



# **Intel® True Scale Fabric Switches 12000 Series**

**User Guide**

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***May, 2013***



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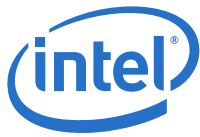
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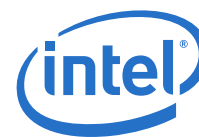
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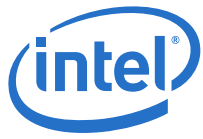
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Date	Revision	Description
May, 2013	001US	Initial release

§ §







## 1.0 Introduction

This manual describes the configuration and administration tasks for the Intel® True Scale Fabric Switches 12000 Series, which includes:

- The 12200 36-port switch with embedded management
  - 12200-BS01-MM
  - 12200-BS23-MM
- The 12300 36-port configurable switch
- The 12300 18-port configurable switch
- The 12800 Director Series:
  - 12800-040
  - 12800-120
  - 12800-180
  - 12800-360

## 1.1 Intended Audience

This manual is intended to provide network administrators and other qualified personnel a reference for configuration and administration task information for the switches.

## 1.2 Related Materials

- *Intel® True Scale Fabric Switches 12000 Series Hardware Installation Guide*
- *Intel® True Scale Fabric Switches 12000 Series CLI Reference Guide*
- *Intel® True Scale Fabric Switches 12000 Series Release Notes*
- *Intel® True Scale Fabric Switch 12200 Release Notes*

## 1.3 Documentation Conventions

This guide uses the following documentation conventions:

- *Note*: provides additional information.
- *Caution*: indicates the presence of a hazard that has the potential of causing damage to data or equipment.
- *Warning*: indicates the presence of a hazard that has the potential of causing personal injury.
- Text in **blue** font indicates a hyperlink (jump) to a figure, table, or section in this guide, and links to Web sites are also shown in **blue**. For example:
  - [Table 2](#) lists problems related to the user interface and remote agent.
  - See "[Installation Checklist](#)" on [page 6](#).
  - For more information, visit [www.intel.com](http://www.intel.com).
- Text in **bold** font indicates user interface elements such as a menu items, buttons, check boxes, or column headings. For example:
  - Click the **Start** button, point to **Programs**, point to **Accessories**, and then click **Command Prompt**.
  - Under **Notification Options**, select the **Warning Alarms** check box.

- Text in `Courier` font indicates a file name, directory path, or command line text. For example:
  - To return to the root directory from anywhere in the file structure: Type `cd /root` and press ENTER.
  - Enter the following command: `sh ./install.bin`
- Key names and key strokes are indicated with UPPERCASE:
  - Press CTRL+P.
  - Press the UP ARROW key.
- Text in *italics* indicates terms, emphasis, variables, or document titles. For example:
  - For a complete listing of license agreements, refer to the *Intel Software End User License Agreement*.
  - What are *shortcut keys*?
  - To enter the date type *mm/dd/yyyy* (where *mm* is the month, *dd* is the day, and *yyyy* is the year).
- Topic titles between quotation marks identify related topics either within this manual or in the online help throughout this document.

## 1.4 Laser Safety Information

This product may use Class 1 laser optical transceivers to communicate over the fiber optic conductors. The U.S. Department of Health and Human Services (DHHS) does not consider Class 1 lasers to be hazardous. The International Electrotechnical Commission (IEC) 825 Laser Safety Standard requires labeling in English, German, Finnish, and French stating that the product uses Class 1 lasers. Because it is impractical to label the transceivers, the following label is provided in this manual.



## 1.5 Electrostatic Discharge Sensitivity (ESDS) Precautions

The assemblies used in the switch chassis are ESD sensitive. Observe ESD handling procedures when handling any assembly used in the switch chassis.

## 1.6 License Agreements

Refer to the *Intel® Software End User License Agreement* for a complete listing of all license agreements affecting this product.





## 2.0 Chassis Viewer Overview

Chassis Viewer is Intel®'s browser-based device management software. Chassis Viewer provides the primary management interface for the Intel® 12000 switches, allowing the user to perform management, configuration, and monitoring tasks related to IB networks.

The Chassis Viewer runs on the firmware of the 12300 and each management module of the 12800 series. The browser must be on a workstation that has IP connectivity to the LAN port (RJ-45 connector) on the switch.

- To access Chassis Viewer, point a browser to the IP address of the switch.  
For a list of supported browsers, please refer to the *Intel® 12000 Release Notes*.
- If user authentication is enabled, the **User Authentication** window shown in [Figure 1](#) is displayed:

**Figure 1. User Authentication**

The server 10.228.198.253 at Intel True Scale Edge Switch 12300 requires a username and password.

Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).

☐ Remember my credentials

OK Cancel

— The default user name and password need to be entered:

- User name: admin
- Password: adminpass

The Chassis Viewer home page is displayed.

The Chassis Viewer manages:

- The switch chassis
- Each director-class leaf module
- Each director-class spine module
- Each director-class management module
- Logging and monitoring functionality

## 2.1 Home Page

Chassis Viewer's home page ([Figure 2](#) and [3](#)) provides a high-level overview of the switch. This area is the starting point to more detailed information for the chassis and components (fans and power supplies), leaf modules, spine modules, and management modules. The selected component provides hyperlinks to related menus and information where the user can perform configuration and monitoring tasks.

Figure 2. Intel® 12300 Home Page

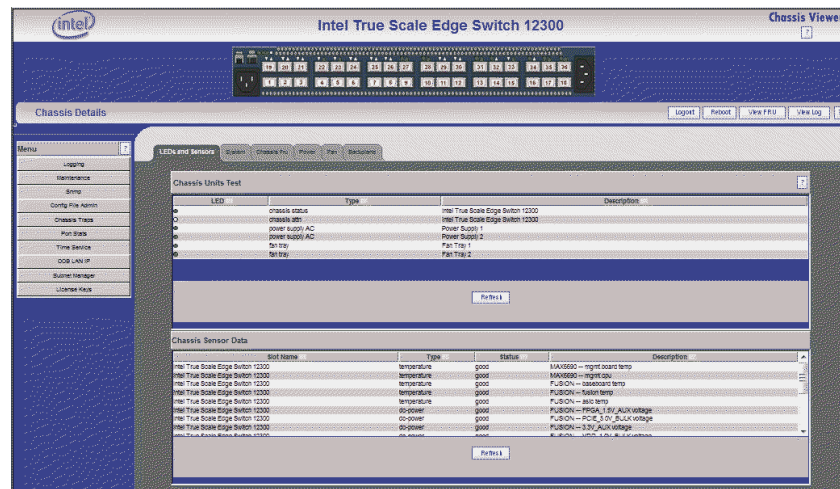
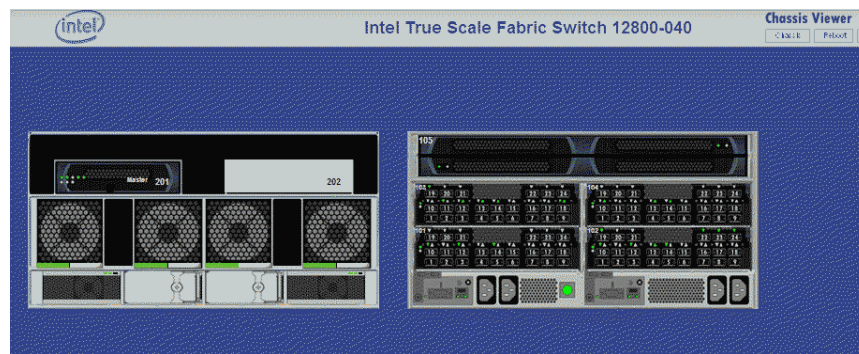
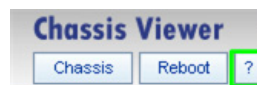


Figure 3. Intel® 12800-040 Home Page



The **(HELP)** button (Figure 4) displays online help. Each help window gives the user a high-level, topic-specific description.

Figure 4. Help Button



## 2.2 Displaying the Chassis View

There are three ways to display the chassis view for the 12800 switches.

### 2.2.1 Leaf Module View

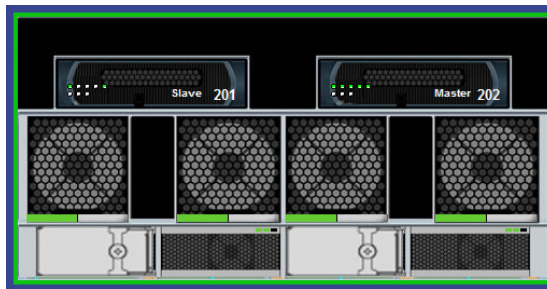
1. Mouse over the outer region of the leaf module view.  
The edges of the chassis are highlighted green as shown in Figure 5:

**Figure 5. Leaf Module View Mouseover**

2. Click the outer region of the leaf module view.  
The chassis view is displayed ([Figure 7](#)).

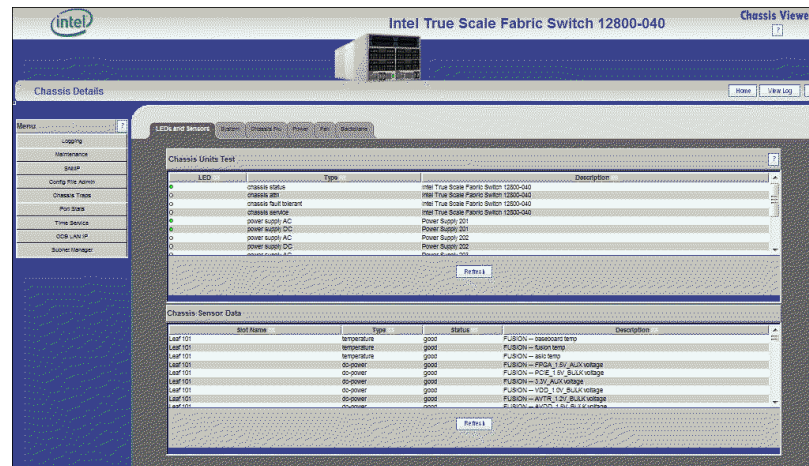
### 2.2.2 Management Module View

1. Mouse over the outer region of the management module view.  
The edges of the chassis are highlighted green as shown in [Figure 6](#):

**Figure 6. Management Module View Mouseover**

2. Click the outer region of the management module view.  
The chassis view is displayed ([Figure 7](#)).

**Figure 7. 12800-040 Chassis View**



## 2.2.3 Home Page Toolbar

1. Select the Chassis button from the Home Page toolbar.

## 2.3 Displaying the Leaf, Spine, and Management Module Views

### 2.3.1 Leaf Module View

To display the leaf module views:

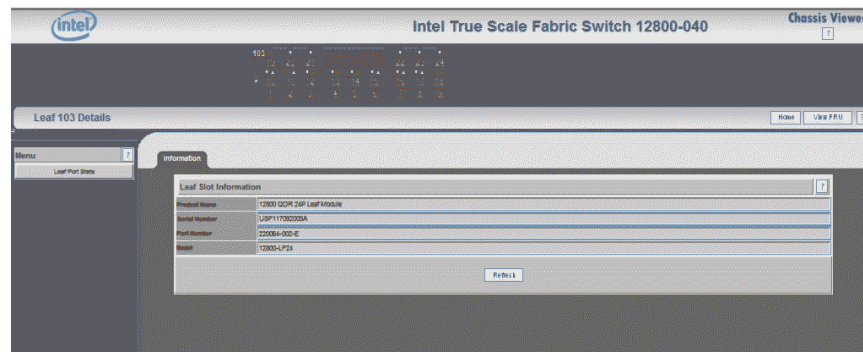
1. Mouse over the leaf module to display.  
The edges of the leaf module are highlighted green as shown in [Figure 8](#):

**Figure 8. Leaf Module Mouseover**



2. Click the leaf module.  
The leaf module view is displayed ([Figure 9](#)).



**Figure 9. Leaf Module View**

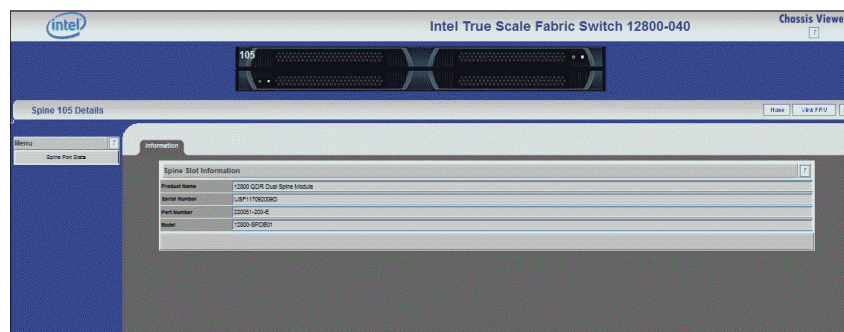
### 2.3.2 Spine Module View

To display the spine module view:

1. Mouse over the spine module to display.  
The edges of the spine module are highlighted green as shown in [Figure 10](#).

**Figure 10. Spine Module Mouseover**

2. Click the spine module.  
The spine module view is displayed ([Figure 11](#)).

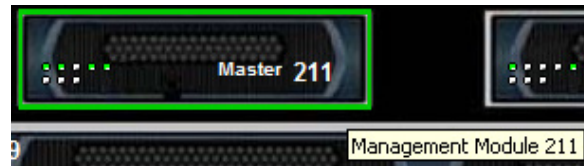
**Figure 11. Spine Module View**

### 2.3.3 Management Module View

To display the management module view:

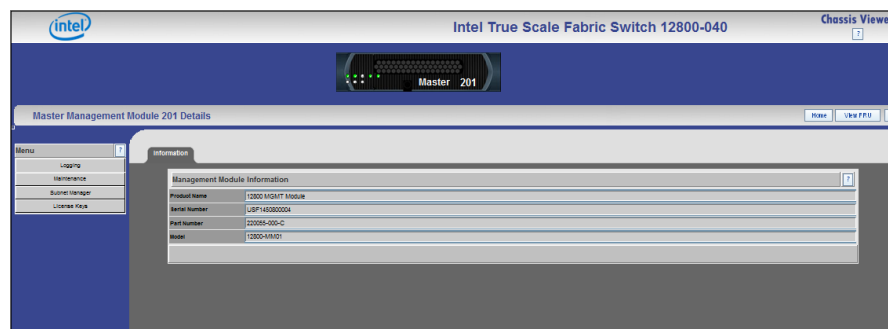
1. Mouse over the management module to display.  
The edges of the module are highlighted green as shown in [Figure 12](#):

**Figure 12. Management Module Mouseover**



2. Click the management module.  
The management module view is displayed (Figure 13).

**Figure 13. Management Module View**

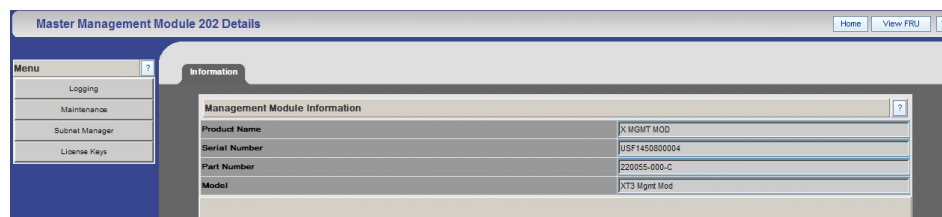


## 2.4 Component Details Area

The **Component Details Area** (Figure 14) for the chassis, spine, leaf, and management module has three areas.

- Details Header
- Information area
- Menu

**Figure 14. Component Details Area**



### 2.4.1 Details Header

The **Details Header** (Figure 15) allows the user to execute command tasks for each hardware component. The figure below displays the 12300 Details Header as an example.





**Figure 15. Details Header**



All component Details Headers contain the following buttons:

- Logout

*Note:*

The Logout button is only displayed if the user has set the User Authentication parameter to **Login Enabled** through the HTTP Session Configuration submenu. Refer to [Section 3.3.3, "HTTP/CLI Session Configuration" on page 31](#) for more information.

- Reboot
- View Field Replaceable Unit (FRU) Information
- View Log
- Home (12800 series)
- Help (12800 series)

## 2.4.2 Module Information Area

The **Module Information Area** ([Figure 16](#)) allows the user to view high-level information for each specific leaf, spine, or management module. The information area comprises fields that are tied to live data from the selected hardware component as well as live system information.

**Figure 16. Module Information Area**

Leaf Slot Information	
Product Name	12800 QDR 18P Leaf Module
Serial Number	USF1150920030
Part Number	220052-004-B
Model	12800-LF18

[Refresh](#)

The information area has the following button:

### Refresh:

Refreshes all fields in the information areas.

## 2.4.3 Chassis View Component Information Area

The **Chassis View Component Information Area** ([Figure 17](#)) allows the user to monitor important information for each specific hardware component, as well as important system information. The information area is comprised of two different fields:

- The white fields allow the user to add or modify applicable general and system information that is specific to their environment.
- The gray fields are tied to live data from the selected hardware component as well as live system information.

**Figure 17. Chassis View Component Information Area**

Chassis System Information	
Out of Band LAN IP	10.228.198.254
Net Mask	255.255.252.0
System Description	Intel True Scale Fabric Switch 12800-040 - Firmware Version: 7.2.0.0.38, Mar 30 2013
IS Node Description	Intel True Scale Fabric Switch 12800-040 GUID=0100066a00e5000103 <span>Field Default</span>
System Uptime	0 Day(s), 9 Hour(s), 26 Minute(s), 7 Second(s)
System Contact	--Empty: No Value Set--
System Name	--Empty: No Value Set--
System Location	--Empty: No Value Set--

## 2.4.4 Modifying Switch Component Information

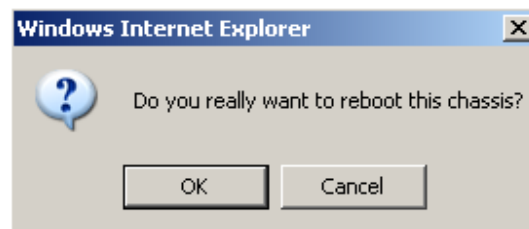
Use the following procedure to modify the fields for switch components:

1. Select the applicable tab: **LED and Sensors, System, Chassis FRU, Power, Fan, or Backplane.**
2. Click on the row to be modified.
3. In the text boxes, enter information that is applicable to the existing network environment.
4. To save, click the **Apply** button at the bottom of the window.

### 2.4.4.1 Rebooting the 12300 Switch

1. From the Chassis Details Header, click **Reboot**.  
The reboot confirmation window is displayed (Figure 18).

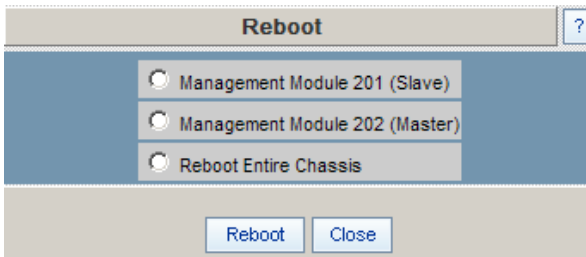
**Figure 18. Reboot Window**



2. Click **OK**.

### 2.4.4.2 Rebooting the 12800 Switches

1. From either the **Details** header of the Chassis Viewer home page or the chassis view **Maintenance** submenu, select **Reboot**.  
A window similar to Figure 19 is displayed:

**Figure 19. Reboot Window**

2. Select the radio button of the management module(s) to be rebooted, or select the **Reboot Entire Chassis** radio button to reboot the switch and all management modules.
3. Click **Reboot**.

## 2.4.5 Chassis View Component Information Area Tabs

The tabs along the top of the information area present information about the following components:










- LED and sensor information
- Overall system information
- Switch Field Replaceable Unit (FRU) Information
- Power supply information
- Fan information
- Switch backplane information

### 2.4.5.1 LEDs and Sensors Tab

The **LEDs and Sensors** tab (Figure 20) displays the following information:

- Switch component LED information for chassis status, fan, and power supplies.
- Slot-based temperature and AC-power sensor data for the internal switching complex.

**Figure 20. Chassis View Component Information Area, Showing LEDs and Sensors Tab**

Chassis Units Test				
LED	Type	Description		
	chassis status	Intel True Scale Fabric Switch 12000-040		
	chassis atm	Intel True Scale Fabric Switch 12000-040		
	chassis fault tolerant	Intel True Scale Fabric Switch 12000-040		
	chassis service	Intel True Scale Fabric Switch 12000-040		
	power supply AC	Power Supply 201		
	power supply DC	Power Supply 201		
	power supply AC	Power Supply 202		
	power supply DC	Power Supply 202		
	power supply AC	Power Supply 203		
<div>Refresh</div>				

Chassis Sensor Data				
Slot Name	Type	Status	Description	
Leaf 101	temperature	good	FUSION -- baseboard temp	
Leaf 101	temperature	good	FUSION -- fusion temp	
Leaf 101	temperature	good	FUSION -- asic temp	
Leaf 101	dc-power	good	FUSION -- FRGA_1.5V_AUX voltage	
Leaf 101	dc-power	good	FUSION -- PCE_1.5V_BULK voltage	
Leaf 101	dc-power	good	FUSION -- 3.3V_AUX voltage	
Leaf 101	dc-power	good	FUSION -- VDD_1.0V_BULK voltage	
Leaf 101	dc-power	good	FUSION -- AVTR_1.2V_BULK voltage	
Leaf 101	dc-power	good	FUSION -- AVDD_1.5V_BULK voltage	
<div>Refresh</div>				

**Note:** For a detailed explanation of physical LEDs on the hardware components, please refer to the *Intel® True Scale Fabric Switches 12000 Series Hardware Installation Guide*.

## 2.4.5.2 System, Chassis FRU, Power, Fan, and Backplane Tabs

Table 1 is a list of the System, Chassis FRU, Power, Fan, and Backplane tabs in the Chassis View Component Information Area (Figure 20).

**Table 1. System, Chassis FRU, Power, Fan, and Backplane Tabs**

Tab/Information	Description
<b>System Tab</b>	The <b>System</b> tab displays overall system information for the applicable switch chassis. This information includes the following items:
<b>Out of Band LAN IP</b>	The IP address of the switch. The IP address of the switch can be changed by the administrator.
<b>Net Mask</b>	The current net mask settings for the Chassis. The net mask of the chassis can be changed by the administrator.
<b>System Description</b>	A read-only textual description of the system.
<b>IB Node Description</b>	Assigned by the administrator, the IB node description is an IB fabric-applicable name that will be displayed within the Intel® Fabric Viewer. To reset this field to the default setting, click the <b>Field Default</b> button. <b>Note:</b> If the IB Node Description field has been changed since the last reboot of either management module, the next reboot will be treated as disruptive.
<b>System Uptime</b>	The elapsed time since the master management module was re-initialized.
<b>System Contact</b>	The textual identification of the contact person and their contact information for this system, assigned by the administrator.
<b>System Name</b>	The name for the system, assigned by an administrator. One convention is to use the system's fully qualified domain name.
<b>System Location</b>	The location of the system, assigned by an administrator.
<b>Apply Button</b>	Saves any changes made by the user in the System tab to memory.

**Table 1. System, Chassis FRU, Power, Fan, and Backplane Tabs**

Tab/Information		Description
<b>Refresh Button</b>		Refreshes all fields in the System tab.
<b>Chassis FRU Tab</b>		The <b>Chassis FRU</b> tab displays switch Field Replaceable Unit (FRU) information. This information includes the following items:
	<b>Type</b>	The type of component.
	<b>Description</b>	A description of the component, assigned by an administrator.
	<b>Alias Name</b>	Name of the component, assigned by an administrator.
	<b>Serial Num</b>	Component serial number
	<b>Detail</b>	A button for each row that displays additional detail about the component. Additional details include: Part Number, Model, Version, Manufacturer Name, Product Name, Manufacturer Identification, and Manufactured Date (if available).
	<b>Apply Button</b>	Saves any changes made by the user in the Chassis FRU tab to memory.
	<b>Refresh Button</b>	Refreshes all fields in the Chassis FRU tab.
<b>Power Tab</b>		The <b>Power</b> tab displays switch power supply information. This information includes the following items:
	<b>Description</b>	A description of the component, assigned by an administrator.
	<b>Status</b>	Displays the status of the component.
	<b>Part Num</b>	Displays the part number of the component.
	<b>Detail</b>	A button for each row that displays additional detail about the component. Additional details include: Description, Status, Part Number, Manufacturing Name, Product Name and Manufacturing ID.
	<b>Apply Button</b>	Saves any changes made by the user in the Power tab to memory.
	<b>Refresh Button</b>	Refreshes all fields in the Power tab.
<b>Fan Tab</b>		The <b>Fan</b> tab displays switch fan information. For descriptions of the fields, see the Power Tab.
<b>Backplane Tab</b>		<p>The <b>Backplane</b> tab displays switch backplane information. The Backplane details button includes the following additional information:</p> <ul style="list-style-type: none"> <li>• Description</li> <li>• Serial Number</li> <li>• Part Number</li> <li>• Model</li> <li>• Version</li> <li>• Manufacturing Name</li> <li>• Product Name</li> <li>• Manufacturing ID</li> <li>• Manufacturing Date</li> </ul> <p>Additionally, the user can modify the <b>Description</b> field, adding information specific to their network environment.</p>







## 3.0 Configuration and Monitoring

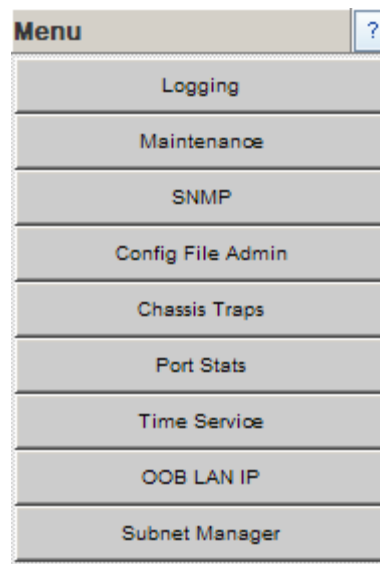
This section provides detailed, task-oriented descriptions for configuring and monitoring the 12000 switches and their feature functionality.

### 3.1 Chassis View Menu

The Chassis View Menu (Figure 21) allows the user to:

- Set and reset levels for log message files (Refer to [“Logging” on page 23](#))
- Perform maintenance (Refer to [“Maintenance” on page 29](#))
- View and modify SNMP trap configuration information (Refer to [“SNMP” on page 33](#))
- Perform various administrative tasks related to configuration (Refer to [“Configuration File Administration” on page 39](#))
- Set default trap scenarios related to the switch (Refer to [“Chassis Traps” on page 45](#))
- Obtain IB port information (Refer to [“Port Statistics” on page 47](#))
- Set the system time (Refer to [“Time Service” on page 57](#))
- Set the OOB LAN IP (Refer to [“OOB LAN IP Submenu” on page 59](#))
- Configure the Subnet Manager (Refer to [“Fabric Manager Configuration” on page 62](#))

**Figure 21. Chassis View Menu**



### 3.2 Logging

The **Logging** submenu (Figure 22) allows the user to set and reset levels for log message files.

**Figure 22. Logging Submenu**



### 3.2.1 Set Level

To efficiently set up Log filtering, enable only those levels that need to appear in the log. The levels are handled by two layers.

The first layer is the Preset Layer. This layer allows the user to select the levels of messages the switch will generate. If the level is selected here, it could be logged into Ram Device or the Syslog Device. Any unselected levels will not be logged to any Device.

The second layer is the Device Levels. This allows the user to select the levels of log messages to be saved.

*Note:* To save log message levels, select the log level in the Device tab and Preset tab.

The Set Level button allows the user to set log level configuration parameters for all software modules.

To set log levels:

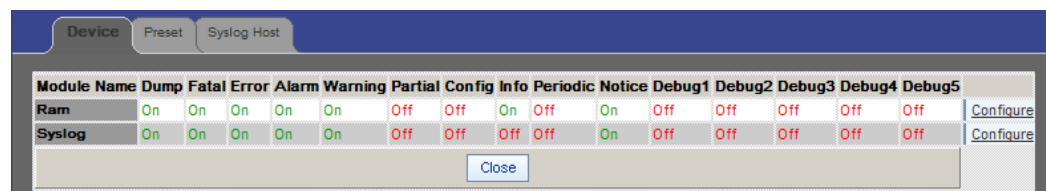
1. From the menu, select **Logging**.  
The **Set Level** button is displayed (Figure 23).

**Figure 23. Set Level Button**



2. Click **Set Level**.
3. The **Log System Configurator (Device Tab)** window is displayed (Figure 24).

**Figure 24. Log System Configurator: Device Tab**







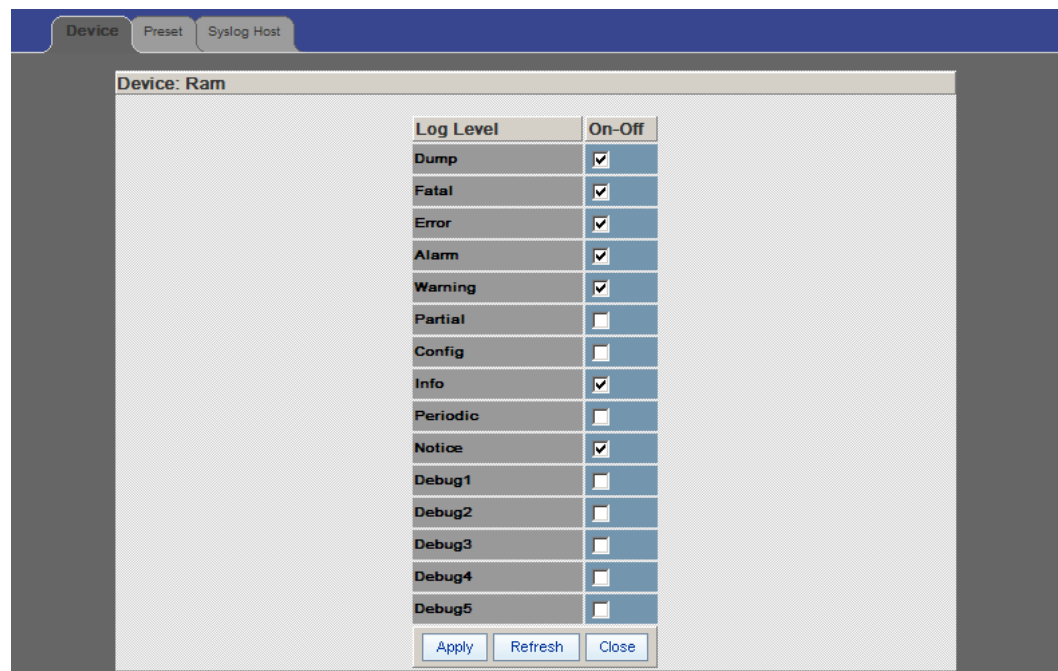
### 3.2.1.1 Device Tab

The **Device** tab (Figure 25) presents current log level configuration settings for the following software modules:

- **RAM** – The circular log buffer contained in memory. To access the contents of this buffer, use the Chassis Viewer **View Log** button.
- **Syslog** – Messages that are sent to the syslog host specified on the Syslog tab.

From this window, the user can change any of the log level settings for a specific software module by clicking on the **Configure** button, which displays a configuration window:

**Figure 25. Device Tab: Software Module Configurator**



To change any Log Level settings:

1. Click the **On-Off** check box to the right of the setting.
2. Click the **Apply** button to save any changes.

The following list describes each of the Log Level configuration parameters.

- **DUMP** – Indicates that a problem has caused the system to produce a system dump file. In most circumstances, it is recommended that the user retrieve the dump that was produced. Support engineers may require the information contained in the dump file to diagnose the cause of the problem.
- **FATAL** – Indicates that a non-recoverable system problem has occurred. The user should reboot the system or component and verify that the subsystem is fully functional to determine whether the fault has been corrected. If the problem persists, the user should contact the supplier.
- **ERROR** – Indicates that a serious system error has occurred which might be recoverable. If the system exhibits any instability, the user should reboot the

system or component. If errors persist, the user should immediately contact the supplier's technical support.

- **ALARM** – Indicates that a serious problem has occurred which degrades capacity or service. If the error is recoverable, the user should correct the failure. If the alarm/failure persists, the user should reboot the system at a convenient time. If the problem is still not cleared, the user should contact the supplier.
- **WARNING** – Indicates that a recoverable problem has occurred. The user does not need to take action.
- **PARTIAL** – When more information is available, Partial causes additional message-related details to be displayed.
- **CONFIGURATION** – An informational message indicating changes that a user has made to the system configuration. The user does not need to take any action.
- **INFO** – Informational messages that occur during a system or component boot. The user does not need to take any action.
- **PERIODIC** – An informational message containing periodic statistics. The user does not need to take action.
- **NOTICE** – Notice is used for failures that could be a result of “frequent” user actions, such as a server reboot.

### 3.2.1.2 Debug message levels 1 through 5:

Debug messages are for supplier and/or engineering use and are not necessarily indicative of actions that an end user may need to take.

- **DEBUG1** – Messages that describe the states of connections and links.
- **DEBUG2** – Messages that describe major configuration changes or operations.
- **DEBUG3** – Messages that describe the I/O flow.
- **DEBUG4** – Messages that contain the packet dumps within an I/O flow. I/O flows contain multiple packets.
- **DEBUG5** – Messages that contain the packet dumps within an I/O flow. I/O flows contain multiple packets.

**Important:** When configuring the log levels to display debug messages, care should be taken to ensure that system performance issues are weighed against troubleshooting requirements. Generally, the higher the debug number the more information is written to the log. Specifically, DEBUG3 through DEBUG5 have the most effect on system performance.

### 3.2.1.3 Preset Tab

The **Preset** tab ([Figure 26](#)) allows the user to quickly change log level settings for all software modules on the switch.



**Figure 26. Log System Configurator: Preset Tab**

Name	On-Off
Dump	<input checked="" type="checkbox"/>
Fatal	<input checked="" type="checkbox"/>
Error	<input checked="" type="checkbox"/>
Alarm	<input checked="" type="checkbox"/>
Warning	<input checked="" type="checkbox"/>
Partial	<input checked="" type="checkbox"/>
Config	<input checked="" type="checkbox"/>
Info	<input checked="" type="checkbox"/>
Periodic	<input checked="" type="checkbox"/>
Notice	<input checked="" type="checkbox"/>
Debug1	<input type="checkbox"/>
Debug2	<input type="checkbox"/>
Debug3	<input type="checkbox"/>
Debug4	<input type="checkbox"/>
Debug5	<input type="checkbox"/>

Apply Refresh Close

To change the log level settings:

1. Click the **On-Off** check box to the right of the setting(s).
2. Click the **Apply** button to save any changes.

### 3.2.1.4 Syslog Host Tab

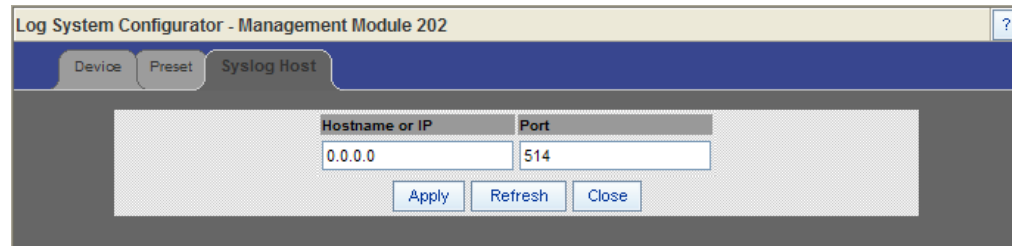
The **Syslog Host** tab (Figure 27) allows the user to configure logging messages to be sent to a syslog host through an IP address or domain name server (DNS) host name.

**Note:** In order to avoid losing log information in the event of a hardware failure, users should configure a syslog server.

The switch only saves the in-memory log when it is able to gracefully shutdown, and restore the log from the persistent state when it boots. Power cycling the switch, removing/resetting the management card or any hardware failure that causes an ASYNC reboot will not persistently save the in-memory log.

**Note:** If the Host IP address is 0.0.0.0, no syslog host is configured, otherwise log messages are sent to the syslog server at a specified IP address and port.

**Figure 27. Log System Configurator: Syslog Host Tab**



To set up the syslog host:

1. In the **Hostname or IP** text box, enter either the host name or IP address of the syslog host where the log files are to be saved.
2. Click the **Apply** button to save the IP address.

### 3.2.1.5 Configure Syslog on the Syslog Server

1. Edit the `/etc/sysconfig/syslog` file and ensure that the `-r` is included in the `SYSLOGD_OPTIONS`. This allows logging from a remote system. For example:

```
SYSLOGD_OPTIONS="-r -m 0"
```

2. Type `/etc/init.d/syslog restart`, and press **Enter**.

*Note:*

To centralize logging for all switches in an IB fabric, the user can configure each switch to point to the same syslog server, which has the syslog daemon (`syslogd`) running.

### 3.2.2 Reset Log Levels

The **Reset Levels** button resets the logging levels to their factory default values.

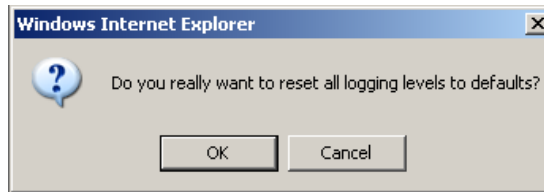
To reset the logging levels:

1. From the menu, select **Logging**.  
The **Reset Levels** button is displayed (Figure 28).

**Figure 28. Reset Levels Button**



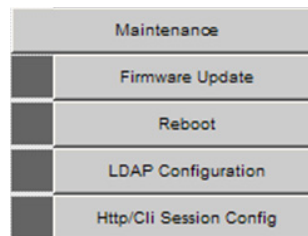
2. Click **Reset Levels**.  
The **Reset Levels** window is displayed (Figure 29).

**Figure 29. Reset Log Levels Window**

3. To reset the logging levels, click **OK**.

### 3.3 Maintenance

The **Maintenance** menu ([Figure 30](#)) allows the user to select an alternate firmware file for the switch, reboot the switch, set and configure authentications for the switch, and set HTTP and CLI session time out parameters, as well as set security requirements for the switch.

**Figure 30. Maintenance Menu**

**Note:** For rebooting information, see [Section 2.4.4.2, “Rebooting the 12800 Switches”](#) on [page 18](#).

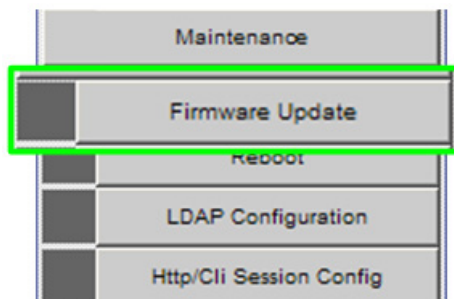
#### 3.3.1 Firmware Update

The **Firmware Update** button allows the user to select an alternate firmware file for the switch. These alternate files are reflected in the drop-down lists in the **Firmware Update** window.

To download firmware:

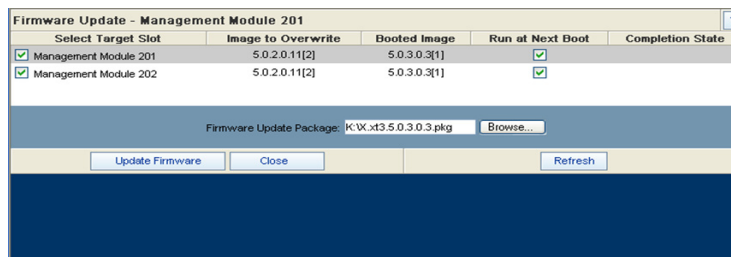
1. From the menu, select **Maintenance**.  
The **Firmware Update** button is displayed ([Figure 31](#)).

**Figure 31. Firmware Update Button**



2. Click **Firmware Update**.  
The **Firmware Update** window is displayed (Figure 32).

**Figure 32. Firmware Update Window**



3. In the **Select Target Slot** column, select the hardware component to change its firmware.

**Note:** If there are multiple modules of the same type, the user can select all slots that apply.

4. In the **Firmware Update Package:** text box, use the **Browse...** button to locate the path to the alternate firmware file.

**Note:** Before using the **Browse...** button, make certain that the browser is tied to an FTP server where the firmware files reside (i.e., if the file(s) does not reside on a local computer).

5. To have the new image become active after the next reboot, make certain that the box(es) in the **Boot?** column are checked.
6. Click the **Update Firmware** button.

### 3.3.2 LDAP Configuration

The lightweight directory access protocol (LDAP) configuration feature allows the user to set and configure authentications for the switch. The LDAP service resides on a server that has access to a usercode and password database.

On the 12000 switches with LDAP enabled, when a user attempts to login to either Chassis Viewer or the CLI, the LDAP client intercepts the login attempt and rather than authenticating internally, encrypts and packages the information in an LDAP packet and sends it to a pre-configured LDAP server over TCP/IP (i.e., the out-of-band LAN). The

LDAP server receives the request, passes it on to the authentication services, and responds to the client with a yes or no, either allowing or denying the user access to the box.

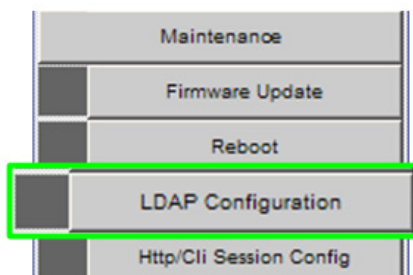
When LDAP is disabled internal authentication becomes the default.

To set up LDAP authentication:

1. From the menu, select **Maintenance**.

The **LDAP Configuration** button is displayed (Figure 33).

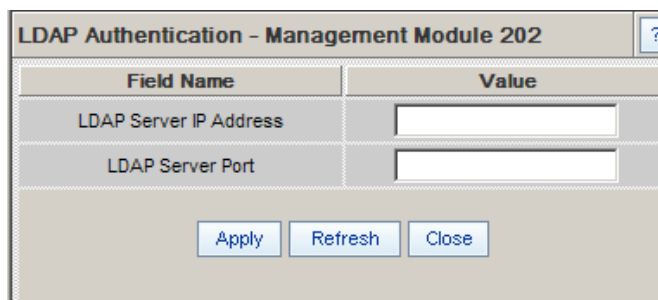
**Figure 33. LDAP Configuration Button**



2. Click **LDAP Configuration**.

The **LDAP Authentication** window is displayed (Figure 34).

**Figure 34. LDAP Authentication Window**



Field Name	Value
LDAP Server IP Address	<input type="text"/>
LDAP Server Port	<input type="text"/>

Apply Refresh Close

3. In the **LDAP Server IP Address** box, enter the address of the applicable LDAP server.
4. In the **LDAP Server Port** box, enter the applicable server port number (the default is 389).
5. Click **Apply**.

### 3.3.3 HTTP/CLI Session Configuration

The hyper text transfer protocol (HTTP) and command line interface (CLI) session configuration feature allows the user to set HTTP and CLI session time out parameters, as well as set security requirements for the switch.

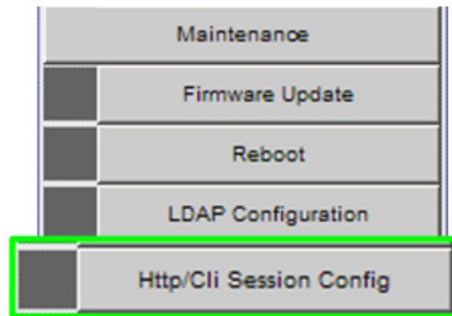
The session time out duration is the length of time that a session remains active if there is no GUI activity. If a session is inactive for a time exceeding the time out duration, the user will be logged out.

To modify the HTTP and CLI configurations:

1. From the menu, select **Maintenance**.

The **HTTP/CLI Session Config** button is displayed (Figure 35).

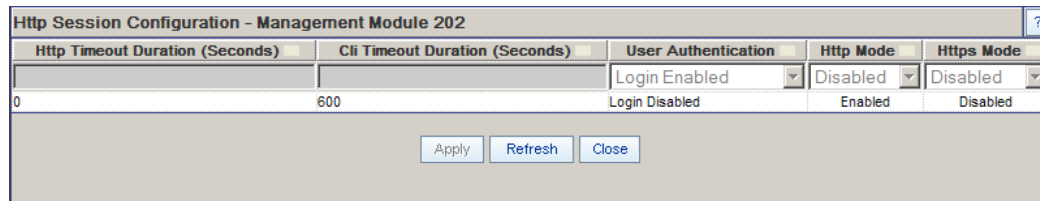
**Figure 35. HTTP/CLI Session Config Button**



2. Click **HTTP/CLI Session Config**.

The **HTTP/CLI Session Configuration** window is displayed (Figure 36).

**Figure 36. HTTP/CLI Session Configuration Window**

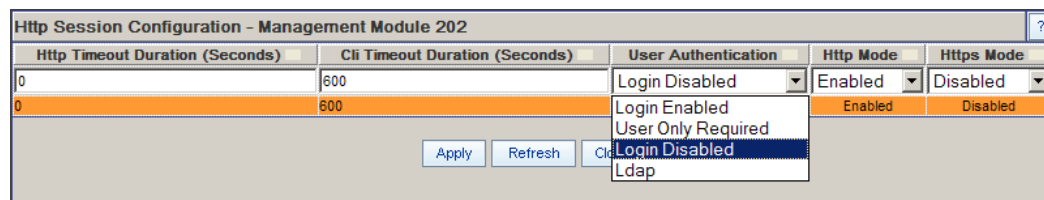


Http Timeout Duration (Seconds)	Cli Timeout Duration (Seconds)	User Authentication	Http Mode	Https Mode
0	600	Login Enabled	Disabled	Disabled
		Login Disabled	Enabled	Disabled

Buttons: Apply, Refresh, Close

3. To modify the session time out duration (in seconds), click on the existing configuration. The row changes to orange.
4. In the **HTTP Timeout Duration** field, enter the new timeout duration (in seconds). The default is 0 seconds (i.e., no timeout).
5. In the **CLI Timeout Duration** field, enter the new timeout duration (in seconds). The default is 600 seconds.
6. To change the **User Authentication** parameter, click on the **User Authentication** list (Figure 37).

**Figure 37. User Authentication Dropdown List**



Http Timeout Duration (Seconds)	Cli Timeout Duration (Seconds)	User Authentication	Http Mode	Https Mode
0	600	Login Disabled	Enabled	Disabled
0	600	Login Enabled	Enabled	Disabled
		User Only Required		
		Login Disabled		
		Ldap		

Buttons: Apply, Refresh, Close

7. Select the preferred user authentication method.

- **Login Enabled** - UserName and Password must be entered, and must match what is in the database of the local switch.





- **User Only Required** - According to the local switch database, a valid username must be entered. A password is not required.
  - **Login Disabled** - Does not require username or password.
  - **LDAP** - Use an LDAP server. If the user name/password validation fails to complete successfully, check the database of the local switch.
8. To change the **HTTP Mode** parameter, click on the **HTTP Mode** list (Figure 38).

**Figure 38. HTTP Mode Dropdown List**

Http Timeout Duration (Seconds)	Cli Timeout Duration (Seconds)	User Authentication	Http Mode	Https Mode
0	600	Login Disabled	Enabled	Disabled
0	600	Login Disabled	Disabled	Disabled

Buttons: Apply, Refresh, Close

9. Select **Enabled** or **Disabled**.
10. To change the **HTTPS Mode** parameter, click on the **HTTPS Mode** list (Figure 39).

**Figure 39. HTTPS Mode Dropdown List**

Http Timeout Duration (Seconds)	Cli Timeout Duration (Seconds)	User Authentication	Http Mode	Https Mode
0	600	Login Disabled	Enabled	Disabled
0	600	Login Disabled	Enabled	Enabled

Buttons: Apply, Refresh, Close

11. Select **Enabled** or **Disabled**.
12. Click **Apply**.

## 3.4 SNMP

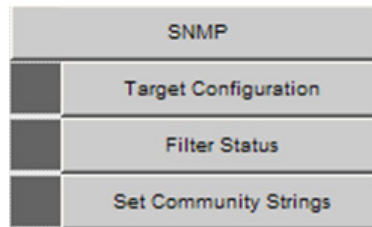
The **SNMP** submenu (Figure 40) allows the user to view and modify SNMP trap configuration information.

*Note:*

The following Chassis SNMP MIBs are provided:

- icsChassisMib
- icsChassisTrapMib
- icsConfigFileTrapMib
- icsIBStatMib
- icsKeyMgmtMib
- icsLogConfigMIB
- icsMasterMib
- icsSmMib

**Figure 40. SNMP Submenu**



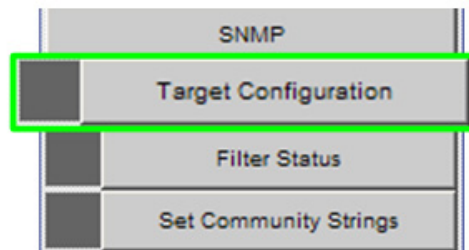
### 3.4.1 Target Configuration

The **Target Configuration** button displays the **SNMP Target Configuration** window, allowing the user to view and edit existing SNMP trap destinations.

To display the **Target Configuration** window:

1. From the menu, select **SNMP**.  
The **Target Configuration** button is displayed (Figure 41).

**Figure 41. Target Configuration Button**



2. Select **Target Configuration**.  
The **SNMP Target Configuration** window is displayed (Figure 42).



Figure 42. SNMP Target Configuration Window

**SNMP Target Address - Management Module 202**

Addr Name	Transport Dom	Transport Addr	Port	Timeout	Retry Cnt	Tag List	Params	Storage Type	Status
nms v1	1.3.6.1.6.1.1	172.28.0.26	162	1500	3	rfc1493 rfc1757 rfc1907 rfc2233 tmscom	v1 params	nonVolatile	Active
nms v2	1.3.6.1.6.1.1	10.32.4.64	162	1500	3	rfc1493 rfc1757 rfc1907 rfc2233 tmscom	v2 params	nonVolatile	Not In Service
nms v3	1.3.6.1.6.1.1	0.0.0.0	162	1500	3	rfc1493 rfc1757 rfc1907 rfc2233 tmscom	v3 params	nonVolatile	Not Ready

Apply Refresh Delete Close

---

**New SNMP Address Form - Management Module 202**

Addr Name	Transport Dom	Transport Addr	Port	Timeout	Retry Cnt	Tag List	Params	Storage Type	Status

Refresh Add Close

---

**SNMP Target Parameters - Management Module 202**

Parameter Name	MP Model	Security Model	Security Name	Security Level	Storage Type	Status
v1 params	0	1	public	No Auth No Priv	nonVolatile	Active
v2 params	1	2	public	No Auth No Priv	nonVolatile	Active
v3 params	3	3	inbathone	No Auth No Priv	nonVolatile	Active

Apply Refresh Close

The top section of the window, **SNMP Target Addresses**, allows the user to determine what type of SNMP traps are sent, and where they are sent. The rows provide an area for specifying multiple trap destinations. The middle section, **SNMP Address Form**, allows the user to record new SNMP address information for the applicable module. The bottom section of the window, **SNMP Target Parameters**, allows the user to configure each trap destination with version, optional security information, and filtering mechanisms.

The **Apply** button applies the current settings to either the **SNMP Target Addresses** or **SNMP Target Parameters** section. The **Add** button saves changes made to the **SNMP Address Form** section.

**Note:** The **Target Configuration** window is used for viewing and modifying existing SNMP target entries. It is not used for creating new target entries.

To create a new target entry, use the following CLI command:

```
snmpTargetAddr add -n name -a addr [-p port] [-t timeout] [-r retry_count] [-l tag_list] [-v parameters] [-s storage_type]
```

For example, to add a trap target with the IP address 192.168.0.123 that accepts SNMP v2c style traps:

```
snmpTargetAddr add -n traphost1 -a 192.168.0.123 -v "v2 params"
```

Or, to add the same target except using SNMP v1 traps:

```
snmpTargetAddr add -n traphost1 -a 192.168.0.123 -v "v1 params"
```

### 3.4.1.1 Target Configuration Window Field Descriptions

The following are descriptions for each field in the **Target Configuration** window:

#### SNMP Target Addresses:

- **Address Name**  
Specifies a unique, administrator-defined name the system uses to identify a row.
- **Transport Domain**  
Specifies the transport type of the address contained in the snmpTargetAddrTAddress object (e.g., 1.3.6.1.6.1.1 = udp, 1.3.6.1.4.1.1977.200.1 = tcp).
- **Transport Address**  
Specifies the IP address in dotted decimal format.

*Note:* The combination of the Transport Domain and the Transport Address determines the trap destination.

- **Port**  
Specifies the TCP or UDP port where the SNMP trap is sent.
- **Timeout**  
Specifies the time (in milliseconds) that the trap sender waits on a response before re-sending the trap.
- **Retry Count**  
Specifies the number of attempts to be made to send the trap after a timeout condition occurs.

*Note:* Timeout and Retry Count are SNMP v2.c and above (not applicable for v1 traps).

- **Tag List**  
Specifies which traps should be sent to this particular destination.

*Note:* RFC2233 specifies the link up/down traps. Including RFC2233 in the Tag List specifies that the trap receiver will get link up/down traps.

- **Parameters**  
Specifies a mapping to an entry in the SNMP Target Parameters table, determining the version of SNMP to use.
- **Storage Type**  
This field determines whether or not the entry is saved for each reboot of the switch.
  - *Nonvolatile* means that the value is saved, and remains after each subsequent reboot.
  - *Volatile* or *Other* indicates it will not be saved.
- **Status**  
Indicates the current status of the row. The row may be in one of three states:
  - **Active**
  - **Not in service**
  - **Not Ready**

*Note:* A status of **not in service** indicates that the current row will not be used in the event a trap is generated by the system. Toggling a trap to not in service, which temporarily suspends trap forwarding, may be useful to keep values intact.

#### **SNMP Target Parameters:**

*Note:* Changes can only be made to rows that have a status of **not in service**.

- **Parameter Name**



Specifies a mapping to an entry in the SNMP Target Parameters table, determining the version of SNMP to use.

- **MP Model**

The Message Processing Model to be used when generating SNMP messages for entry. Values for this field are 0 for SNMP v1, 1 for SNMP v2 and 3 for SNMP v3.

- **Security Model**

The Security Model to be used when generating SNMP messages using this entry. Values for this field are 1 for SNMP v1, 2 for SNMP v2, or 3 for SNMP v3.

- **Security Name**

Security name identifies the entity for whom SNMP messages will be generated.

*Note:* This is equivalent to the community string in an SNMP get.

- **Security Level**

One of three options:

- *NoAuthNoPriv*: No Authentication, no privacy.
- *AuthNoPriv*: Authentication, no privacy.
- *AuthPriv*: Authentication and privacy

- **Storage Type**

This field determines whether or not the entry is saved for each reboot of the switch.

- *Nonvolatile* means that the value is saved, and remains after each subsequent reboot.
- *Volatile* or *Other* indicates it will not be saved.

- **Status**

Indicates the current status of the row. The row may be in one of three states:

- **Active**
- **Not in service**
- **Not Ready**

*Note:* A status of **not in service** indicates that the current row will not be used in the event a trap is generated by the system. Toggling a trap to not in service, which temporarily suspends trap forwarding, may be useful to keep values intact.

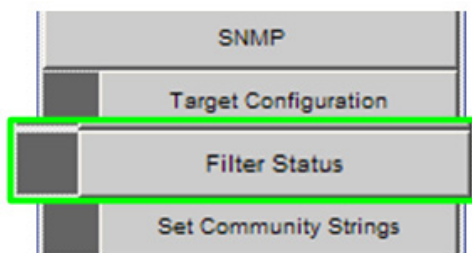
### 3.4.2 Filter Status

The **SNMP Filter Status** window allows the user to view parameters for rfc2273 (SNMP-NOTIFICATION-MIB).

To view **SNMP filter status**:

1. From the menu, select **SNMP**  
The **Filter Status** button is displayed ([Figure 43](#)).

**Figure 43. Filter Status Button**



2. Click **Filter Status**.  
The **SNMP Filter Status** window is displayed (Figure 44).

**Figure 44. SNMP Filter Status Window**

SNMP Filter Parameters - Management Module 202					
Notify Name	Tag	Type	Storage Type	Status	
bridge	rfc1493	Trap	nonVolatile	Active	
interfaces	rfc2233	Trap	nonVolatile	Active	
rmon	rfc1757	Trap	nonVolatile	Active	
snmp	rfc1907	Trap	nonVolatile	Active	
tms	tmscom	Trap	nonVolatile	Active	
Refresh Close					
SNMP Filter Parameters - Management Module 202					
Filter Profile Name	Parameter	Storage Type	Status		
v1 params		nonVolatile	Active		
v2 params		nonVolatile	Active		
v3 params		nonVolatile	Active		
Refresh Close					
SNMP Filter Parameters - Management Module 202					
Filter Subtree	Filter Mask	Filter Type	Storage Type	Status	
0		1	nonVolatile	Active	
0		1	nonVolatile	Active	
0		1	nonVolatile	Active	
Refresh Close					

### 3.4.3 Set Community Strings

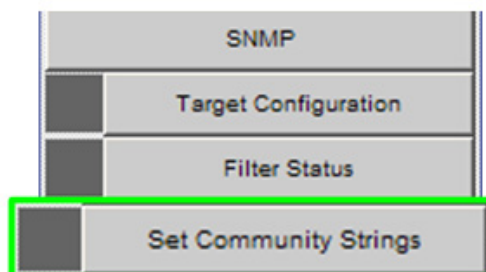
The **Set Community Strings** window allows the user to set two SNMP community names:

- Read Only Community Name
- Read/Write Community Name

To set the Community Strings:

1. From the menu, select **SNMP**.  
The **Set Community Strings** button is displayed (Figure 45).


**Figure 45. Set Community Strings Button**



2. Click **Set Community Strings**.

The **Set Community Strings** window is displayed (Figure 46).

**Figure 46. Set Community Strings Window**



The first field, **Read Only Comm. Name** is the community string that when specified in an SNMP client, allows read-only access to SNMP fields exported by the SNMP server.

The second field, **Read/Write Comm. Name** is the community string that when specified in an SNMP client, allows read and write access to SNMP fields exported by the SNMP server.

3. In each text box, enter a meaningful name (such as **public** and **private** displayed in Figure 46), and click on **Apply**.

### 3.5 Configuration File Administration

The **Config File Admin** menu (Figure 47) allows the user to perform various administrative tasks related to the configuration files for each module populating the switch.

**Figure 47. Configuration File Administration Menu**



### 3.5.1 Administer

The **Administer** window allows the user to set backup and restore scenarios for the configuration file of applicable switch modules.

1. From the **Chassis View** menu (Figure 21), select **Config File Admin**.  
The **Administer** button is displayed (Figure 48).

**Figure 48. Configuration File Administration - Administer**



2. Click **Administer**.  
The **Configuration File Administration** window is displayed (Figure 49).

**Figure 49. Configuration File Administration Window**

Configuration File Administration - Management Module 202								
Index	Mode	Module	Firmware Rev	Serial Num	Timestamp	Backup	Restore	Clear
1	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
2	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
3	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
4	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear

Apply

3. Click on the module to be modified.
4. The row changes to orange.
5. In the **Mode** column, click the drop-down and select the configuration file administration mode for a module (Figure 50).





**Figure 50. Configuration File Administration - Mode Drop-down**

Configuration File Administration - Management Module 202								
Index	Mode	Module	Firmware Rev	Serial Num	Timestamp	Backup	Restore	Clear
4	Auto Back	None	--Empty; No Value Set--	--Empty; No Value Set--	Never			
1		None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
2	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
3	Auto Restore Disabled	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear
4	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	Backup	Restore	Clear

Apply

The following is a description of each mode option:

- **Disabled**

Following an Auto Restore of a configuration file to a module, the system sets the module mode to **Disabled**. This allows the user to verify that the configuration file is correct, before returning the module to Auto Backup mode. In the **Disabled** mode, use the **Backup** and **Restore** buttons to either back up or restore a configuration file.

- **Auto Backup**

All configuration changes to a module are automatically backed up.

- **Auto Restore**

The most recent configuration file is restored to a module inserted into a specific Chassis slot. This is useful as a prerequisite to hot swapping a module.

6. To save, click **Apply**.

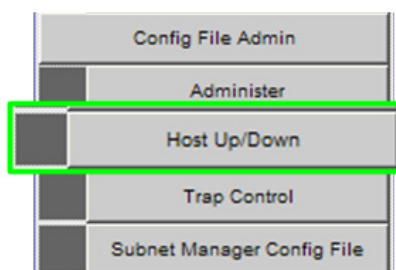
*Note:* The **Clear** button deletes the configuration file from the switch.

### 3.5.2 Host Upload/Download

The **Host Up/Download** windows allows the user to:

- Upload configuration files from a server.
  - Download saved configuration files from the switch to a server.
1. From the **Chassis View** menu (Figure 21), select **Config File Admin**. The **Host Up/Down** button is displayed (Figure 51).

**Figure 51. Configuration File Administration - Host Up/Down**



2. Click **Host Up/Down**.

The **Configuration File Upload/Download** window is displayed (Figure 52).

**Figure 52. Configuration File Upload/Download Window**

Index	Mode	Module	Firmware Rev	Serial Num	Timestamp	Download	Upload
1	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<a href="#">Upload</a>
2	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<a href="#">Upload</a>
3	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<a href="#">Upload</a>
4	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<a href="#">Upload</a>

[Refresh](#)
[Close](#)

To upload a configuration file from a server to the switch:

1. For a selected module, click the **Upload** button.  
The **Upload** window is displayed (Figure 53).

**Figure 53. Upload Window**

Configuration File Host Upload/Download - Management Module 202

Slot occupied by (NULL)

File Name:  [Browse...](#)

[Cancel](#) [Submit](#)

2. Type the path to the desired server location, or click **Browse** to locate the correct path.
3. Click **Submit**.

To download a configuration file from the switch to a server:

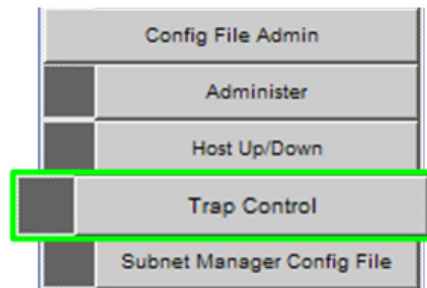
1. For a selected module, click the **Download** button. The **File Download** window is displayed.
2. Click **Save**.
3. In the **Save As** window, locate the correct path to the desired server location, and click **Save**.

### 3.5.3 Trap Control

The **Trap Control** window allows the user to set default trap scenarios related to configuration files.

1. From the **Chassis View** menu (Figure 21), select **Config File Admin**.  
The **Trap Control** button is displayed (Figure 54).

Figure 54. Trap Control



2. Click **Trap Control**.

The **Trap Control** window is displayed (Figure 55).

Figure 55. Configuration File Trap Control Window



3. Select or deselect the desired trap(s).

**Note:** To generate an immediate trap, click the applicable **Gen Trap** button.

4. To save settings, click on **Apply**.

**Note:** If the trap is not selected, the **Gen Trap** button will not generate a trap.

The following are definitions for each configuration file trap:

- **CfgSrvBackupFailed**  
The server was instructed to back up a file for a particular slot, which failed.
- **CfgSrvSyncError**  
Synchronization to the slave Management Module failed. The problem should be resolved and attempted manually.
- **CfgSrvGenError**  
A general error has occurred.
- **CfgSrvFileRestored**  
The configuration files have been restored to a particular slot.
- **CfgSrvFileBackedup**  
The configuration files have been successfully backed up for a particular slot.
- **CfgSrvModeDisabled**

An event has occurred that has caused the slot mode to be set to disabled. The user should resolve the error and reset the mode to the proper value for the affected slot.

**Note:** The default settings for this window are as shown above. The user should not change the defaults unless instructed by Technical Support.

### 3.5.4 Subnet Manager Configuration File

The **Subnet Manager Configuration File** window allows the user to upload and download new Intel® Fabric Manager embedded subnet manager files, as well as start and restart all applicable master and standby subnet managers using the new file.

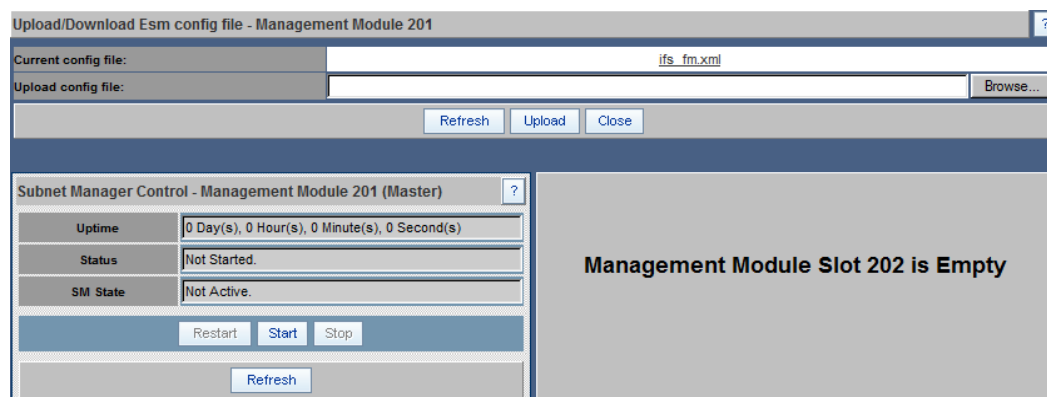
1. From the **Chassis View** menu (Figure 21), select **Config File Admin**.  
The **Subnet Manager Config File** button is displayed (Figure 56).

**Figure 56. Subnet Manager Configuration File**



2. Click **Subnet Manager Config File**.  
The **Subnet Manager Configuration** window is displayed (Figure 57).

**Figure 57. Subnet Manager Configuration File Window**



3. In the Upload Config File text box: enter the path to the alternate embedded subnet manager file (`intel_fm.xml`). If the path is not known, the user can use the **Browse...** button to locate it.
4. Once the new file is located, click the **Upload** button.
5. In the **Subnet Manager Control** window for the master subnet manager, click **Stop**, **Refresh**, then **Restart** to have the new file become active.

6. If applicable in the **Subnet Manager Control** window for the slave subnet manager, click **Refresh** to have the new file become active.

### 3.6 Chassis Traps

The **Chassis Trap Control** window allows the user to set default trap scenarios related to the switch.

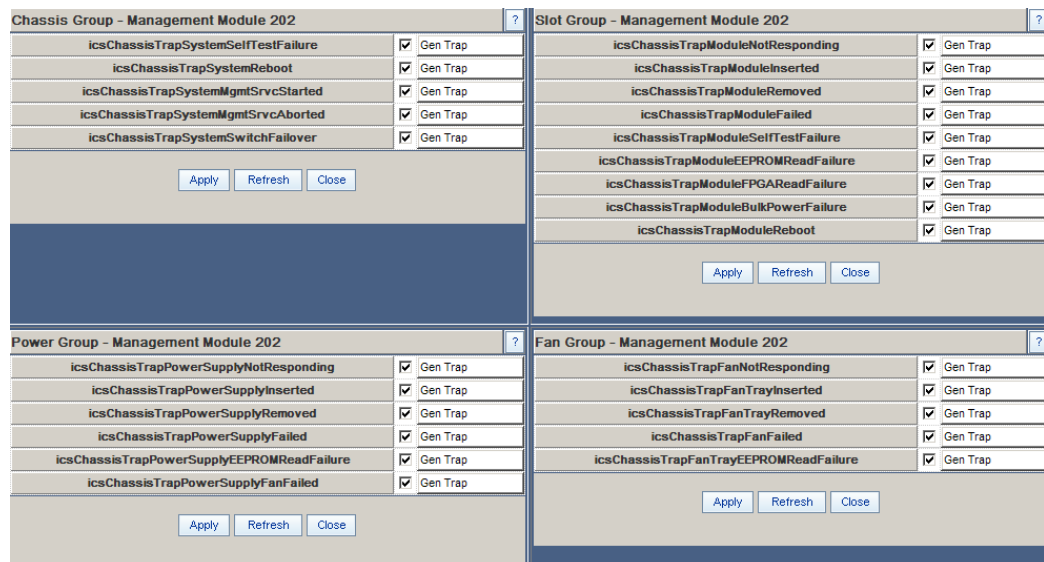
1. From the **Chassis View** menu (Figure 21), select **Chassis Traps**. The **Trap Control** button is displayed (Figure 58).

**Figure 58. Chassis Trap Control**



2. Click **Trap Control**. The **Chassis Trap Control** window is displayed (Figure 59).

**Figure 59. Chassis Trap Control Window**



Chassis Group - Management Module 202	Slot Group - Management Module 202
icsChassisTrapSystemSelfTestFailure <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleNotResponding <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapSystemReboot <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleInserted <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapSystemMgmtSrvcStarted <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleRemoved <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapSystemMgmtSrvcAborted <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleFailed <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapSystemSwitchFailover <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleSelfTestFailure <input checked="" type="checkbox"/> Gen Trap
Apply Refresh Close	icsChassisTrapModuleEEPROMReadFailure <input checked="" type="checkbox"/> Gen Trap
	icsChassisTrapModuleFPGAReadFailure <input checked="" type="checkbox"/> Gen Trap
	icsChassisTrapModuleBulkPowerFailure <input checked="" type="checkbox"/> Gen Trap
	icsChassisTrapModuleReboot <input checked="" type="checkbox"/> Gen Trap
	Apply Refresh Close

Power Group - Management Module 202	Fan Group - Management Module 202
icsChassisTrapPowerSupplyNotResponding <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapFanNotResponding <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapPowerSupplyInserted <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapFanTrayInserted <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapPowerSupplyRemoved <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapFanTrayRemoved <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapPowerSupplyFailed <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapFanFailed <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapPowerSupplyEEPROMReadFailure <input checked="" type="checkbox"/> Gen Trap	icsChassisTrapFanTrayEEPROMReadFailure <input checked="" type="checkbox"/> Gen Trap
icsChassisTrapPowerSupplyFanFailed <input checked="" type="checkbox"/> Gen Trap	Apply Refresh Close
Apply Refresh Close	

3. Select or deselect the desired trap(s).

**Note:** To generate an immediate trap, click the applicable **Gen Trap** button.

4. To save settings, click on **Apply**.

The following are definitions for each chassis trap:

#### Chassis Group

- **icsChassisTrapSystemSelfTestFailure**

This trap indicates that the chassis failed one or more of its self-test(s).



- **icsChassisTrapSystemReboot**  
This trap indicates that the chassis is in the process of rebooting.
- **icsChassisTrapSystemMgmtSrvcStarted**  
This trap indicates that the internal service used to support the management of the chassis is operational.
- **icsChassisTrapSystemMgmtSrvcAborted**  
This trap indicates that the internal service used to support the management of the chassis has terminated abnormally.
- **icsChassisTrapSystemSwitchFailover**  
This trap indicates that there was a fail over from one switch in the chassis to the other.

### Slot Group

- **icsChassisTrapModuleNotResponding**  
This trap indicates that a module is not responding to HEARTBEAT poll requests, that are issued by the internal chassis management service.
- **icsChassisTrapModuleInserted**  
This trap indicates that a module was inserted into the chassis.
- **IcsChassisTrapModuleRemoved**  
This trap indicates that a module was removed from the chassis.
- **icsChassisTrapModuleFailed**  
This trap indicates that a module has failed and is not operational.
- **icsChassisTrapModuleSelfTestFailure**  
This trap indicates that the module failed one or more of its self tests.
- **icsChassisTrapModuleEEPROMReadFailure**  
This trap indicates that an error condition was encountered when reading the EEPROM of the module.
- **icsChassisTrapModuleFPGAReadFailure**  
This trap indicates that an error condition was encountered when reading the Field-Programmable Gate Array (FPGA) of the module.
- **icsChassisTrapModuleBulkPowerFailure**  
This trap indicates that the bulk power used by a module has failed within the chassis.
- **icsChassisTrapModuleReboot**  
This trap indicates that the module is in the process of rebooting.

### Power Group

- **icsChassisTrapPowerSupplyNotResponding**  
This trap indicates that a power supply is not responding to HEARTBEAT poll requests that are issued by the internal chassis management service.
- **icsChassisTrapPowerSupplyInserted**  
This trap indicates that a power supply was inserted into the chassis.
- **icsChassisTrapPowerSupplyRemoved**  
This trap indicates that a power supply was removed from the chassis.
- **icsChassisTrapPowerSupplyFailed**  
This trap indicates that a power supply has failed and is not operational.
- **icsChassisTrapPowerSupplyEEPROMReadFailure**



This trap indicates that an error condition was encountered when reading the EEPROM of the power supply.

- **icsChassisTrapPowerSupplyFanFailed**

This trap indicates that a power supply fan has failed and is not operational.

#### Fan Group

- **icsChassisTrapFanNotResponding**

This trap indicates that a fan is not responding to HEARTBEAT poll requests that are issued by the internal chassis management service.

- **icsChassisTrapFanTrayInserted**

This trap indicates that a fan was inserted into the chassis.

- **icsChassisTrapFanTrayRemoved**

This trap indicates that a fan was removed from the chassis.

- **icsChassisTrapFanFailed**

This trap indicates that a fan has failed and is not operational.

- **icsChassisTrapFanTrayEEPROMReadFailure**

This trap indicates that an error condition was encountered when reading the EEPROM of the fan tray.

## 3.7 Port Statistics

The **Chassis View Port Statistics** provides IB port information for all of the external and internal ports of the switch.

To view port statistical information, do the following:

1. From the **Chassis View** menu (Figure 21), click **Port Stats**.  
The **IB Port Stats** button is displayed (Figure 60).

**Figure 60. IB Port Statistics**



2. Click **IB Port Stats**.  
The **IB Port Statistics** window is displayed (Figure 61).

Figure 61. Chassis IB Port Statistics

Port Name	Port #	Link State	Physical State	Active Link Width	Link Width Enabled	Link Width Supported	Active Link Speed	Link Speed Enabled	Link Speed Supported	Transmit 32bit Words	Receive 32bit Words	Transmit Packets	Receive Packets	Symbol Errors	Link Error Recover	Link Downed	Receive Errors	Remote Physical Errors	Remote Discards	Local Link Integrity Errors	Excessive Buffer Overrun	Play Violations Inbound	Play Violations Outbound	Raw Violations Inbound	Raw Violations Outbound
L101P01	1.1	active	Up	4K	4K	4K	10.0Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	314929	314929	4374	4374	0	0	0	0	0	0	0	0	0	0	0	0
L101P02	1.2	down	Polling	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P03	1.3	active	Up	4K	4K	4K	10.0Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	374032	375468	8041	8043	0	0	0	0	0	0	0	0	0	0	0	0
L101P04	1.4	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P05	1.5	active	Up	4K	4K	4K	10.0Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	328304	325296	4532	4518	0	0	0	0	0	0	0	0	0	0	0	0
L101P06	1.6	down	Polling	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P07	1.7	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P08	1.8	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P09	1.9	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P10	1.10	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P11	1.11	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P12	1.12	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P13	1.13	down	Polling	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P14	1.14	down	Polling	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P15	1.15	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P16	1.16	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P17	1.17	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P18	1.18	down	Polling	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P19	1.19	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P20	1.20	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P21	1.21	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P22	1.22	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P23	1.23	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P24	1.24	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L102P01	2.1	active	Up	4K	4K	4K	10.0Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	500929	600760	8319	8344	0	0	0	4	0	0	0	0	0	0	0	0
L102P02	2.2	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L102P03	2.3	active	Up	4K	4K	4K	10.0Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	587016	588800	8183	8178	0	0	0	0	0	0	0	0	0	0	0	0
L102P04	2.4	down	Sleep	4K	4K	4K	2.5Gbps	2.5G/5.0/10.0Gbps	2.5G/5.0/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### 3.7.1 Understanding Port Naming Conventions

The following is an explanation of the conventions used in the **Port Name** column.

Leaf modules/ports:

L = Leaf module number

P = Leaf module port number

Example: L101P01 is leaf module 101 port number 1.

Interswitch Link (ISL) Ports:

S = Spine module number

L = Leaf module number

A = Spine module switch chip A

B = Spine module switch chip B

Example: S113AP13L225P24 is the ISL between spine module 113, switch chip A, port 13 and leaf module 225, port 24.

**Note:** Spine chips are referenced by the spine number and the switch chip identifier. Each spine module contains two switch chips (Switch chip A and B).

### 3.7.2 Port Statistics Field Descriptions

#### Link State:

Indicates whether the IB link associated with the physical port is up or down. Possible values are **no state change**, **down**, **init**, **armed**, **active**, and **unknown**.

#### Physical State:

Indicates whether the internal connection to the IB port is up or down. Possible values are **No State Change**, **Sleep**, **Polling**, **Disabled**, **Training**, **Up**, and **Error Recovery**.

#### Link Down Default:





Indicates the default down state as set by the Fabric Manager. Possible values are **No State Change**, **Sleep**, **Polling**, and **Unknown**.

**Active Link Width:**

Indicates the number of full duplex serial links that are currently being used on a port. The current bandwidth capability of a port is determined by multiplying this value by the Active Link Speed of this port. For instance a 4X DDR link has a bandwidth capability of 20Gb/s.

*Note:* Values of 1X are possible in this field with 4X IB cables if poor cable connections or defective 4X IB cables are used.

**Link Width Enabled:**

Link Width Enabled is the allowed link width(s) that a port can arbitrate to. Normally, this defaults to the Link Width Supported value, but can be overridden by the subnet manager.

**Link Width Supported:**

Indicates the link width in terms of multipliers of 2.5 Gbit/sec full duplex serial links supported by the port.

**Active Link Speed:**

Indicates the speed of the full duplex serial link. This is either 2.5Gbps (single data rate, or SDR), or 5.0Gbps (double data rate, or DDR), or 10.0Gbps (quad data rate, or QDR).

**Link Speed Enabled:**

Link Speed Enabled is the allowed link speed(s) that a port can arbitrate to. Normally this defaults to the Link Speed Supported value, but can be overridden by the subnet manager.

**Link Speed Supported:**

The supported link speed of the port. This could be 2.5Gbps (SDR), 5.0Gbps (DDR), 10Gbps (QDR) or a combination.

### 3.7.3 IB Statistics Field Descriptions

**Transmit 32 Bit Words:**

The number of 32-bit data words transmitted by the port, not including flow control and VCRC data.

**Receive 32 Bit Words:**

The number of 32-bit data words received by the port, not including flow control and VCRC data.

**Transmit Packets:**

The number of data packets transmitted by the port, not including flow control packets.

**Receive Packets:**

The number of data packets received by the port, not including flow control packets.

**Symbol Errors:**



The number of times a 8B10B encoding violation, or a disparity violation was detected. If multiple errors are detected simultaneously (in more than one lane), the counter only increments by one. The value of the counter is not incremented past 65535. The Performance Manager may reset and/or consolidate the results of this counter.

**Link Error Recovery:**

Indicates the number of times the link error recovery process happened successfully. The value of the counter is not incremented past 65535. The Performance Manager may reset and/or consolidate the results of this counter.

**Link Downed:**

The number of times the link error recovery process failed. The value of the counter is not incremented past 65535. The Performance Manager may reset and/or consolidate the results of this counter.

**Receive Errors:**

Number of errors received on the port.

**Remote Physical Errors Received:**

Indicates bit errors on a link other than the physically attached link.

**Transmit Discards:**

Number of port transmit discards.

**Local Link Integrity Errors:**

An error caused by a marginal link. Depending upon the number of code violations, physical switch problems are detected at the physical layer. These errors are based on a count of local physical errors.

**Excessive Buffer Overrun:**

This error is detected when the Overrun Errors threshold is exceeded by the number of consecutive flow control update periods with at least one overrun error in each period given in the PortInfo attribute.

**Pkey Violations Inbound:**

Indicates the number of times an invalid partition key (PKey) was received. PKeys support an advanced IB feature for logically partitioning a physical subnet into logical access domains.

**Pkey Violations Outbound:**

Indicates the number of times an invalid PKey was sent. PKeys support an advanced IB feature for logically partitioning a physical subnet into logical access domains.

**Raw Violations Inbound:**

Number of times raw inbound packet discarded.

**Raw Violations Outbound:**

Number of times raw outbound packet was discarded.

### 3.7.4 Leaf and Spine Module IB Port Statistics

To access IB port statistics for a specific leaf or spine module, perform the following steps.

#### 3.7.4.1 Leaf Modules

1. Select a leaf module.  
The leaf module view is displayed.
2. From the Leaf menu, select **Leaf Port Stats**.  
The **IB Port Stats** button is displayed (Figure 62).

Figure 62. Leaf IB Port Stats Menu



3. Click **IB Port Stats**.  
The **IB Port Statistics - Leaf** window is displayed (Figure 63).

Figure 63. Leaf Port Statistics Window

IB Port Statistics - Leaf 103

103

19

20

21

130

131

132

1

2

3

222

223

224

100

101

102

7

8

9

Port Name	Port #	Link State	Physical Rate	Active Link Width	Link Width Supported	Link Speed	Link Speed Supported	Transmit 32B Words	Receive 32B Words	Transmit Packets	Receive Packets	Symbol Errors	Link Error Recovery	Link Downed	Receive Errors	Remote Physical Errors Received	Local Link Integrity Errors	Excessive Buffer Overrun	Play Violations Inbound	Play Violations Outbound	Raw Violations Inbound	Raw Violations Outbound
L103P01	3.1	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P02	3.2	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	373568	370209	5188	5188	0	0	0	0	0	0	0	0	0	0	
L103P03	3.3	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P04	3.4	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P05	3.5	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P06	3.6	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P07	3.7	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P08	3.8	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P09	3.9	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	3732081	36296712	51835	504121	0	0	0	0	0	0	0	0	0	0	
L103P10	3.10	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P11	3.11	down	Poling	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	85535	0	0	0	0	0	0	0	0	0	
L103P12	3.12	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	318273	318334	4421	4422	0	0	0	0	0	0	0	0	0	0	
L103P13	3.13	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	4294967295	4294967295	771294241	168165739	0	0	0	0	0	0	0	0	0	0	
L103P14	3.14	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	318129	318096	4419	4418	0	0	0	0	0	0	0	0	0	0	
L103P15	3.15	down	Poling	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	85535	0	0	0	0	0	0	0	0	0	
L103P16	3.16	down	Poling	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	85535	0	0	0	0	0	0	0	0	0	
L103P17	3.17	down	Sleep	4K	4K	2.5Gbps	2.55 G/10 Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L103P18	3.18	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	42841944	10281312	595027	142796	0	0	0	0	0	0	0	0	0	0	
L103P19	3.19	active	Up	4K	4K	10 Gbps	2.55 G/10 Gbps	318273	318334	4421	4422	0	0	0	0	0	0	0	0	0	0	

For information on the each IB port statistic field, refer to the section "Port Statistics Field Descriptions" on page 48.

#### 3.7.4.2 Spine Modules

1. Select a spine module.  
The spine module view is displayed.
2. From the Spine menu, select **Spine Port Stats**.  
The **IB Port Stats** button is displayed (Figure 64).

Figure 64. Spine IB Port Stats Menu



3. Click **IB Port Stats**.

The **IB Port Statistics - Spine** window is displayed (Figure 65).

Figure 65. Spine Port Statistics Window

IB Port Statistics - Spine 105A																
105																
Port Name	Port #	Link State	Physical State	Active Link Width	Link Width Enabled	Link Width Supported	Active Link Speed	Link Speed Enabled	Link Speed Supported	Transmit 32Bit Words	Receive 32Bit Words	Transmit Packets	Receive Packets	Symbol Errors	Link Error Recovery	Link Downed
S105AP01L104P19	5,1	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP02L104P20	5,2	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP03L104P21	5,3	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP04L104P22	5,4	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP05L104P23	5,5	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP06L104P24	5,6	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP07L102P25	5,7	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP08L102P26	5,8	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP09L102P27	5,9	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP10L102P28	5,10	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP11L102P29	5,11	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP12L102P30	5,12	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP13L102P31	5,13	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP14L102P32	5,14	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP15L104P33	5,15	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP16L102P34	5,16	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP17L104P35	5,17	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP18L104P36	5,18	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP19L103P19	5,19	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP20L103P20	5,20	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP21L101P21	5,21	int	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0

For information on the each IB port statistic field, refer to the section "Port Statistics Field Descriptions" on page 48.

## 3.7.5 Set Field Thresholds

The **Set Field Thresholds** window allows the user to set, for a specific parameter(s), an error message threshold for the cable ports on the switch.

To change error reporting thresholds, do the following:

1. Click on **Port Stats**.

The **Set Field Thresholds** button is displayed (Figure 66).

Figure 66. Set Field Thresholds



2. Click on **Set Field Thresholds**.  
The **Set Field Thresholds** window is displayed (Figure 67).

Figure 67. Set Field Thresholds Window

Set Field Thresholds - Management Module 202		
Field	Threshold	Time Unit
portXmitDataThresh	0	Percent of Max
portRecvDataThresh	0	Percent of Max
portXmitPktsThresh	0	Percent of Max
portRecvPktsThresh	0	Percent of Max
portSymbolErrThresh	0	1 Second
portLinkErrRecvThresh	0	1 Second
portLinkDownedThresh	0	1 Second
portRecvErrThresh	0	1 Second
portRecvRemPhysErrThresh	0	1 Second
portXmitDiscardThresh	0	1 Second
portPKeyViolInThresh	0	1 Second
portPKeyViolOutThresh	0	1 Second
portRawViolInThresh	0	1 Second
portRawViolOutThresh	0	1 Second
portLocalLinkIntegThresh	0	1 Second
portExcBufferOverrunThresh	0	1 Second

3. To change a threshold value for any field:
  - a. Click in the **Threshold** field.
  - b. Enter a new threshold value.

**Note:** For those fields with a “**Percent of Max**” time unit, the user may enter a number from 0 to 100. For those fields with a “**1 Second**” time unit, the user may enter a number from 1 to 65,535.

- c. Click **Apply**.

**Note:** If any threshold is exceeded on any port, the port will be displayed as red on the switch map and a warning message will be logged.

The following are descriptions for each field in the Set Field Thresholds area:



*Note:* The thresholds for the following four fields are set as a percentage of maximum; that is the percentage of maximum port capacity, which depending upon IB fabric configuration can be:

- 4X (10/20Gbps)
- 1X (2.5Gbps)

**portXmitDataThresh**

The threshold for the number of 32-bit data words transmitted by the port.

**portRecvDataThresh**

The threshold for the number of 32-bit data words received by the port.

**portXmitPktsThresh**

The threshold for the number of data packets transmitted by the port.

**portRecvPktsThresh**

The threshold for the number of data packets received by the port.

*Note:* The thresholds for the following fields are set based upon the number of error messages which can occur in one second. The value can be from 1 to 65,535.

**portSymbolErrThresh**

The threshold for the number of times a 8B10B encoding violation, or a disparity violation was detected on the port.

**portLinkErrRecvThresh**

The threshold for the number of times the link error recovery process happened successfully on the port.

**portLinkDownedThresh**

The threshold for the number of times the link error recovery process failed on the port.

**portRecvErrThresh**

The threshold for the number of errors received on the port.

**portRecvRemPhysErrThresh**

The threshold for the number of remote physical errors received on the port.

**portXmitDiscardThresh**

The threshold for the number of transmit discards received on the port.

**portPKeyViolInThresh**

The threshold for the number of times PKey inbound was invalid on the port.

**portPKeyViolOutThresh**

The threshold for the number of times PKey outbound was invalid on the port.

**portRawViolInThresh**



The threshold for the number of times a raw inbound packet was discarded by the port.

**portRawViolOutThresh**

The threshold for the number of times a raw outbound packet was discarded by the port.

**portLocalLinkIntegThresh**

The threshold for the number of local link integrity errors on the port.

**portExcBufferOverrunThresh**

The threshold for the number of excessive buffer overrun errors on the port.

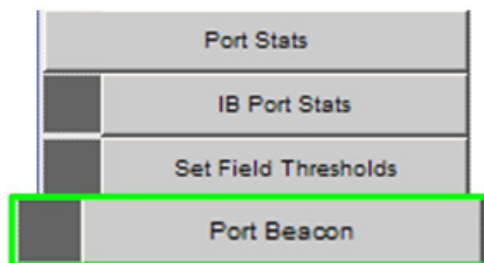
### 3.7.6 Port Beacon

The Port Beacon feature allows the user to enable IB port(s) LEDs to flash, assisting a user in locating a port.

*Note:* The Port Beacon feature can also be accessed via the Leaf Module menu.

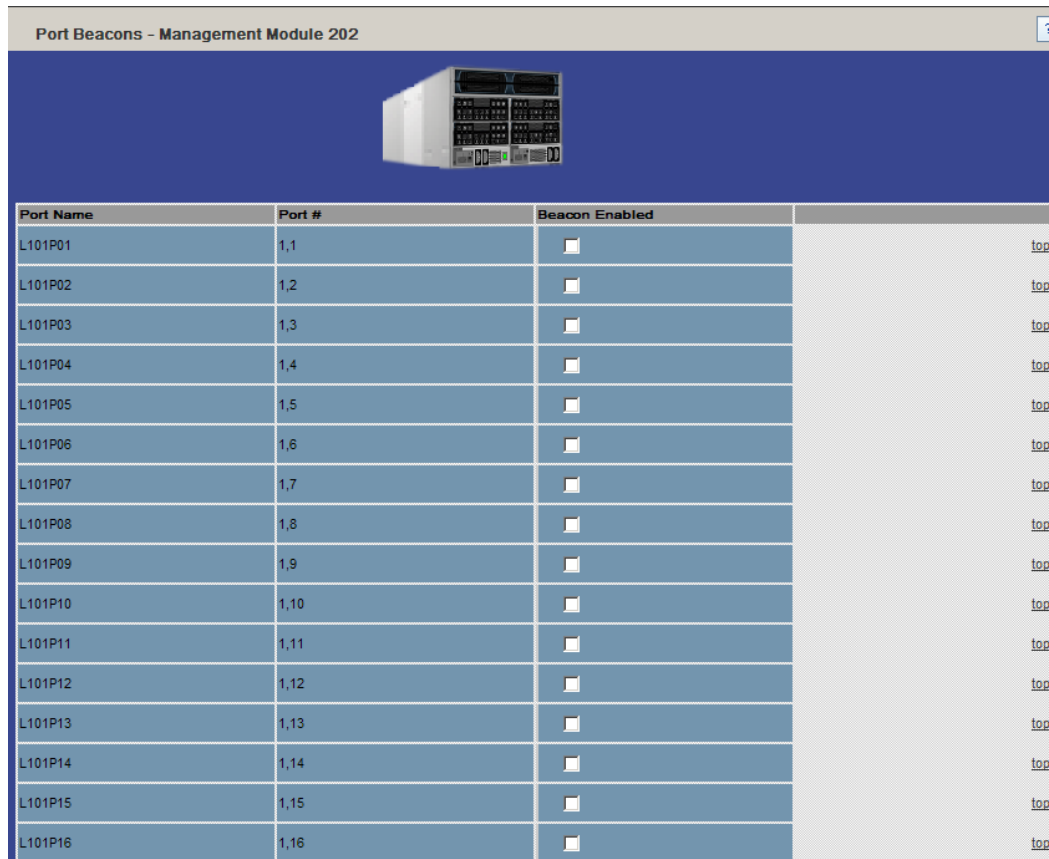
1. From the Chassis menu, click **Port Stats**.  
The **Port Beacon** button is displayed ([Figure 68](#)).

**Figure 68. Port Beacon**



2. Click **Port Beacon**.  
The **Port Beacon** window is displayed ([Figure 69](#)).

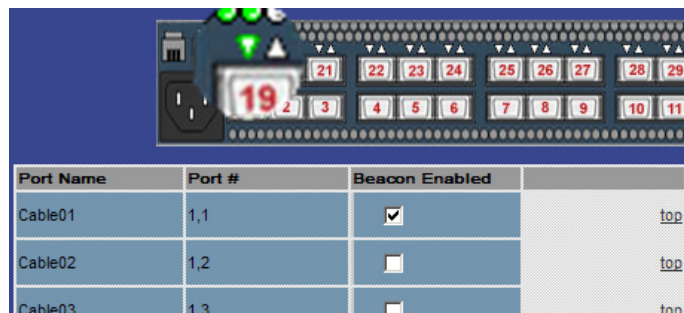
**Figure 69. Port Beacon Window**



Port Name	Port #	Beacon Enabled	
L101P01	1,1	<input type="checkbox"/>	<a href="#">top</a>
L101P02	1,2	<input type="checkbox"/>	<a href="#">top</a>
L101P03	1,3	<input type="checkbox"/>	<a href="#">top</a>
L101P04	1,4	<input type="checkbox"/>	<a href="#">top</a>
L101P05	1,5	<input type="checkbox"/>	<a href="#">top</a>
L101P06	1,6	<input type="checkbox"/>	<a href="#">top</a>
L101P07	1,7	<input type="checkbox"/>	<a href="#">top</a>
L101P08	1,8	<input type="checkbox"/>	<a href="#">top</a>
L101P09	1,9	<input type="checkbox"/>	<a href="#">top</a>
L101P10	1,10	<input type="checkbox"/>	<a href="#">top</a>
L101P11	1,11	<input type="checkbox"/>	<a href="#">top</a>
L101P12	1,12	<input type="checkbox"/>	<a href="#">top</a>
L101P13	1,13	<input type="checkbox"/>	<a href="#">top</a>
L101P14	1,14	<input type="checkbox"/>	<a href="#">top</a>
L101P15	1,15	<input type="checkbox"/>	<a href="#">top</a>
L101P16	1,16	<input type="checkbox"/>	<a href="#">top</a>

3. For the desired leaf or 12300 IB port, select the **Beacon Enabled** check box.
4. Click **Apply**.  
The physical port will blink. In Chassis Viewer, the IB Link Status LED for the port is outlined as shown in Figure 70.

**Figure 70. Port Beacon Highlight**



Port Name	Port #	Beacon Enabled	
Cable01	1,1	<input checked="" type="checkbox"/>	<a href="#">top</a>
Cable02	1,2	<input type="checkbox"/>	<a href="#">top</a>
Cable03	1,3	<input type="checkbox"/>	<a href="#">top</a>



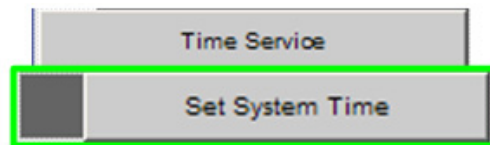
### 3.8 Time Service

The **System Time Information** window allows the user to set the system time using either network time protocol (NTP) or manual overrides.

To set the system time:

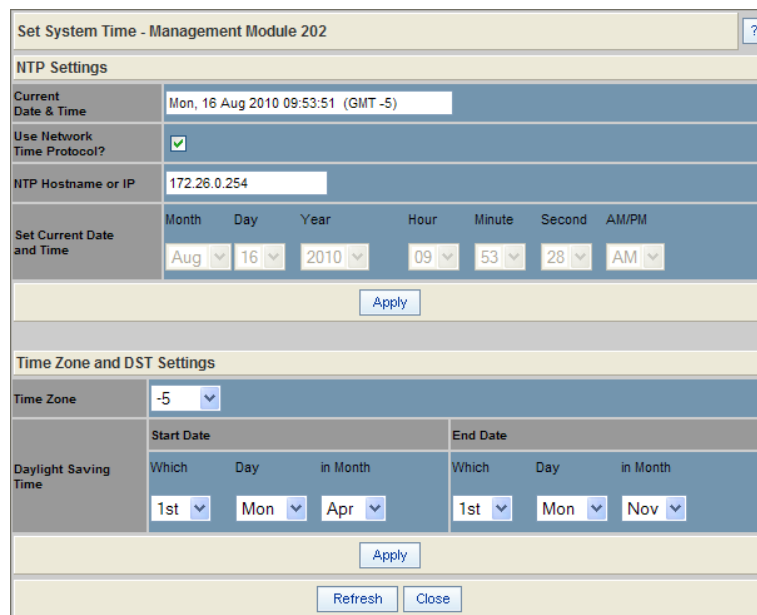
1. From the menu, select **Time Service**.  
The **Set System Time** button is displayed (Figure 71).

**Figure 71. Switch Time Service**



2. Click **Set System Time**.  
The **System Time Information** window is displayed (Figure 72).

**Figure 72. System Time Information Window**



**Note:** If using Network Time Protocol (NTP) and host names (instead of IP addresses), DNS information must first be set up using the CLI command `dnsParamsSet`. Remember to reboot the switch after executing this command.

**Note:** For detailed information, refer to the *Intel® True Scale Fabric Switches 12000 Series CLI Reference Guide*.

To use NTP:

1. Click the **Use Network Time Protocol?** check box (Figure 73).

**Figure 73. Time Service - NTP Setup**

Set System Time - Management Module 202

**NTP Settings**

Current Date & Time: Mon, 16 Aug 2010 09:53:51 (GMT-5)

Use Network Time Protocol? ☒

NTP Hostname or IP: 172.26.0.254

Set Current Date and Time: Month (Aug), Day (16), Year (2010), Hour (09), Minute (53), Second (28), AM/PM (AM)

Apply

**Time Zone and DST Settings**

Time Zone: -5

Daylight Saving Time: Start Date (1st Mon Apr), End Date (1st Mon Nov)

Apply

Refresh Close

2. Enter either the DNS host name or IP address for the NTP server.
3. To save, click on **Apply**.

To manually set the system time:

1. Make sure the **Use Network Time Protocol?** check box is unchecked (Figure 74).

NTP Settings

Current Date & Time: Mon, 16 Aug 2010 10:58:02 (GMT-5)

Use Network Time Protocol? ☐

NTP Hostname or IP: 172.26.0.254

Set Current Date and Time: Month (Aug), Day (16), Year (2010), Hour (10), Minute (57), Second (34), AM/PM (AM)

Apply

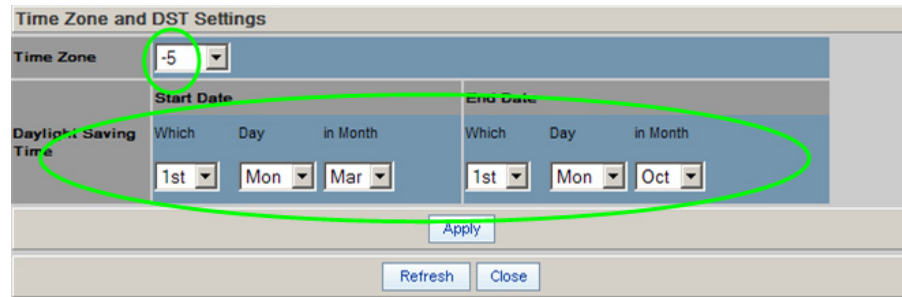
**Figure 74. Time Service - Manual Setup**

2. Set the current date and time using the drop-downs for **Month**, **Day**, and **Year** as well as **Hour**, **Minute**, **Seconds**, and **AM/PM**.
3. To save, click on **Apply**.

To set time zone and daylight saving time (DST) settings:

1. In the **Time Zone** drop-down, select the correct time zone based upon Greenwich Mean Time (GMT) (Figure 75).

**Figure 75. Time Service - Time Zone/Daylight Saving Time Setup**



2. Using the **Which**, **Day**, and **in Month** drop-downs, set the start and end dates for daylight saving time.
3. To save, click on **Apply**.

Time Zone Tips:

In the U.S. the following time zones are in effect:

- Eastern Standard Time = GMT -5
- Central Standard Time = GMT -6
- Mountain Standard Time = GMT -7
- Pacific Standard Time = GMT -8

Daylight Saving Time Tips:

For most of the United States, Daylight Saving Time (DST) begins at 2 a.m. on the second Sunday of March, and ends at 2 a.m. on the first Sunday in November.

Additionally, for those regions in the United States that do not observe DST, the start and end dates in the **Which**, **Day**, and **in Month** settings should be set to the **exact same date**.

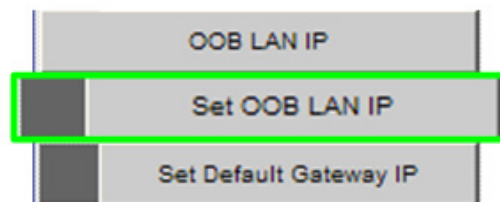
## 3.9 OOB LAN IP Submenu

### 3.9.1 Configuring the Switch OOB IP Address

To configure the Switch IP address:

1. From the menu, select **OOB LAN IP**  
The **Set OOB LAN IP** button is displayed (Figure 76).

**Figure 76. Set Switch OOB IP Address Button**



2. Click **Set OOB LAN IP**.  
The **Set OOB LAN IP** window is displayed (Figure 77).

**Figure 77. Set OOB LAN IP Window**



The image shows two stacked web-based configuration windows for 'Management Module 202'.

The top window, titled 'Set OOB LAN IP - Management Module 202', contains two text input fields: 'Out of Band LAN IP' with the value '172.26.3.19' and 'Net Mask' with the value '255.255.240.0'. Below these fields are three buttons: 'Apply', 'Refresh', and 'Close'.

The bottom window, titled 'Set OOB LAN IPv6 - Management Module 202', contains one text input field: 'Out of Band LAN IP' with the value '3ffe::8/64'. Below this field is a section titled 'IPv6 Autoconfig Enable/Disable' which contains a table with two columns: 'Enabled' and 'Disabled'. The 'Enabled' column has a radio button, and the 'Disabled' column has a radio button with a green checkmark. Below the table are three buttons: 'Apply', 'Refresh', and 'Close'.

	Enabled	Disabled
Auto Config	<input type="radio"/>	<input checked="" type="radio"/>

3. Click the **Out of Band LAN IP Address** text box.
4. Enter an applicable switch IP address.
5. Click the **Net Mask** text box.
6. Enter an applicable switch net mask.
7. Click **Apply**.

If using IPv6, the user can manually enter an applicable static IPv6 address (in hexadecimal format address/prefix) in the **Out of Band LAN IP** text box (Figure 78).

Figure 78. Set OOB LAN IPv6 Window



8. To automatically configure and assign addresses from an IPv6 router, click the **Auto Config Enabled** radio button.

*Note:* The IPv6 router must be configured to assign addresses using stateless address auto configuration.

9. Click **Apply**.

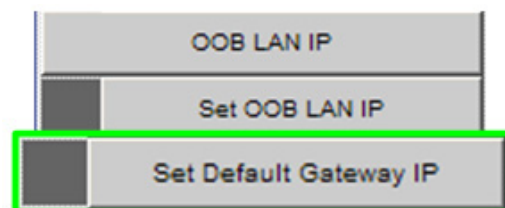
### 3.9.2 Configuring the Switch Default Gateway IP Address

The **Set Default Gateway IP** window allows the user to configure the IP address for the default gateway to route packets from the OOB management port to an external network.

To configure the Switch default gateway IP address:

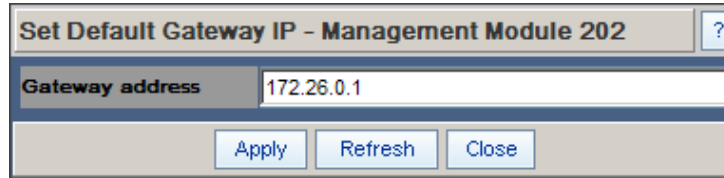
1. From the menu, select **OOB LAN IP**.  
The **Set Default Gateway IP** button is displayed (Figure 79).

Figure 79. Set Switch Default Gateway IP Address Button



2. Click **Set Default Gateway IP**.  
The **Set Default Gateway IP** window is displayed (Figure 80).

**Figure 80. Set Default Gateway IP Window**



The window titled "Set Default Gateway IP - Management Module 202" contains a text box labeled "Gateway address" with the value "172.26.0.1". Below the text box are three buttons: "Apply", "Refresh", and "Close".

3. Click the **Gateway address** text box.
4. Type in the correct switch default gateway IP address.
5. Click **Apply**.

*Note:* If the DHCP option is selected, no gateway address is necessary.

## 3.10 Fabric Manager Configuration

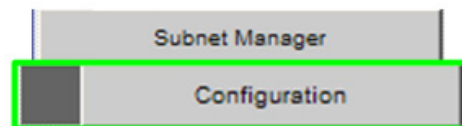
*Note:* This section assumes the user has purchased and activated the embedded version of the Fabric Manager.

### 3.10.1 Automatically starting the Fabric Manager

To enable the Fabric Manager to automatically start at boot time:

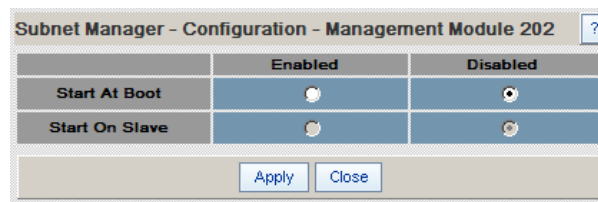
1. From the menu, select **Subnet Manager**.  
The **Configuration** button is displayed (Figure 81).

**Figure 81. Subnet Manager Submenu**



2. Click **Configuration**.  
The **Subnet Manager Configuration** window is displayed (Figure 82).

**Figure 82. Subnet Manager Configuration Window**



The window titled "Subnet Manager - Configuration - Management Module 202" contains a table with two columns: "Enabled" and "Disabled". The table has two rows: "Start At Boot" and "Start On Slave". Below the table are two buttons: "Apply" and "Close".

	Enabled	Disabled
Start At Boot	<input checked="" type="radio"/>	<input type="radio"/>
Start On Slave	<input checked="" type="radio"/>	<input type="radio"/>

3. To configure the Fabric Manager to automatically start with each boot, click **Enabled**.

*Note:* If the user wants to manually activate the Fabric Manager, click **Disabled**.

4. For switches in a redundant management configuration, the **Start On Slave** option should be set to **Disabled**.

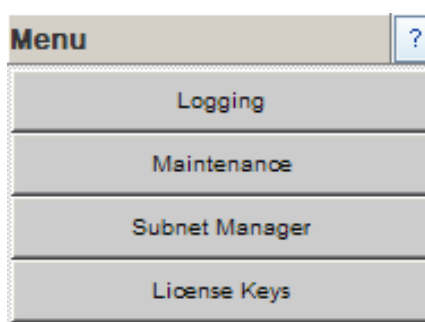
In the event that the Fabric Manager on the master Management Module is disabled, the Fabric Manager on the slave Management Module will turn on automatically when it becomes the chassis management module.

5. Click **Apply**.

### 3.11 Management Module Menu

The Management Module Menu contains selections for logging, maintenance, subnet manager, and license keys (Figure 83).

**Figure 83. Management Module Menu**



#### 3.11.1 Logging

The Logging submenu allows the user to view and purge the log message file.

#### 3.11.2 Viewing the Log

Each management module maintains a separate log. The View Log button allows the user to view the message log.

To view the message log:

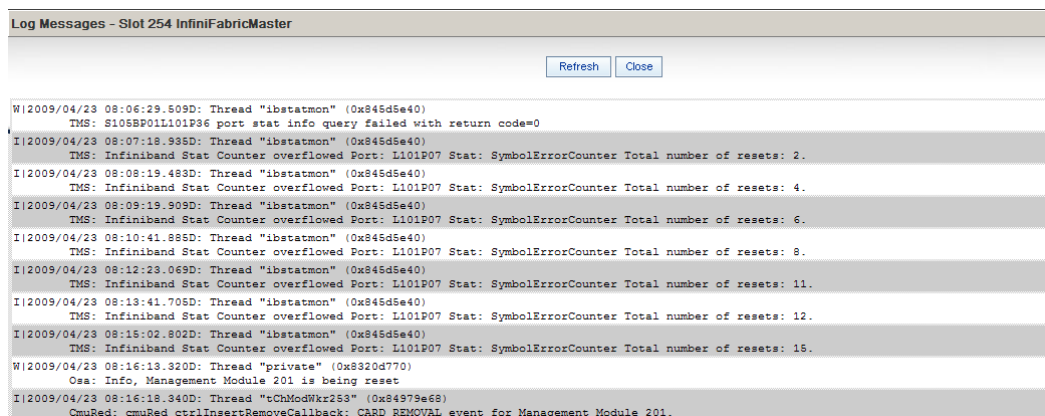
1. From the menu, select **Logging**.  
The **View Log** button is displayed (Figure 84).

**Figure 84. View Log Button**



2. Click **View Log**.  
The **Log Message** window is displayed (Figure 85).

**Figure 85. Sample Message Log**



To save a log message for further analysis, perform the following steps:

1. From the **Log Messages** window, select **Edit, Select All** (or **CTRL + A**).
2. Select **Edit, Copy** (or **CTRL + C**).
3. Open a text editing package, such as Notepad.
4. Select **Edit, Paste** (or **CTRL + V**).
5. Save as a plain text (.txt) file.

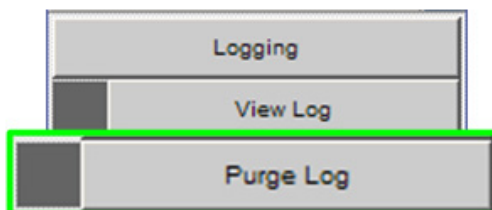
### 3.11.3 Purging the Log

The **Purge Log** button purges the RAM, clearing the log file(s).

To purge the log:

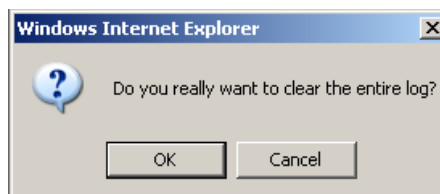
1. From the menu, click **Logging**.  
The **Purge Log** button is displayed (Figure 86).

**Figure 86. Purge Log Button**



2. Click **Purge Log**.
3. The **Purge Log** confirmation window is displayed (Figure 87).



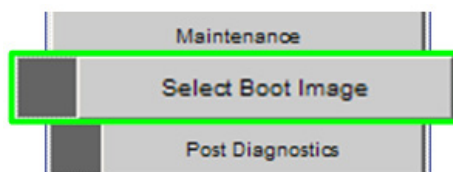
**Figure 87. Purge Log Confirmation Window**

4. Click **OK**.
5. The message log file is now purged.

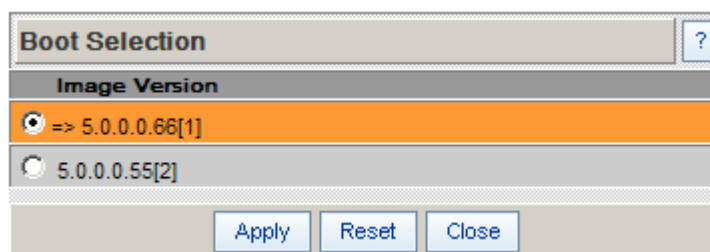
### 3.11.4 Select Boot Image

The **Select Boot Image** button allows the user to choose an alternative boot image for the switch. To select a boot image:

1. From the menu, select **Maintenance**.  
The **Select Boot Image** button is displayed (Figure 88).

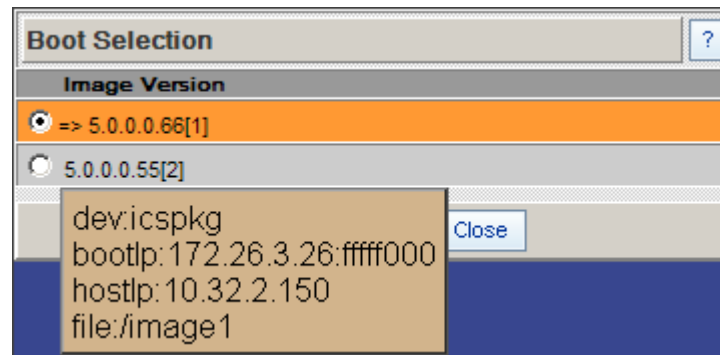
**Figure 88. Select Boot Image Button**

2. Click **Select Boot Image**.  
The **Boot Image Selection** window is displayed (Figure 89).

**Figure 89. Boot Image Selection Window**

By mousing over either radio button in the **Boot Image Selection** window, the user can glean additional information about each file, as shown in Figure 90.

**Figure 90. Boot Image File Pop Up**



To choose a new boot image:

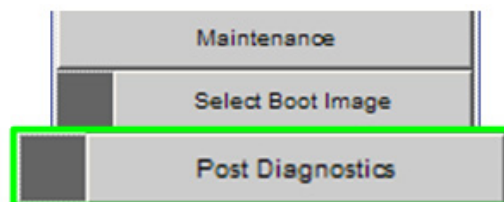
1. Click on a radio button of the new boot image.
2. Click **Apply**.  
This is the image that will run after the next reboot.

### 3.11.5 Post Diagnostics

The Post Diagnostic feature allows the user to choose tests for various switch components that can be run in real time. These are tests that are not run during the power-on phase.

1. From the menu, select **Maintenance**.  
The **Post Diagnostics** button is displayed (Figure 91).

**Figure 91. Post Diagnostics Button**



2. Click **Post Diagnostics**.
3. The **Post Diagnostics** window is displayed (Figure 92).



Figure 92. Post Diagnostics Window

Post Diagnostics							?
Run	Test Name	Test Result	ENA	DEMAND	PWR-ON	Result-Ext	
	POST TEST CPU	NO-RUN	Y	N	Y		
	POST TEST MEM DRAM	NO-RUN	Y	N	Y		
	POST TEST BOOTROM IMG CHKSUM	NO-RUN	Y	N	Y		
	POST TEST RUN-TIME IMG CHKSUM	NO-RUN	Y	N	Y		
	POST TEST JMP RAM	NO-RUN	Y	N	Y		
<input type="checkbox"/>	POST TEST I2C PROBE	NO-RUN	Y	Y	N		
<input type="checkbox"/>	POST TEST FAN TRAYS	NO-RUN	Y	Y	N		
<input type="checkbox"/>	POST TEST PWR SUPPLIES	NO-RUN	Y	Y	N		
<input type="checkbox"/>	POST TEST REAL-TIME CLOCK	NO-RUN	Y	Y	N		
<input type="checkbox"/>	POST TEST PROTO	NO-RUN	Y	Y	N		

Refresh Run Tests Close

- Select the test(s) to be run and click **Run Tests**.  
The test results are displayed in the **Test Result** column (Figure 93). Additional information is posted to the **Result-Ext** column:

Figure 93. Post Diagnostics Results Output

	POST TEST RUN-TIME IMG CHKSUM	NO-RUN	Y	N	Y	
	POST TEST JMP RAM	NO-RUN	Y	N	Y	
<input type="checkbox"/>	POST TEST I2C PROBE	NO-RUN	Y	Y	N	
<input checked="" type="checkbox"/>	POST TEST FAN TRAYS	FAIL	Y	Y	N	Fans (2) < minimum (4)
<input type="checkbox"/>	POST TEST PWR SUPPLIES	NO-RUN	Y	Y	N	
<input type="checkbox"/>	POST TEST REAL-TIME CLOCK	NO-RUN	Y	Y	N	

## 3.12 Fabric Manager Control

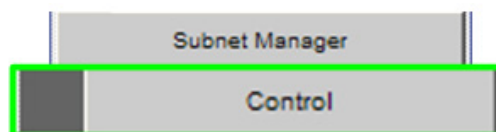
This section assumes the user has purchased and activated the embedded version of the Fabric Manager.

### 3.12.1 Accessing the Subnet Manager Control Window

The **Subnet Manager Control** window presents status information relating to the Fabric Manager and provides a mechanism for starting, restarting, and stopping the Fabric Manager.

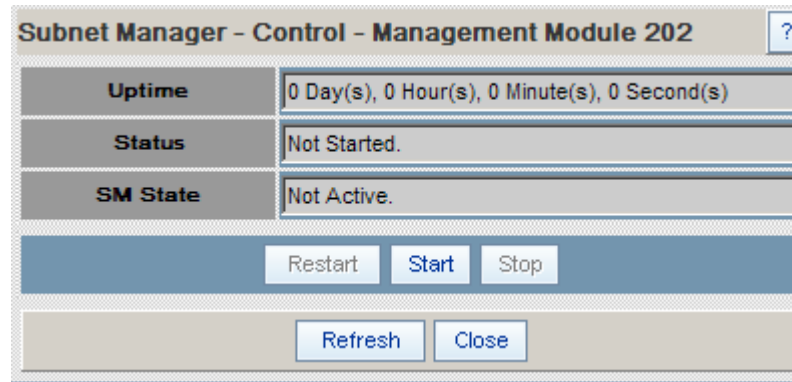
- From the Management Module menu, click **Subnet Manager**.  
The **Control** button is displayed (Figure 94).

Figure 94. Subnet Manager Control Button



- Click **Control**.  
The **Subnet Manager Control** window is displayed (Figure 95).

**Figure 95. Subnet Manager Control Window**



Subnet Manager - Control - Management Module 202	
Uptime	0 Day(s), 0 Hour(s), 0 Minute(s), 0 Second(s)
Status	Not Started.
SM State	Not Active.
<div>Restart Start Stop</div>	
<div>Refresh Close</div>	

- To start the Fabric Manager, click **Start**.  
The system responds by displaying **Starting up** in the **Status** box of the **Subnet Manager Control** window.
- To confirm that the Fabric Manager has started, click **Refresh**.  
Once the Fabric Manager is running, the system reports **Running** in the **Status** box and begins to increment the **Uptime** counter.
- Click **Close**.

### 3.12.1.1 Restarting the Fabric Manager

- From the menu, click **Subnet Manager**.
- Click **Control**. The **Subnet Manager Control** window is displayed.
- To restart the Fabric Manager, click **Restart**.  
The system responds by displaying **Shutting Down** in the **Status** box of the **Subnet Manager Control** window.
- To confirm that the Fabric Manager has started, click **Refresh**.  
Once the Fabric Manager is running, the system reports **Running** in the **Status** box and begins to increment the **Uptime** counter.
- Click **Close**.

### 3.12.1.2 Stopping the Fabric Manager

- From the menu, click **Subnet Manager**.
- Click **Control**.  
The **Subnet Manager Control** window is displayed.
- To stop the Fabric Manager, click **Stop**.  
The system responds by displaying **Shutting Down** in the **Status** box of the **Subnet Manager Control** window.
- To confirm that the Fabric Manager has shut down, click **Refresh**.  
Once the Fabric Manager has shut down, the system reports **Not Started** in the **Status** box of the **Subnet Manager Control** window.
- Click **Close**.

### 3.13 License Keys; Key Administration

The **License Keys** submenu allows the user to add and delete feature functionality that is sold as an add-on to the switch.

#### 3.13.1 Adding a New License Key

1. Click **License Keys**.

The **Key Administration** button is displayed (Figure 96).

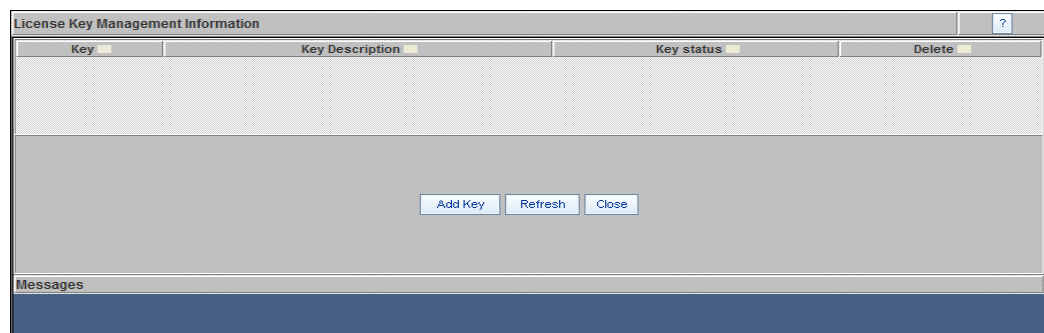
**Figure 96. License Key Submenu**



2. Click **Key Administration**.

The **Key Management** window is displayed (Figure 97).

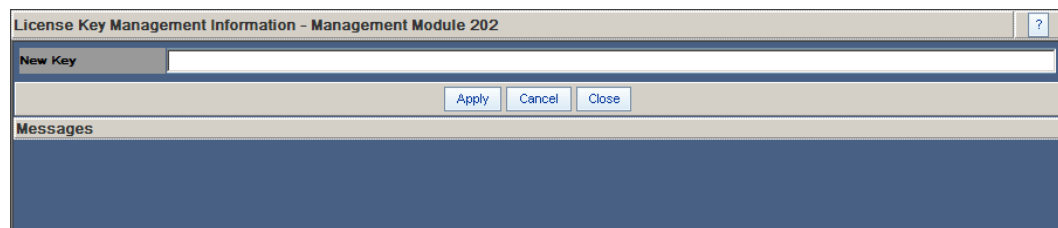
**Figure 97. Key Management Window**



3. To add a new license key, click the **Add Key** button.

The **License Key Management Information** window is displayed (Figure 98).

**Figure 98. License Key Management Information Window**



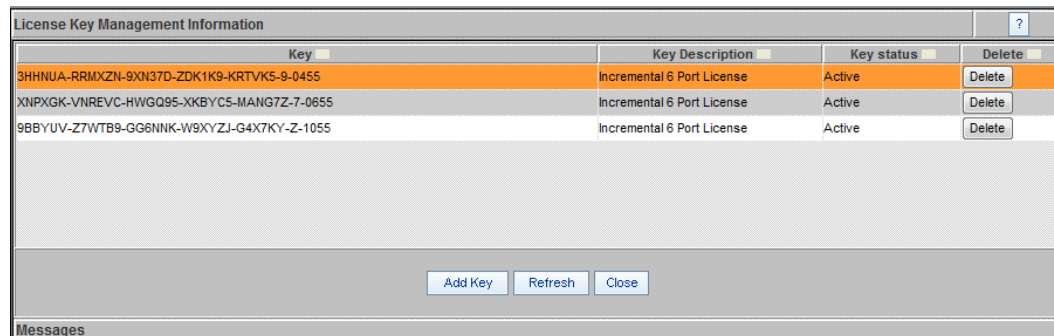
4. Enter the license key information in the **New Key** text box, and click **Apply**.

#### 3.13.2 Deleting a License Key

1. Click on the **License Keys** submenu.
2. Click on **Key Administration**.

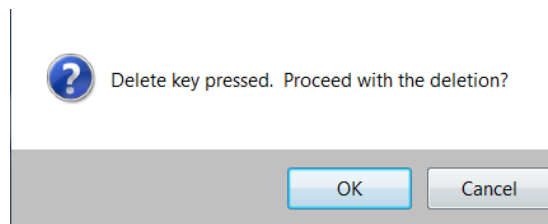
The **Key Management** window is displayed (Figure 99).

**Figure 99. Key Management Delete**



- To delete a license key, click the **Delete** button.  
The system prompts with **Are you sure you want to clear key: ()?** dialog box (Figure 100).

**Figure 100. License Key Delete Prompt**



- Click **OK** to delete.

§ §

