integers joined by a colon in the **Security Name or Community** field. Each string in the community name can be a number from 0 through 65535.
7. Select the **Encrypt (Turn off for V3)** check box to enable or disable encryption for a particular string. It is turned off for V3.
8. Select one of the following options in the **Security Model** list:
   - **V1**
   - **V2C**
   - **V3**
9. For V3 only, select one of the following options in the **Security Level (Only for V3)** list:
   - **noAuth** --Allow all packets.
   - **authNoPriv** --Allow only authenticated packets.
   - **authPriv** --A password is required.
10. Click **Add**.

    The message `The change has been made` is displayed. To view the trap receiver entries, click **Show**.

    To delete the trap receiver, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

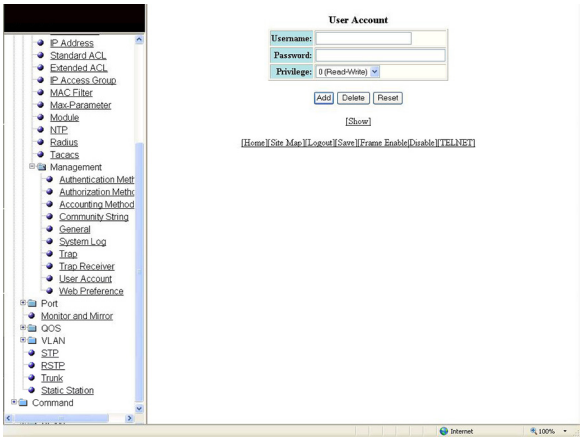
Configuring a management user account

To configure a management user account, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **User Account**.

   The **User Account** window is displayed as shown in the figure below.

   FIGURE 85 Configuring a management user account



3. Type the user identifier in the **Username** field.
4. Type the login password in the **Password** field.
5. Select one of the following options in the **Privilege** list:

- **0 (Read-Write)**
- **4 (Port-Config)**
- **5 (Read-Only)**

6. Click **Add**.

   The message `The change has been made` is displayed. To view the configured user account, click **Show**.

   To delete the configured user account, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

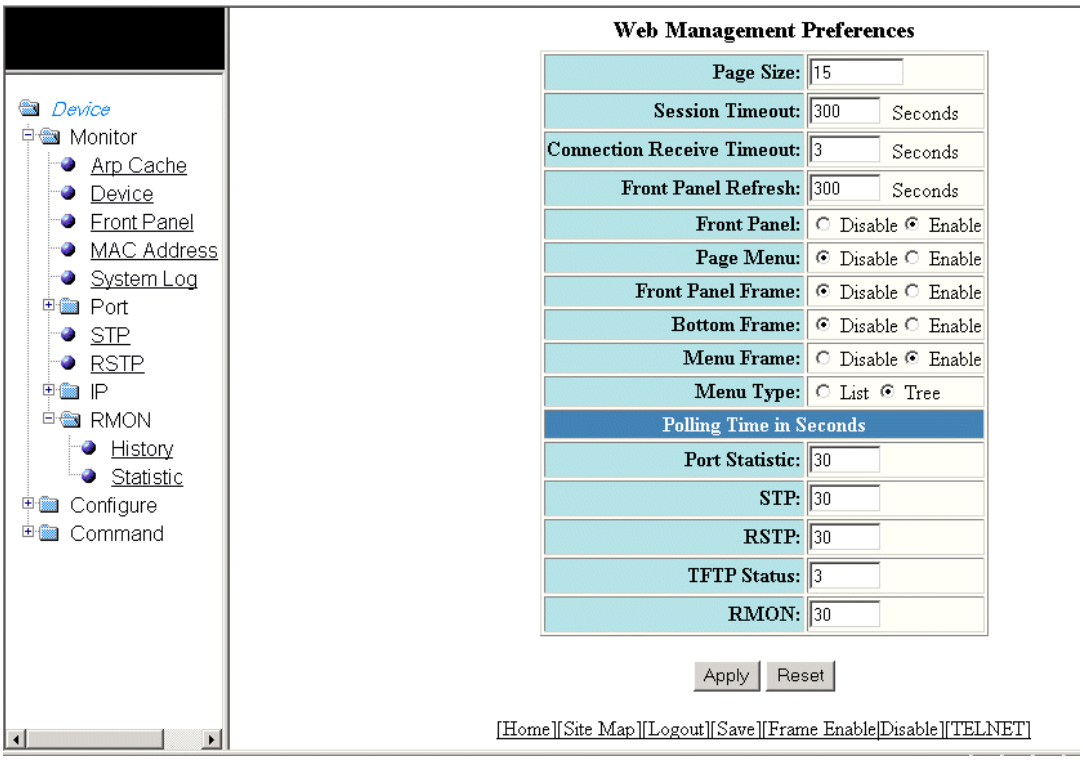
Configuring the web management preferences

To configure the web management preferences, perform the following steps.

1. Click **Configure** on the left pane and select **System**.
2. Click **Management** and select **Web Preference**.

   The **Web Management Preferences** window for the Brocade FastIron SX devices is displayed as shown in the figure below.

   FIGURE 86 Configuring the web management preferences



3. Type the page size in the **Page Size** field.
4. Type the console session timeout value in seconds in the **Session Timeout** field.
5. Type the wait time interval after getting disconnected from the application in the **Connection Receive Timeout** field.

6. Type the number of seconds after which the front panel gets refreshed in the **Front Panel Refresh** field.
7. Click **Disable** or **Enable** for **Front Panel**. By default, it is enabled and the ports are labelled on the front panel of the devices.
8. Click **Disable** or **Enable** for **Page Menu**.
9. Click **Disable** or **Enable** for **Front Panel Frame**.
10. Click **Disable** or **Enable** for **Bottom Frame**.
11. Click **Disable** or **Enable** for **Menu Frame**.
12. Click **List** or **Tree** for **Menu Type**.
13. Type the port statistics polling time in the **Port Statistic** field.
14. Type the STP statistics polling time in the **STP** field.
15. Type the RSTP statistics polling time in the **RSTP** field.

NOTE
The **RSTP** field is not available in the **Web Management Preference** window for the Brocade FCX and Brocade ICX devices.

16. Type the TFTP polling time in seconds in the **TFTP Status** field.
17. Type the polling time for Remote Monitoring in the **RMON** field.
18. Click **Apply**.

The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset**.

Configuring Module Components

NOTE
This chapter is specific to the Brocade FastIron SX devices.

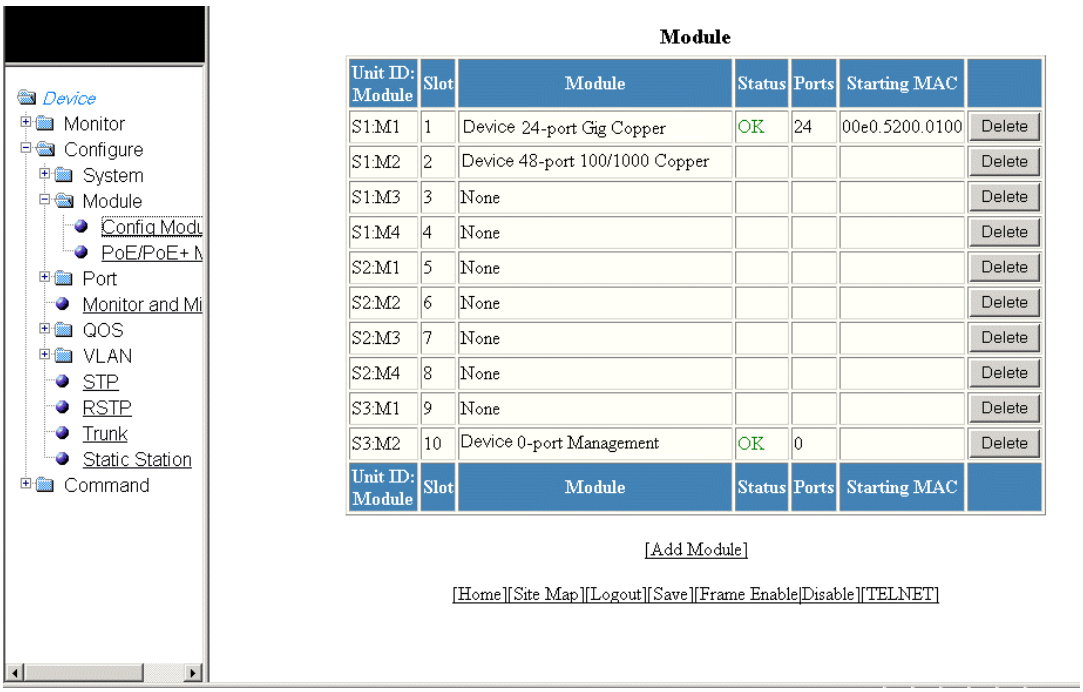
Configuring a module

To configure a chassis module, perform the following steps.

1. Click **Configure** on the left pane and select **Module** .
2. Click **Config Module** .

   The **Module** window is displayed as shown in the figure below.

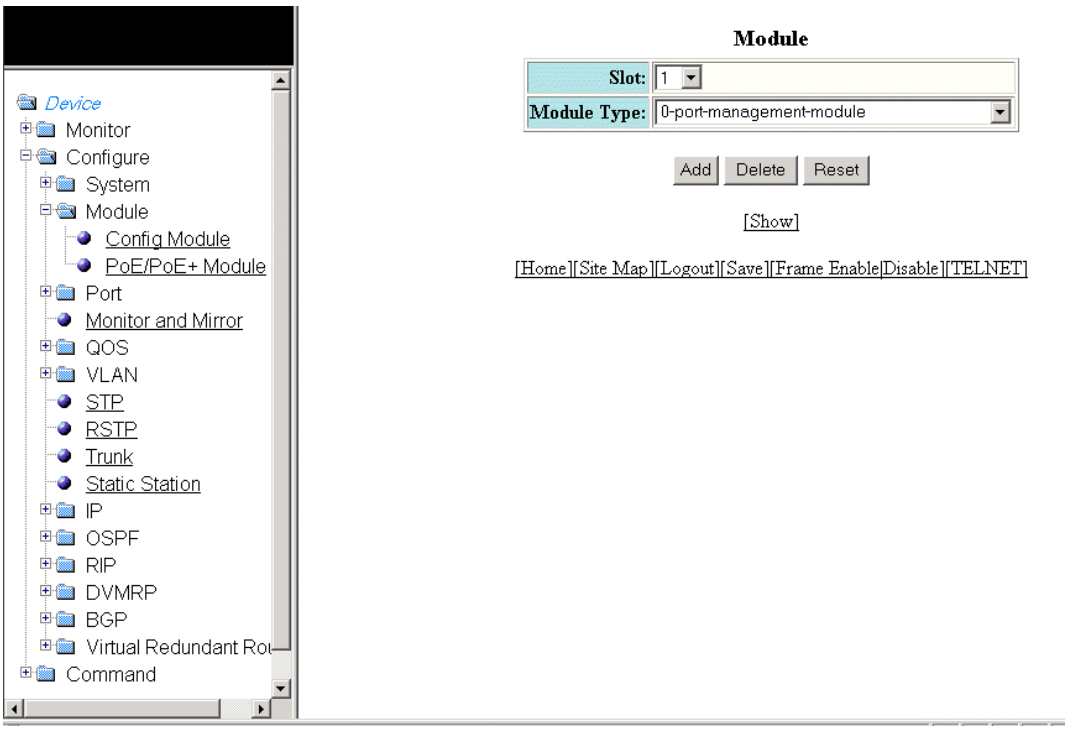
   FIGURE 87 Configuring a module



3. Click **Add Module** .

   The **Module** window is displayed as shown in the figure below.

FIGURE 88 Configuring a module



4. Select a slot number in the **Slot** list.
5. Select a chassis module type in the **Module Type** list.
6. Click **Add** .

   The message `The change has been made` is displayed. To display the configured module, click **Show** .

   To delete the configured module, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

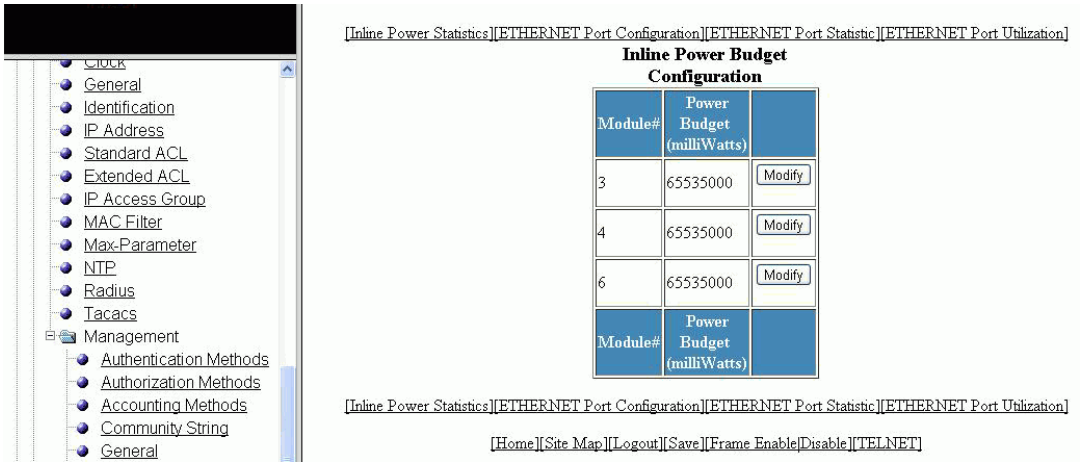
Modifying inline power budget

To configure Power over Ethernet (PoE), perform the following steps.

1. Click **Configure** on the left pane and select **Module** .
2. Click **PoE/PoE+ Module** .

   The **Inline Power Budget Configuration** window is displayed as shown in the figure below.

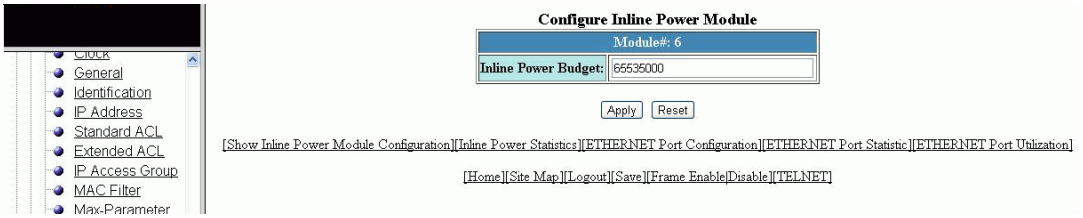
FIGURE 89 Configuring PoE



3. Click **Modify** .

   The **Configure Inline Power Module** window is displayed as shown in the figure below.

   FIGURE 90 Modifying the inline power module



4. Type the number of milliwatts (from 0 through 65535000) to allocate to the module in the **Inline Power Budget** field. The default value is 65535000 milliwatts.
5. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** . To display the configured inline power budget, click **Show Inline Power Module Configuration** .

   The **Inline Power Budget Configuration** window provides links to monitor the power budget of the PoE or PoE+ modules and to configure and monitor port parameters:

   - To display the power budget of the PoE or PoE+ module, click **Inline Power Statistics** . For more information, refer to Displaying inline power details on page 62.
   - To configure an Ethernet port, click **ETHERNET Port Configuration** . For more information, refer to Configuring an Ethernet port on page 143.
   - To view the total number of packets, collisions, and errors that have occurred on a port, click **ETHERNET Port Statistic** . For more information, refer to Displaying Ethernet port statistics on page 51.
   - To view the traffic that is received and transmitted on a port, click **ETHERNET Port Utilization** . For more information, refer to Displaying Ethernet port utilization on page 55.

Configuring Port Parameters

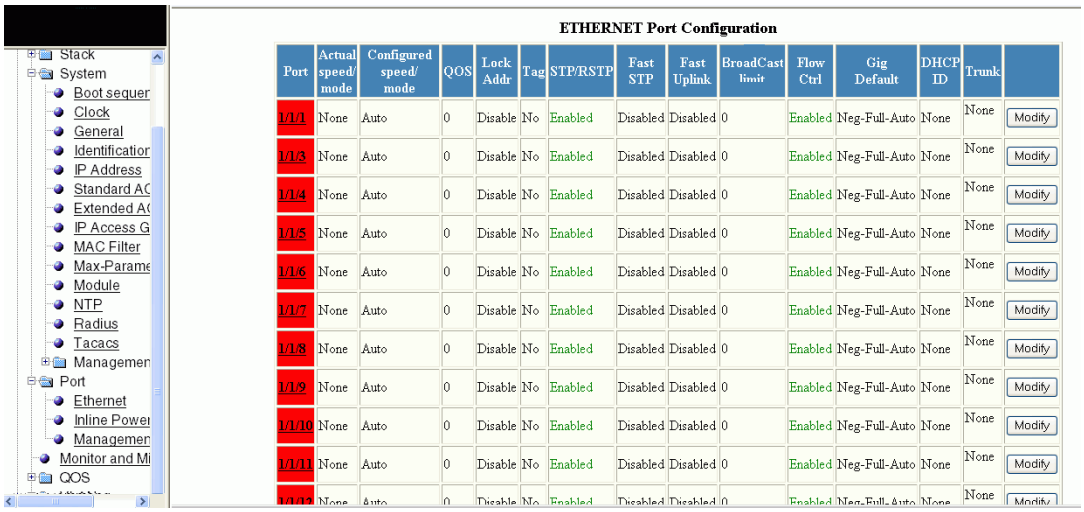
Configuring an Ethernet port

To configure an Ethernet port, perform the following steps.

1. Click **Configure** on the left pane and select **Port**.
2. Click **Ethernet**.

   The **ETHERNET Port Configuration** window is displayed as shown in the figure below.

   FIGURE 91 Configuring an Ethernet port



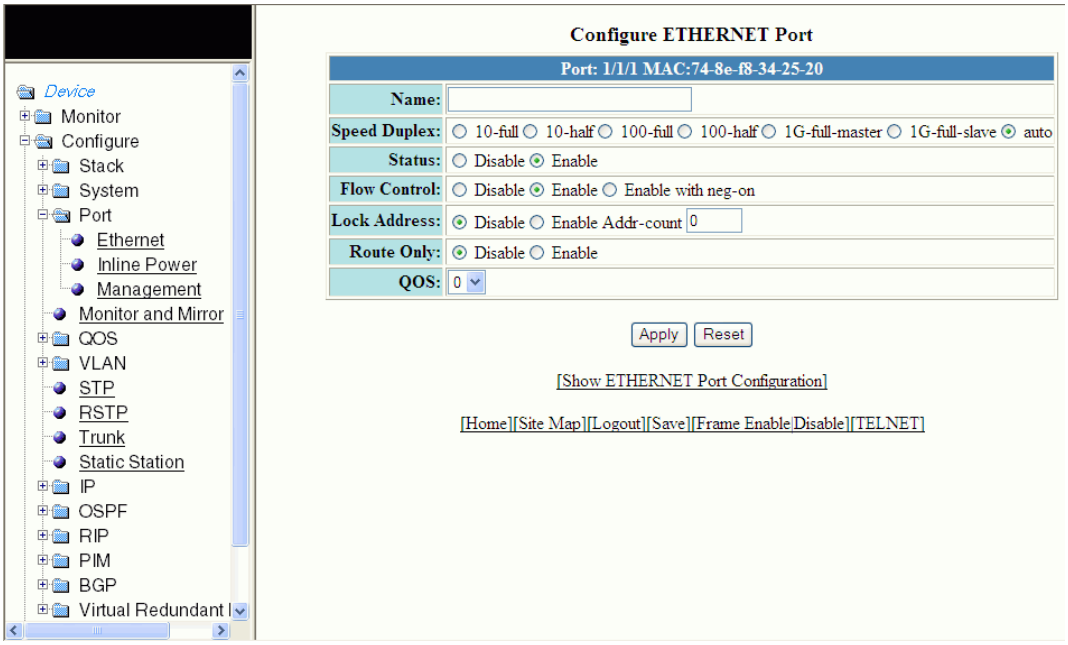
3. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to display the information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the **ETHERNET Port Configuration** window for the Brocade FastIron SX devices.

4. Click **Modify** to modify the respective Ethernet port.

   The **Configure ETHERNET Port** window is displayed as shown in the figure below.

FIGURE 92 Modifying the port settings



5. Type the name of the Ethernet port in the **Name** field.
6. Select the type of the port speed for **Speed Duplex**, which can be one of the following:
   - **10-full** --10 Mbps, full duplex
   - **10-half** --10 Mbps, half duplex
   - **100-full** --100 Mbps, full duplex
   - **100-half** --100 Mbps, half duplex
   - **1G-full-master** --1 Gbps, full duplex master
   - **1G-full-slave** --1 Gbps, full duplex slave
   - **auto** --Auto-negotiation
7. Click **Disable** or **Enable** for **Status** to disable or enable an Ethernet port.
8. Click **Disable** or **Enable** or **Enable with neg-on** for **Flow Control** . By default, flow control is enabled.
9. Click **Disable** or **Enable** for **Lock Address** . If you click **Enable** , type the number of devices that can have access to a specific port in the **Addr-count** field.
10. Click **Disable** or **Enable** for **Route Only**. If you click **Enable** , Layer 2 switching is disabled globally.
11. Select the QoS priority for the port in the **QOS** list.
12. Click **Apply**.

    The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset**.

    To display the **ETHERNET Port Configuration** window, click **Show ETHERNET Port Configuration** .

    To display the inline power statistics for a PoE stack device, click **Show Inline Power**. For more information, refer to the “Displaying port inline power for the Brocade FCX and Brocade ICX devices” section.

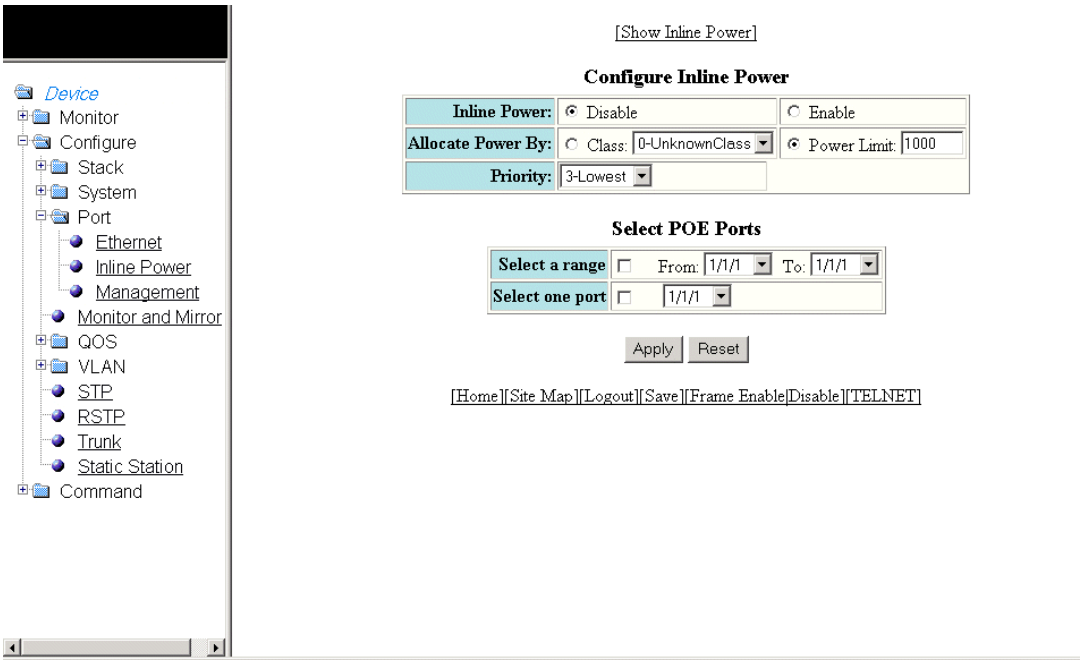
Configuring port inline power

To configure port inline power, perform the following steps.

1. Click **Configure** on the left pane and select **Port** .
2. Click **Inline Power** .

   The **Configure Inline Power** window is displayed as shown in the figure below.

   FIGURE 93 Configuring port inline power



3. Click **Disable** or **Enable** for **Inline Power** .
4. Click **Class** for **Allocate Power By** and then select a power class in the **Class** list, or click **Power Limit** and then type the maximum power level for a power-consuming device in the **Power Limit** field.
5. Select an inline power priority for a Power over Ethernet (PoE) port in the **Priority** list.
6. To select the PoE ports, select the **Select a range** check box and select the range of ports in the **From** and **To** lists, or select the **Select one port** check box and select the port in the list.
7. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

   To display the inline power statistics and details, click **Show Inline Power** . For more information, refer to Displaying port inline power for the Brocade FCX and Brocade ICX devices on page 59.

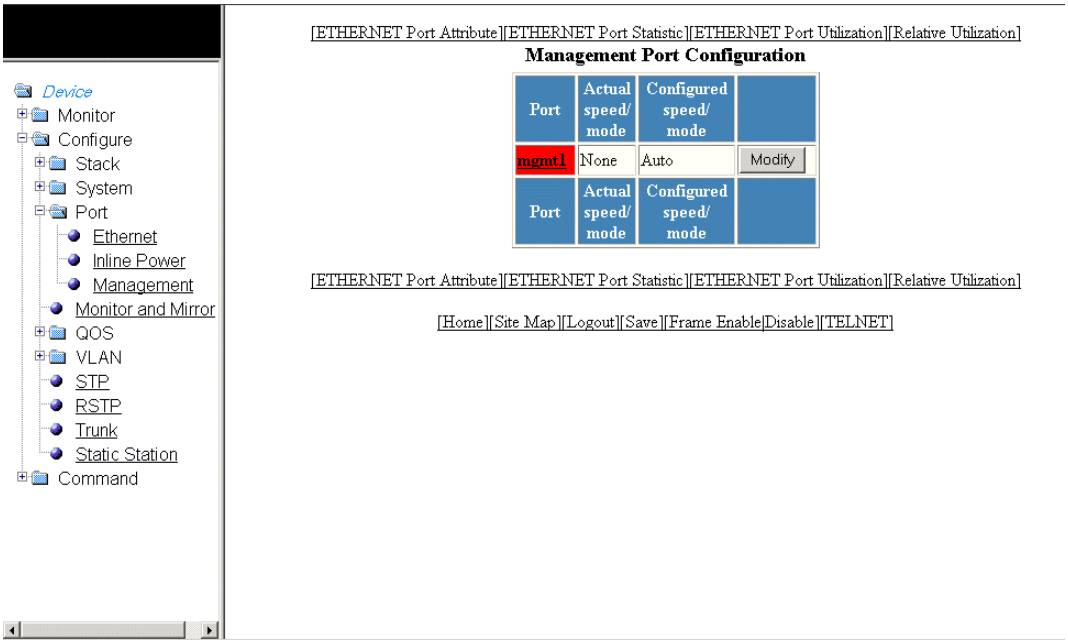
Configuring a management port

To configure a management port, perform the following steps.

1. Click **Configure** on the left pane and select **Port** .
2. Click **Management** .

   The **Management Port Configuration** window is displayed as shown in the figure below.

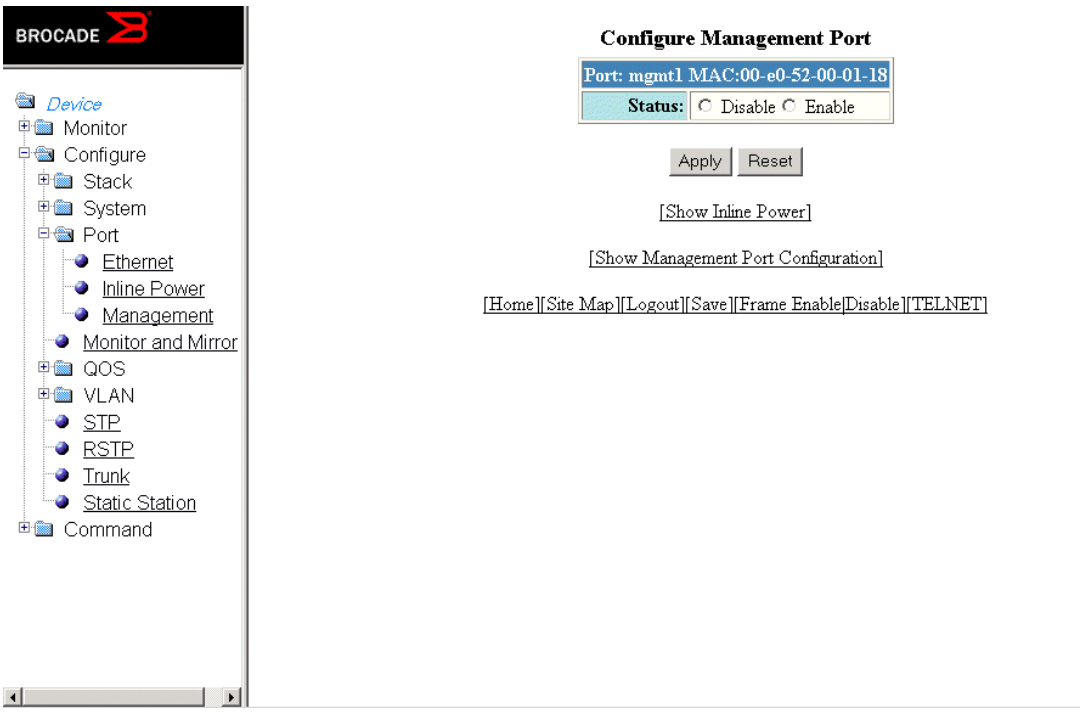
   FIGURE 94 Management port configuration



3. Click **Modify** .

   The **Configure Management Port** window is displayed as shown in the figure below.

FIGURE 95 Configuring a management port



4. Click **Disable** or **Enable** for **Status** .
5. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

   To display the configured management port information, click **Show Management Port Configuration** .

   To display the inline power statistics and details, click **Show Inline Power** . For more information, refer to Displaying port inline power for the Brocade FCX and Brocade ICX devices on page 59.

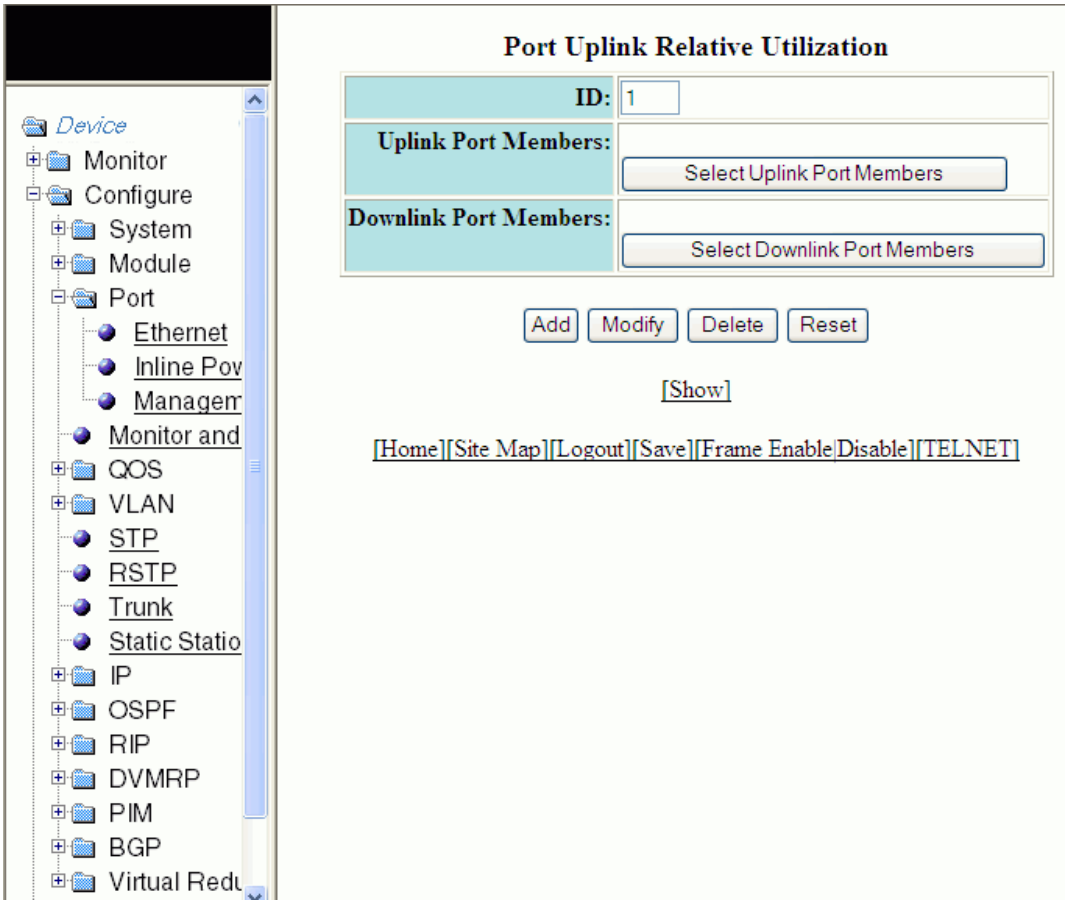
Configuring the port uplink relative utilization

To configure the port uplink utilization list, perform the following steps.

1. Click **Configure** on the left pane and select **Port**.
2. Click **Relative Utilization** on the **ETHERNET Port Configuration**, **Configure Inline Power**, or **Management Port Configuration** window.

   The **Port Uplink Relative Utilization** window is displayed as shown in the figure below.

FIGURE 96 Configuring the port uplink relative utilization



3. Type the uplink utilization list number (from 1 through 4) in the **ID** field.
4. Click **Select Uplink Port Members** to select the uplink ports.
5. Click **Select Downlink Port Members** to select the downlink ports.

NOTE
The port number varies based on the product:

- For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
- For Brocade FastIron SX devices - slotnum/portnum

6. Click **Add**.

   The message `The change has been made` is displayed. To display the configured port uplink utilization list, click **Show**.

   To modify the configured port uplink utilization list, click **Modify**. You can also delete the configured port uplink utilization list by clicking **Delete**. To reset the data entered in the configuration pane, click **Reset**.

Configuring Monitor and Mirror Port

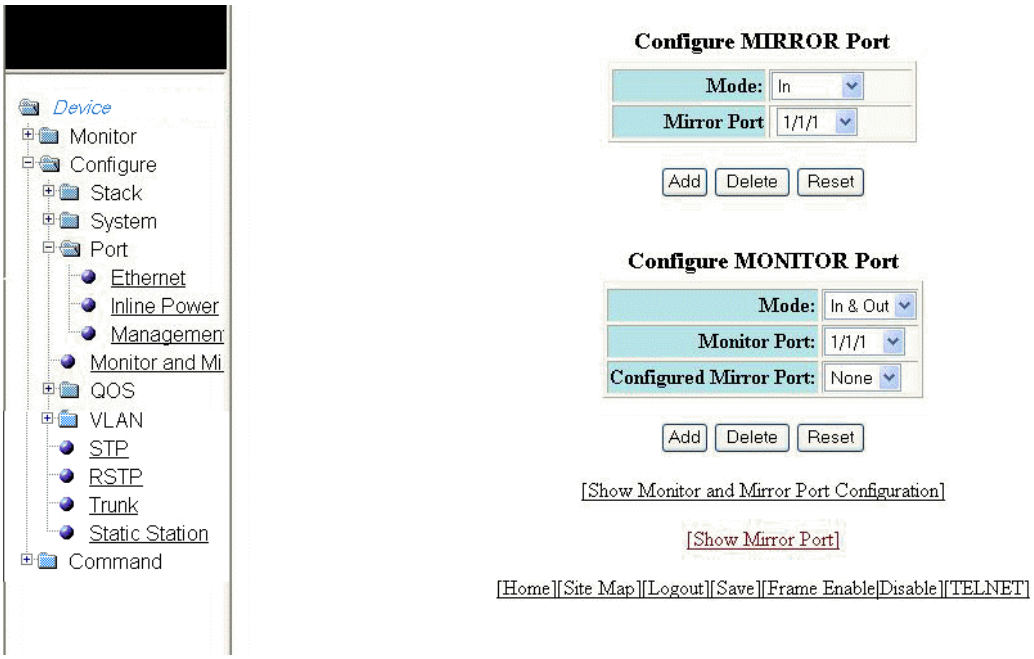
Configuring a mirror port

To configure port monitoring, first configure the mirror port. The mirror port is the port to which the monitored traffic is copied. To configure a mirror port, perform the following steps.

1. Click **Configure** on the left pane and select **Monitor and Mirror**.

   The **Configure MIRROR Port** window is displayed as shown in the figure below.

   FIGURE 97 Configuring a mirror port

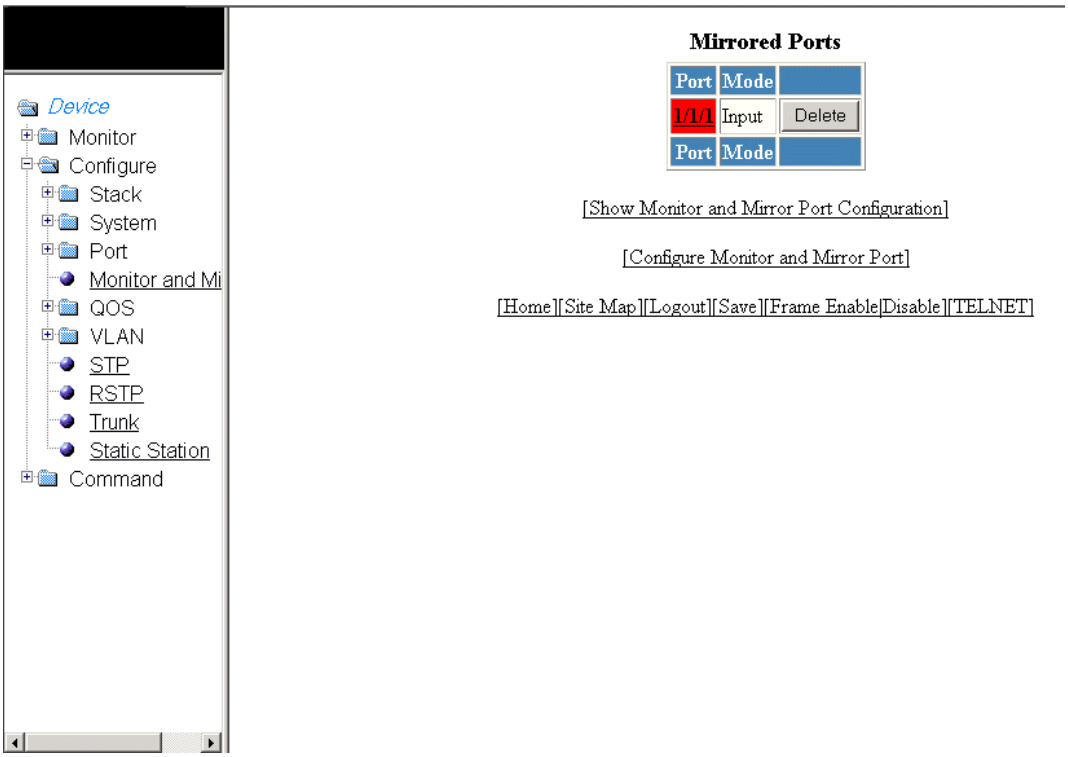


2. Select the mode in which the port operates in the **Mode** list, which can be one of the following:
   - **In**
   - **Out**
   - **In & Out**
3. Select a port to which the monitored traffic must be copied in the **Mirror Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Click **Add** .

The message `The change has been made` is displayed. To display the configured mirror port, click **Show Mirror Port**. The figure below shows the **Mirrored Ports** window with the configured mirror port information.

To delete the configured mirror port, click **Delete**. To reset the data entered in the configuration pane, click **Reset** .

FIGURE 98 Monitoring mirror ports



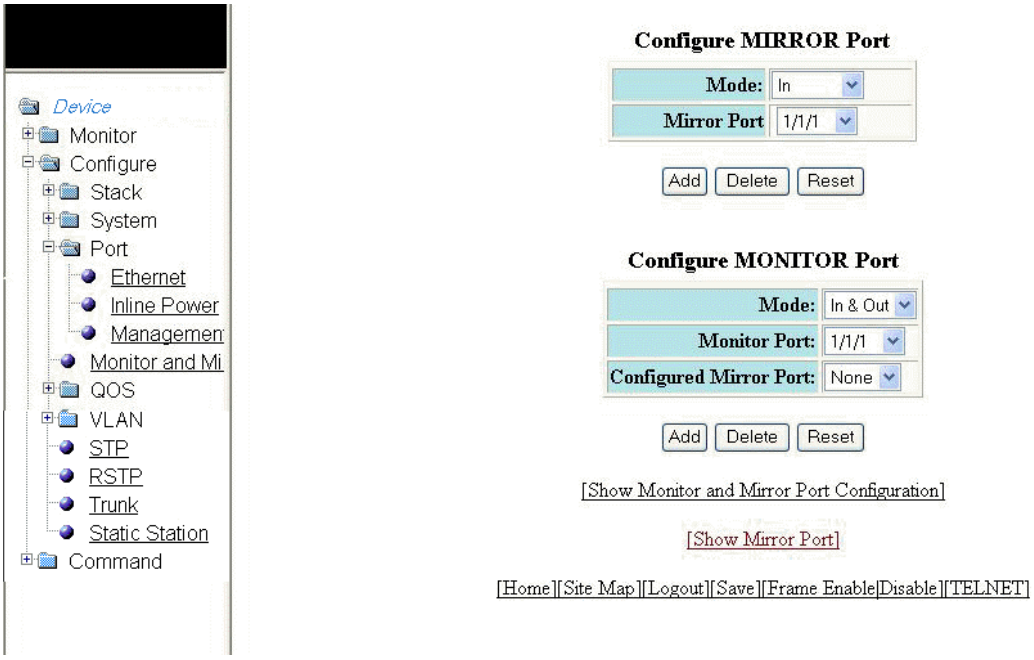
Configuring a monitor port

To configure port monitoring on an individual port on a Brocade device, perform the following steps.

1. Click **Configure** on the left pane and select **Monitor and Mirror**.

   The **Configure MONITOR Port** window is displayed as shown in the figure below.

FIGURE 99 Configuring the monitor port



2. Select one of the following modes in which the port operates in the **Mode** list:
   - **In**
   - **Out**
   - **In & Out**
3. Select a port for which you want to monitor the traffic in the **Monitor Port** list. The port number varies based on the product:
   - - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
     - For Brocade FastIron SX devices - slotnum/portnum
4. Select a mirror port that you have configured in the **Configured Mirror Port** list.
5. Click **Add**.

   The message `The change has been made` is displayed. To display the configured monitor port, click **Show Monitor and Mirror Port Configuration**. To display the mirror port, click **Show Mirror Port**.

   To delete the configured monitor port, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

Configuring QoS

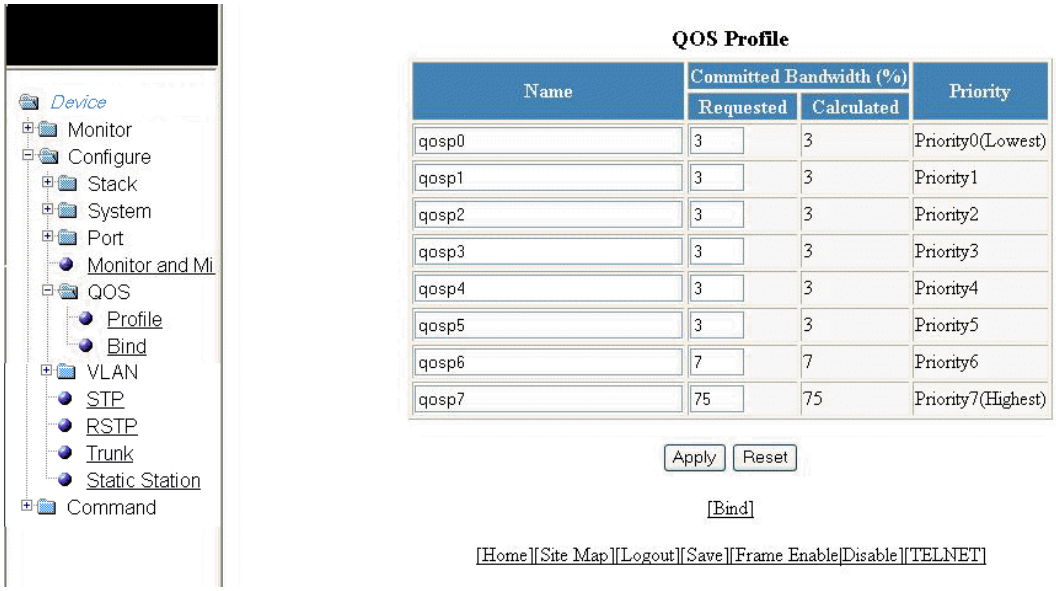
Configuring the QoS profile

To configure the Quality of Service (QoS) profile, perform the following steps.

1. Click **Configure** on the left pane and select **QOS** .
2. Click **Profile** .

   The **QOS Profile** window is displayed as shown in the figure below.

   FIGURE 100 Configuring a QoS profile



3. The default queue names are **qosp0** , **qosp1** , **qosp2** , **qosp3** , **qosp4** , **qosp5** , **qosp6** , and **qosp7** . You can change one or more of the names, if desired. Type the QoS name in the **Name** field.
4. The **Committed Bandwidth (%)** is the percentage of the device outbound bandwidth that is allocated to the queue. Brocade QoS queues require a minimum bandwidth of 3 percent for each priority. Type the percentage of bandwidth you want for the queue in the **Requested** field.

   NOTE
   The total of the percentages you enter must be equal to 100. The Brocade device does not adjust the bandwidth percentages you enter.

5. Click **Apply** .

The message `The change has been made` is displayed and the committed bandwidth is changed to the configured value in the **Calculated** field. The **Priority** field shows the default priority of the individual QoS from lowest to highest (0 through 7).

To clear the entered data in the fields, click **Reset** . To configure the QoS profile bind, click **Bind** . For more information on how to configure a QoS profile bind, refer to Configuring the QoS profile bind on page 154.

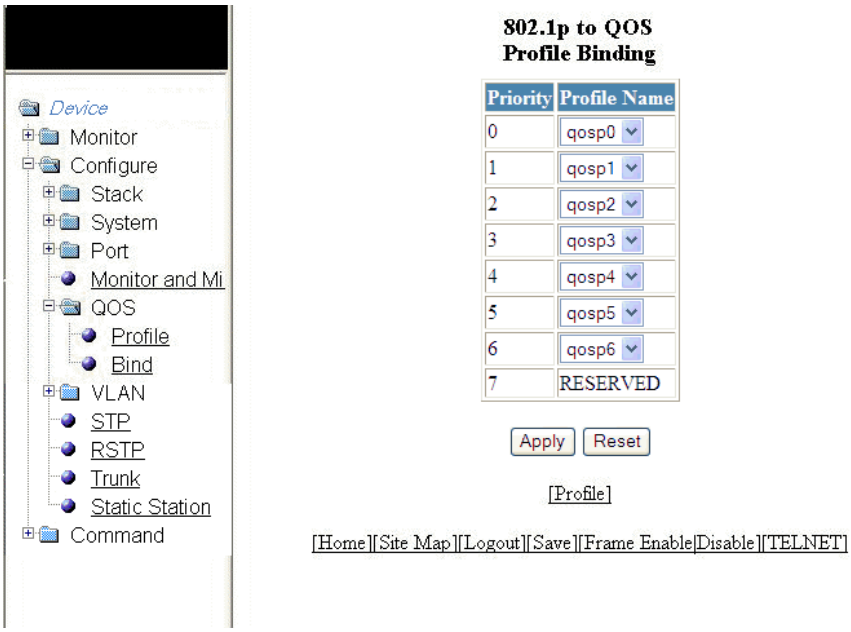
Configuring the QoS profile bind

To bind an 802.1p priority to a hardware forwarding queue, perform the following steps.

1. Click **Configure** on the left pane and select **QOS** .
2. Click **Bind** .

   The **802.1p to QOS Profile Binding** window is displayed as shown in the figure below.

   FIGURE 101 802.1p to QoS profile binding



3. Select a hardware forwarding queue to which you are reassigning the priority in the **Profile Name** lists.
4. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

   To configure the Quality of Service (QoS) profile, click **Profile** . For more information, refer to Configuring the QoS profile on page 153.

Configuring VLAN

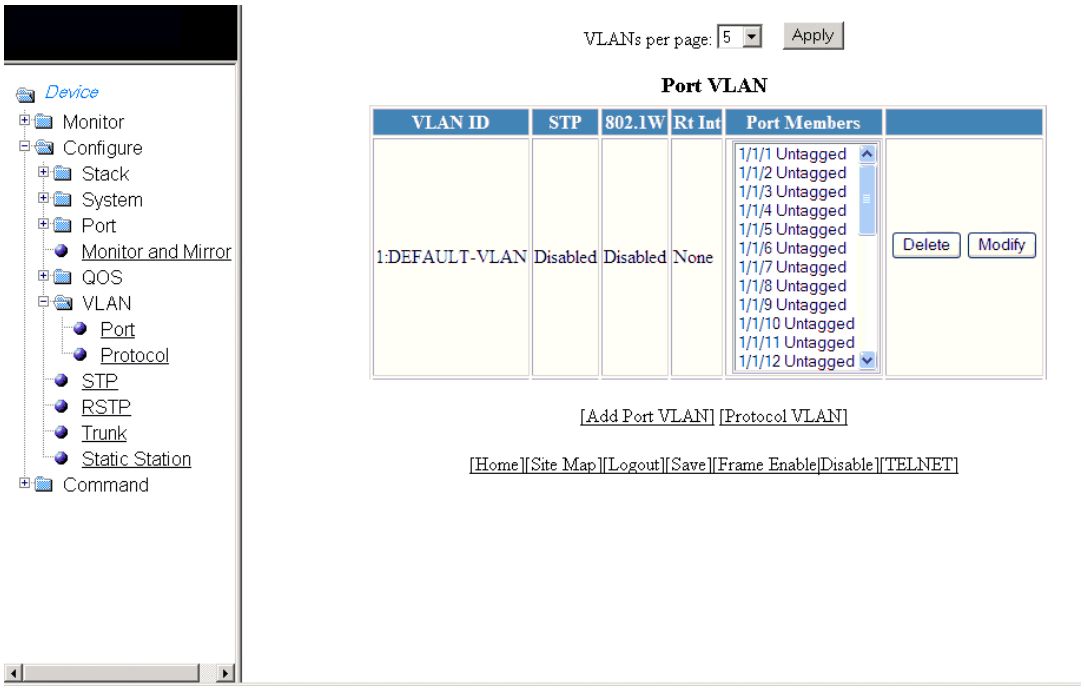
Configuring a port VLAN for the Brocade FCX and Brocade ICX devices

To configure a port-based Virtual LAN (VLAN) for the Brocade FCX and Brocade ICX devices, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN** .
2. Click **Port** .

   The **Port VLAN** window is displayed as shown in the figure below. You can limit the number of VLANs displayed per page using the **VLANs per page** list.

   FIGURE 102 Configuring port VLANs

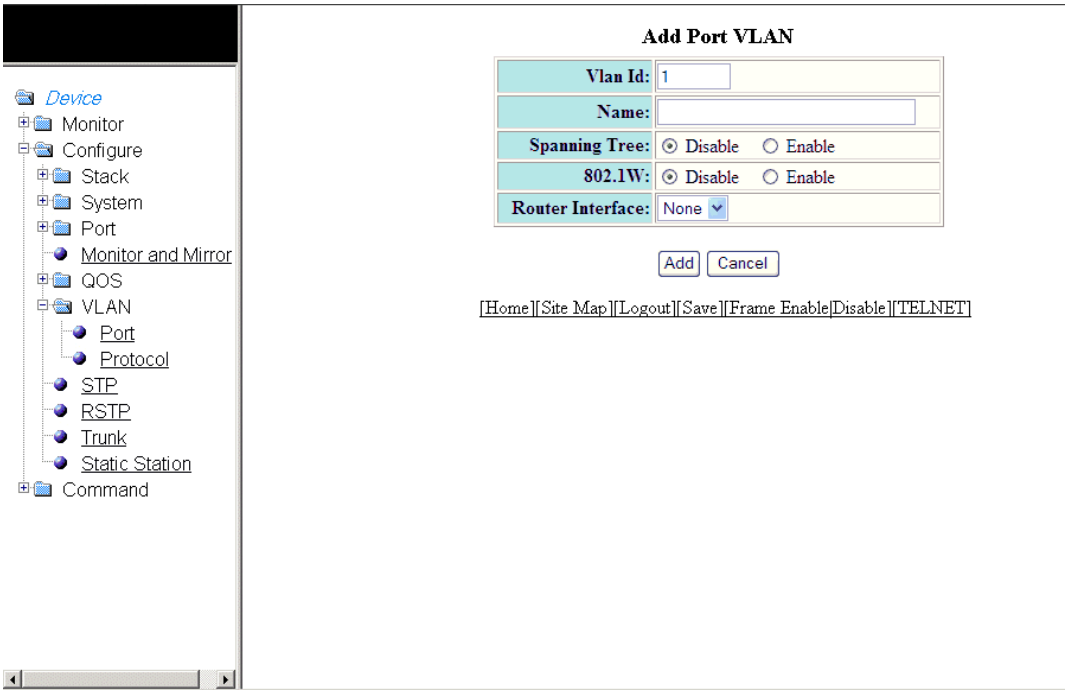


3. Click **Add Port VLAN** .

   The **Add Port VLAN** window is displayed as shown in the figure below.

NOTE
Port-based VLAN cannot be configured, if the VLAN does not have any ports assigned to it.

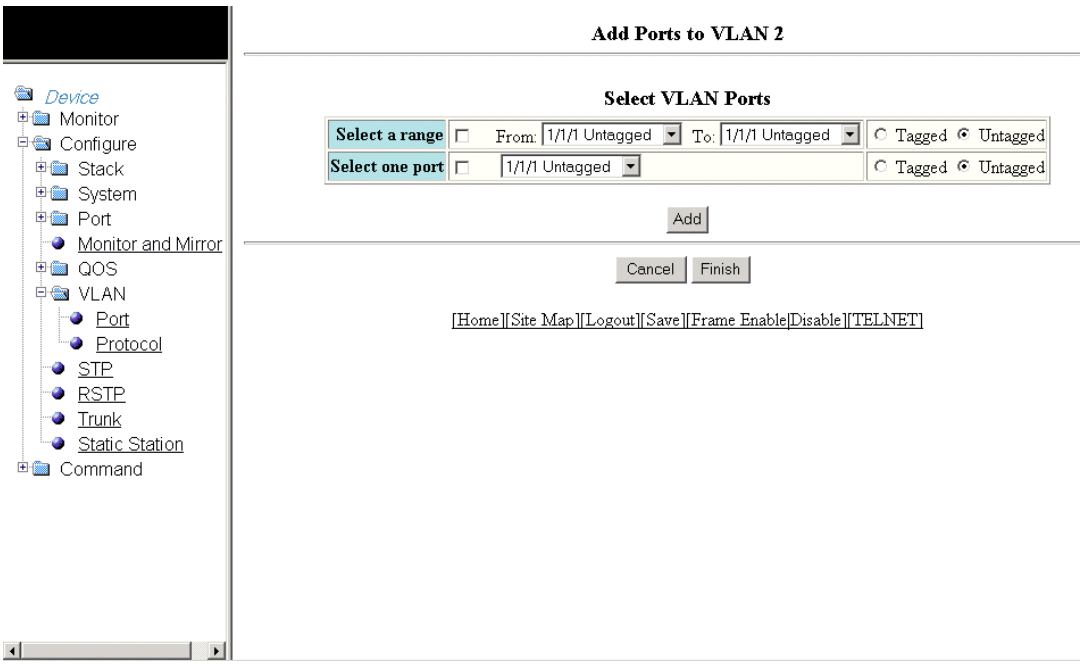
FIGURE 103 Adding port VLANs



4. Type the VLAN identifier of the port in the **Vlan Id** field.
5. Type the port VLAN name in the **Name** field.
6. Click **Disable** or **Enable** for **Spanning Tree** .
7. Click **Disable** or **Enable** for **802.1W** .
8. Select a virtual routing interface in the **Router Interface** list.
9. Click **Add** .

The **Add Ports to VLAN** window is displayed as shown in the figure below.

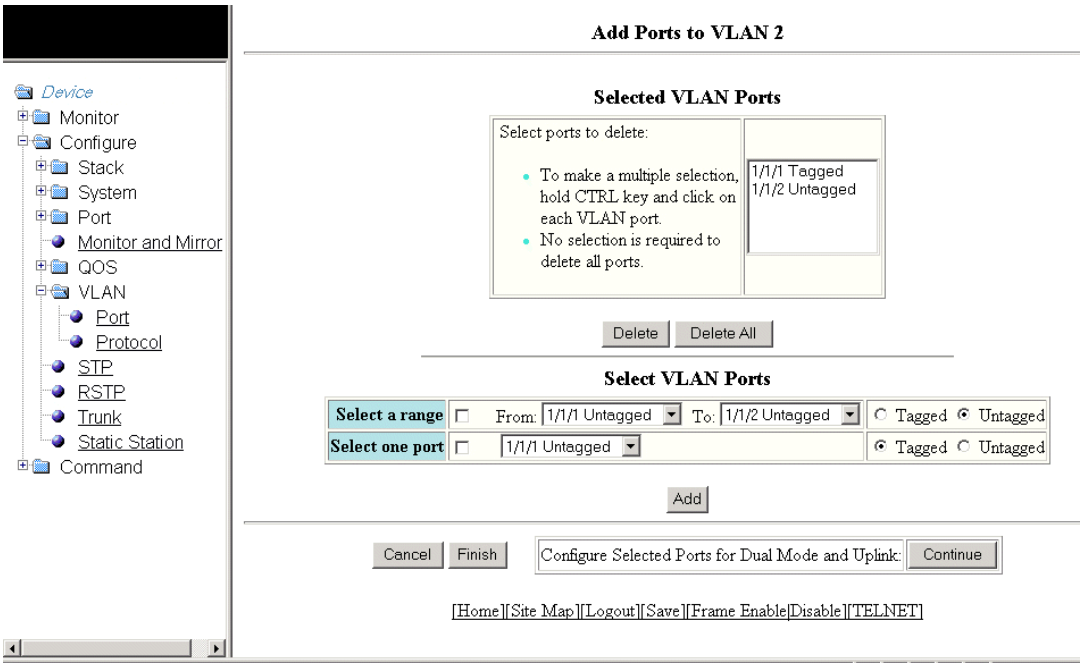
FIGURE 104 Adding ports to VLANs



10. To select the VLAN ports, select the **Select a range** check box, select the range of VLAN ports in the **From** and **To** lists, and click **Tagged** or **Untagged** , or select the **Select one port** check box, select a port-based VLAN in the list, and click **Tagged** or **Untagged** .
11. Click **Add** .

The **Selected VLAN Ports** window is displayed as shown in the figure below.

FIGURE 105 Selected VLAN ports



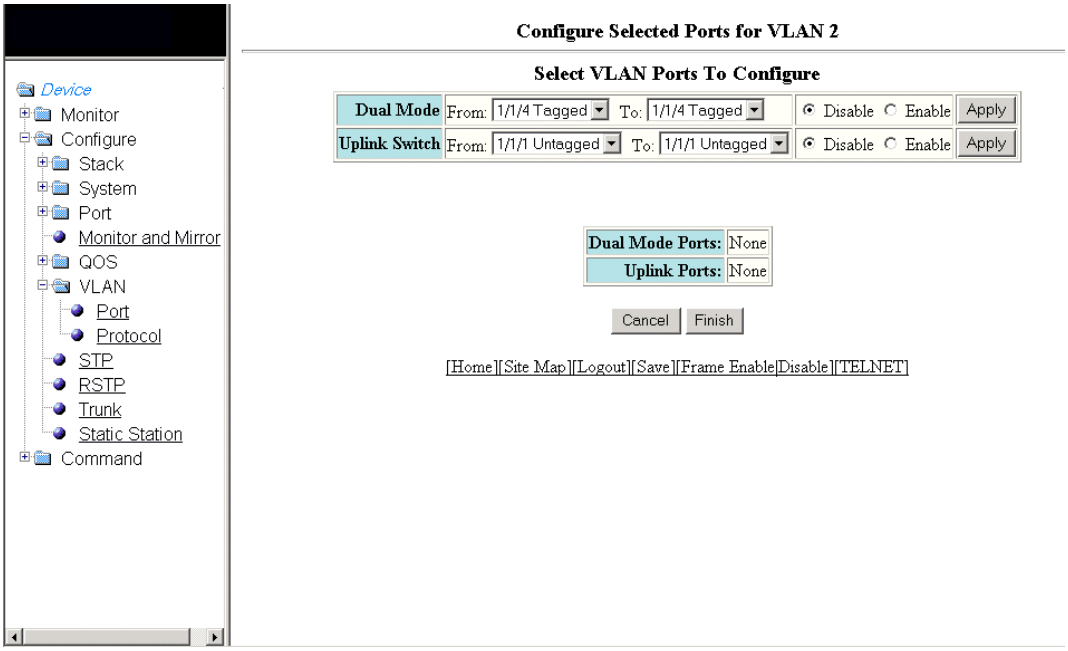
12. The selected VLAN ports are displayed in the **Selected VLAN Ports** list. Click **Delete** or **Delete All** to delete the VLAN ports.

NOTE
The VLAN configuration is retained even if the last port member is deleted.

13. You can add more VLAN ports from the **Select VLAN Ports** pane. To do so, complete step 10 and step 11 .

14. Click **Finish** to return to the **Port VLAN** window with the configured port-based VLAN displayed, or click **Continue** to configure selected ports for dual mode and uplink. The **Configure Selected Ports for VLAN** window is displayed as shown in the figure below.

FIGURE 106 Configuring dual mode and uplink for ports



15. To configure dual mode and uplink for the ports, perform the following steps.

a) Select the ports for which you want to configure the dual mode in the **From** and **To** lists for **Dual Mode** . Click **Disable** or **Enable** and then click **Apply** . The configured ports are displayed in the **Dual Mode Ports** list.

b) Select the ports for which you want to configure uplink in the **From** and **To** lists for **Uplink Switch** . Click **Disable** or **Enable** and then click **Apply** . The configured ports are displayed in the **Uplink Ports** list.

c) Click **Finish** .

The configured port VLAN is displayed in the **Port VLAN** window. To cancel the VLAN port configuration and return to the **Port VLAN** window, click **Cancel** .

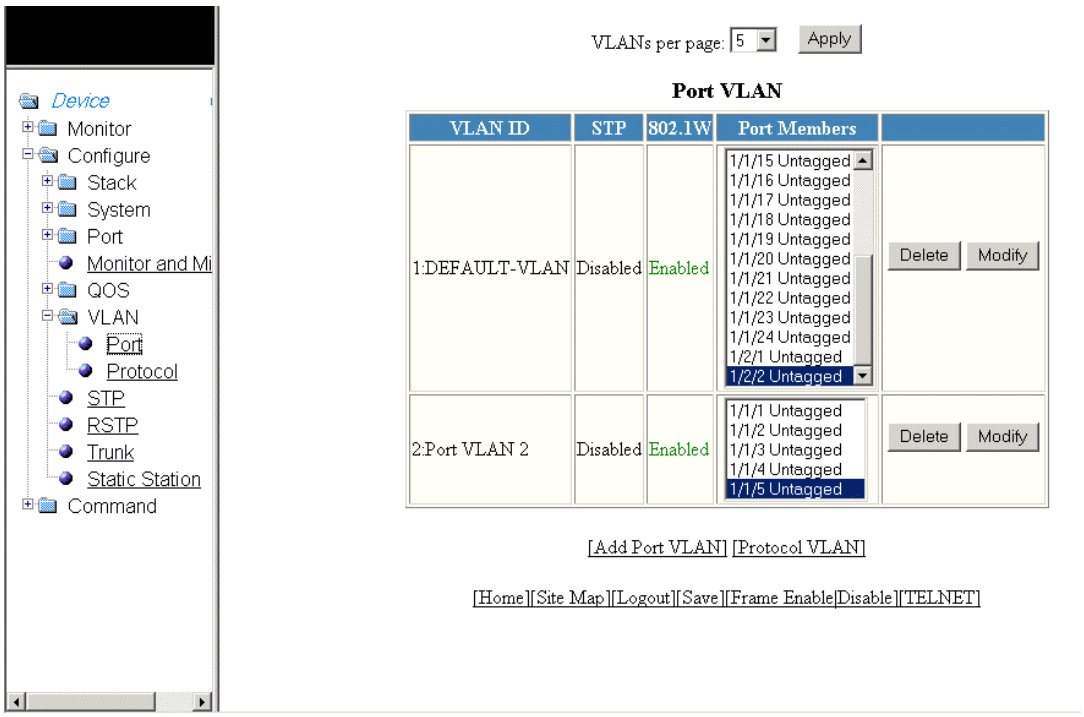
Modifying a port VLAN

To modify a port VLAN, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN** .
2. Click **Port** .

   The **Port VLAN** window is displayed as shown in the figure below.

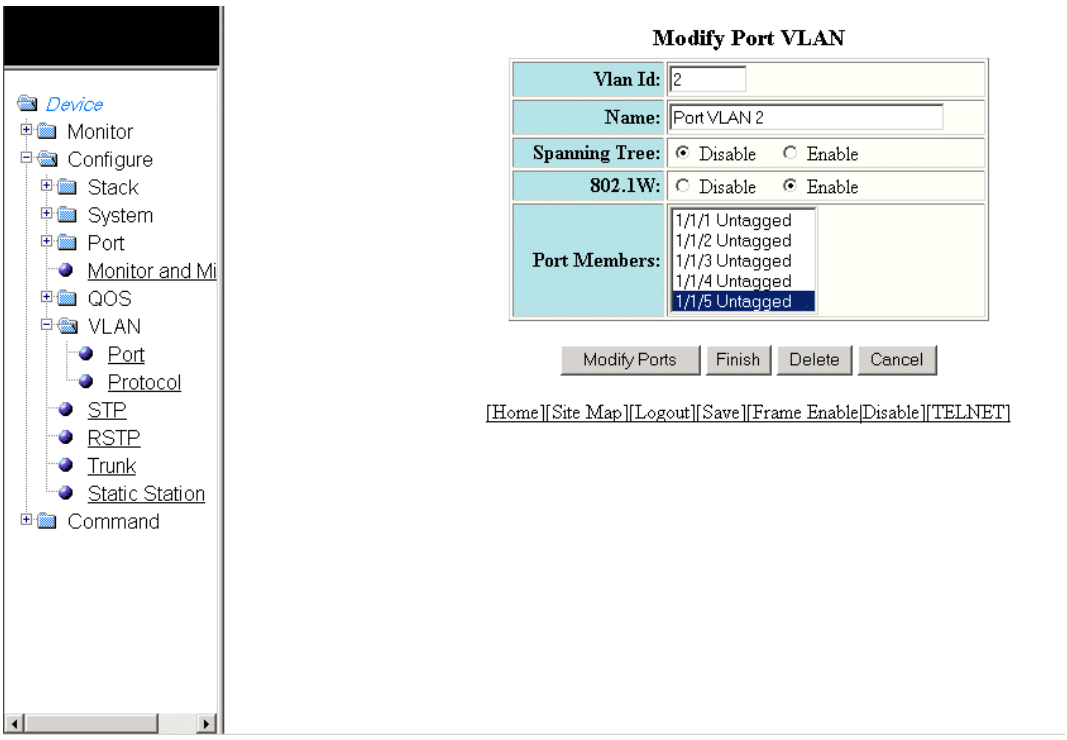
   FIGURE 107 Configuring port VLANs



3. Click **Modify** .

   The **Modify Port VLAN** window is displayed as shown in the figure below .

FIGURE 108 Modifying port VLANs



4. Type the VLAN identifier of the port in the **Vlan Id** field.
5. Type the port VLAN name in the **Name** field.
6. Click **Disable** or **Enable** for **Spanning Tree** .
7. Click **Disable** or **Enable** for **802.1W** .
8. Select the VLAN ports in the **Port Members** list.
9. Click **Modify Ports** to add or delete VLAN ports.
10. Click **Finish** .

To delete the configured port VLAN, click **Delete** . To undo your changes and go back to the **Port VLAN** window, click **Cancel** .

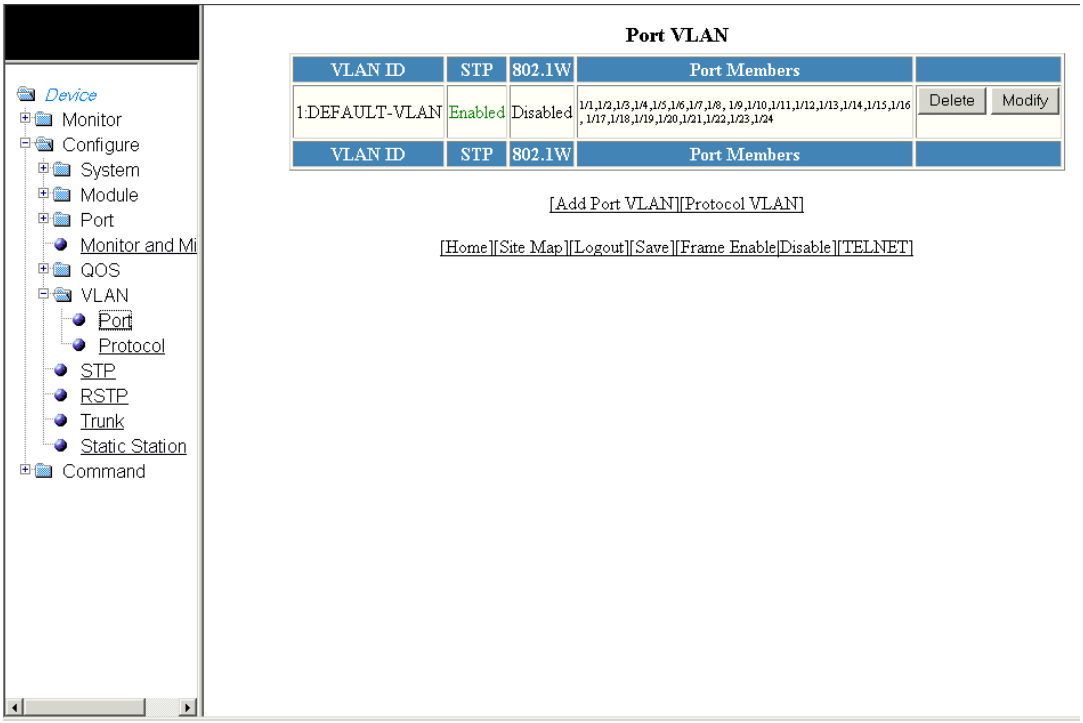
Configuring a port VLAN for the Brocade FastIron SX devices

To configure a port-based Virtual LAN (VLAN) for the Brocade FastIron SX devices, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN**.
2. Click **Port**.

The **Port VLAN** window is displayed as shown in the figure below.

FIGURE 109 Configuring port VLANs

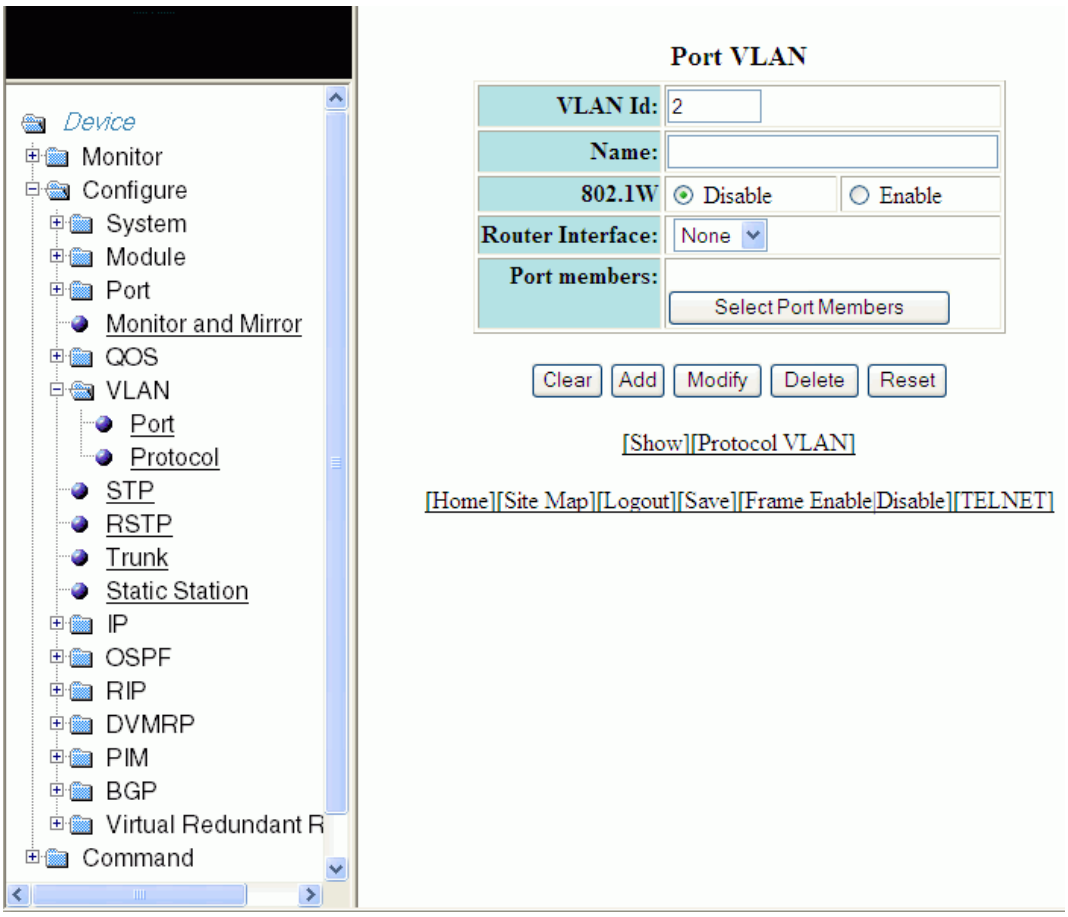


3. Click **Add Port VLAN**.

   The**Port VLAN** window is displayed as shown in the figure below.

NOTE
Port-based VLAN cannot be configured, if the VLAN does not have any ports assigned to it.

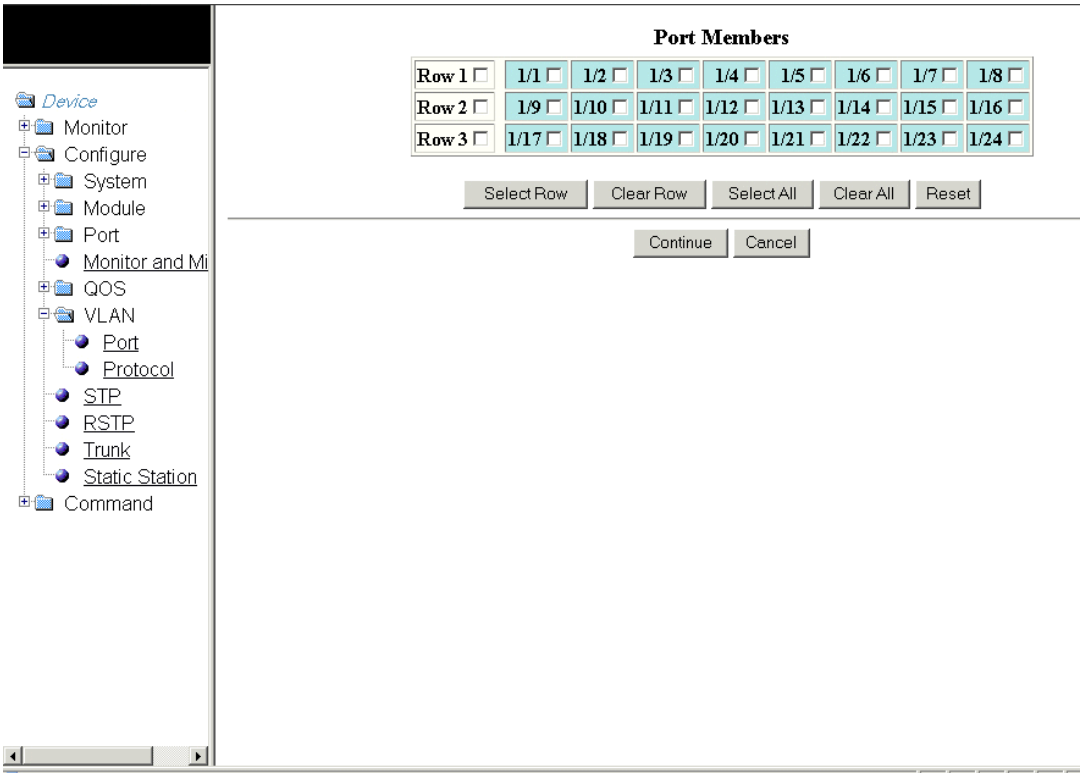
FIGURE 110 Adding port VLANs



4. Type the VLAN identifier of the port in the **VLAN Id** field.
5. Type the port VLAN name in the **Name** field.
6. Click **Disable** or **Enable** for **802.1W** .
7. Select a virtual routing interface in the **Router Interface** list.
8. Click **Select Port Members** to add ports to the VLAN.

   The **Port Members** window is displayed as shown in the figure below.

FIGURE 111 Adding port members



The options within the right panel include:

- **Select Row**—Allows you to select the entire row.
- **Clear Row**—Allows you to clear any selected row.
- **Select All**—Allows you to select all the port members.
- **Clear All**—Allows you to clear all the port members selected.
- **Reset**—Allows you to undo your changes.

NOTE
The VLAN configuration is retained even if the last port member is deleted.

9. Select the port members and click **Continue**. The **Port VLAN** window is displayed and the selected port members are displayed in the **Port Members** field. To cancel the selection of the ports and go back to the **Port VLAN** window, click **Cancel**.

   The **Port VLAN** window is displayed and you can view the selected port members in the **Port Members** field.

10. Click **Add** on the**Port VLAN** window.

    The message `The change has been made` is displayed. To delete the configured port VLAN, click **Delete** . To undo your changes and go back to the **Port VLAN** window, click **Cancel**.

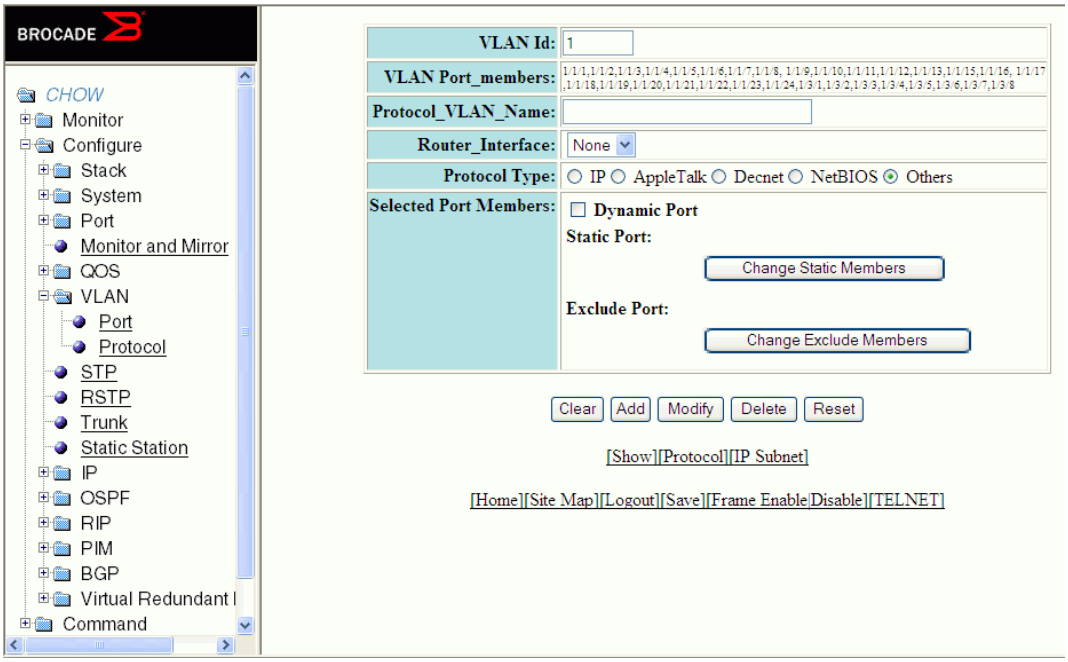
Configuring a protocol VLAN

To configure a protocol-based VLAN, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN**.
2. Click **Protocol**.

   The protocol VLAN window is displayed as shown in the figure below.

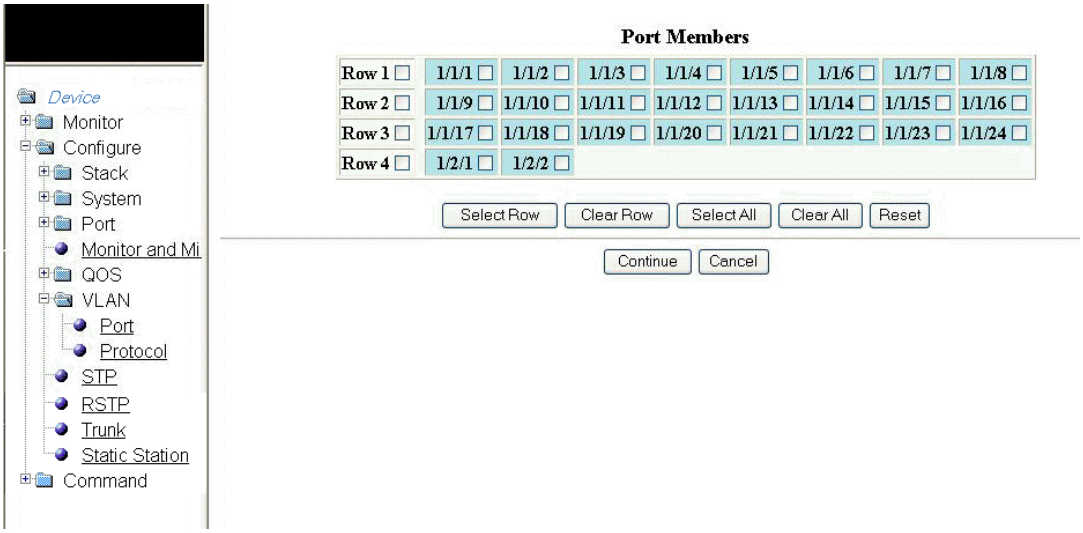
FIGURE 112 Configuring a protocol VLAN



3. Type the VLAN identifier in the **VLAN Id** field.
4. Type the VLAN name in the **Protocol_VLAN_Name** field.
5. Select a virtual routing interface in the **Router Interface** list.
6. Click one of the following types for **Protocol Type**:
   - **IP**—The device sends IP broadcasts to all ports within the IP protocol VLAN.
   - **IPX**—The device sends IPX broadcasts to all ports within the IPX protocol VLAN.
   - **AppleTalk**—The device sends AppleTalk broadcasts to all ports within the AppleTalk protocol VLAN.
   - **Decnet**—The device sends DECnet broadcasts to all ports within the DECnet protocol VLAN.
   - **NetBIOS**—The device sends NetBIOS broadcasts to all ports within the NetBIOS protocol VLAN.
   - **Other**—The device sends broadcasts from all protocol types other than those listed in **Protocol Type** to all ports within the VLAN.
7. Select the **Dynamic Port** check box to add the protocol VLAN dynamically.
8. Click **Change Static Members** to add protocol VLANs statically.

   The **Port Members** window is displayed as shown in the figure below.

FIGURE 113 Adding static port members

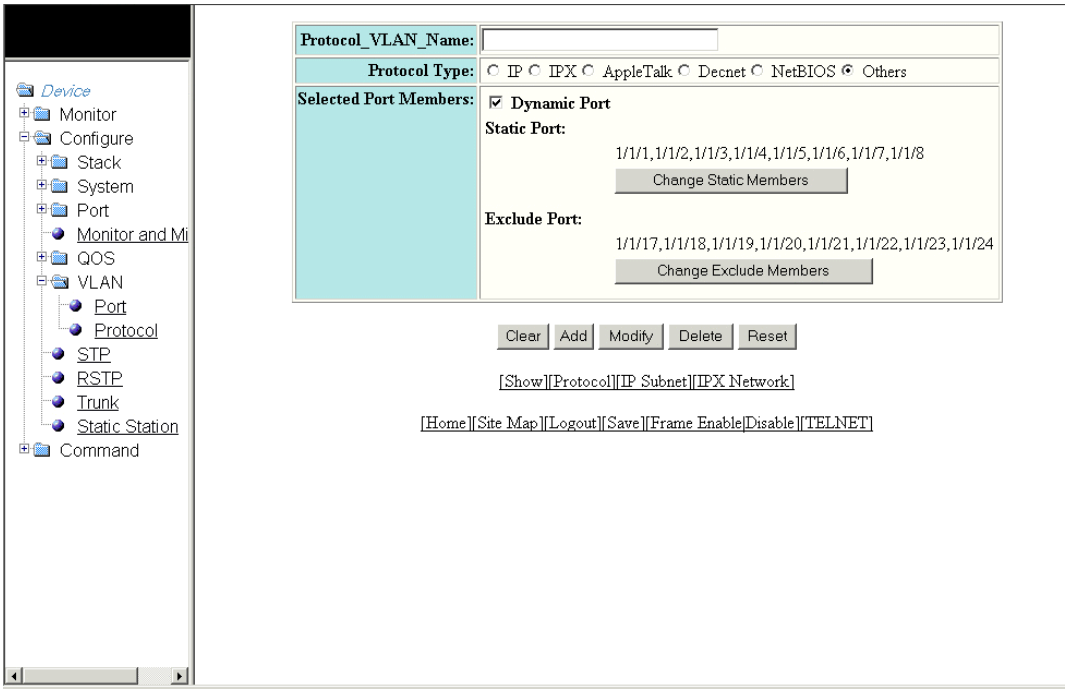


The options within the right panel include:

- **Select Row -- A** llows you to select the entire row.
- **Clear Row --** Allows you to clear any selected row.
- **Select All --** Allows you to select all the port members.
- **Clear All --** Allows you to clear all the port members selected.
- **Reset --Allows you t** o undo your changes.

9. Select the port members and click **Continue** to view the selected port members as shown in the figure below. To go back to the protocol VLAN window, click **Cancel**.
10. Click **Change Exclude Members** in the protocol VLAN window to explicitly exclude the selected ports in a port-based VLAN from becoming members of a protocol. The **Port Members** window is displayed.
11. Select the port members and click **Continue** to view the selected port members as shown in the figure below.

FIGURE 114 Displaying the selected port members



12. Click **Add**.

    The message `The change has been made` is displayed. To display the configured protocol VLAN, click **Show**.

    To modify the configured protocol VLAN, click **Modify**. You can also delete the protocol VLAN by clicking **Delete** . To clear the selected static and exclude ports, click **Clear**. To reset the data entered in the configuration pane, click **Reset**.

    The protocol VLAN window provides links to various VLAN parameters:

    - Click **IP Subnet** to configure an IP subnet VLAN. For more information, refer to Configuring an IP subnet VLAN on page 166.
    - Click **IPX Network** to configure an Internetwork Packet Exchange (IPX) network VLAN. For more information, refer to the “Configuring an IPX network VLAN” section.

Configuring an IP subnet VLAN

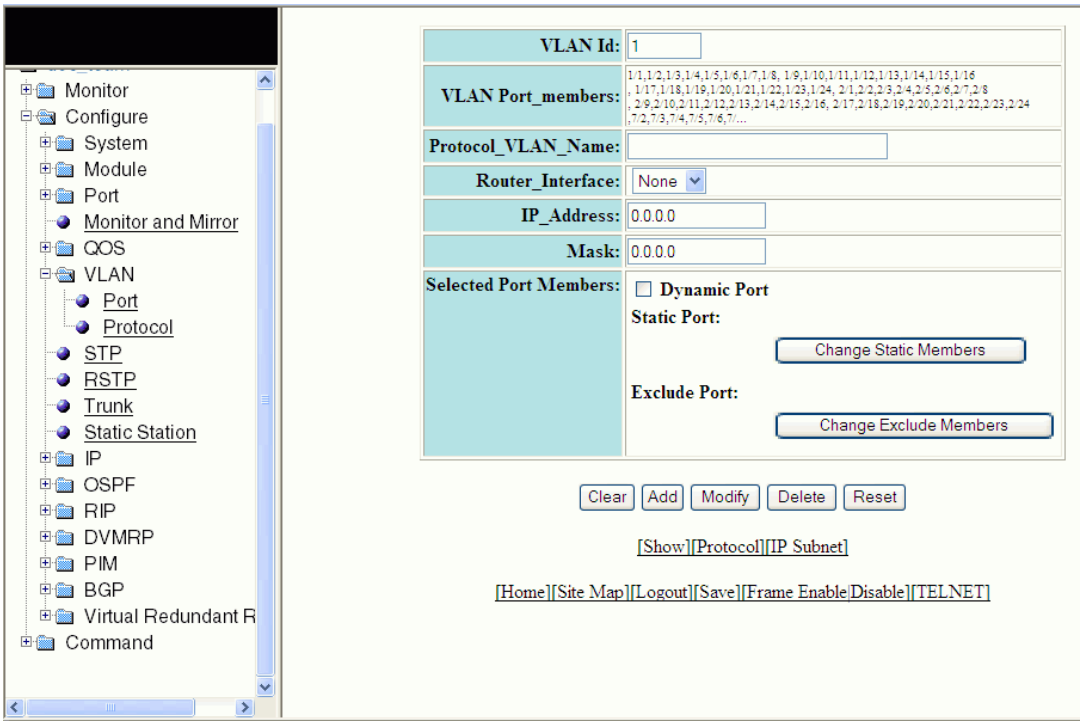
To configure an IP subnet VLAN, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN** .
2. Click **Protocol** .

   The protocol VLAN window is displayed as shown in Configuring a protocol VLAN on page 163.
3. Click **IP Subnet** .

   The IP subnet VLAN window is displayed as shown in the figure below.

FIGURE 115 Configuring an IP subnet VLAN



4. Type the VLAN identifier in the **VLAN Id** field.
5. Type the protocol-based VLAN name in the **Protocol_VLAN_Name** field.
6. Select a virtual routing interface in the **Router Interface** list.
7. Type the IP address of the device in the **IP_Address** field.
8. Type the IP subnet mask in the **Mask** field. This parameter provides a filter for displaying multiple MAC addresses that have specific values in common.
9. Select the **Dynamic Port** check box to add the IP subnet VLANs dynamically.
10. Click **Change Static Members** to add IP subnet VLANs statically.
11. Click **Change Exclude Members** to explicitly exclude the selected ports in a port-based VLAN from becoming members of an IP subnet.
12. Click **Add** .

    The message `The change has been made` is displayed. To display the configured IP subnet VLAN, click **Show** .

    To modify the configured IP subnet VLAN, click **Modify** . You can also delete the IP subnet VLAN by clicking **Delete** . To clear the selected static and exclude ports, click **Clear** . To reset the data entered in the configuration pane, click **Reset** .

Configuring an IPX network VLAN

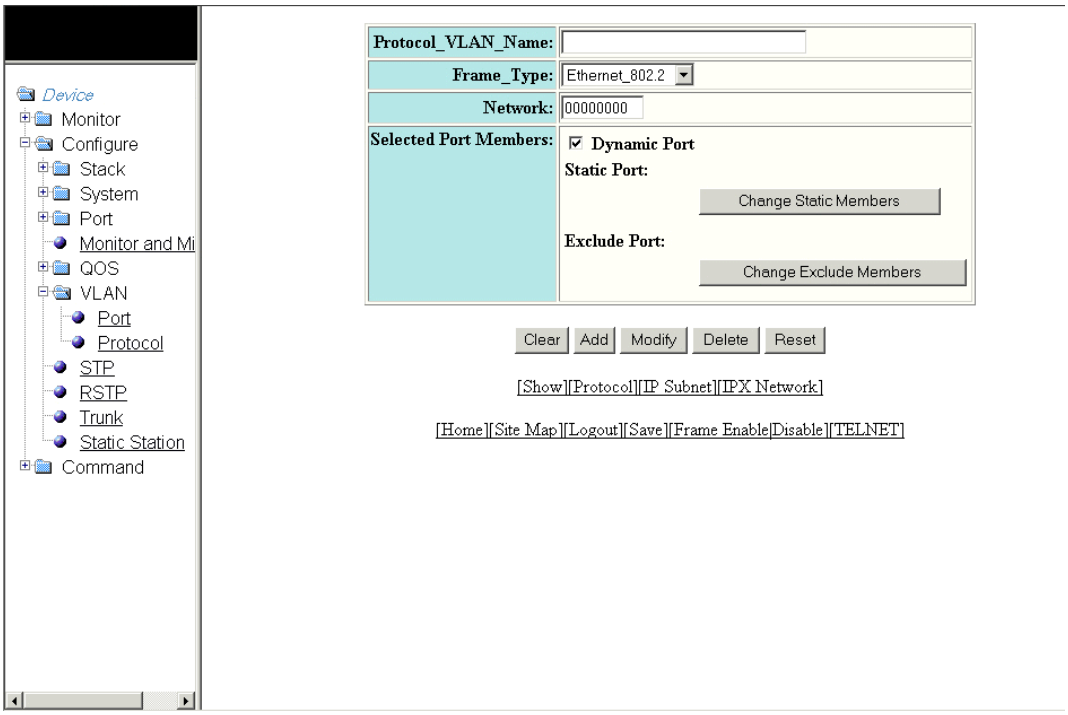
To configure an IPX network VLAN, perform the following steps.

1. Click **Configure** on the left pane and select **VLAN** .
2. Click **Protocol** .

   The protocol VLAN window is displayed as shown in Configuring a protocol VLAN on page 163.
3. Click **IPX Network** .

The IPX network VLAN window is displayed as shown in the figure below.

FIGURE 116 Configuring an IPX network VLAN



4. Type the VLAN identifier in the **VLAN Id** field.
5. Type the protocol-based VLAN name in the **Protocol_VLAN_Name** field.
6. Select the Ethernet frame type of the protocol in the **Frame_Type** list.
7. Type the IPX network address from 0x00000001 to 0xFFFFFFFE in the **Network** field.
8. Select the **Dynamic Port** check box to add the IPX network VLANs dynamically.
9. Click **Change Static Members** to add IPX network VLANs statically.
10. Click **Change Exclude Members** to explicitly exclude the selected ports in a port-based VLAN from becoming members of an IPX network.
11. Click **Add** .

    The message `The change has been made` is displayed. To display the configured IPX network VLAN, click **Show** .

    To modify the configured IPX network VLAN, click **Modify** . You can also delete the IPX network VLAN by clicking **Delete** . To clear the selected static and exclude ports, click **Clear** . To reset the data entered in the configuration pane, click **Reset** .

Configuring STP

Configuring STP parameters

Brocade Layer 2 switches and Layer 3 switches support standard Spanning Tree Protocol (STP) as described in the IEEE 802.1D specification.

Each port-based VLAN on a Brocade device runs a separate spanning tree. A Brocade device has one port-based VLAN (VLAN 1) that contains all the device ports. However, if you configure additional port-based VLANs on a Brocade device, then each of those VLANs on which STP is enabled and the VLAN 1 run separate spanning trees.

If you configure a port-based VLAN on the device, the VLAN has the same STP state as the default STP state on the device. Thus, by default on Layer 2 switches, new VLANs have STP enabled and on Layer 3 switches, new VLANs have STP disabled. You can enable or disable STP in each VLAN separately and also on individual ports.

Using the Web Management Interface, you can change the default STP bridge and port parameters.

Changing STP bridge parameters

The table below lists the default STP bridge parameters.

TABLE 29 Default STP bridge parameters

Parameter	Default value
Forward Delay	15 seconds
Maximum Age	20 seconds
Hello Time	2 seconds
Priority	32768

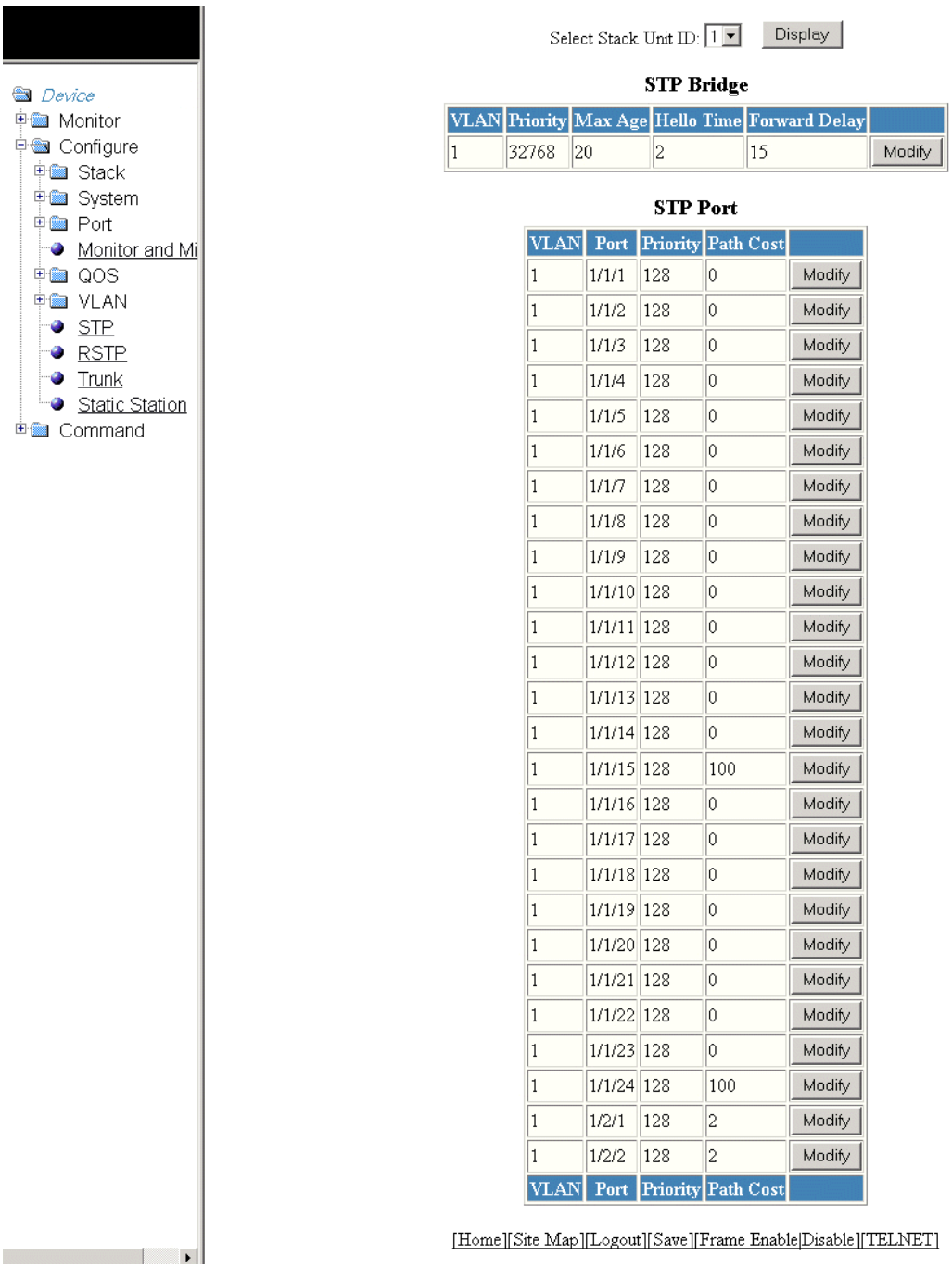
NOTE
To change STP bridge timers, you must stay within the following ranges:2 * (Forward Delay-1) >= Maximum Age >= 2 * (Hello Time +1)

To change the default STP bridge values, perform the following steps.

1. Click **Configure** on the left pane and select **STP** .

   The **STP Bridge** window is displayed as shown in the figure below.

FIGURE 117 Configuring the STP bridge



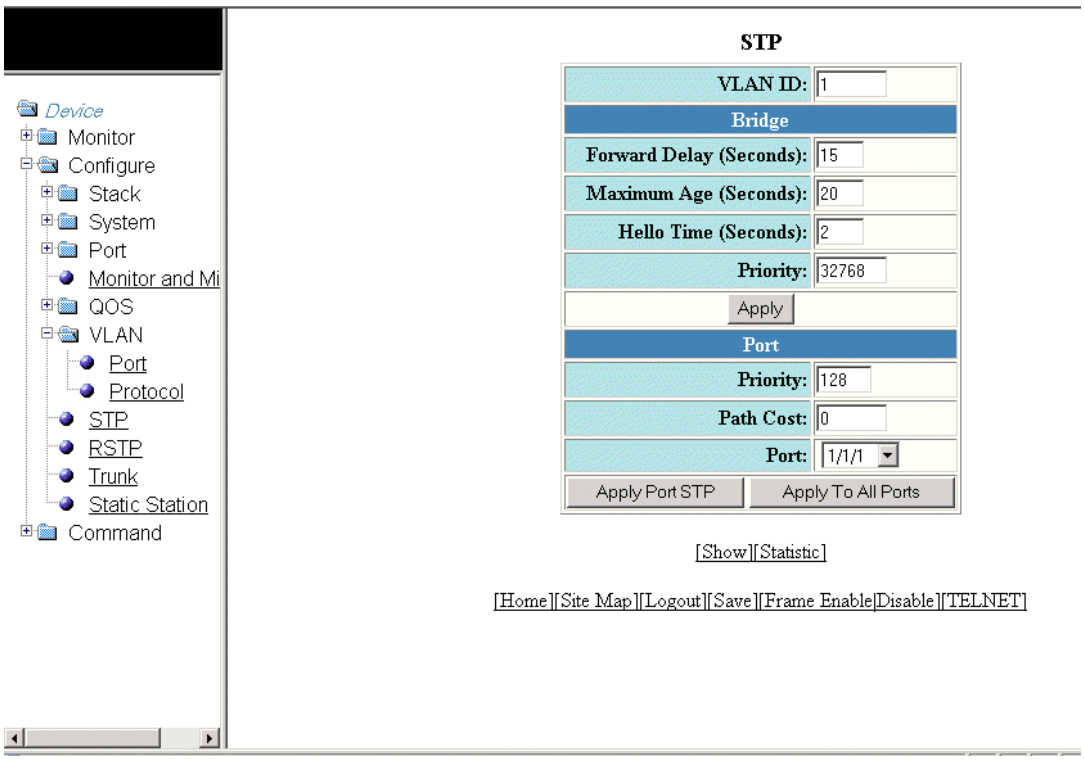
2. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to display the information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the **STP Bridge** window for the Brocade FastIron SX devices.

3. To change the default values of the STP bridge, click **Modify** .

   The **STP** window is displayed as shown in the figure below.

   FIGURE 118 Configuring STP bridge parameters



4. Type the VLAN identifier of the port in the **VLAN ID** field.

NOTE
The **VLAN ID** field is not available in the **STP** window for the Brocade FastIron SX devices.

5. Type the forward delay time, which is the period of time spent by a port in the listening and learning state before moving on to the learning or forwarding state, in the **Forward Delay (Seconds)** field. The range is from 4 through 30 seconds.
6. Type the maximum amount of time the device waits before a topology change in the **Maximum Age (Seconds)** field. The range is from 6 through 40 seconds.
7. Type the hello time, which is the interval of time between each configuration BPDU sent by the root bridge, in the **Hello Time (Seconds)** field. The range is from 1 through 10 seconds.
8. Type the priority used to identify the root bridge in a spanning tree in the **Priority** field. The range is from 0 through 65535.
9. Click **Apply** .

   The message `The change has been made` is displayed and the configured values are displayed in the **STP Bridge** window. To display the **STP Bridge** window, click **Show** . To display STP information, click **Statistic** . For more information on the field descriptions, refer to Displaying STP information on page 67.

Changing STP port parameters

The table below lists the default STP port parameters.

TABLE 30 Default STP port parameters

Parameter	Default value
Priority	128
Path Cost	The default path cost depends on the port type. • 10 Mbps - 100 • 100 Mbps - 19 • 1 Gbps - 4 • 10 Gbps - 2

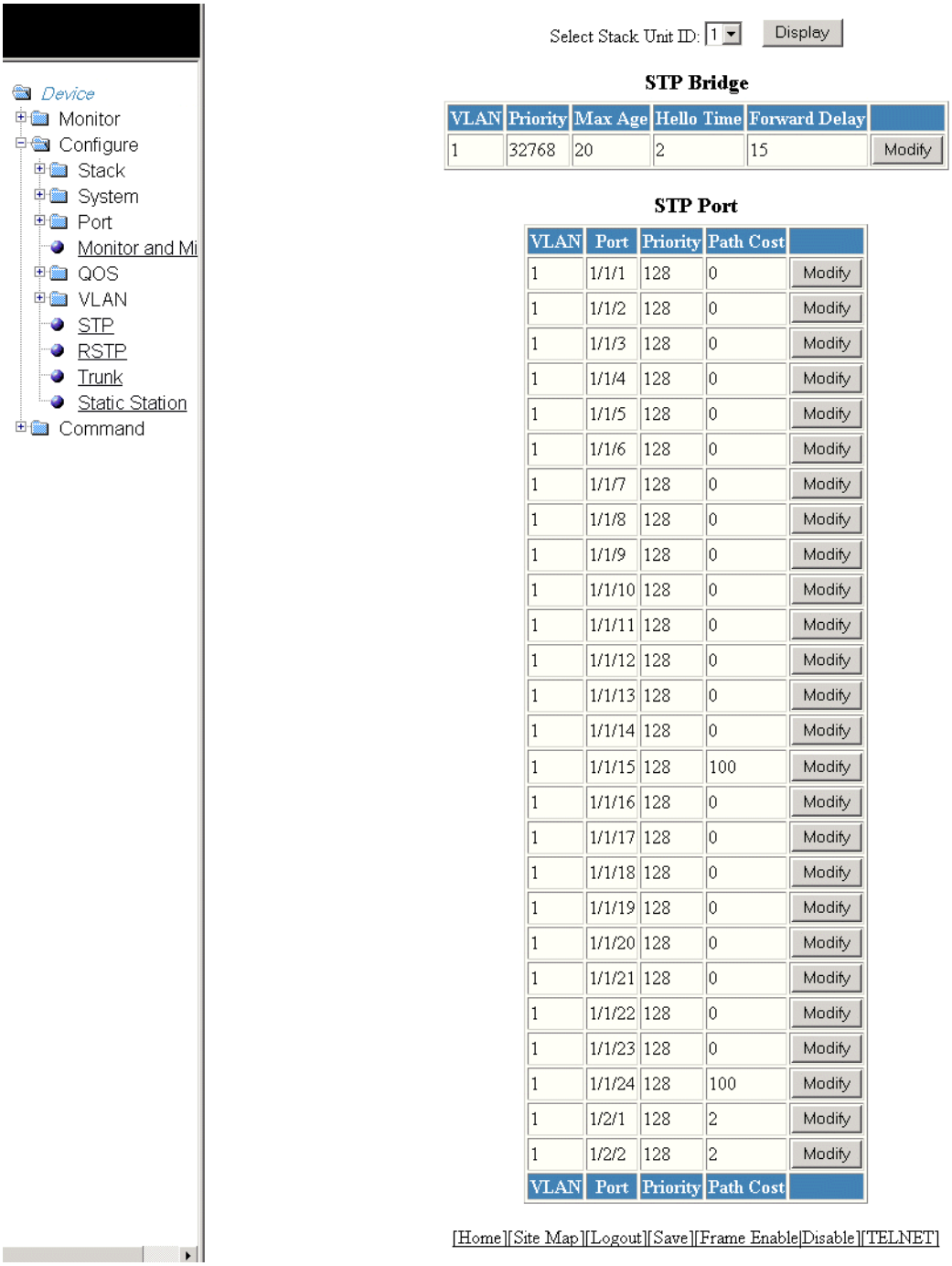
To change the default STP port values, perform the following steps.

1. Click **Configure** on the left pane and select **STP**.

   The **STP Port** window is displayed as shown in the figure below.
2. For the Brocade FCX and Brocade ICX devices, select a unit ID in the **Select Stack Unit ID** list and click **Display** to display the information about a specific stack unit.

NOTE
The **Select Stack Unit ID** list is not available in the **STP Bridge** window for the Brocade FastIron SX devices.

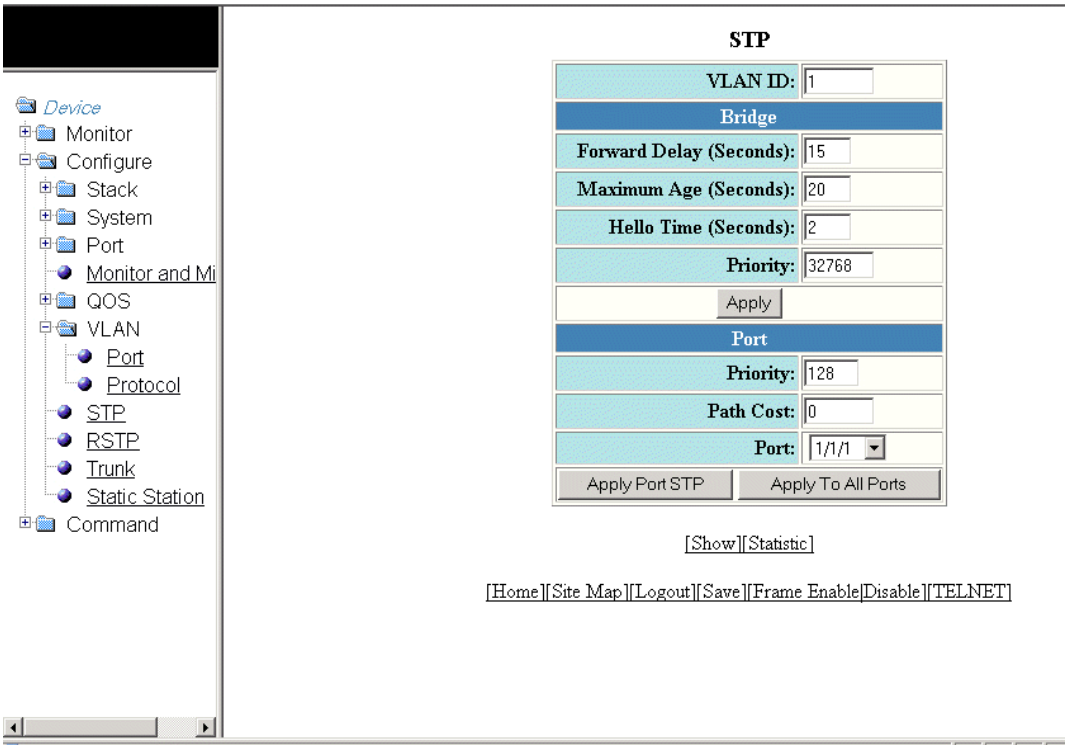
FIGURE 119 Configuring the STP port



3. Click **Modify** to change the default values of individual STP ports.

   The **STP** window is displayed.

FIGURE 120 Configuring STP port parameters



4. Type the VLAN identifier of the port in the **VLAN ID** field.
5. Type the preference that STP should give to this port relative to other ports for forwarding traffic out of the spanning tree in the **Priority** field. The range is from 0 through 240.
6. Type the cost of using the port to reach the root bridge in the **Path Cost** field. The range is from 0 through 65535.
7. Select a port number in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
8. Click **Apply Port STP** to configure the entered values only to the specified port. Click **Apply To All Ports** to configure the entered values to all the ports.

   The message `The change has been made` is displayed and the configured values are displayed in the **STP Port** window. To display the **STP Port** window, click **Show**.

   To display STP information, click **Statistic**. For more information on the field descriptions, refer to the “Displaying STP information” section.

Configuring RSTP

Configuring RSTP parameters

You can change the RSTP default bridge and port parameters using the Web Management Interface.

Changing RSTP bridge parameters

The table below lists the default RSTP bridge parameters.

TABLE 31 Default RSTP bridge parameters

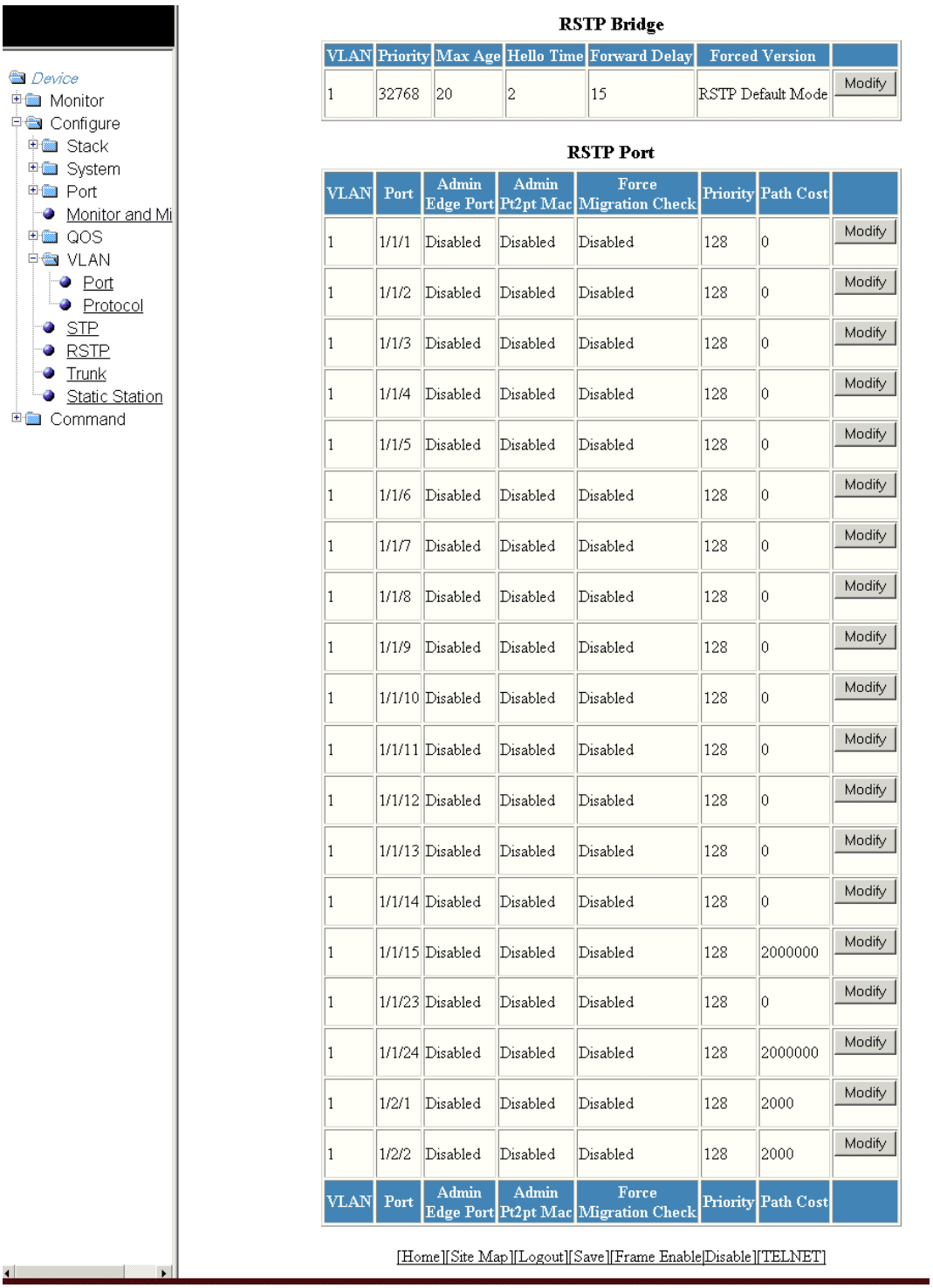
Parameter	Default value
Forward Delay	15 seconds
Maximum Age	20 seconds
Hello Time	2 seconds
Priority	32768
Force Version	RSTP Default Mode

To change the default RSTP bridge values, perform the following steps.

1. Click **Configure** on the left pane and select **RSTP**.

   The **RSTP Bridge** window is displayed as shown in the figure below.

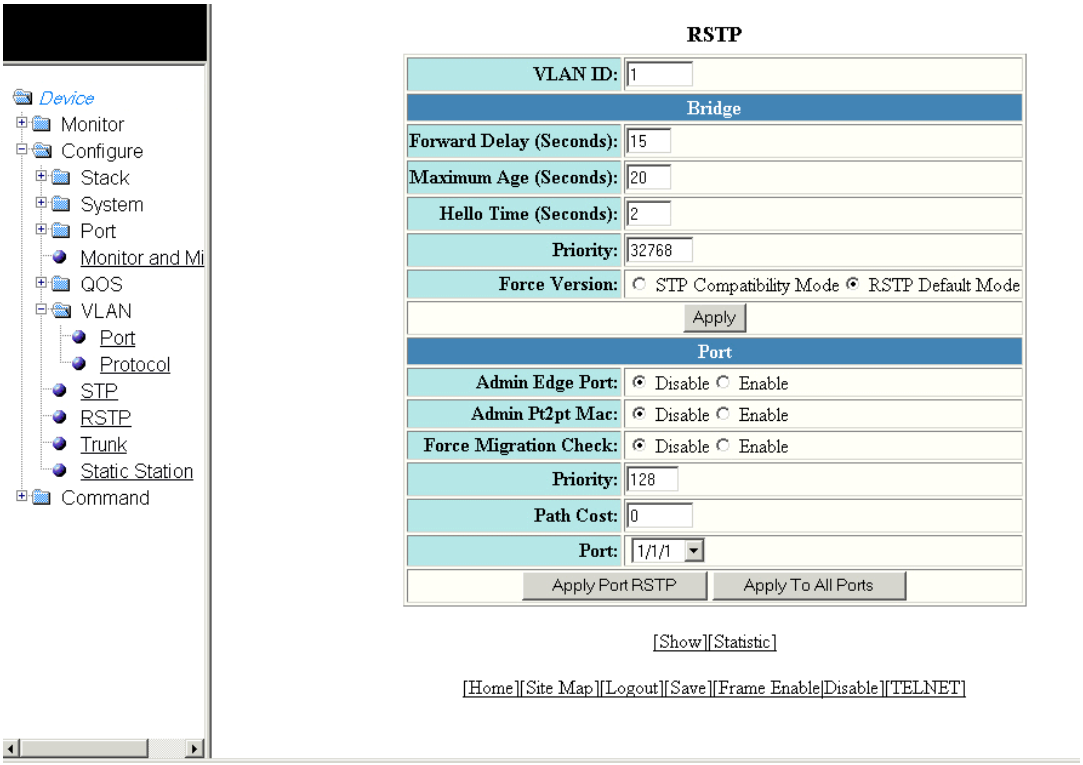
FIGURE 121 Configuring RSTP parameters



2. Click **Modify**.

   The **RSTP** window is displayed as shown in the figure below.

FIGURE 122 Changing RSTP bridge values



3. Type the forward delay, which specifies how long a port waits before it forwards an RST BPDU after a topology change, in the **Forward Delay (Seconds)** field. The range is from 4 through 30 seconds.
4. Type the maximum age, which specifies the amount of time the device waits to receive a Hello packet before it starts a topology change, in the **Maximum Age (Seconds)** field. The range is from 6 through 40 seconds.
5. Type the hello time, which specifies the interval between two Hello packets, in the **Hello Time (Seconds)** field. The range is from 1 through 10 seconds.
6. Type the priority of the bridge in the **Priority** field. The range is from 0 through 65535.
7. Click **STP Compatibility Mode** or **RSTP Default Mode** for **Force Version** . By default, **RSTP Default Mode** is enabled.
8. Click **Apply**.

   The message `The change has been made` is displayed and the configured values are shown in the **RSTP Bridge** window.

Changing RSTP port parameters

The table below lists the default RSTP port parameters.

TABLE 32 Default RSTP port parameters

Parameter	Default value
Admin Edge Port	Disable

TABLE 32 Default RSTP port parameters (Continued)

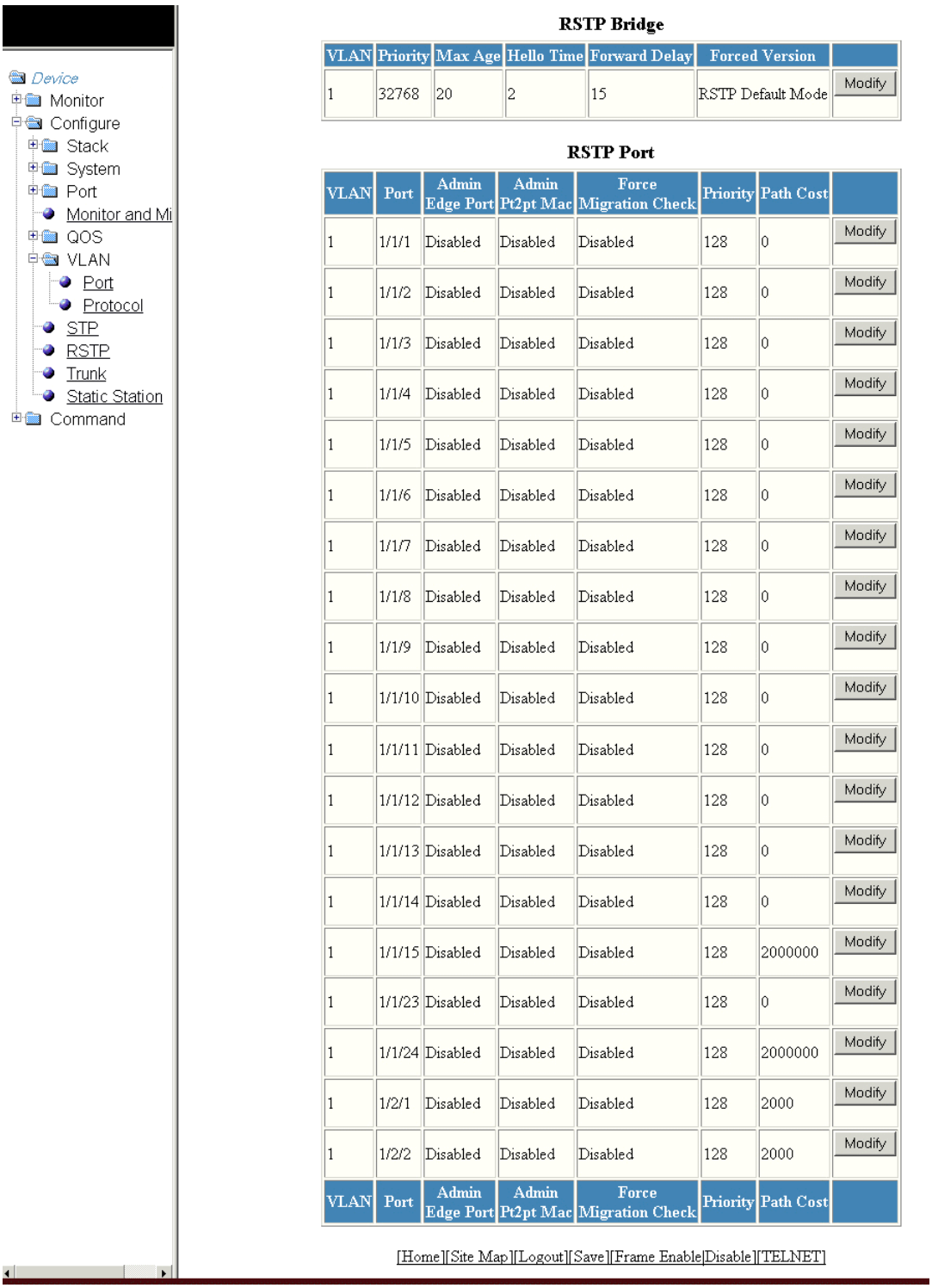
Parameter	Default value
Admin Pt2pt Mac	Disable
Force Migration Check	Disable
Priority	128
Path Cost	The default path cost varies based on the products: • For Brocade FCX and Brocade ICX devices - 0 • For Brocade FastIron SX devices - 2000

To change the default RSTP port values, perform the following steps.

1. Click **Configure** on the left pane and select **RSTP**

   The **RSTP Port** window is displayed as shown in the figure below.

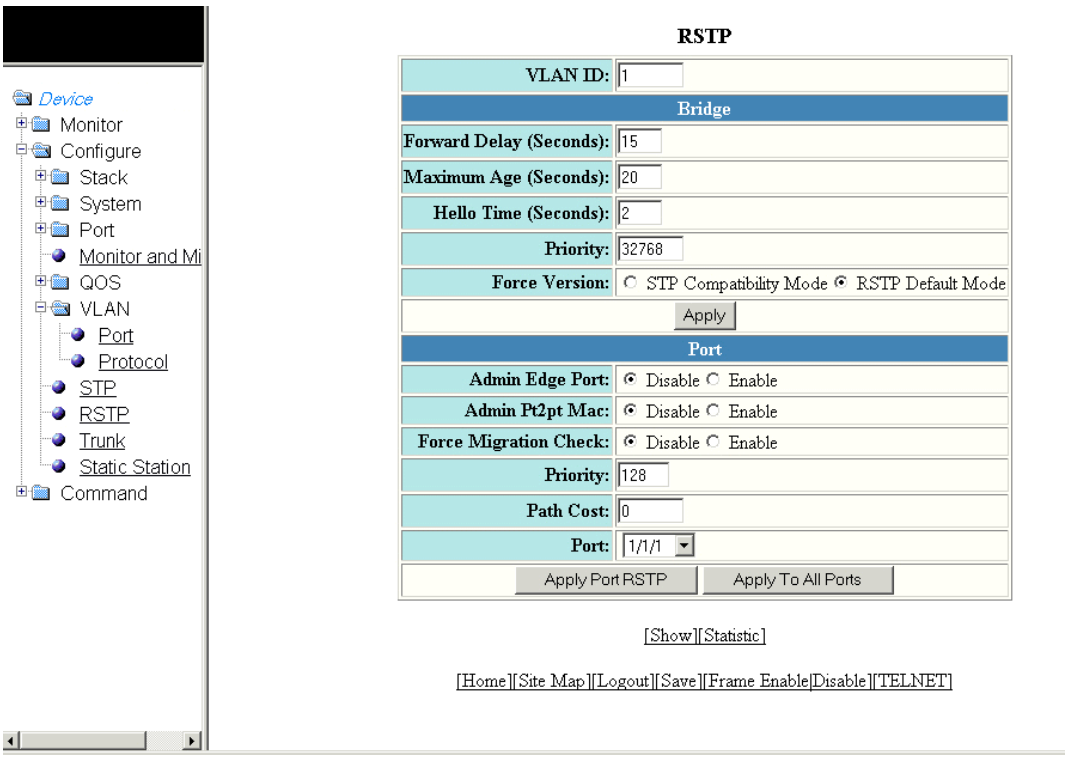
FIGURE 123 Configuring RSTP ports



2. Click **Modify** to change the default values for an individual RSTP ports.

   The **RSTP** window is displayed as shown in the figure below.

FIGURE 124 Changing RSTP port values



3. Click **Disable** or **Enable** for **Admin Edge Port**. If you click **Enable** , the port becomes an edge port in the domain.
4. Click **Disable** or **Enable** for **Admin Pt2pt Mac**. If you click **Enable**, a port will be connected to another port through a point-to-point link.
5. Click **Disable** or **Enable** for **Force Migration Check**. If you click **Enable**, the specified port will be forced to send one RST BPDU. If only STP BPDUs are received in response to the sent RST BPDU, then the port returns to sending STP BPDUs.
6. Type the priority, which is the preference that RSTP gives to this port relative to other ports for forwarding traffic out of the topology, in the **Priority** field. The range is from 0 through 240.
7. Type the cost of the port path to the root bridge in the **Path Cost** field. The range is from 1 through 20,000,000.
8. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade FCX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
9. Click **Apply Port RSTP** to configure the values only to the specified port, or click **Apply To All Ports** to configure the values to all the ports.

   The message `The change is made` is displayed and the configured RSTP port values are reflected in the **RSTP Port** window.

Configuring LAGs

Configuring a static dynamic or keep-alive LAG

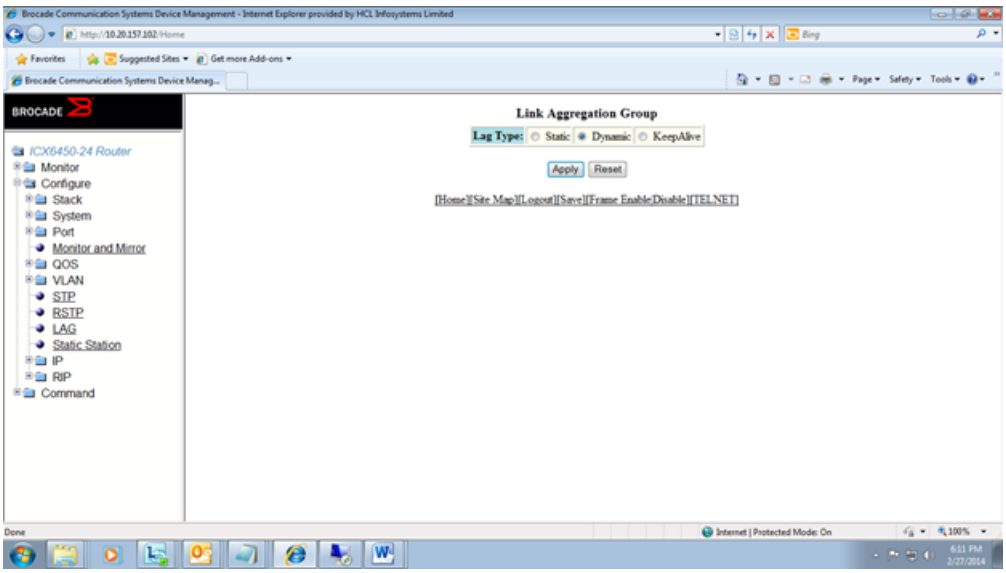
You can configure a static, dynamic, or keep-alive link aggregation group (LAG).

NOTE
sFlow and rate-limiting commands are not supported in the Web Management interface.

To configure a LAG, perform the following steps.

1. Click **Configure** on the left pane and select **LAG**.

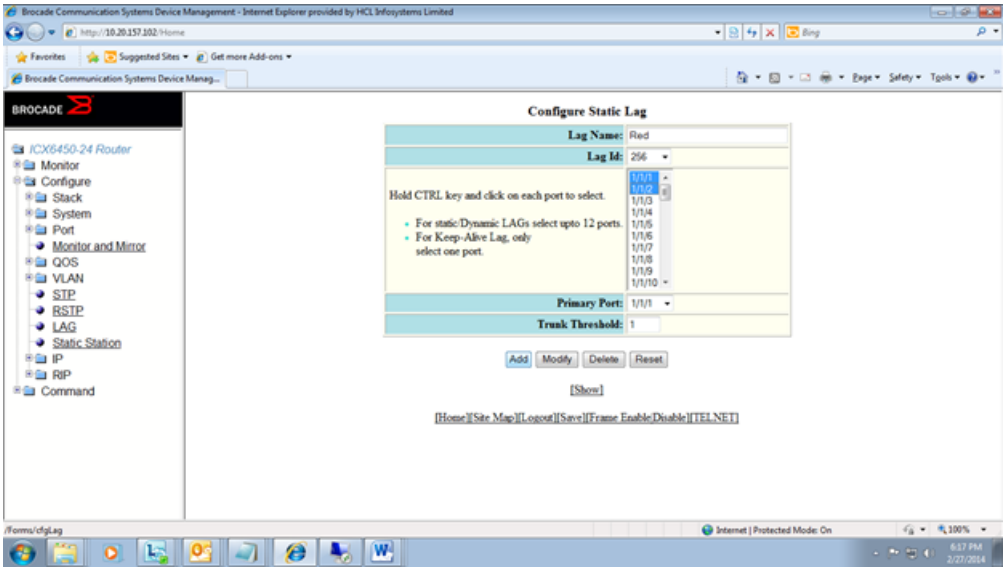
   The **Link Aggregation Group** window is displayed.



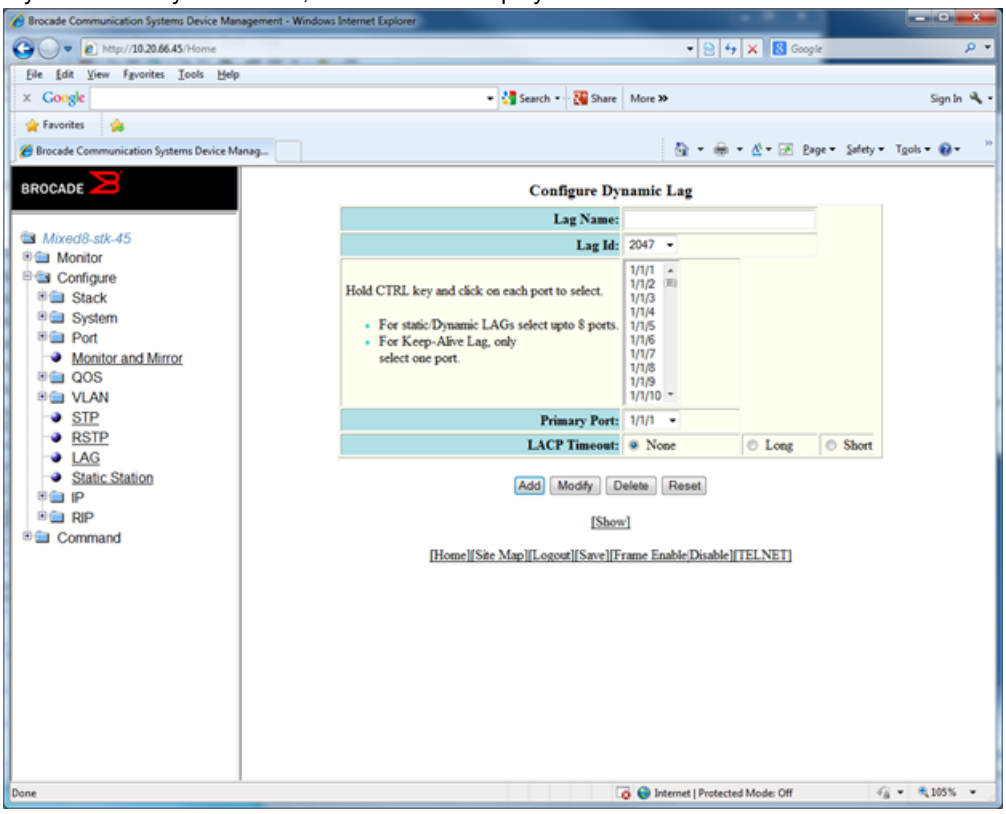
   You can select among the LAG types: static, dynamic, or keep-alive.

2. Click **Apply**.

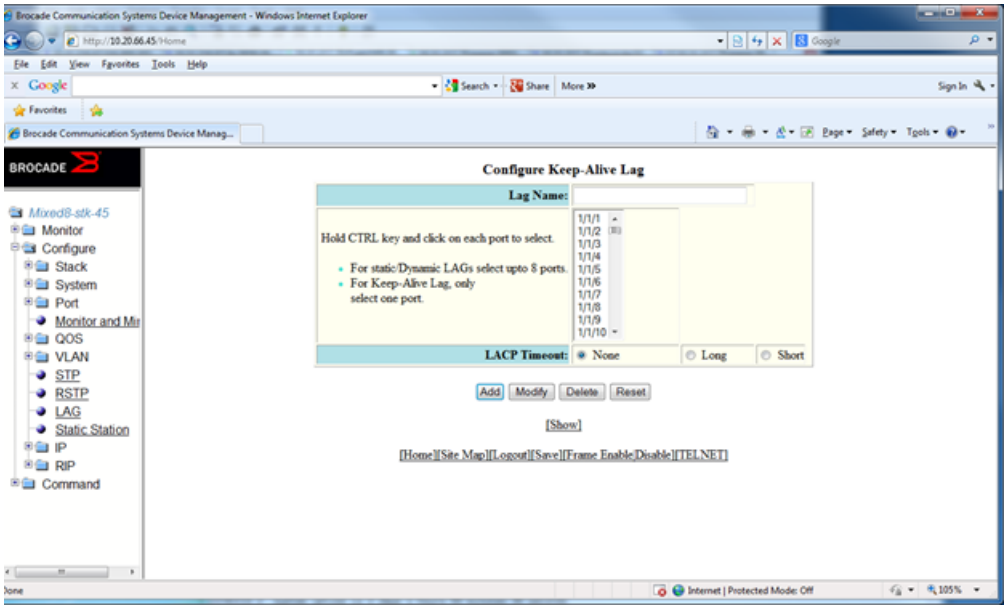
   - If you select a static LAG, this window is displayed:



- If you select a dynamic LAG, this window is displayed:



- If you select a keep-alive LAG, this window is displayed:



3. Enter the LAG name in the **Lag Name** field.

   You can enter up to 64 alphanumeric characters.

4. Enter the LAG ID in the **Lag Id** field.

   Hold down the CTRL key and, for static and dynamic LAGs only, select ports from the list. The number of ports you can select for static and dynamic LAGs depends on the platform. You can select only one port for keep-alive LAGs.

   NOTE
   If you do not select a LAG ID, an ID is automatically generated.

5. **NOTE**
   This step applies only to static and dynamic LAGs.

   Select the primary port.

   The **Primary Port** list displays a list of the ports you selected for the LAG; you can select a primary port from it.

6. **NOTE**
   This step applies only to static LAGs.

   Configure the trunk threshold.

7. **NOTE**
   This step applies only to dynamic and keep-alive LAGs.

   Configure the LACP timeout.

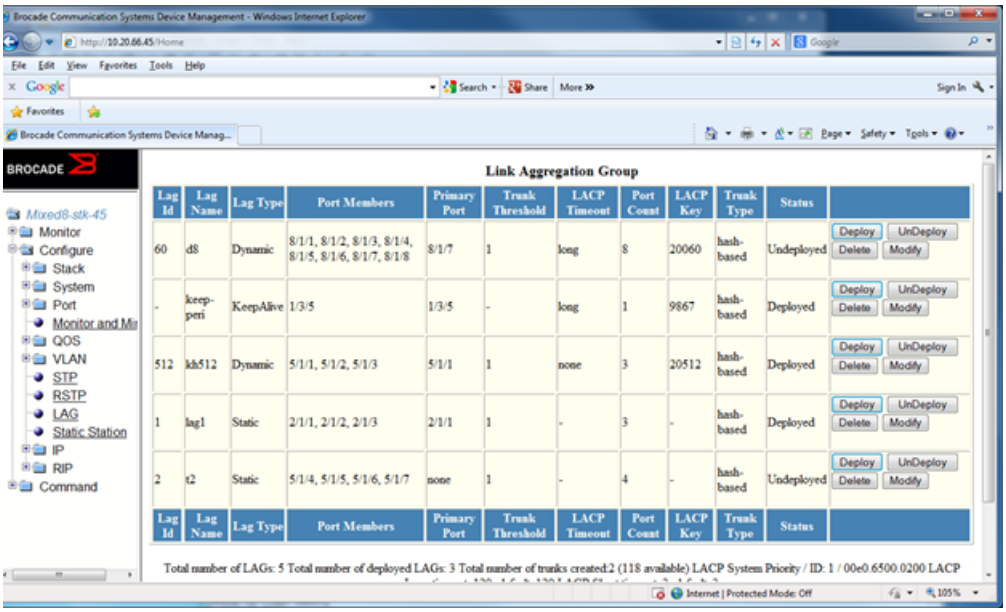
8. Click **Add**.
   The LAG is added.

Displaying a configured LAG

You can display information for a configured link aggregation group (LAG). You can also deploy, undeploy, modify, or delete configured LAGs.

To display LAG information, perform the following step.

Click **Show** in the **Configure LAG** window.



This window has information fields for all LAG types; the fields are populated according to the LAG type, as follows:

- For static LAGs, the **LACP Timeout** and **LACP Key** fields display "–" because these parameters do not apply to static LAGs.
- For dynamic LAGs, the **Trunk Threshold** field displays "–" because this parameter does not apply to dynamic LAGs.

You can perform the following actions in this window:

- You can select the **Modify** button to display the **Link Aggregation Group** configuration window.
- You can select the **Add LAG** link to configure a new LAG.

Configuring a Static Station

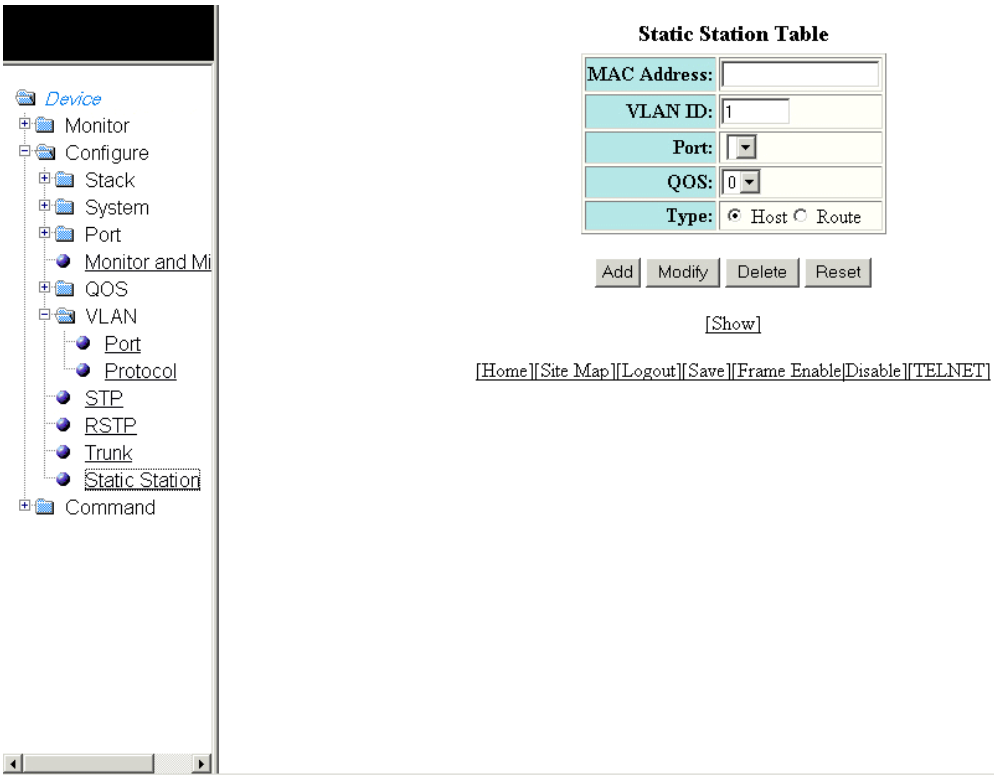
Adding a static station

To configure a static MAC entry and assign the traffic priority (QoS) and VLAN membership (VLAN ID) to the entry, perform the following steps.

1. Click **Configure** on the left pane and select **Static Station**.

   The **Static Station Table** window is displayed as shown in the figure below.

   FIGURE 125 Configuring the static station



2. Type the MAC address of the device in *xx-xx-xx-xx-xx-xx* format in the **MAC Address** field.
3. Type the port-based VLAN identifier in the **VLAN ID** field. VLAN 1 is the default VLAN.
4. Select a port number in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
5. Select a QoS priority in the **QOS** list. A static MAC entry can be assigned a priority from 0 through 7.

6. Click **Host** or **Route** for **Type**. By default, **Host** is selected.
7. Click **Add**.

   The message `The change has been made` is displayed. To display the configured static station, click **Show**.

   To reset the data entered in the configuration pane, click **Reset**. You can also delete the configured static station entry by clicking **Delete**.

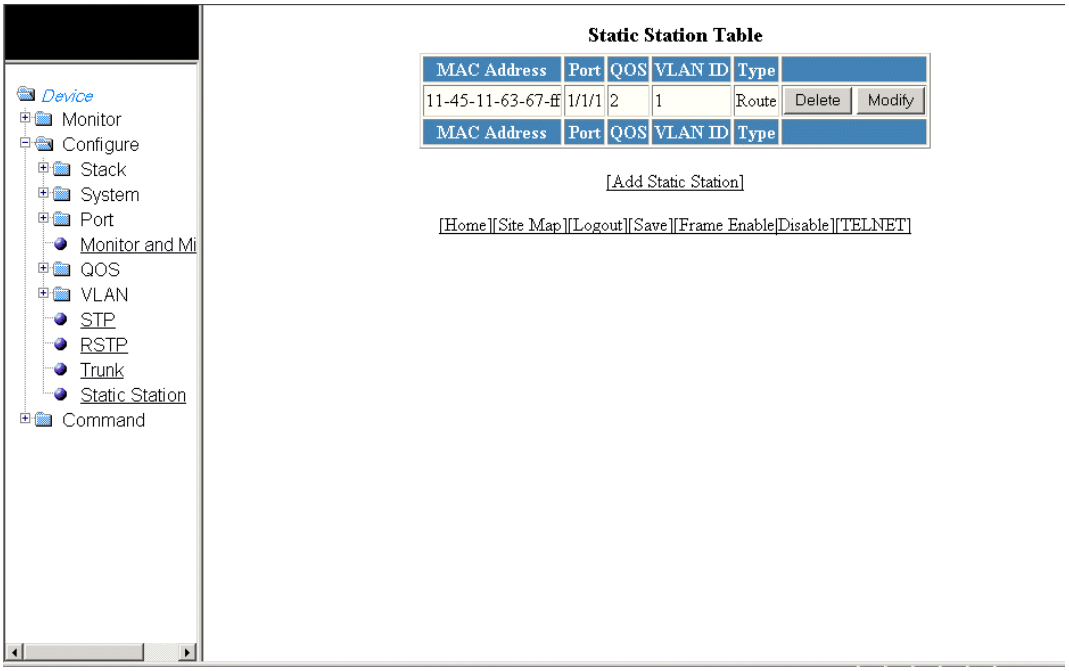
Modifying a static station

After you configure a static station, you can modify the port number, QoS priority, VLAN ID, and device type of the entry by performing the following steps.

1. Click **Configure** on the left pane and select **Static Station**.

   The **Static Station Table** window is displayed as shown in the figure below.

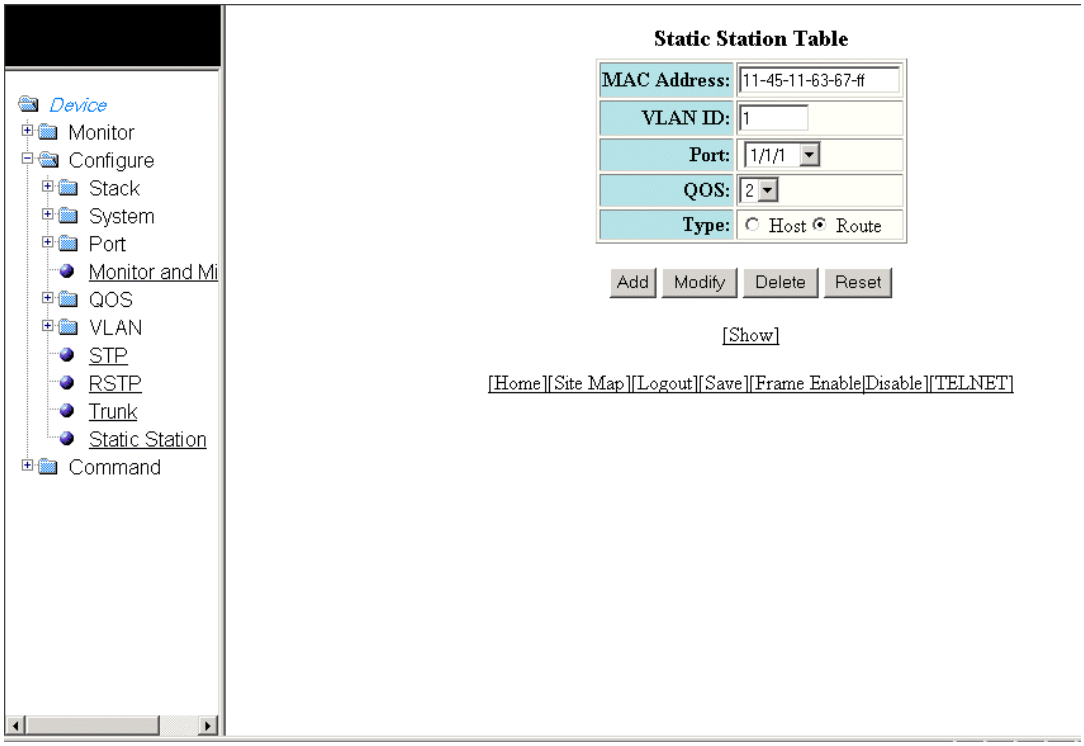
   FIGURE 126 Modifying the static station



2. Click **Modify** .

   The **Static Station Table** window is displayed as shown in the figure below.

FIGURE 127 Modifying the static station



3. Type the port-based VLAN identifier in the **VLAN ID** field. VLAN 1 is the default VLAN.

NOTE
The **VLAN ID** field is not available in the **Static Station Table** window for the Brocade FastIron SX devices.

4. Select a port number in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
5. Select a QoS priority in the **QOS** list. A static MAC entry can be assigned a priority from 0 through 7.
6. Click **Host** or **Route** for **Type**.
7. Click **Modify**.

   The message `The change has been made` is displayed and the configured values are reflected in the **Static Station** window. To display the modified static station, click **Show**.

   To reset the data entered in the configuration pane, click **Reset** . You can also delete the static station entry by clicking **Delete**.

Configuring IP

The IP feature is specific to the Brocade FCX, Brocade ICX, and Brocade FastIron SX devices running Layer 3 code.

NOTE
The terms "Layer 3 switch" and "router" are used interchangeably in this chapter.

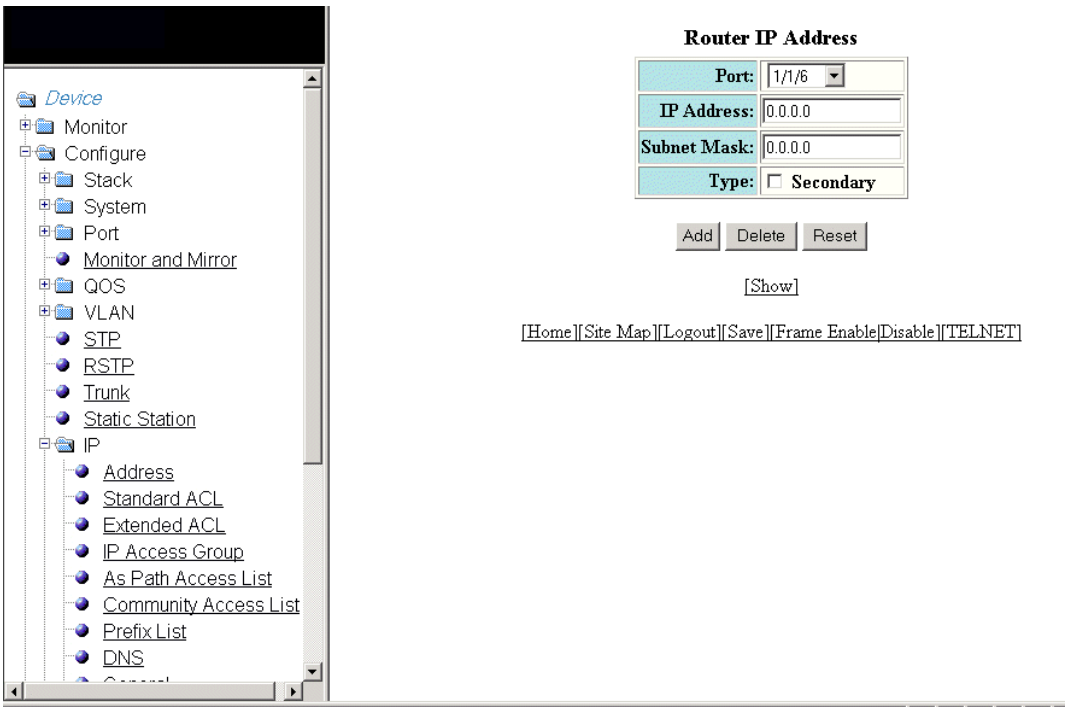
Configuring the router IP address

To configure an IP address to an interface, perform the following steps.

1. Click **Configure** on the left pane and select **IP**.
2. Click **Address**.

   The **Router IP Address** window is displayed as shown in the figure below.

FIGURE 128 Configuring router IP addresses



3. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Type the IP address of the device in the **IP Address** field.
5. Type the IP subnet mask in the **Subnet Mask** field.
6. Select the **Secondary** check box for **Type** if you have already configured an IP address within the same subnet on the interface.
7. Click **Add**.

   The message `The change has been made` is displayed and the specified IP address is assigned to the interface. To display the configured router IP address, click **Show**.

   To delete the configured IP address, click **Delete**. To reset the data entered in the configuration pane, click **Reset**.

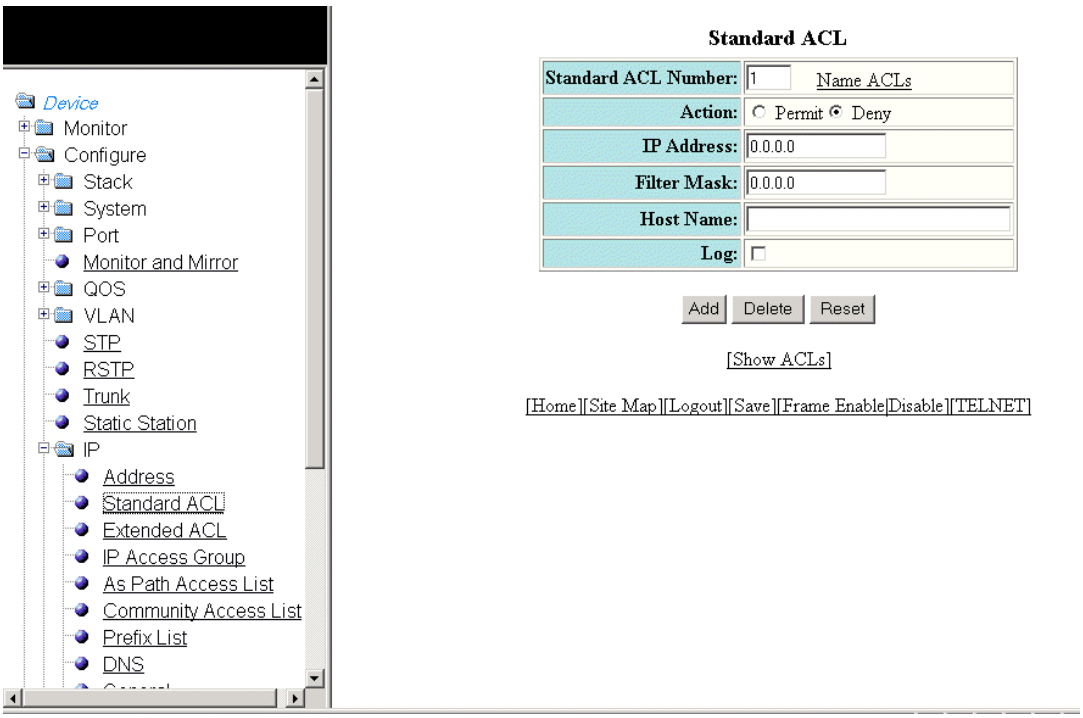
Configuring a standard ACL

To configure a standard ACL, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Standard ACL** .

   The **Standard ACL** window is displayed as shown in the figure below.

FIGURE 129 Configuring standard ACLs



3. Type the ACL number from 1 through 99 in the **Standard ACL Number** field. If you want to type an ACL name, click **Name ACLs** . The field label changes to **Standard ACL Name** . Now you can type an ACL name up to 256 alphanumeric characters in length.
4. Click **Permit** or **Deny** for **Action** so that the packets that match a policy in the ACL can be permitted (forwarded) or denied (dropped).
5. Type the host IP address in the **IP Address** field.
6. Type the IP subnet mask in the **Filter Mask** field.
7. Type the host name in the **Host Name** field.
8. Select the **Log** check box so that the device generates syslog entries and SNMP traps for the packets that are denied by the access policy.
9. Click **Add** .

   The message `The change has been made` is displayed and the ACL is added. To display the configured ACL, click **Show ACLs** .

   To delete the configured ACL, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

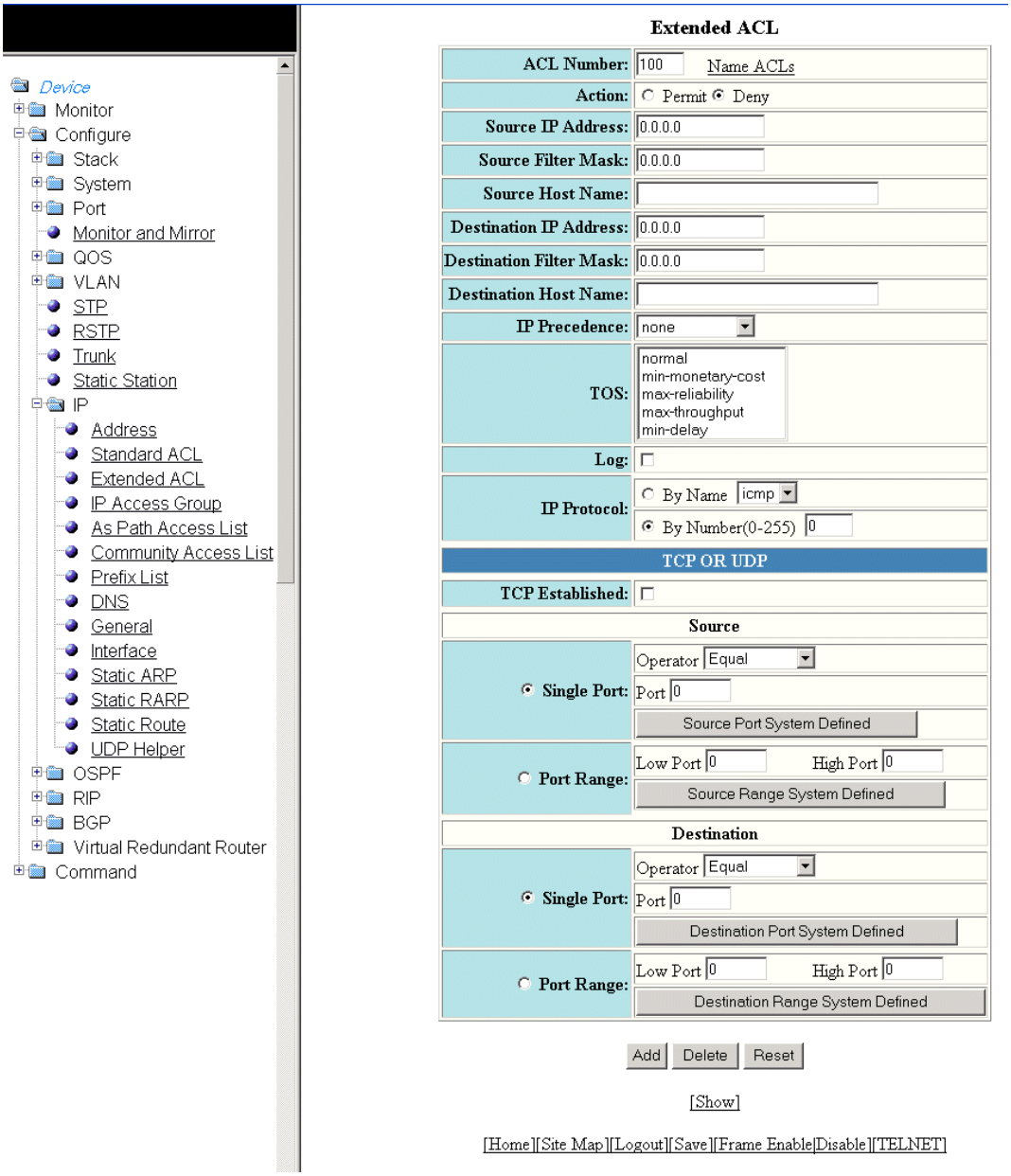
Configuring an extended ACL

To configure an extended numbered ACL, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Extended ACL** .

   The **Extended ACL** window is displayed as shown in the figure below.

FIGURE 130 Configuring an extended ACL



3. Type the extended ACL number from 100 through 199 in the **ACL Number** field. If you want to specify the extended ACL name, click **Name ACLs** . The field label is changed to **ACL Name** .
4. Click **Permit** or **Deny** for **Action** so that the packets that match the policy can be forwarded or dropped.
5. Type the source IP address in the **Source IP Address** field.
6. Type the source mask in the **Source Filter Mask** field.
7. Type the source host name in the **Source Host Name** field.
8. Type the destination IP address in the **Destination IP Address** field.
9. Type the destination mask in the **Destination Filter Mask** field.
10. Type the destination host name in the **Destination Host Name** field.

11. Select one of the following options in the **IP Precedence** list:

- **routine** --The ACL matches packets that have the routine precedence.
- **priority** --The ACL matches packets that have the priority precedence.
- **immediate** --The ACL matches packets that have the immediate precedence.
- **flash** --The ACL matches packets that have the flash precedence.
- **flash-override** --The ACL matches packets that have the flash override precedence.
- **critical** --The ACL matches packets that have the critical precedence.
- **internet** --The ACL matches packets that have the internetwork control precedence.
- **network** --The ACL matches packets that have the network control precedence.

12. Select one of the following options in the **TOS** list:

- **normal** --The ACL matches packets that have the normal ToS.
- **min-monetary-cost** --The ACL matches packets that have the minimum monetary cost ToS.
- **max-reliability** --The ACL matches packets that have the maximum reliability ToS.
- **max-throughput** --The ACL matches packets that have the maximum throughput ToS.
- **min-delay** --The ACL matches packets that have the minimum delay ToS.

13. Select the **Log** check box to enable generation of SNMP traps and syslog messages for packets denied by the ACL.
14. Click **By Name** for **IP Protocol** to select the IP protocol by name or click **By Number** to specify the number (from 0 through 255).
15. Select the **TCP Established** check box so that the policy applies to the TCP packets that have the ACK (Acknowledgment) or RST (Reset) bits set on (set to "1") in the Control Bits field of the TCP packet header. The policy applies only to the established TCP sessions, not to the new sessions.

NOTE
This field applies only to the destination TCP ports, not the source TCP ports.

16. Enter the following information for **Source** :

a) To configure a single port, click **Single Port** .

Select one of the following for **Operator** :

- **Equal** --The policy applies to the TCP or UDP port name or number you enter.
- **NotEqual** --The policy applies to all the TCP or UDP port numbers except the port number or port name you enter.
- **LessThan** --The policy applies to the TCP or UDP port numbers that are less than the port number or the numeric equivalent to the port name you enter.
- **GreaterThan** --The policy applies to the TCP or UDP port numbers greater than the port number or the numeric equivalent to the port name you enter.

Click **Source Port System Defined**

b) To configure a range of ports, click **Port Range** .

Type the lower port number in the **Low Port** field and the highest port number in the **High Port** field.

Click **Source Range System Defined** .

17. To configure the destination port settings under **Destination** , follow the procedure explained in step 16 .
18. Click **Add** .

The message `The change has been made` is displayed. To display the configured extended numbered ACL, click **Show** .

To delete the configured extended numbered ACL, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

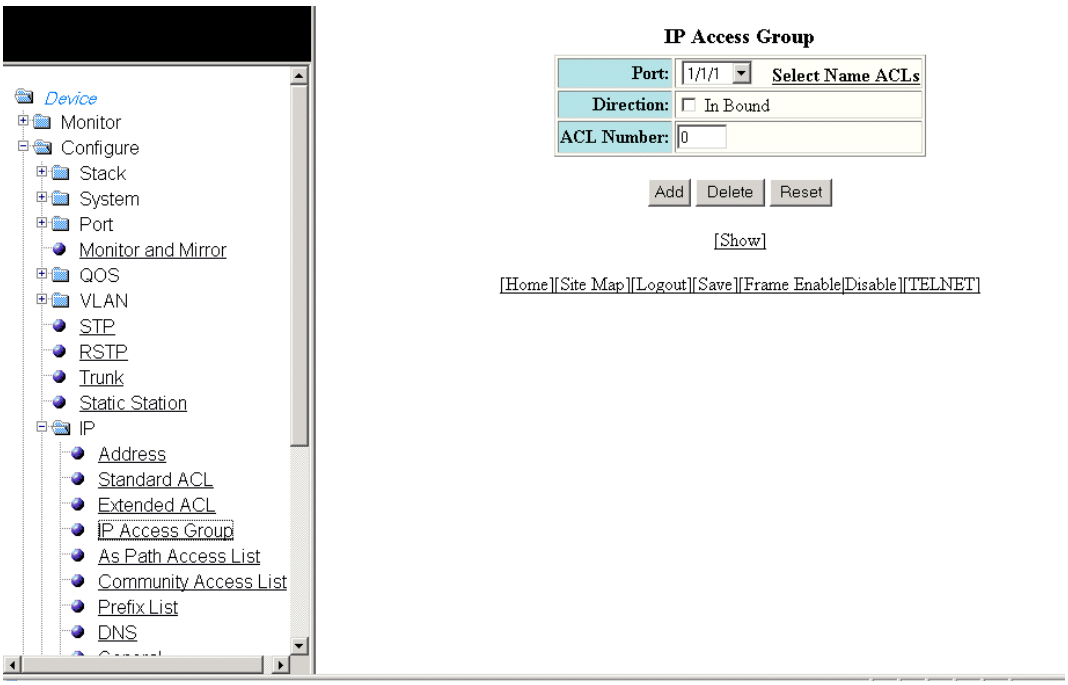
Configuring an IP access group

To configure an IP access group, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **IP Access Group** .

   The **IP Access Group** window is displayed as shown in the figure below.

   FIGURE 131 Configuring IP access groups



3. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Select the **In Bound** check box for **Direction** to enable incoming traffic on the interface to which you apply the ACL.
5. Type the ACL number in the **ACL Number** field. If you want to type an ACL name, click **Select Name ACLs** . The field label changes to **ACL Name** . Now you can type the ACL name up to 256 alphanumeric characters in length.
6. Click **Add** .

   The message `The change has been made` is displayed. To display the configured IP access group, click **Show** .

   To delete the configured IP access group, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

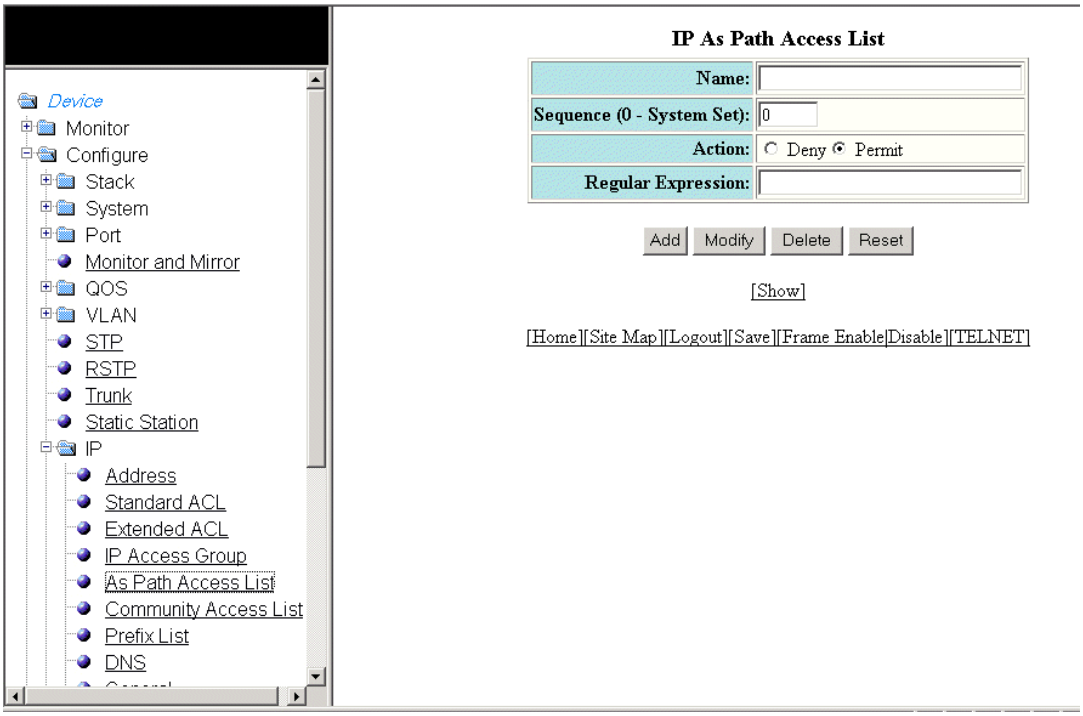
Configuring an IP Autonomous System-path access list

To configure an Autonomous System-path access list, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Autonomou System Path Access List** .

   The **IP Autonomous System Path Access List** window is displayed as shown in the figure below.

   FIGURE 132 Configuring the IP Autonomous System-path access list



3. Type the ACL name in the **Name** field.
4. Type the Autonomous System-path list sequence number in the **Sequence (0 - System Set)** field. You can configure up to 199 entries in an Autonomous System-path list.

   If you do not specify a sequence number, the software numbers the entries in increments of five, beginning with number 5. The software interprets the entries in an Autonomous System-path list in numerical order, beginning with the lowest sequence number.
5. Click **Deny** or **Permit** for **Action** .
6. Type the Autonomous System-path information you want to permit or deny to routes that match any of the match statements within the ACL in the **Regular Expression** field.
7. Click **Add** .

   The message `The change has been made` is displayed. To display the configured Autonomous System-path list, click **Show** .

   To modify the Autonomous System-path list, click **Modify** . You can also delete the Autonomous System-path list by clicking **Delete** . To reset the data entered in the configuration pane, click **Reset** .

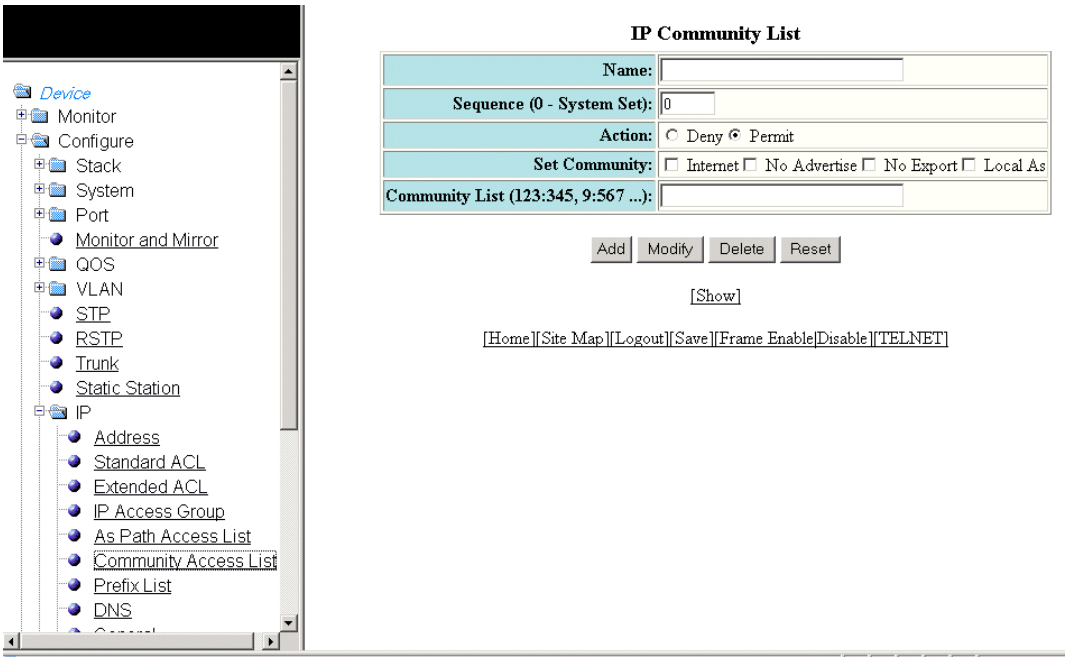
Configuring an IP community list

To configure an IP community list, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Community Access List** .

   The **IP Community List** window is displayed as shown in the figure below.

   FIGURE 133 Configuring the IP community list



3. Type the ACL name in the **Name** field.
4. Type the community list sequence number in the **Sequence (0 - System Set)** field. You can configure up to 199 entries in a community list.

   If you do not specify a sequence number, the software numbers the entries in increments of five, beginning with number 5. The software interprets the entries in a community list in numerical order, beginning with the lowest sequence number.
5. Click **Deny** or **Permit** for **Action** .
6. Select one of the following options for **Set Community** :

   - **Internet** --The Internet community.
   - **No Advertise** --Routes with this community cannot be advertised to any other BGP Layer 3 switches.
   - **No Export** --The community of sub-Autonomous Systems within a confederation. Routes with this community can be exported to other sub-Autonomous Systems within the same confederation but cannot be exported outside the confederation to other Autonomous Systems or otherwise sent to EBGP neighbors.
   - **Local Autonomous System** --The local sub-Autonomous System within the confederation. Routes with this community can be advertised only within the local sub-Autonomous System.
7. Type the community number in *num* :*num* format in the **Community List** field.
8. Click **Add** .

The message `The change has been made` is displayed. To display the configured community list, click **Show** .

To modify the community list, click **Modify** . You can also delete the community list by clicking **Delete** . To reset the data entered in the configuration pane, click **Reset** .

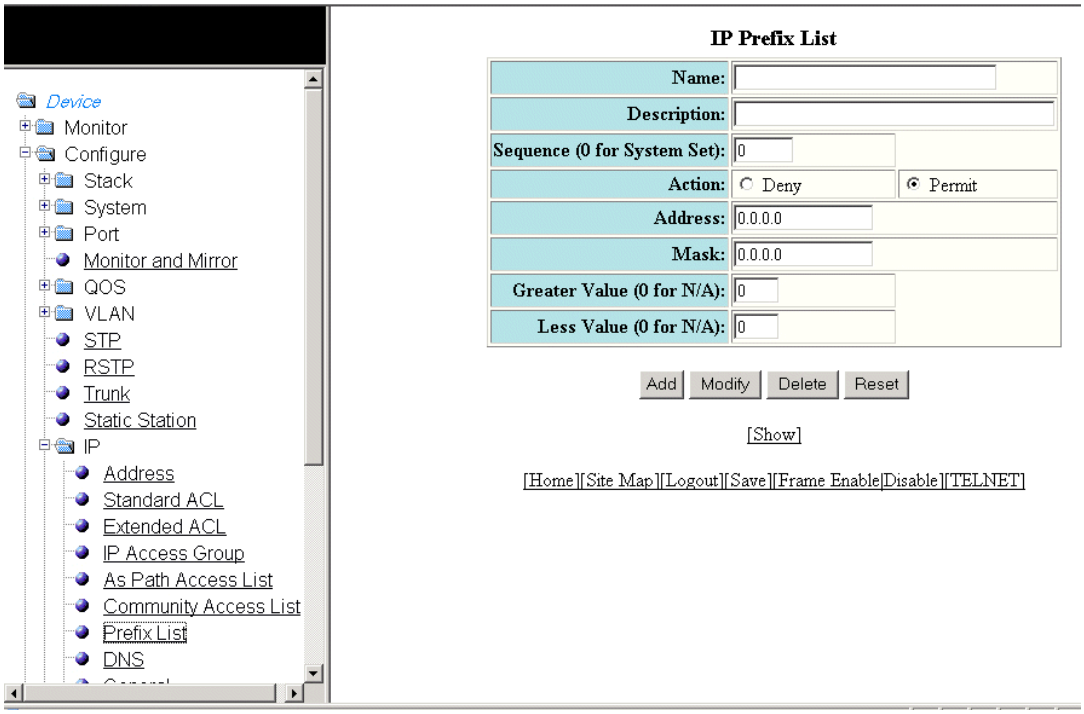
Configuring an IP prefix list

To configure an IP prefix list, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Prefix List** .

   The **IP Prefix List** window is displayed as shown in the figure below.

   FIGURE 134 Configuring IP prefix lists



3. Type the prefix list name in the **Name** field.
4. Type a text string describing the prefix list in the **Description** field.
5. Type the IP prefix list sequence number in the **Sequence (0 for System Set)** field. You can configure up to 100 prefix list entries.

   If you do not specify a sequence number, the software numbers the entries in increments of five, beginning with prefix list entry 5. The software interprets the prefix list entries in numerical order, beginning with the lowest sequence number.
6. Click **Deny** or **Permit** for **Action** .
7. Type the network IP address in the **Address** field.
8. Type the network mask address in the **Mask** field.
9. Type the maximum value of the mask length in the **Greater Value (0 for N/A)** field.

10. Type the least value of the mask length in the **Less Value (0 for N/A)** field.

NOTE
The **Greater Value (0 for N/A)** or **Less Value (0 for N/A)** values you specify must meet the following condition:Length < Greater Value <= Less Value <= 32

11. Click **Add** .

The message `The change has been made` is displayed. To display the configured IP prefix list, click **Show** .

To modify the IP prefix list, click **Modify** . You can also delete the IP prefix list by clicking **Delete** . To reset the data entered in the configuration pane, click **Reset** .

Configuring a DNS entry

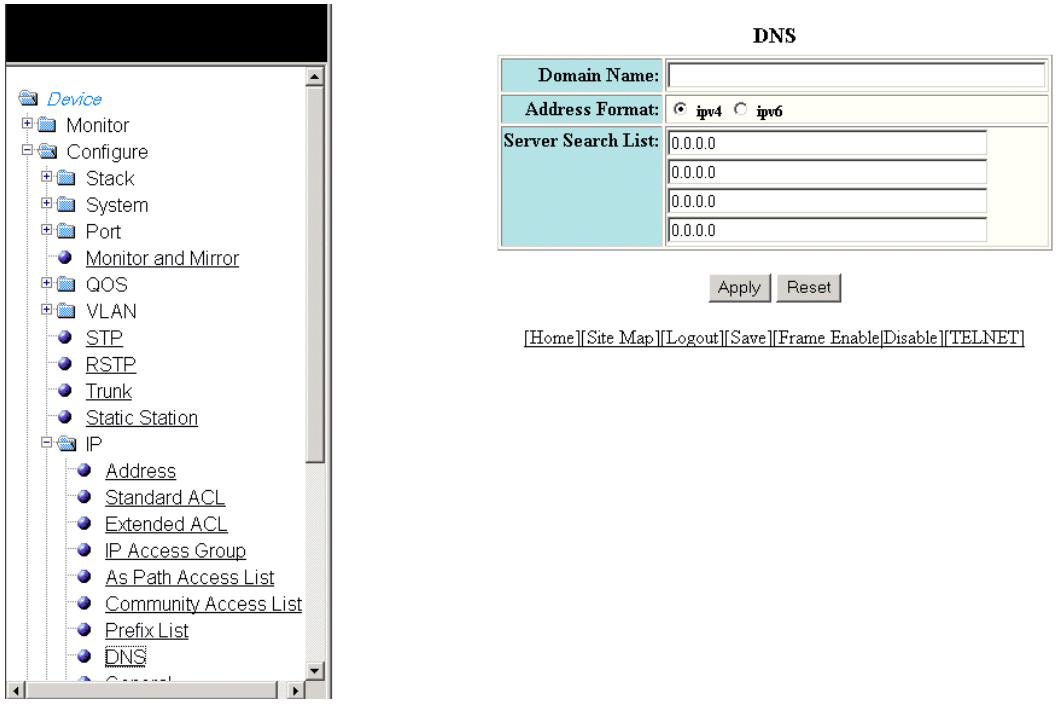
You can configure the Brocade device to recognize up to four Domain Name System (DNS) servers. The first entry serves as the primary default address. If a query to the primary address fails to be resolved after three attempts, the next DNS address is queried (also up to three times). This process continues for each defined DNS address until the query is resolved. The order in which the default DNS addresses are polled is the same as the order in which you enter them.

To configure DNS, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **DNS** .

The **DNS** window is displayed as shown in the figure below.

FIGURE 135 Configuring a DNS entry



3. Type the domain name in the **Domain Name** field.
4. Click **ipv4** or **ipv6** for **Address Format** .
5. Type the IPv4 or IPv6 address of the DNS in the **Server Search List** fields.
6. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

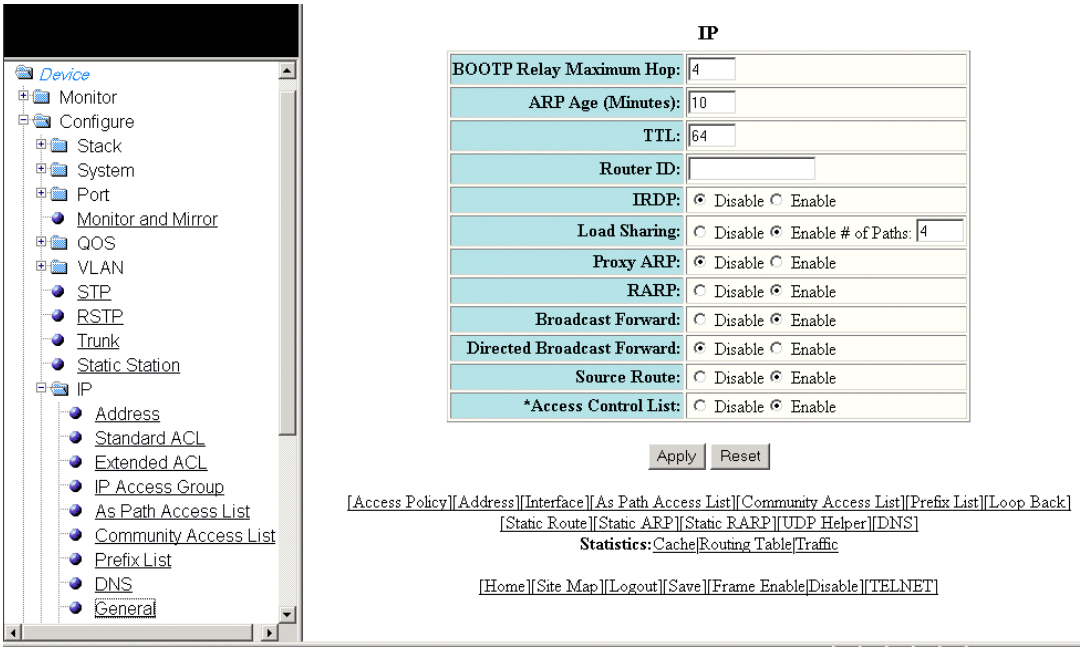
Configuring the general IP settings

To configure the general IP settings, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **General** .

   The **IP** window is displayed as shown in the figure below.

FIGURE 136 Configuring the general IP settings



3. Type the maximum number of hops away a BootP server can be located from a Layer 3 switch and still be used by the router clients for network booting in the **BOOTP Relay Maximum Hop** field. The range is from 1 through 15. The default value is 4 hops.
4. Type the amount of time the device should keep a MAC address learned through ARP in the device ARP cache in the **ARP Age (Minutes)** field. The range is from 0 through 240 minutes. The default is 10 minutes.
5. Type the maximum number of Layer 3 switches (hops) through which a packet can pass before being discarded in the **TTL** field. The range is from 1 through 255 hops. The default is 64 hops.
6. Type the Layer 3 switch identifier in the **Router ID** field.
7. Click **Disable** or **Enable** for **IRDP** . By default, this protocol is disabled.

ICMP Router Discovery Protocol (IRDP) is an IP protocol a Layer 3 switch can use to advertise the IP addresses of its interfaces to the directly attached hosts.

8. Click **Disable** or **Enable** for **Load Sharing** . If you click **Enable** , type the number of load sharing paths in the **# of Paths** field.
9. Click **Disable** or **Enable** for **Proxy ARP** .

   Proxy ARP is an IP mechanism a Layer 3 switch can use to answer an ARP request on behalf of a host, by replying with the Layer 3 switch's own MAC address instead of the host.
10. Click **Disable** or **Enable** for **RARP** .

    Reverse ARP (RARP) is an IP mechanism a host can use to request an IP address from a directly attached Layer 3 switch when the host boots.
11. Click **Disable** or **Enable** for **Broadcast Forward** .
12. Click **Disable** or **Enable** for **Directed Broadcast Forward** .

    A directed broadcast is a packet containing all ones (or in some cases, all zeros) in the host portion of the destination IP address. When a Layer 3 switch forwards such a broadcast, it sends a copy of the packet to each of its enabled IP interfaces.
13. Click **Disable** or **Enable** for **Source Route** .
14. Click **Disable** or **Enable** for **Access Control List** .
15. Click **Apply** .

    The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

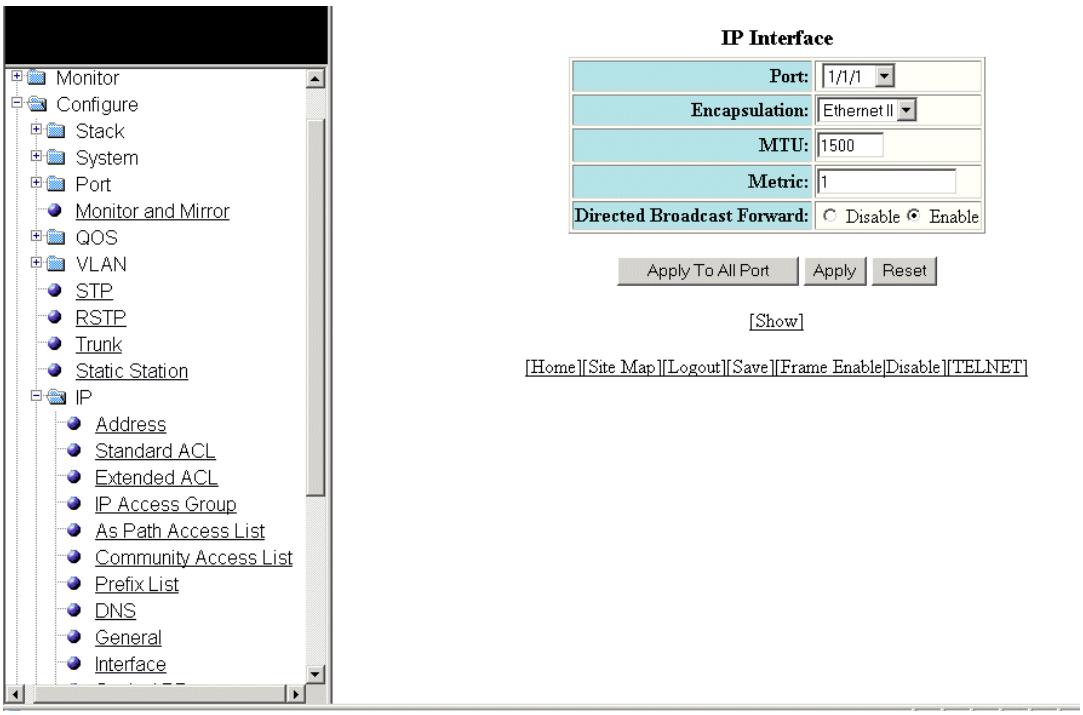
Configuring IP interfaces

To configure an IP interface, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Interface** .

   The **IP Interface** window is displayed as shown in the figure below.

FIGURE 137 Configuring an IP interface



3. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Select the format of the Layer 2 packets in the **Encapsulation** list.
5. Type the maximum size of the IP packet when encapsulated in a Layer 2 packet, in the **MTU** field.
6. Type the cost in the **Metric** field.
7. Click **Disable** or **Enable** for **Directed Broadcast Forward** .
8. Click **Apply** to configure the IP interface to the specified port or click **Apply To All Ports** to configure the IP interface on all the ports.

   The message `The change has been made` is displayed. To display the configured IP interface, click **Show** . To reset the data entered in the configuration pane, click **Reset** .

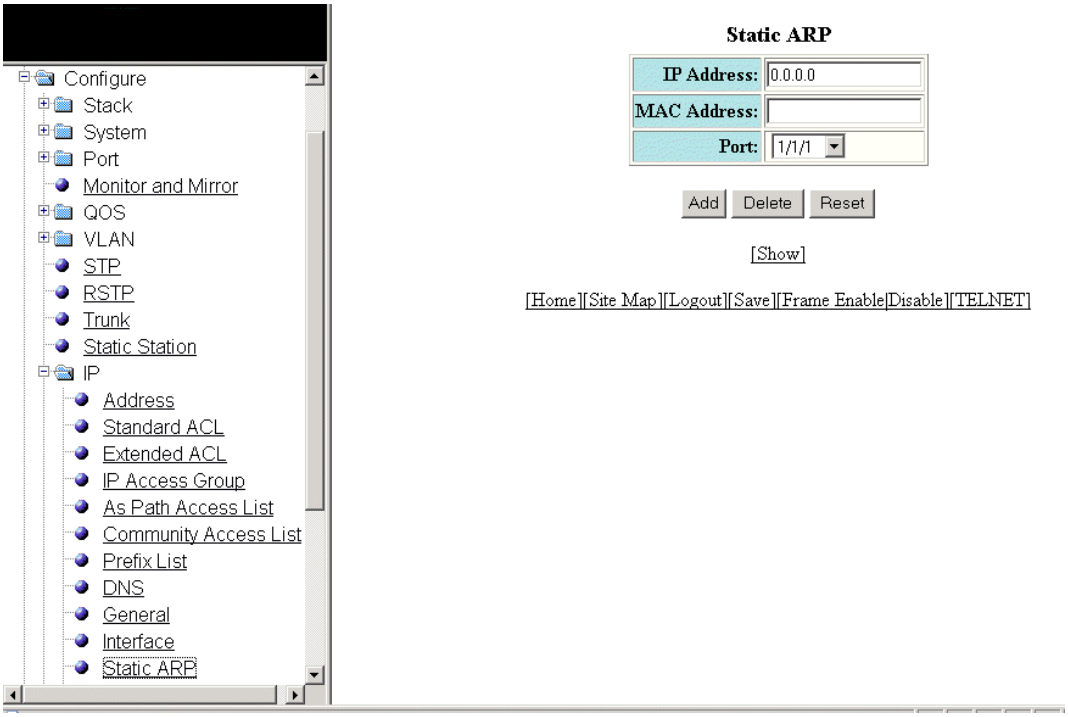
Configuring a static ARP

To configure a static Address Resolution Protocol (ARP) entry, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Static ARP** .

   The **Static ARP** window is displayed as shown in the figure below.

FIGURE 138 Configuring static ARP



3. Type the IP address of the directly connected device in the **IP Address** field.
4. Type the MAC address of the device in *xx-xx-xx-xx-xx-xx* format in the **MAC Address** field.
5. Select a port number in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
6. Click **Add** .

   The message `The change has been made` is displayed. To display the configured static ARP entry, click **Show** .

   To reset the data entered in the configuration pane, click **Reset** .

NOTE
The delete operation is not supported in 08.0.20 and later releases.

Configuring a static RARP

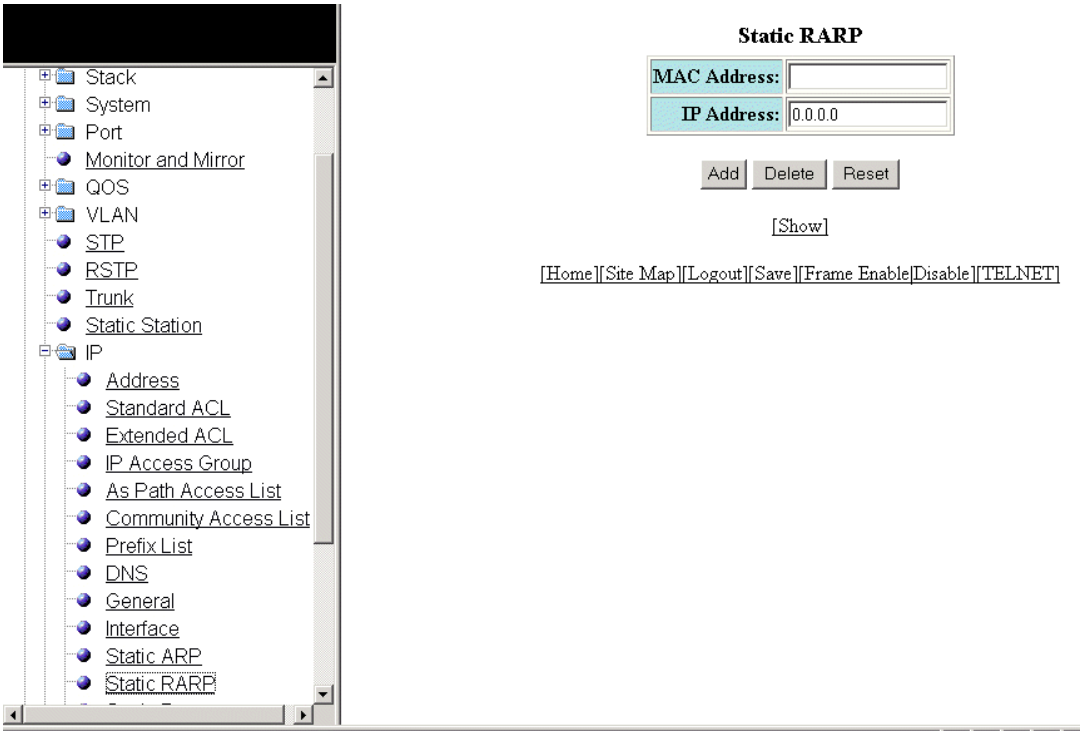
The Reverse Address Resolution Protocol (RARP) provides a simple mechanism for directly attached IP hosts to boot over the network. RARP allows an IP host that does not have a means of storing its IP address across power cycles or software reloads to query a directly attached Layer 3 switch for an IP address.

To configure a static IP RARP entry for static routes on a Brocade Layer 3 switch, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Static RARP** .

   The **Static RARP** window is displayed as shown in the figure below.

   FIGURE 139 Configuring static RARP



3. Type the MAC address of the boot client in *xx-xx-xx-xx-xx-xx* format in the **MAC Address** field.
4. Type the IP address you want the Layer 3 switch to give to the client in the **IP Address** field.
5. Click **Add** .

   The message `The change has been made` is displayed. To display the configured static IP RARP entry, click **Show** .

   To delete the configured static IP RARP entry, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

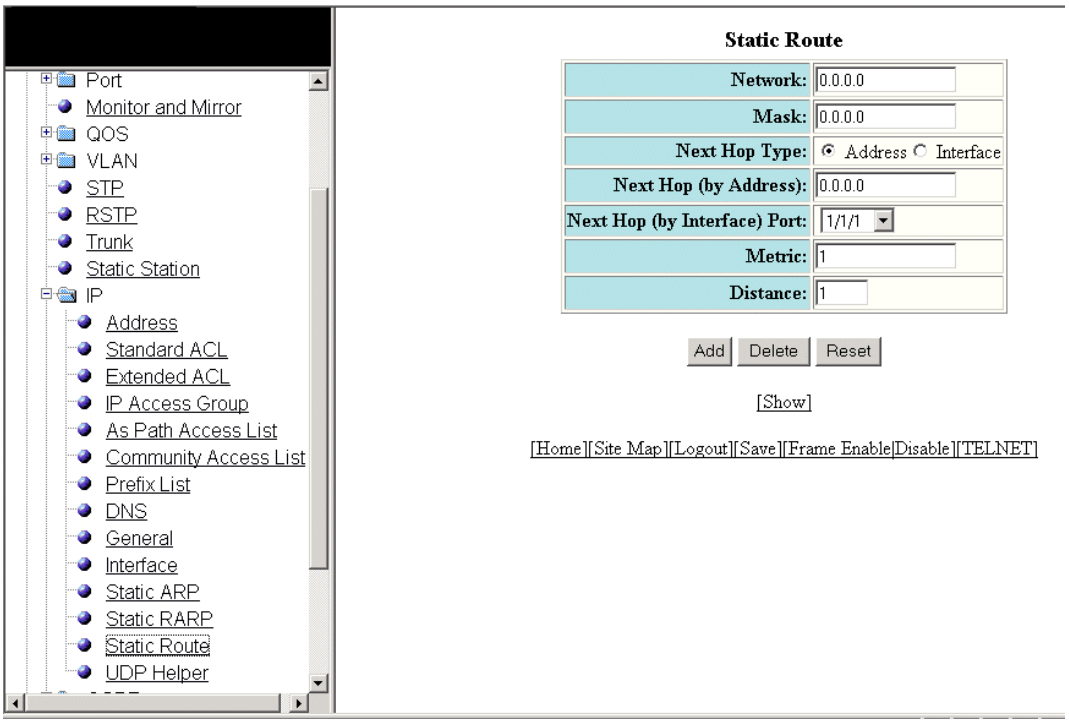
Configuring a static route

To configure an IP static route, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **Static Route** .

   The **Static Route** window is displayed as shown in the figure below.

FIGURE 140 Configuring static routes



3. Type the route destination IP address in the **Network** field.
4. Type the network mask in the **Mask** field.
5. Click **Address** for **Next Hop Type** and type the IP address of the next hop router (gateway) for the route in the **Next Hop (by Address)** field.

   Or

   Click **Interface** for **Next Hop Type** and select an Ethernet port in the **Next Hop (by Interface) Port** list.
6. Type the metric value from 1 through 16 in the **Metric** field. The default is 1.
7. Type the administrative distance of the route in the **Distance** field. The default is 1.
8. Click **Add** .

   The message `The change has been made` is displayed. To display the configured static route, click **Show** .

   To delete the configured static route, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

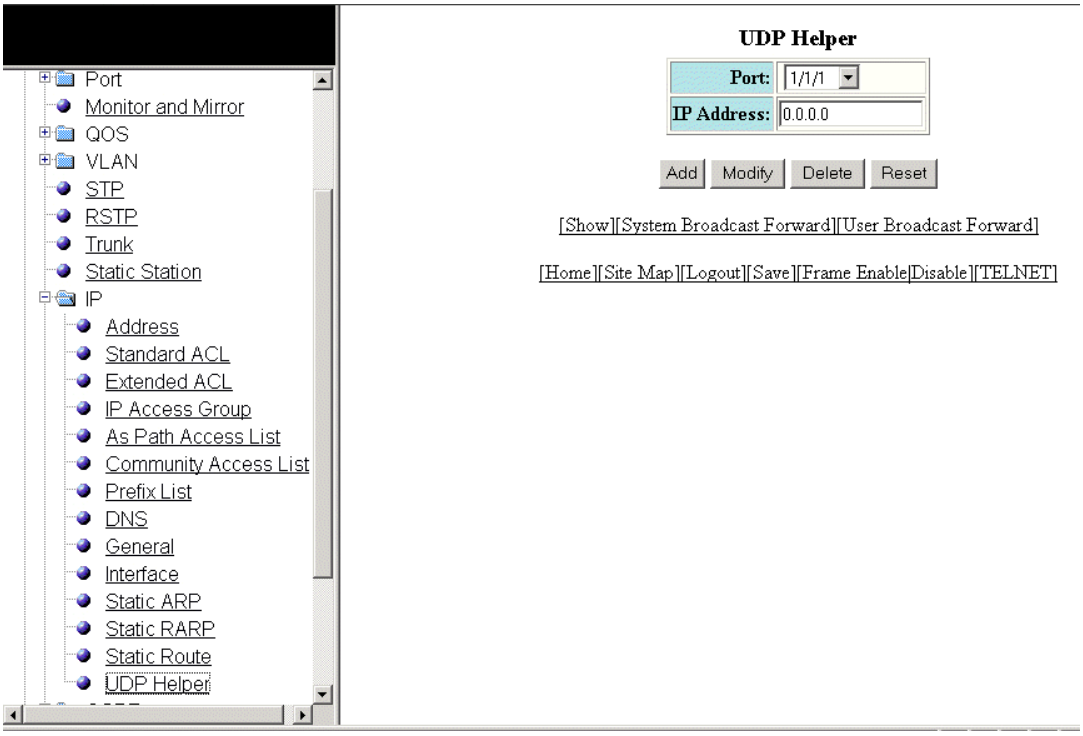
Configuring a UDP helper

To configure a helper address on the interface connected to the clients, perform the following steps.

1. Click **Configure** on the left pane and select **IP** .
2. Click **UDP Helper** .

   The **UDP Helper** window is displayed as shown in the figure below.

FIGURE 141 Configuring UDP helper



3. Select an Ethernet port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
4. Type the server IP address or the subnet directed broadcast address of the IP subnet the server belongs to in the **IP Address** field.
5. Click **Add** .

   The message `The change has been made` is displayed. To display the configured UDP helper, click **Show** .

   To modify the configured UDP helper, click **Modify** . You can also delete the UDP helper by clicking **Delete** . To reset the data entered in the configuration pane, click **Reset** .

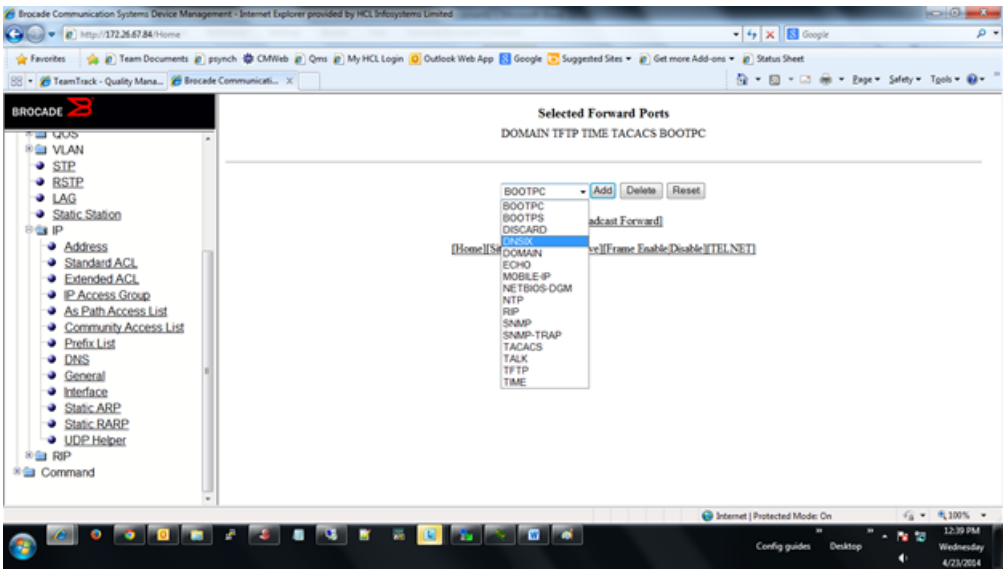
Enabling forwarding for a UDP application

To specify a UDP application by using an application name, perform the following steps.

1. Click **System Broadcast Forward** on the **UDP Helper** window.

   The system broadcast forward window is displayed as shown in this figure.

FIGURE 142 Enabling forwarding for a UDP application



2. Select one of the following forward ports in the list:

- **BOOTPC**
- **BOOTPS**
- **DISCARD**
- **DNSIX**
- **DOMAIN**
- **ECHO**
- **MOBILE-IP**
- **NETBIOS-DGM**
- **RIP**
- **SNMP**
- **SNMP-TRAP**
- **TACACS**
- **TALK**
- **TFTP**
- **TIME**

3. Click **Add** .

   The added port is displayed in the **Selected Forward Ports** pane, which displays the application ports that are enabled by default. To delete the forwarding port, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

   To specify the UDP application by using an application UDP port number, perform the following steps.

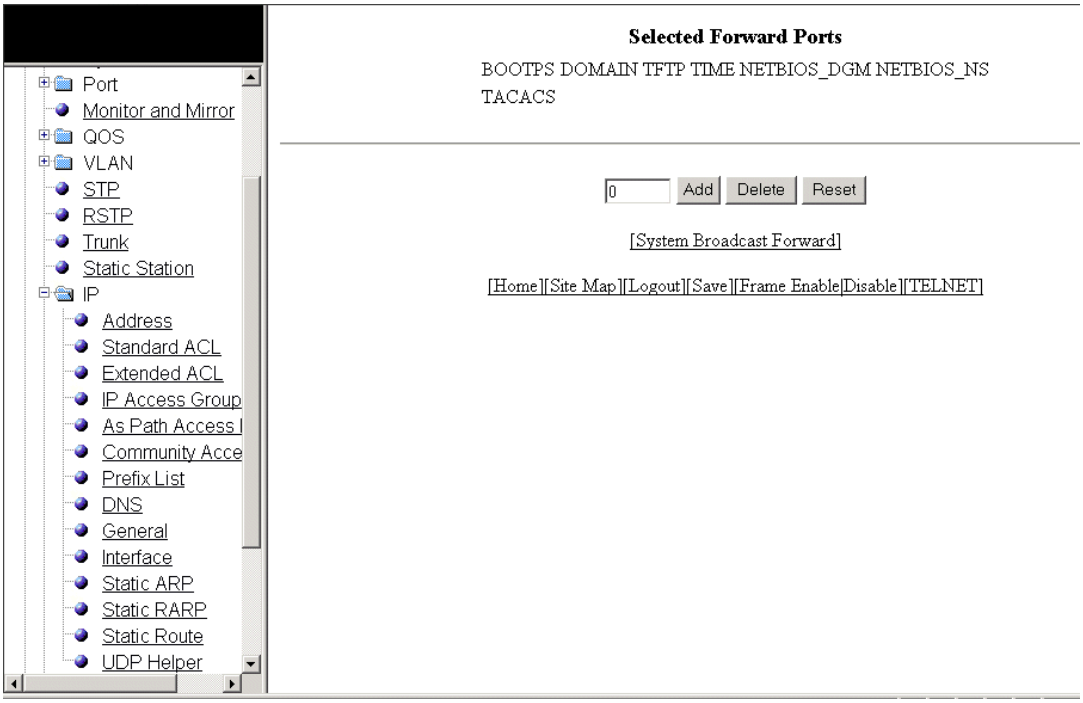
Specifying the UDP application

To specify the UDP application by using an application UDP port number, perform the following steps.

1. Click **User Broadcast Forward** on the **UDP Helper** window.

   The user broadcast forward window is displayed as shown in the figure below.

FIGURE 143 Enabling user broadcast forward



2. Type the UDP port number in the field.
3. Click **Add**.

   The added port is displayed in the **Selected Forward Ports** pane, which displays the application ports that are enabled by default. To delete the forwarding port, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

Configuring RIP

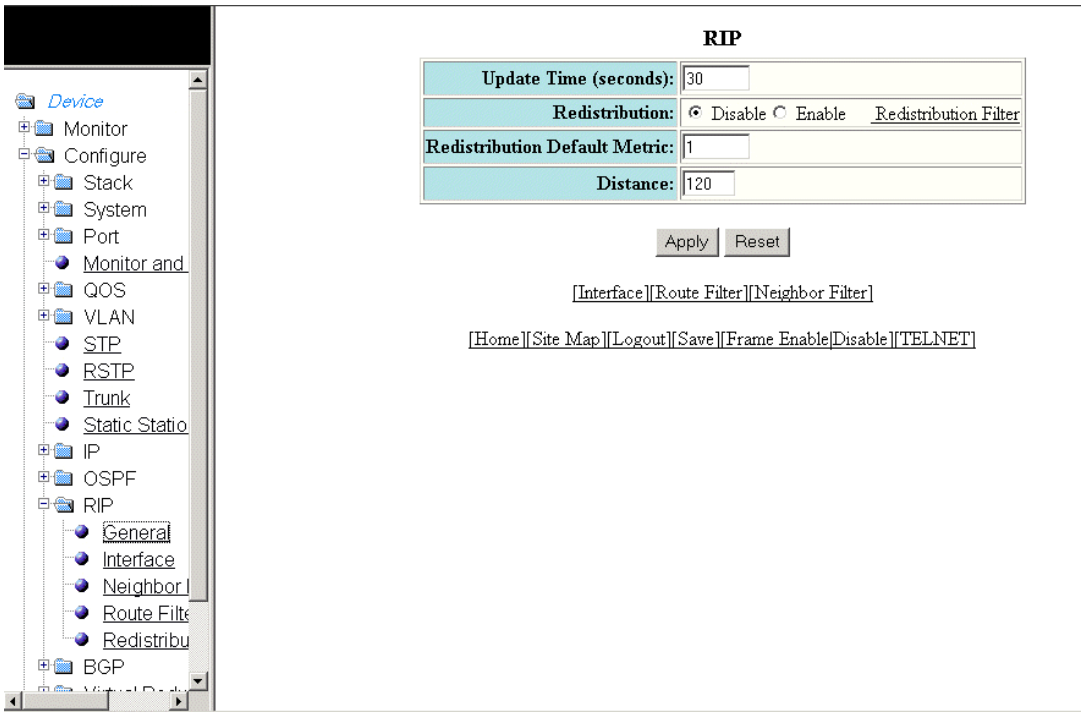
Configuring the general RIP settings

To configure the general RIP settings, perform the following steps.

1. Click **Configure** on the left pane and select **RIP** .
2. Click **General** .

   The **RIP** window is displayed as shown in the figure below.

   FIGURE 144 Configuring the general RIP settings



3. Type the update interval from 1 through 1000 seconds in the **Update Time (seconds)** field. The default value is 30 seconds.

   The update interval specifies how often the Layer 3 switch sends route advertisements to its RIP neighbors.

4. Click **Disable** or **Enable** for **Redistribution** . To configure a redistribution filter, click **Redistribution Filter** . For more information on how to configure a RIP redistribution filter, refer to Configuring a RIP redistribution filter on page 215.
5. Type the RIP cost from 1 through 15 in the **Redistribution Default Metric** field. The default is 1.
6. Type the administrative distance of the RIP Layer 3 switches in the **Distance** field. The default value is 120.
7. Click **Apply** .

   The message `The change has been made` is displayed. To reset the data entered in the configuration pane, click **Reset** .

   The **RIP** window provides links to configure other RIP parameters:

   - To configure a RIP interface, click **Interface** . For more information, refer to Configuring a RIP interface on page 210.
   - To configure a RIP route filter, click **Route Filter** . For more information, refer to Configuring a RIP route filter on page 213.
   - To configure a RIP neighbor filter, click **Neighbor Filter** . For more information, refer to Configuring a RIP neighbor filter on page 212.

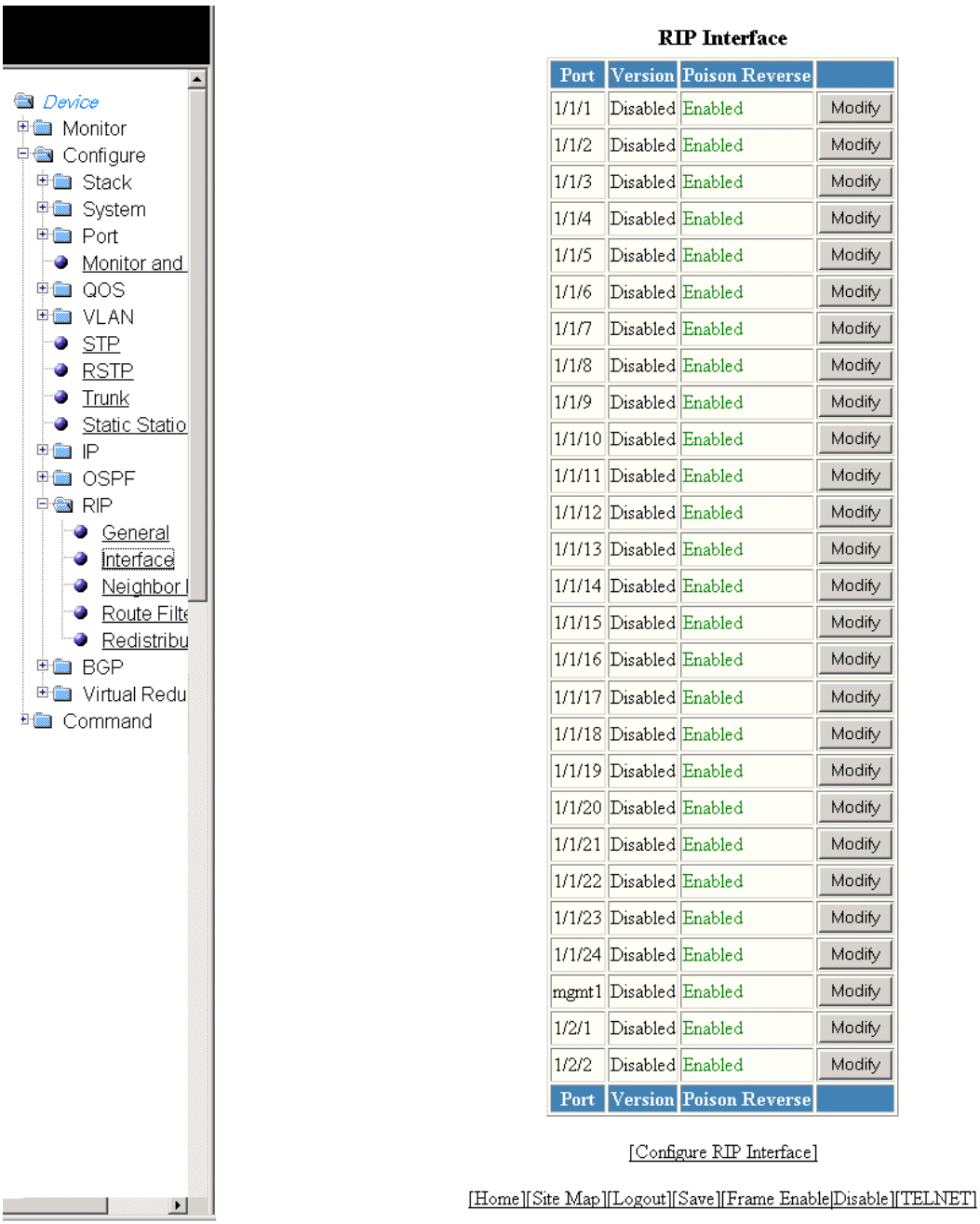
Configuring a RIP interface

To configure a RIP interface, perform the following steps.

1. Click **Configure** on the left pane and select **RIP** .
2. Click **Interface** .

   The **RIP Interface** window is displayed as shown in the figure below.

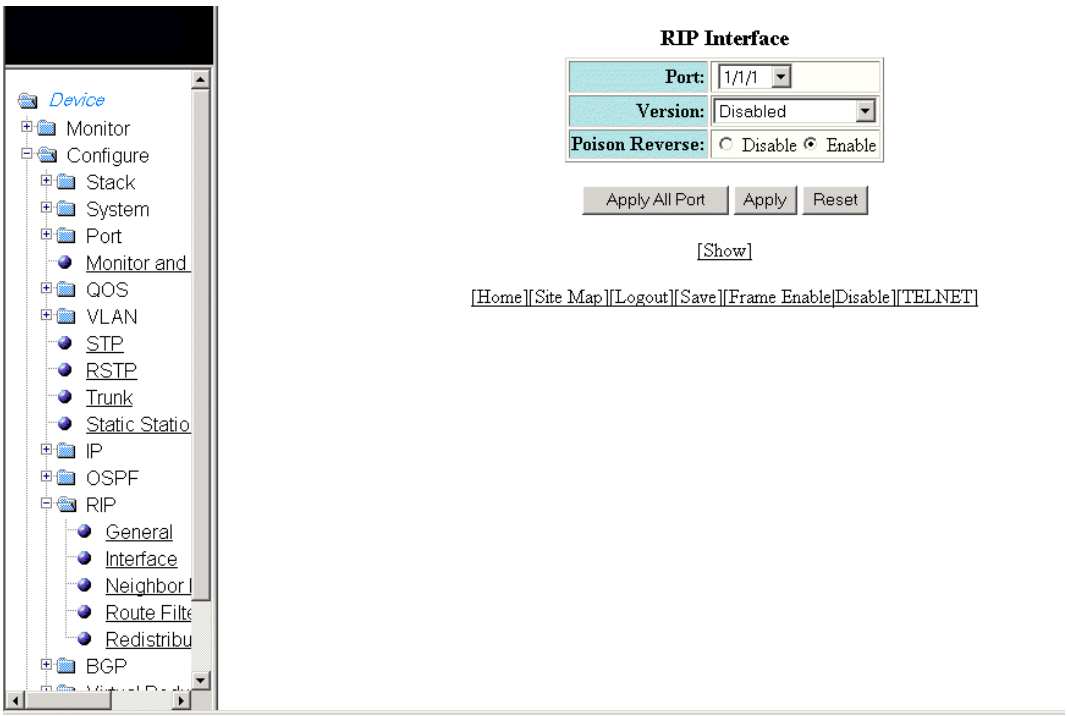
FIGURE 145 RIP interface



3. Click **Configure RIP Interface** or **Modify** to change the RIP interface parameters for the respective port.

   The **RIP Interface** window is displayed as shown in the figure below.

FIGURE 146 Configuring a RIP interface



4. Select a port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
5. Select one of the following options for **Version** :
   - **Disabled**
   - **V1 Only**
   - **V2 Only**
   - **V1-Compatible-V2**
6. Click **Disable** or **Enable** for **Poison Reverse** .

   Poison reverse is the method a Layer 3 switch uses to prevent routing loops caused by advertising a route on the same interface as the one on which the Layer 3 switch learned the route.
7. Click **Apply** to configure the RIP interface to the specified port or click **Apply All Port** to configure the RIP interface on all the ports.

   The message `The change has been made` is displayed. To display the configured RIP interface, click **Show** . To reset the data entered in the configuration pane, click **Reset** .

Configuring a RIP neighbor filter

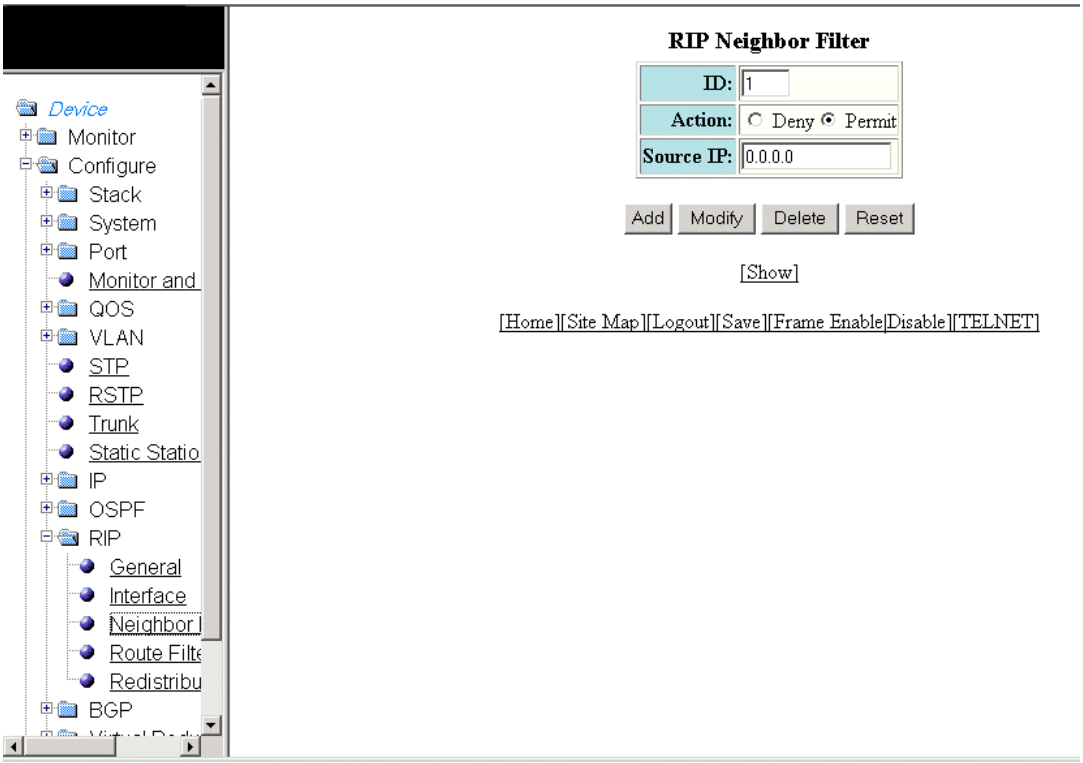
By default, a Brocade Layer 3 switch learns RIP routes from all its RIP neighbors. Neighbor filters allow you to specify the neighbor Layer 3 switches from which the Brocade device can receive RIP routes. Neighbor filters apply globally to all ports.

To configure a RIP neighbor filter, perform the following steps.

1. Click **Configure** on the left pane and select **RIP** .
2. Click **Neighbor Filter** .

   The **RIP Neighbor Filter** window is displayed as shown in the figure below.

   FIGURE 147 Configuring a RIP neighbor filter



3. Type a filter number in the **ID** field.
4. Click **Deny** or **Permit** for **Action** .
5. Type a source IP address in the **Source IP** field.
6. Click **Add** .

   The message `The change has been made` is displayed. To display the configured RIP neighbor filter, click **Show** .

   To modify the configured RIP neighbor filter, click **Modify** . To reset the data entered in the configuration pane, click **Reset** . You can also delete the configured RIP neighbor filter by clicking **Delete** .

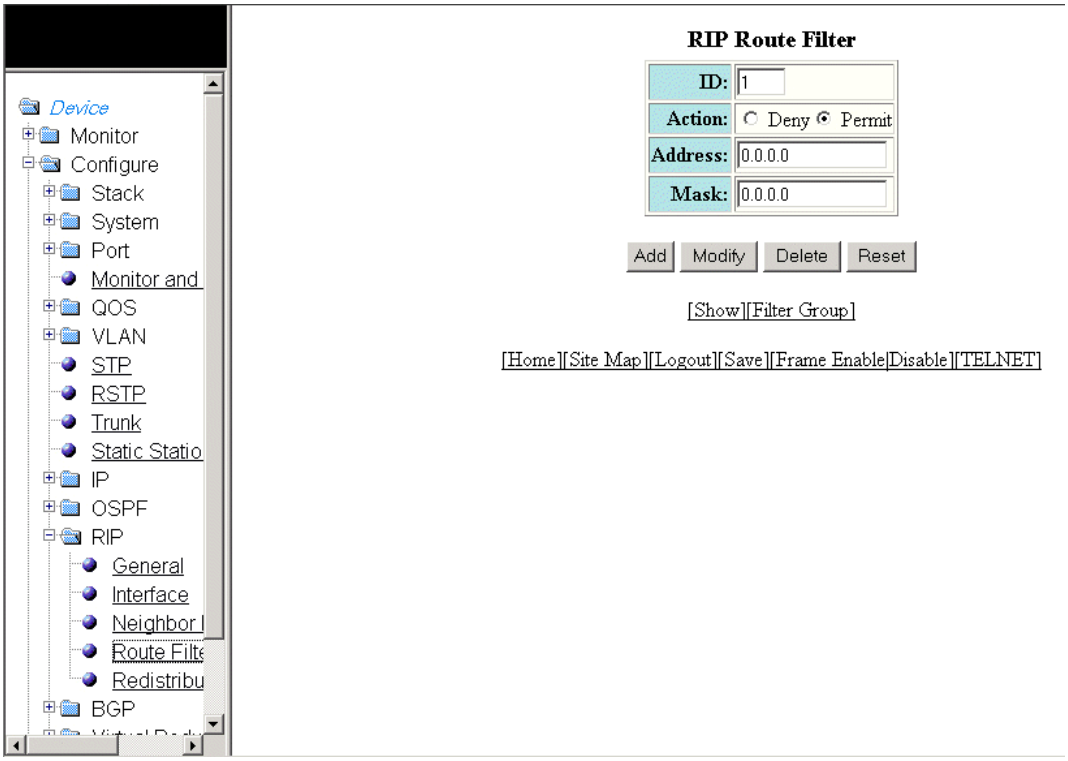
Configuring a RIP route filter

To configure a RIP route filter to permit or deny learning or advertising of specific routes, perform the following steps.

1. Click **Configure** on the left pane and select **RIP** .
2. Click **Route Filter** .

   The **RIP Route Filter** window is displayed as shown in the figure below.

FIGURE 148 Configuring a RIP route filter



3. Type a filter number in the **ID** field.
4. Click **Deny** or **Permit** for **Action** .
5. Type a source IP address in the **Address** field.
6. Type a source mask in the **Mask** field.
7. Click **Add** .

   The message `The change has been made` is displayed. To display the configured RIP route filter, click **Show** .

   To modify the configured RIP route filter, click **Modify** . To reset the data entered in the configuration pane, click **Reset** . You can also delete the configured RIP route filter by clicking **Delete** .

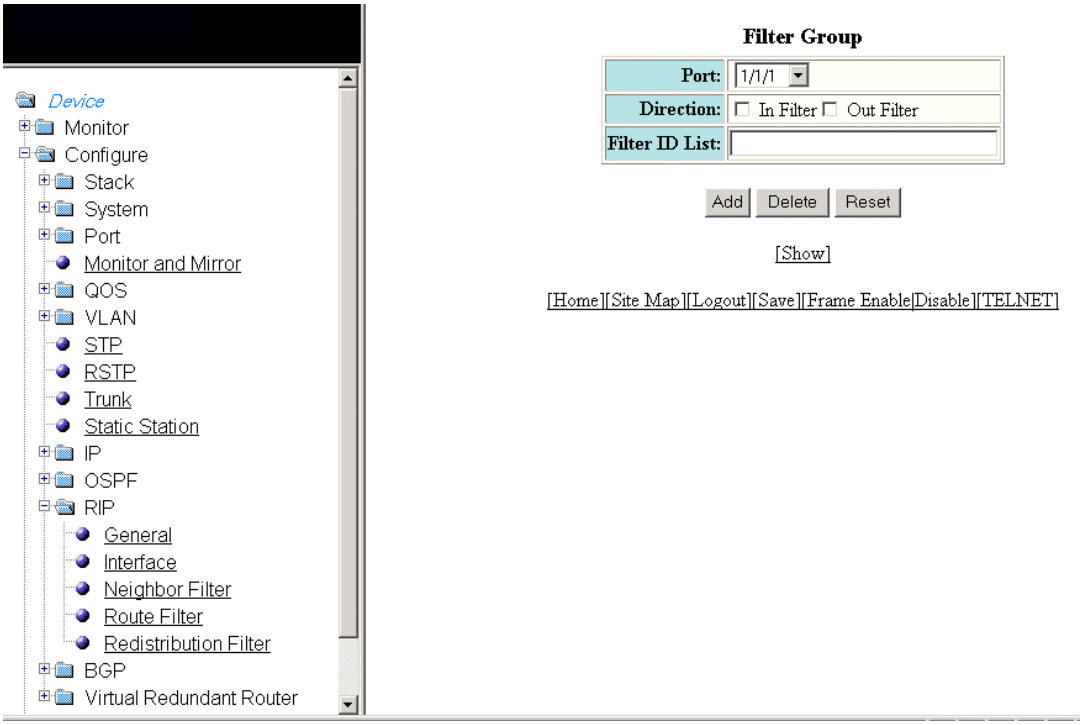
Configuring a filter group

After you define RIP route filters, you must assign them to individual interfaces. The filters do not take effect until you apply them to the interfaces. To apply a RIP route filter to an interface, perform the following steps.

1. Click **Filter Group** on the **RIP Route Filter** window.

   The **Filter Group** window is displayed as shown in the figure below.

FIGURE 149 Configuring a filter group



2. Select an Ethernet port in the **Port** list. The port number varies based on the product:
   - For Brocade FCX and Brocade ICX devices - stack-unit/slotnum/portnum
   - For Brocade FastIron SX devices - slotnum/portnum
3. Select one of the following for **Directions** :
   - **In filters** --Applies to routes the Layer 3 switch learns from its neighbor on the interface.
   - **Out filters** --Applies to routes the Layer 3 switch advertises to its neighbor on the interface.
4. Type the RIP route filters that you want to apply for an interface in the **Filter ID List** field.
5. Click **Add** .

   The message `The change has been made` is displayed. To display the configured RIP route filter group, click **Show** .

   To delete the configured RIP route filter group, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

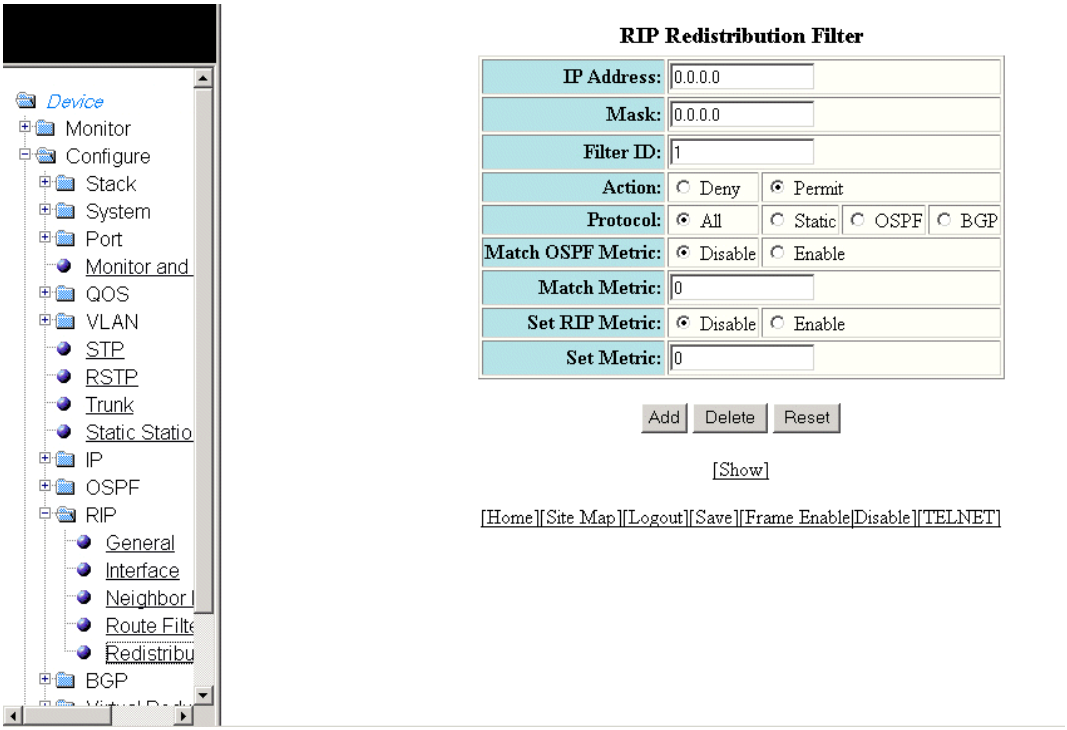
Configuring a RIP redistribution filter

To configure a RIP redistribution filter, perform the following steps.

1. Click **Configure** on the left pane and select **RIP** .
2. Click **Redistribution Filter** .

   The **RIP Redistribution Filter** window is displayed as shown in the figure below.

FIGURE 150 Configuring the RIP redistribution filter



3. Type a network IP address in the **IP Address** field.
4. Type an IP subnet mask in the **Mask** field.
5. Type a redistribution filter identifier in the **Filter ID** field.
6. Click **Deny** or **Permit** for **Action** .
7. Select one of the following options for **Protocol** :
   - - **All** --Applies redistribution to all route types.
     - **Static** --Applies redistribution to IP static routes only.
     - **OSPF** --Applies redistribution to OSPF routes only.
     - **BGP** --Applies redistribution to BGP routes only.
8. Click **Disable** or **Enable** for **Set OSPF Metric** .
9. Type the match metric value from 1 through 15 in the **Match Metric** field. The match metric parameter applies the redistribution filter only to those routes with the specified metric value.
10. Click **Disable** or **Enable** for **Set RIP Metric** .
11. Type the RIP metric value in the **Set Metric** field.
12. Click **Add** .

The message `The change has been made` is displayed. To display the configured RIP redistribution filter, click **Show** .

To delete the configured RIP redistribution filter, click **Delete** . To reset the data entered in the configuration pane, click **Reset** .

Basic Device Commands

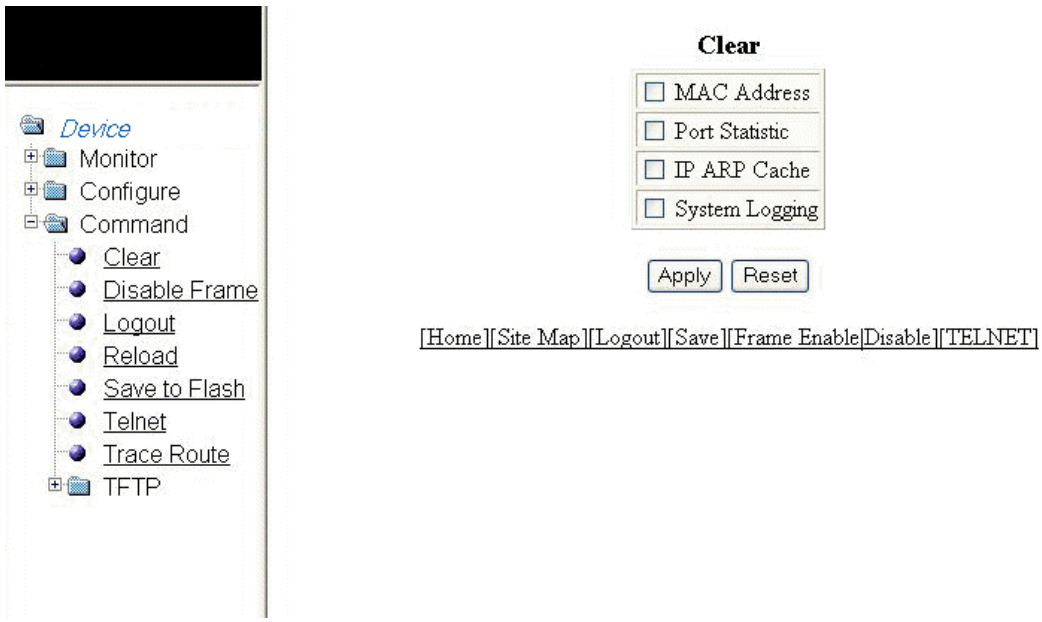
Clearing information for a Layer 2 switch

To clear specific data related to a Layer 2 switch, perform the following steps.

1. Click **Command** on the left pane and select **Clear.**

   The **Clear** window is displayed as shown in the figure below.

FIGURE 151 Clear window



2. Select the following check boxes to clear information:
   - **MAC Address**
   - **Port Statistic**
   - **IP ARP Cache**
   - **System Logging**
3. Click **Apply** .

   All the current entries will be deleted.

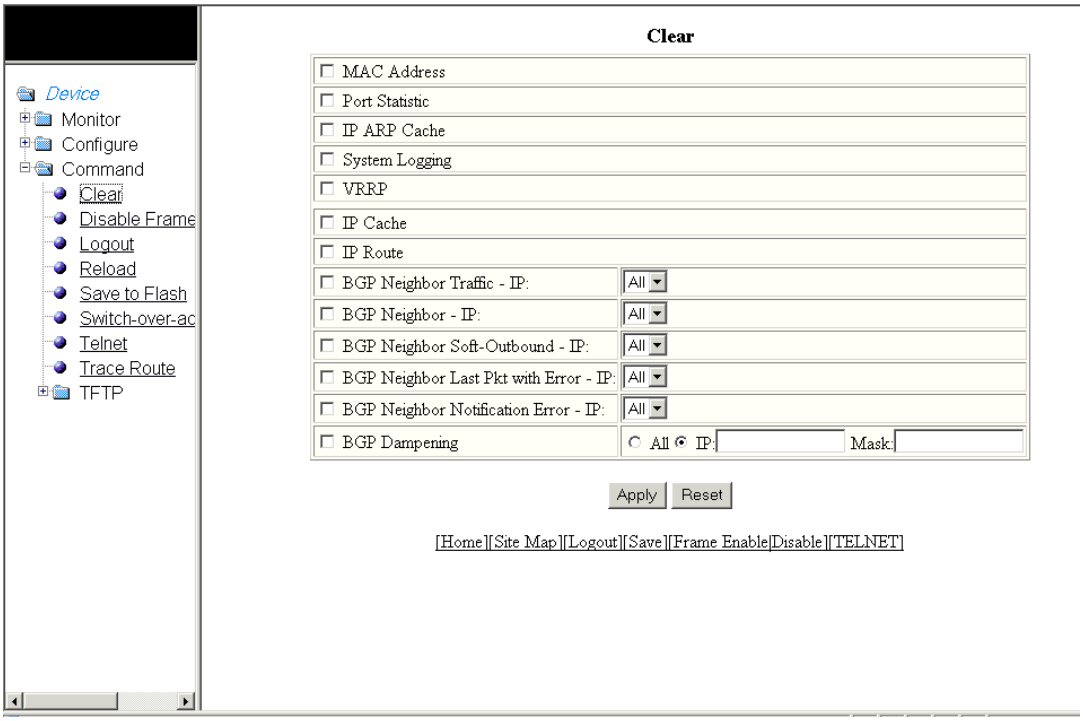
Clearing information for a Layer 3 switch

To clear specific data related to a Layer 3 switch, perform the following steps.

1. Click **Command** on the left pane and select **Clear**.

   The **Clear** window is displayed as shown in the figure below .

FIGURE 152 Clear window



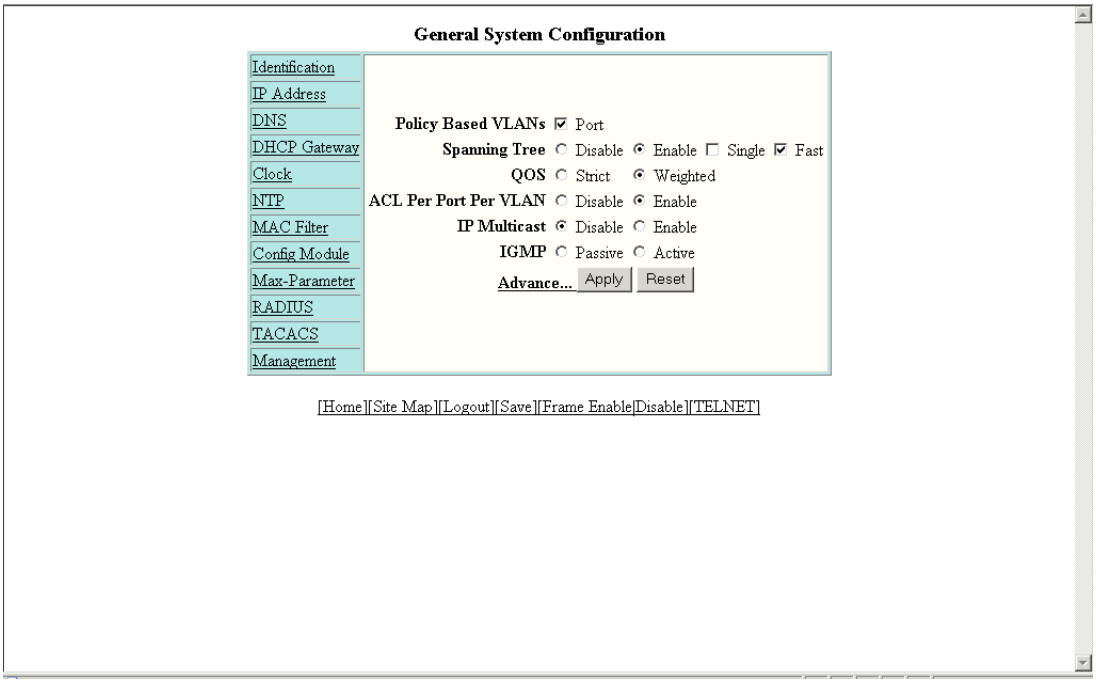
2. Select the following check boxes to clear information:
   - **MAC Address**
   - **Port Statistic**
   - **IP ARP Cache**
   - **System Logging**
   - **VRRP**
   - **IP Cache**
   - **IP Route**
   - **BGP Neighbor Traffic - IP** --Select **All** in the list to clear the BGP message counter for all neighbors.
   - **BGP Neighbor - IP** --Select **All** in the list to close all neighbor sessions and clear all the routes exchanged by the Layer 3 switch and the neighbors.
   - **BGP Neighbor Soft-Outbound - IP** --Select **All** in the list to update all outbound routes by applying the new or changed filters.
   - **BGP Neighbor Last Pkt with Error - IP** --Select **All** in the list to clear the last packet from the neighbors that contained an error.
   - **BGP Neighbor Notification Error - IP** --Select **All** in the list to clear the buffer for all neighbors containing the last NOTIFICATION message sent or received.
   - **BGP Dampening** --Perform one of the following tasks:
     - Click **All** to clear all the route dampening statistics.
     - Click **IP** and type the network IP address in the **IP** field and the network mask in the **Mask** field.
3. Click **Apply**.

   All the current entries will be deleted.

Disabling or enabling the menu view

To enable or disable the menu view, click **Command** on the left pane and select **Disable Frame.** The menu tree from the left panel is hidden as shown in the figure below. Click **Frame Enable** to view the menu tree.

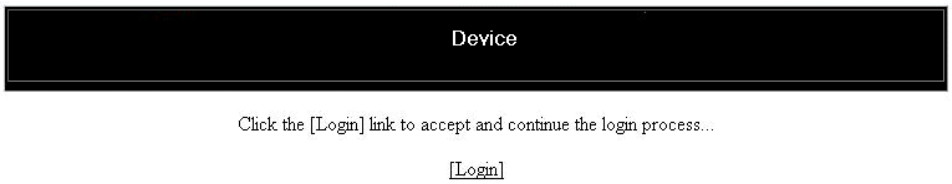
FIGURE 153 Disabling the menu tree



Logging out

To exit the Web Management Interface, click **Command** on the left pane and select **Logout** . The login window is displayed as shown in the figure below. To re-log in, click **Login** on the window.

FIGURE 154 Logging out



Reloading units in a stack

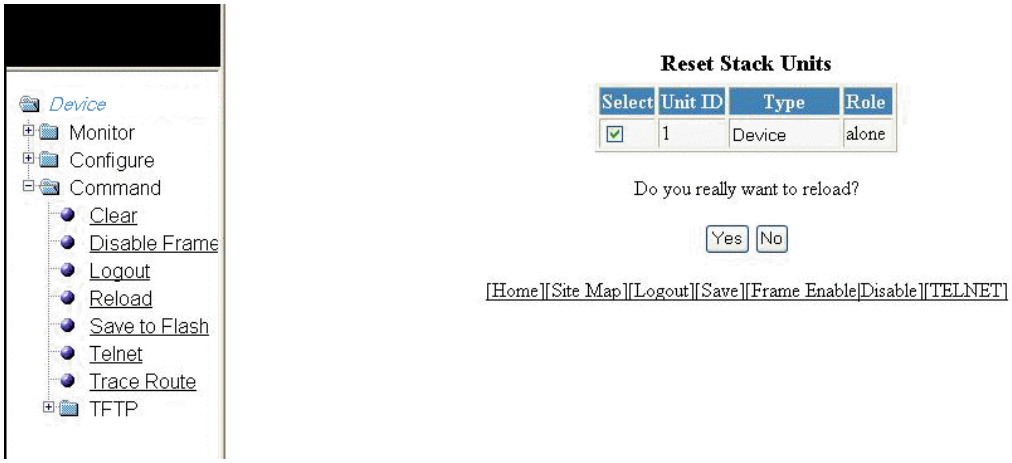
NOTE
This section is applicable to the Brocade FCX-ADV and Brocade ICX devices.

To reload any or all of the units within a device, perform the following steps.

1. Click **Command** on the left pane and select **Reload** .

   The **Reset Stack Units** window is displayed as shown in the figure below.

   FIGURE 155 Reloading the units



2. Click **Yes** to start the process.

NOTE
For the Brocade FCX and Brocade ICX devices, if the Active Controller is reset or removed from the stack, the entire stack reloads and Active Controller and Standby Controller elections are started. If the unit functioning as the previous Active Controller is no longer part of the stack, the Standby Controller unit becomes the new Active Controller. After a reset, if no stack member qualifies as the Active Controller, the existing Standby Controller waits 30 seconds and then assumes the role of the Active Controller.If both the Active Controller and the Standby Controllers are removed, the rest of the stack continues to function. The stack members will not be able to learn any new addresses.

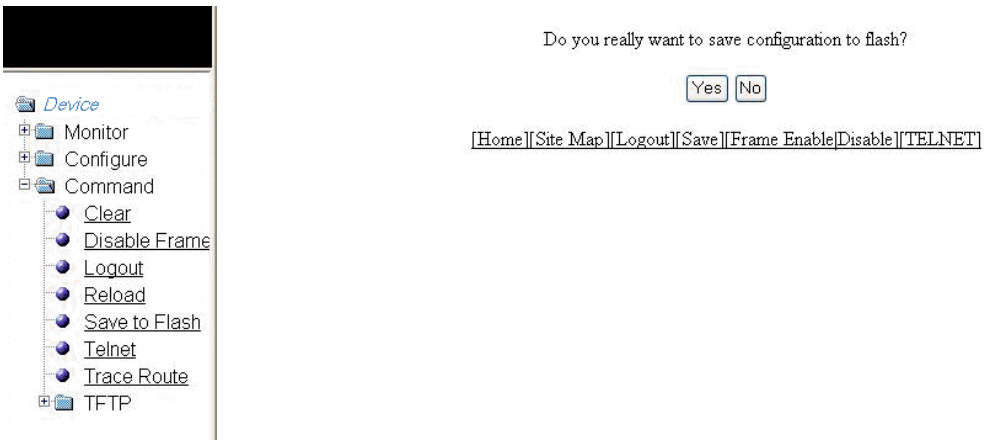
Saving the configuration to flash

To save the configuration changes to flash, perform the following tasks.

1. Click **Command** on the left pane and select **Save To Flash** .

   The save configuration window is displayed as shown in the figure below.

FIGURE 156 Saving the configuration to flash



2. Click **Yes** to confirm saving the configuration.

NOTE
To apply the changes to memory allocation, reload the software after you save the changes to the startup-configuration file.

Switching over to the active role

To switch a standby module to become an Active Controller, perform the following steps.

1. Click **Command** on the left pane and select **Switch-over-active-controller** .

NOTE
For the Brocade FastIron SX devices, select **Switch-over-active-role** .

The switch over window is displayed as shown in the figure below.

FIGURE 157 Switching over to an Active Controller

2. Click **Yes** to switch the standby module to become an Active Controller or click **No** to cancel the operation.

Performing hitless-reload from primary images

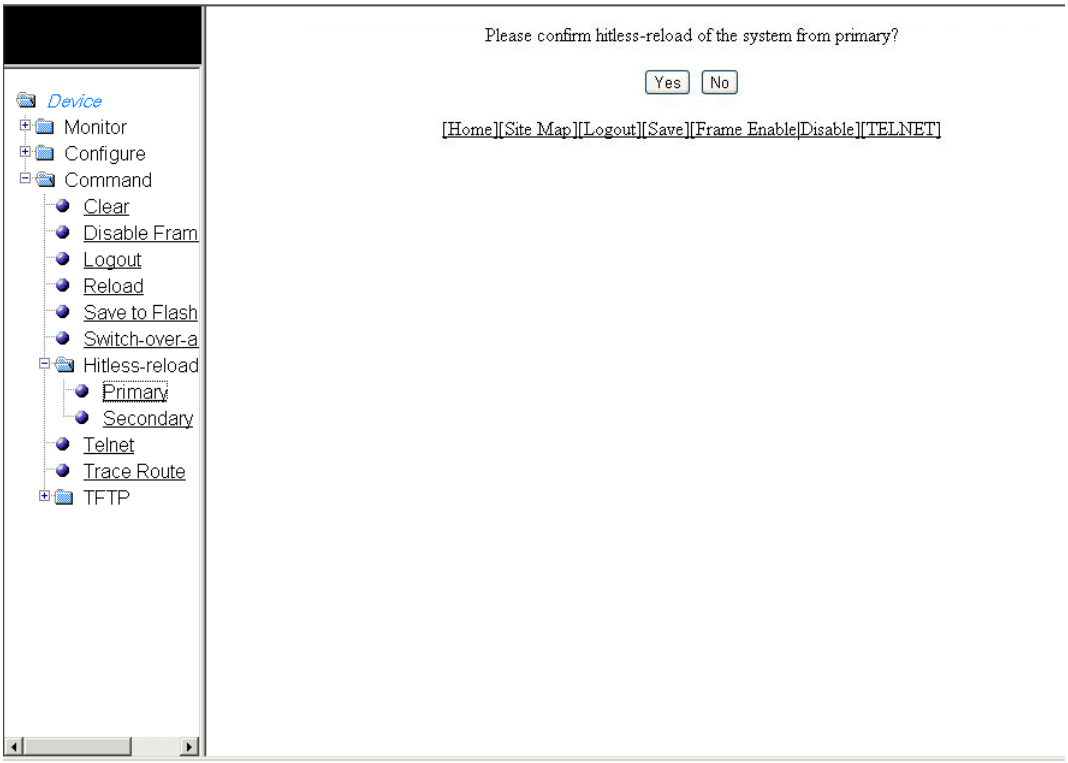
NOTE
Hitless-reload is supported on the Brocade FastIron SX devices and applies to both Layer 2 and Layer 3 protocols. Hitless-reload is not supported on the Brocade FCX and Brocade ICX devices.

To perform a hitless-reload of the system from a primary image, perform the following steps.

1. Click **Command** on the left pane and select **Hitless-reload** .
2. Click **Primary** .

   The primary hitless-reload window is displayed as shown in the figure below.

FIGURE 158 Hitless-reload from the primary image



3. Click **Yes** to reload the system from the primary image or click **No** to cancel the operation.

Performing hitless-reload from secondary images

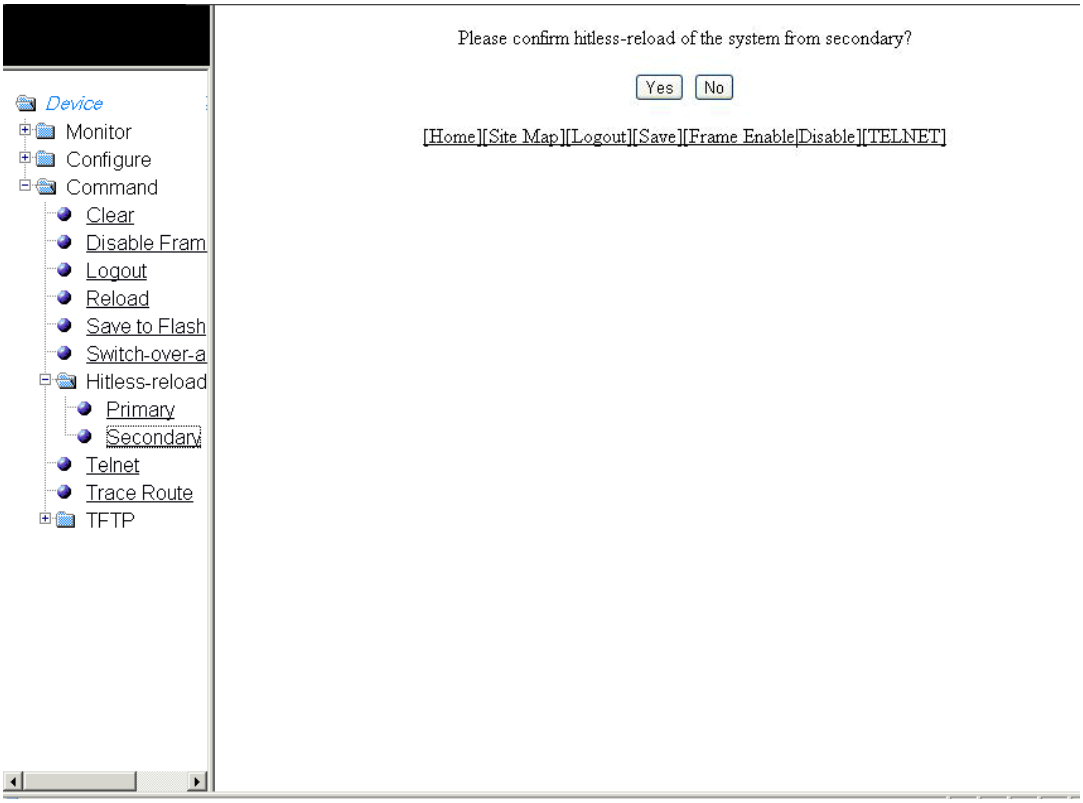
NOTE
Hitless-reload is supported on the Brocade FastIron SX devices and applies to both Layer 2 and Layer 3 protocols. Hitless-reload is not supported on the Brocade FCX and Brocade ICX devices.

To perform a hitless-reload of the system from a secondary image, perform the following steps.

1. Click **Command** on the left pane and select **Hitless-reload** .
2. Click **Secondary** .

   The secondary hitless-reload window is displayed as shown in the figure below.

FIGURE 159 Hitless-reload from a secondary image



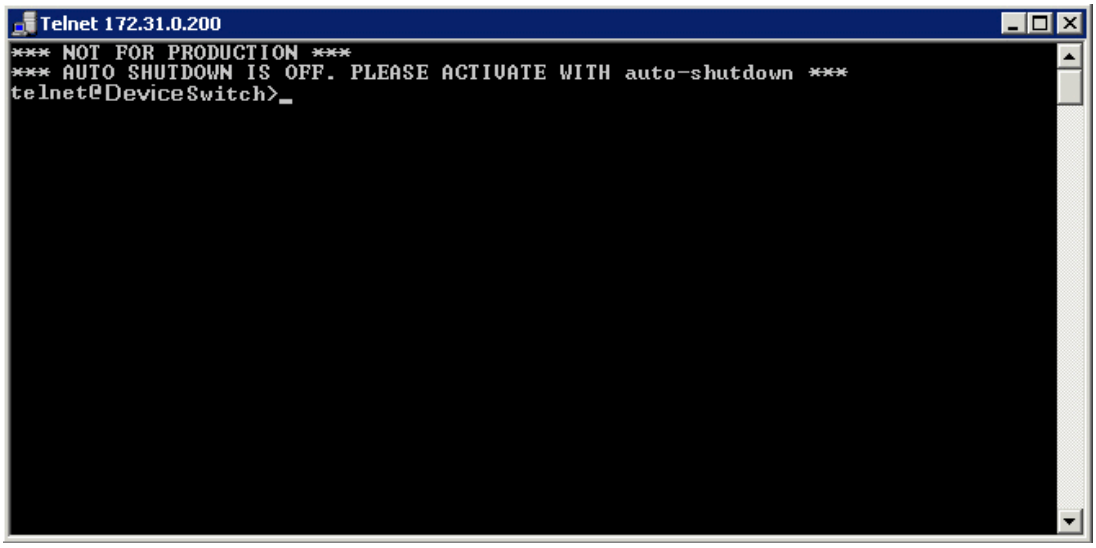
3. Click **Yes** to reload the system from the secondary image or click **No** to cancel the operation.

Accessing the Telnet command prompt

To open a Telnet CLI window, click **Command** on the left pane and select **Telnet** .

The **Telnet** window is displayed as shown in the figure below.

FIGURE 160 Accessing Telnet



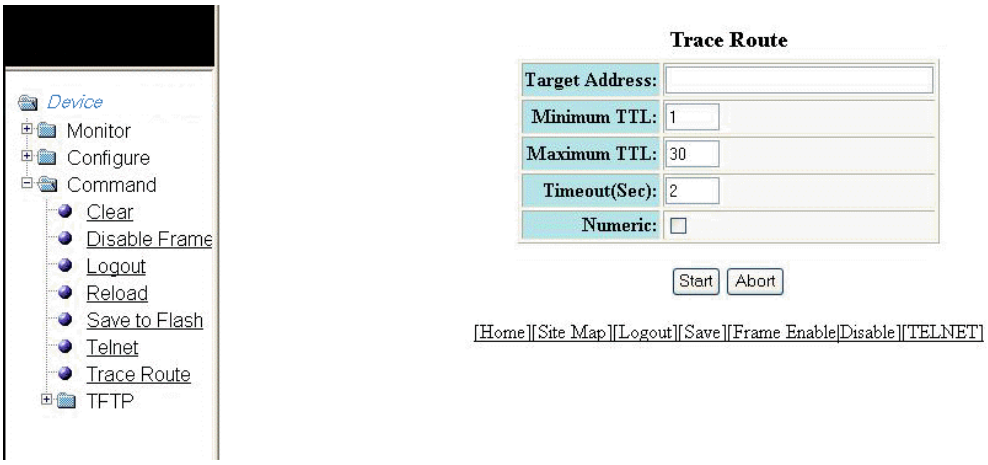
Performing a trace

Trace Route allows you to trace a path from the Brocade device to an IPv4 host. Trace route requests show all responses to a minimum Time To Live (TTL) of 1 second and a maximum TTL of 30 seconds. In addition, if there are multiple equal-cost routes to the destination, the Brocade device displays up to three responses. To run a trace, perform the following steps.

1. Click **Command** on the left pane and select **Trace Route** .

   The **Trace Route** window is displayed as shown in the figure below.

   FIGURE 161 Performing a trace



2. Type the IP address of the host at the other end of the route in the **Target Address** field.
3. Type the minimum value of TTL in the **Minimum TTL** field. The default is 1.
4. Type the maximum value of TTL in the **Maximum TTL** field. The default is 30.

5. Type the number of seconds the router waits for a reply from the pinged device in the **Timeout (Sec)** field.
6. Select the **Numeric** check box so that, for parameters that require a numeric value, the trace route does not check that the value you enter is within the allowed range. Instead, if you do exceed the range for a numeric value, the software rounds the value to the nearest valid value.
7. Click **Start** to begin the trace process or click **Abort** to exit without performing the trace.

Using TFTP

Configuring TFTP

When the device reboots, or the auto-configuration feature has been disabled and then re-enabled, the device uses information from the Dynamic Host Configuration Protocol (DHCP) server to contact the Trivial File Transfer Protocol (TFTP) server to update the running configuration file. If the DHCP server provides a TFTP server name or IP address, the device uses this information to request files from the TFTP server. If the DHCP server does not provide a TFTP server name or IP address, the device requests the configuration files from the DHCP server.

The device requests the configuration files from the TFTP server in the following order:

- Boot file name provided by the DHCP server (if configured)
- Host name MAC address configuration file
- Brocade configuration file

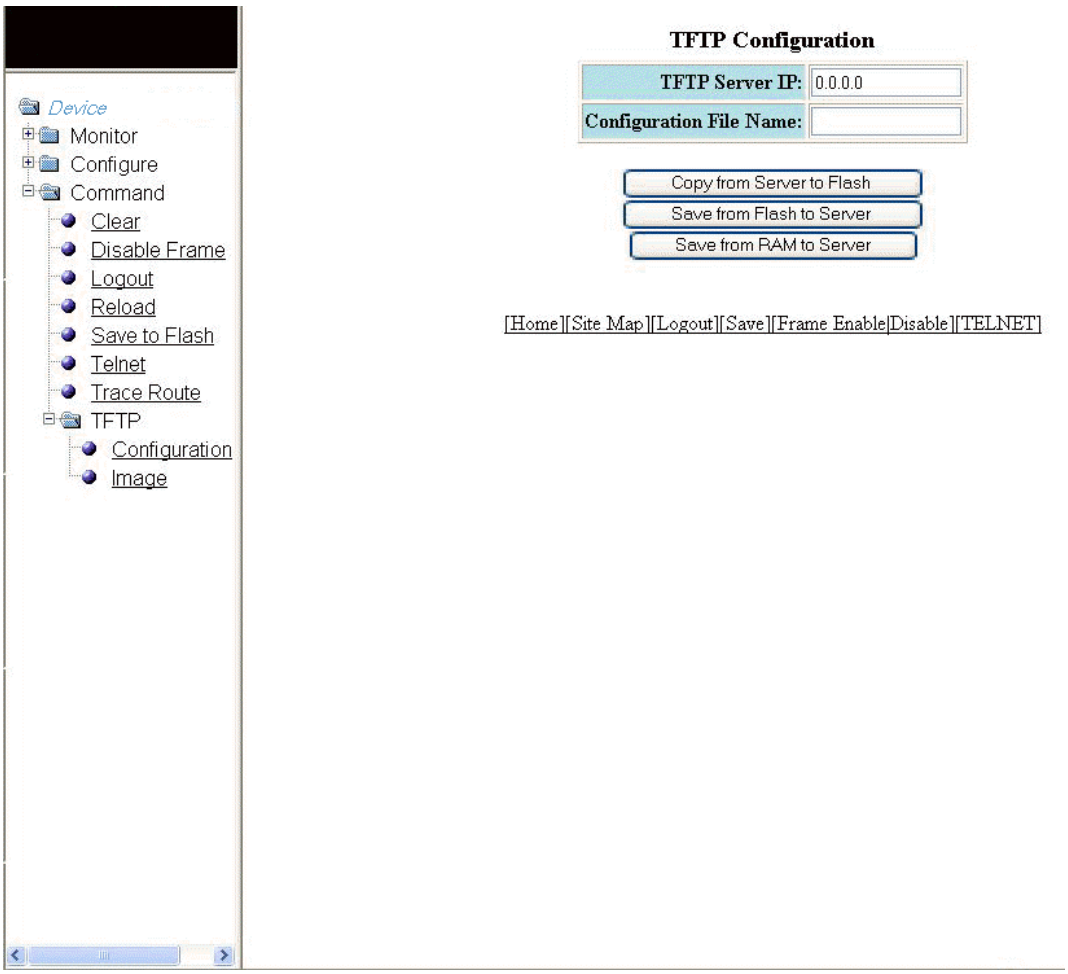
If the device is successful in contacting the TFTP server and the server has the configuration files, the files are merged. If there is a conflict, the server file takes precedence. If the device is unable to contact the TFTP server or if the files are not found on the server, the TFTP part of the configuration download process ends.

To access the TFTP configuration, perform the following steps.

1. Click **Command** on the left pane and select **TFTP** .
2. Click **Configuration** .

   The **TFTP Configuration** window is displayed as shown in the figure below.

FIGURE 162 Configuring TFTP



3. Type the IP address of the most recently contacted TFTP server (if the switch has contacted a TFTP server since the last time the software was reloaded or the switch was rebooted) in the **TFTP Server IP** field.
4. Type the name under which the startup-config file of the Layer 2 switch or Layer 3 switch was uploaded or downloaded during the most recent TFTP access in the **Configuration File Name** field.
5. You can perform one of the following tasks with the configuration file:

- Click **Copy from Server to Flash** to copy the file from a TFTP server to the device flash memory.
- Click **Save from Flash to Server** to save the file from the device flash memory to a TFTP server.
- Click **Save from RAM to Server** to save the file from the device RAM memory to a TFTP server.

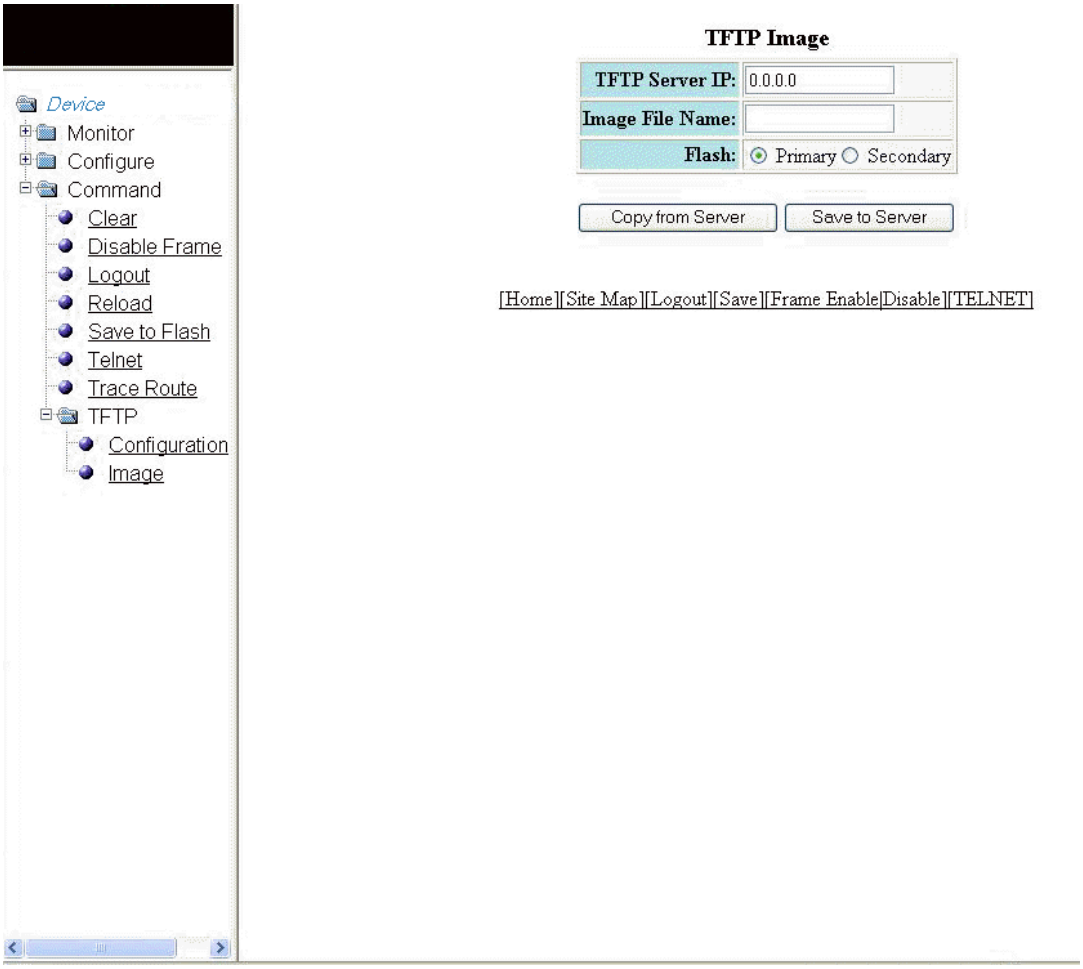
Configuring a TFTP image

To access a TFTP image, perform the following steps.

1. Click **Command** on the left pane and select **TFTP** .
2. Click **Image** .

   The **TFTP Image** window is displayed as shown in the figure below.

   FIGURE 163 Configuring a TFTP image



3. Type the IP address of the most recently contacted TFTP server (if the switch has contacted a TFTP server since the last time the software was reloaded or the switch was rebooted) in the **TFTP Server IP** field.
4. Type the name of the Layer 2 switch or Layer 3 switch flash image (system software file) that was uploaded or downloaded during the most recent TFTP access in the **Image File Name** field.
5. Click one of the following for **Flash** :

   - *Primary* --The default local storage device for image files and configuration files.
   - *Secondary* --The second flash storage device you can use to store redundant images for additional booting reliability or to preserve one software image while testing another one.

6. You can perform one of the following tasks with the TFTP image:

   - Click **Copy from Server** to copy a boot image from a TFTP server to the primary or secondary storage location in the device flash memory.
   - Click **Save to Server** to save the boot image from the primary or secondary storage location of the device flash memory to a TFTP server.