

Intel® True Scale Fabric Switches 12000 Series

User Guide

July 2015



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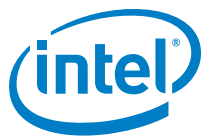
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Contents

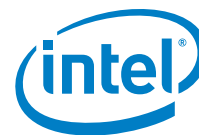
1.0	Introduction	9
1.1	Intended Audience	9
1.2	Related Materials	9
1.3	Documentation Conventions	9
1.4	Laser Safety Information	10
1.5	Electrostatic Discharge Sensitivity (ESDS) Precautions	10
1.6	License Agreements	10
1.7	Technical Support	11
2.0	Chassis Viewer Overview	13
2.1	Home Page	13
2.2	Displaying the Chassis View	14
2.2.1	Leaf Module View	14
2.2.2	Management Module View	15
2.2.3	Home Page Toolbar	16
2.3	Displaying the Leaf, Spine, and Management Module Views	16
2.3.1	Leaf Module View	16
2.3.2	Spine Module View	17
2.3.3	Management Module View	17
2.4	Component Details Area	18
2.4.1	Details Header	18
2.4.2	Module Information Area	19
2.4.3	Chassis View Component Information Area	19
2.4.4	Modifying Switch Component Information	20
2.4.5	Chassis View Component Information Area Tabs	21
3.0	Configuration and Monitoring	25
3.1	Chassis View Menu	25
3.2	Logging	25
3.2.1	Set Level	26
3.2.2	Reset Log Levels	30
3.3	Maintenance	31
3.3.1	Firmware Update	31
3.3.2	LDAP Configuration	32
3.3.3	HTTP/CLI Session Configuration	33
3.4	SNMP	35
3.4.1	Target Configuration	36
3.4.2	Filter Status	39
3.4.3	Set Community Strings	40
3.5	Configuration File Administration	41
3.5.1	Administer	42
3.5.2	Host Upload/Download	43
3.5.3	Trap Control	44
3.5.4	Subnet Manager Configuration File	46
3.6	Chassis Traps	47
3.7	Port Statistics	50
3.7.1	Understanding Port Naming Conventions	50
3.7.2	Port Statistics Field Descriptions	51
3.7.3	IB Statistics Field Descriptions	52
3.7.4	Leaf and Spine Module IB Port Statistics	53
3.7.5	Set Field Thresholds	55
3.7.6	Port Beacon	57



3.8	Time Service	59
3.9	OOB LAN IP Submenu	62
3.9.1	Configuring the Switch OOB IP Address	62
3.9.2	Configuring the Switch Default Gateway IP Address	64
3.10	Fabric Manager Configuration	65
3.10.1	Automatically starting the Fabric Manager.....	65
3.11	Management Module Menu	66
3.11.1	Logging.....	66
3.11.2	Viewing the Log	66
3.11.3	Purging the Log.....	67
3.11.4	Select Boot Image.....	68
3.11.5	Post Diagnostics.....	69
3.12	Fabric Manager Control.....	70
3.12.1	Accessing the Subnet Manager Control Window	70
3.13	License Keys; Key Administration.....	72
3.13.1	Adding a New License Key	72
3.13.2	Deleting a License Key	72

Figures

1	User Authentication	13
2	Intel® 12300 Home Page	14
3	Intel® 12800-040 Home Page.....	14
4	Help Button	14
5	Leaf Module View Mouseover	15
6	Management Module View Mouseover	15
7	12800-040 Chassis View	16
8	Leaf Module Mouseover.....	16
9	Leaf Module View	17
10	Spine Module Mouseover	17
11	Spine Module View	17
12	Management Module Mouseover.....	18
13	Management Module View	18
14	Component Details Area.....	18
15	Details Header.....	19
16	Module Information Area	19
17	Chassis View Component Information Area	20
18	Reboot Window.....	20
19	Reboot Window.....	21
20	Chassis View Component Information Area, Showing LEDs and Sensors Tab.....	22
21	Chassis View Menu	25
22	Logging Submenu	26
23	Set Level Button	26
24	Log System Configurator: Device Tab	26
25	Device Tab: Software Module Configurator	27
26	Log System Configurator: Preset Tab.....	29
27	Log System Configurator: Syslog Host Tab	30
28	Reset Levels Button.....	30
29	Reset Log Levels Window	31
30	Maintenance Menu	31
31	Firmware Update Button	32
32	Firmware Update Window	32
33	LDAP Configuration Button	33
34	LDAP Authentication Window	33



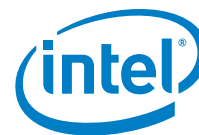
35	HTTP/CLI Session Config Button	34
36	HTTP/CLI Session Configuration Window	34
37	User Authentication Dropdown List	34
38	HTTP Mode Dropdown List	35
39	HTTPs Mode Dropdown List	35
40	SNMP Submenu	36
41	Target Configuration Button	36
42	SNMP Target Configuration Window	37
43	Filter Status Button	40
44	SNMP Filter Status Window	40
45	Set Community Strings Button	41
46	Set Community Strings Window	41
47	Configuration File Administration Menu	41
48	Configuration File Administration - Administer	42
49	Configuration File Administration Window	42
50	Configuration File Administration - Mode Drop-down	43
51	Configuration File Administration - Host Up/Down	43
52	Configuration File Upload/Download Window	44
53	Upload Window	44
54	Trap Control	45
55	Configuration File Trap Control Window	45
56	Subnet Manager Configuration File	46
57	Subnet Manager Configuration File Window	46
58	Subnet Manager Configuration File Save As	47
59	Chassis Trap Control	47
60	Chassis Trap Control Window	48
61	IB Port Statistics	50
62	Chassis IB Port Statistics	50
63	Leaf IB Port Stats Menu	53
64	Leaf Port Statistics Window	54
65	Spine IB Port Stats Menu	54
66	Spine Port Statistics Window	55
67	Set Field Thresholds	55
68	Set Field Thresholds Window	56
69	Port Beacon	58
70	Port Beacon Window	58
71	Port Beacon Highlight	59
72	Switch Time Service	59
73	System Time Information Window	60
74	Time Service - NTP Setup	61
75	Time Service - Manual Setup	61
76	Time Service - Time Zone/Daylight Saving Time Setup	62
77	Set Switch OOB IP Address Button	62
78	Set OOB LAN IP Window	63
79	Set OOB LAN IPv6 Window	64
80	Set Switch Default Gateway IP Address Button	64
81	Set Default Gateway IP Window	65
82	Subnet Manager Submenu	65
83	Subnet Manager Configuration Window	65
84	Management Module Menu	66
85	View Log Button	66
86	Sample Message Log	67
87	Purge Log Button	67
88	Purge Log Confirmation Window	68
89	Select Boot Image Button	68



90	Boot Image Selection Window	68
91	Boot Image File Pop Up	69
92	Post Diagnostics Button	69
93	Post Diagnostics Window	70
94	Post Diagnostics Results Output	70
95	Subnet Manager Control Button	70
96	Subnet Manager Control Window	71
97	License Key Submenu	72
98	Key Management Window	72
99	License Key Management Information Window	72
100	Key Management Delete	73
101	License Key Delete Prompt	73

Tables

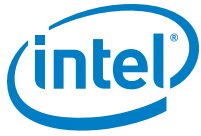
1	System, Chassis FRU, Power, Fan, and Backplane Tabs	22
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Revision History

Date	Revision	Description
May, 2013	001US	Initial release
January, 2014	002US	Added information for downloading the current subnet manager configuration file. See "Subnet Manager Configuration File" on page 44.
August 2014	003US	Updated Support link in Section 1.7, "Technical Support" on page 11.
January 2015	004US	Added 12300-18 six port upgrade information to "License Keys; Key Administration" on page 72
July 2015	005US	Document revision incremented for release 7.4

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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.
- 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.

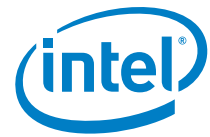
1.4 Laser Safety Information

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.



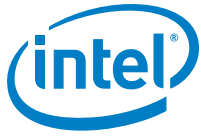
1.6 License Agreements

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

1.7 Technical Support

Intel True Scale Technical Support for products under warranty is available during local standard working hours excluding Intel Observed Holidays. For customers with extended service, consult your plan for available hours. For Support information, see the Support link at www.intel.com/truescale.

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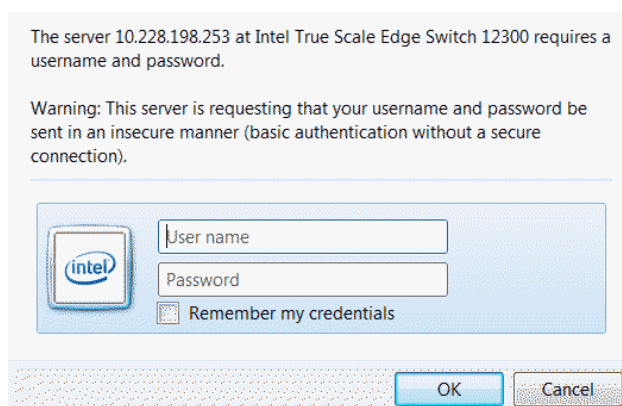
2.0 Chassis Viewer Overview

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 2-1](#) is displayed:

Figure 2-1. User Authentication



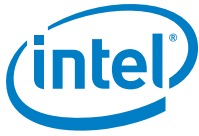
— The default user name and password need to be entered:

- 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 2-2 and 2-3) 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 2-2. Intel® 12300 Home Page

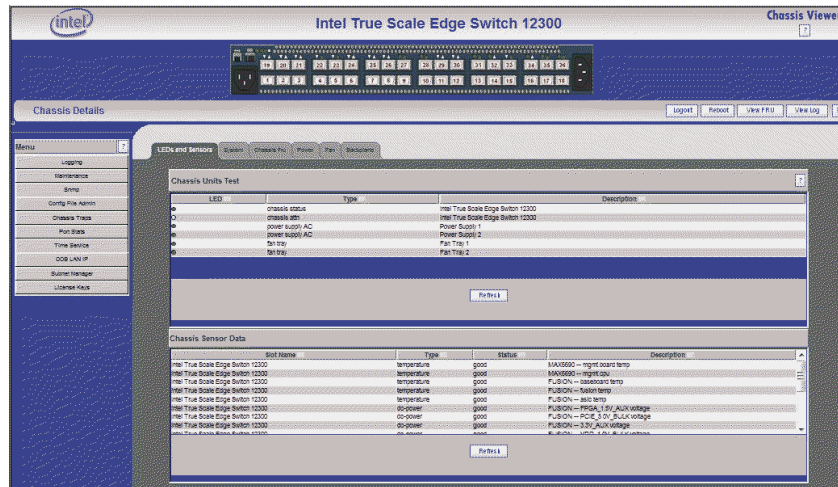
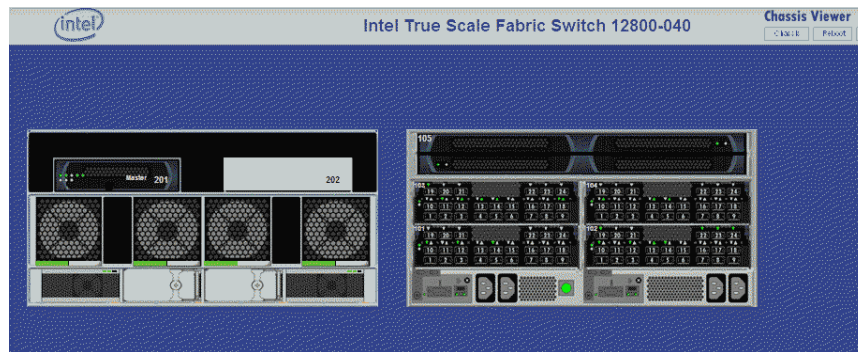
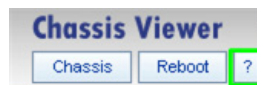


Figure 2-3. Intel® 12800-040 Home Page



The ? (**HELP**) button (Figure 2-4) displays online help. Each help window gives the user a high-level, topic-specific description.

Figure 2-4. 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 2-5](#):

Figure 2-5. Leaf Module View Mouseover



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

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 2-6](#):

Figure 2-6. Management Module View Mouseover



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

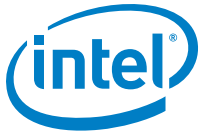
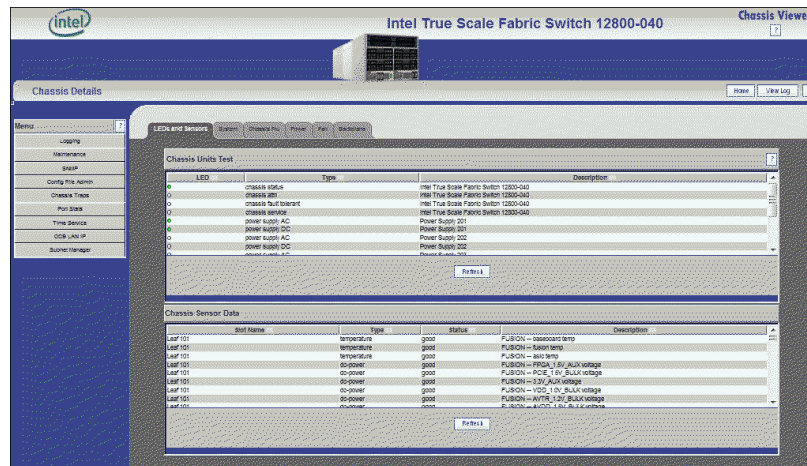


Figure 2-7. 12800-040 Chassis View



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:

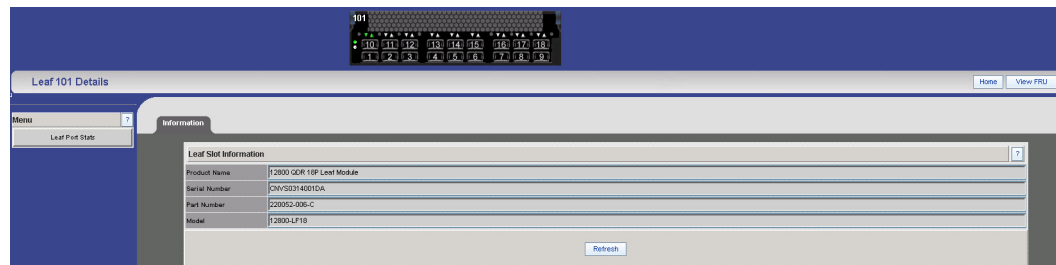
1. Mouse over the leaf module to display.
The edges of the leaf module are highlighted green as shown in [Figure 2-8](#):

Figure 2-8. Leaf Module Mouseover



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

Figure 2-9. Leaf Module View



2.3.2 Spine Module View

To display the spine module view:

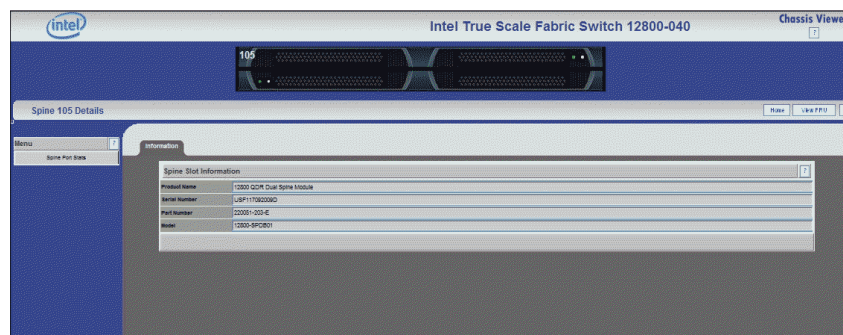
1. Mouse over the spine module to display.
The edges of the spine module are highlighted green as shown in [Figure 2-10](#).

Figure 2-10. Spine Module Mouseover



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

Figure 2-11. Spine Module View



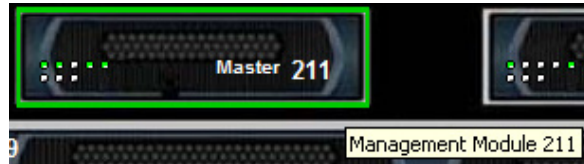
2.3.3 Management Module View

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 2-12](#):

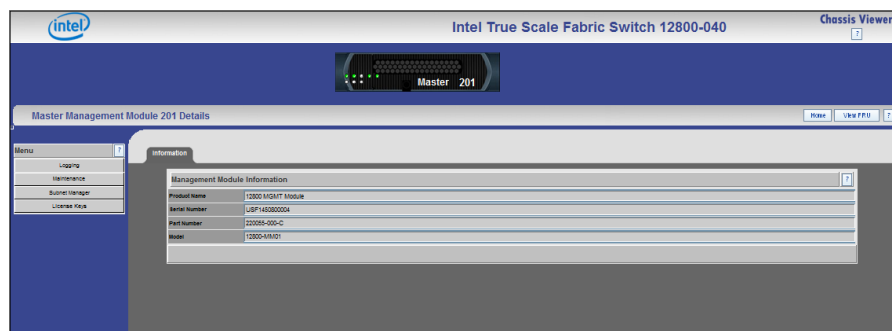


Figure 2-12. Management Module Mouseover



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

Figure 2-13. Management Module View

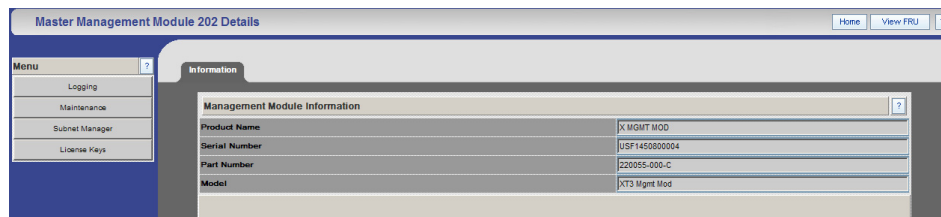


2.4 Component Details Area

The **Component Details Area** (Figure 2-14) for the chassis, spine, leaf, and management module has three areas.

- Details Header
- Information area
- Menu

Figure 2-14. Component Details Area



2.4.1 Details Header

The **Details Header** (Figure 2-15) allows the user to execute command tasks for each hardware component. The figure below displays the 12300 Details Header as an example.

Figure 2-15. 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 33](#) 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 2-16](#)) 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 2-16. 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 2-17](#)) 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.

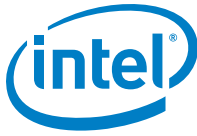


Figure 2-17. Chassis View Component Information Area

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 Field Default
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

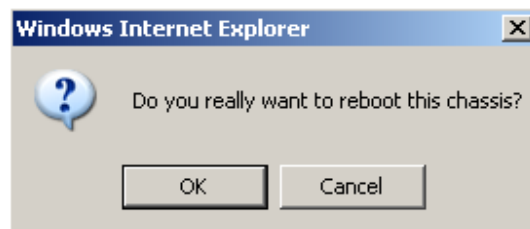
Use the following procedure to modify the fields for switch components:

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 2-18).

Figure 2-18. Reboot Window

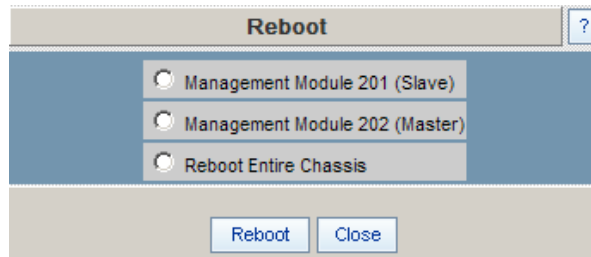


2. Click **OK**.

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 2-19 is displayed:

Figure 2-19. 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 2-20) 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 2-20. 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>Perfect</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 -- FPGAs 1.5V_AUX voltage
Leaf 101	dc-power	good	FUSION -- PCIe 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>Perfect</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 2-1 is a list of the System, Chassis FRU, Power, Fan, and Backplane tabs in the Chassis View Component Information Area (Figure 2-20).

Table 2-1. System, Chassis FRU, Power, Fan, and Backplane Tabs

Tab/Information	Description
System Tab	The System tab displays overall system information for the applicable switch chassis. This information includes the following items:
Out of Band LAN IP	The IP address of the switch. The IP address of the switch can be changed by the administrator.
Net Mask	The current net mask settings for the Chassis. The net mask of the chassis can be changed by the administrator.
System Description	A read-only textual description of the system.
IB Node Description	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 Field Default button. Note: 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.
System Uptime	The elapsed time since the master management module was re-initialized.
System Contact	The textual identification of the contact person and their contact information for this system, assigned by the administrator.
System Name	The name for the system, assigned by an administrator. One convention is to use the system's fully qualified domain name.
System Location	The location of the system, assigned by an administrator.
Apply Button	Saves any changes made by the user in the System tab to memory.

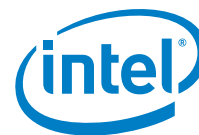


Table 2-1. System, Chassis FRU, Power, Fan, and Backplane Tabs

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

§ §



3.0 Configuration and Monitoring

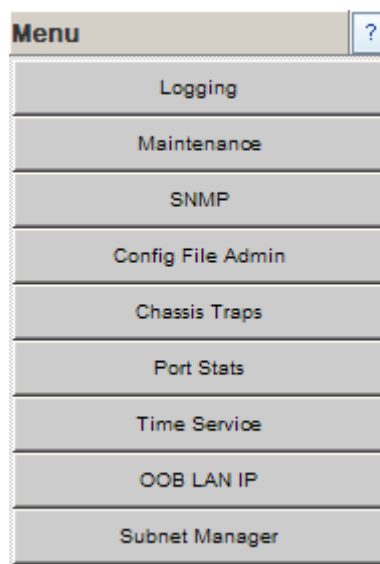
This section provides detailed, task-oriented descriptions for configuring and monitoring the 12000 switches and their feature functionality.

3.1 Chassis View Menu

The Chassis View Menu ([Figure 3-1](#)) allows the user to:

- Set and reset levels for log message files (Refer to [“Logging” on page 26](#))
- Perform maintenance (Refer to [“Maintenance” on page 31](#))
- View and modify SNMP trap configuration information (Refer to [“SNMP” on page 35](#))
- Perform various administrative tasks related to configuration (Refer to [“Configuration File Administration” on page 41](#))
- Set default trap scenarios related to the switch (Refer to [“Chassis Traps” on page 47](#))
- Obtain IB port information (Refer to [“Port Statistics” on page 50](#))
- Set the system time (Refer to [“Time Service” on page 59](#))
- Set the OOB LAN IP (Refer to [“OOB LAN IP Submenu” on page 62](#))
- Configure the Subnet Manager (Refer to [“Fabric Manager Configuration” on page 65](#))

Figure 3-1. Chassis View Menu

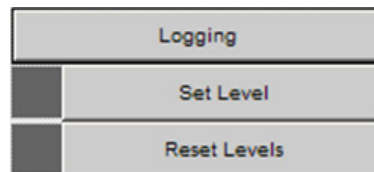




3.2 Logging

The **Logging** submenu (Figure 3-2) allows the user to set and reset levels for log message files.

Figure 3-2. 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:

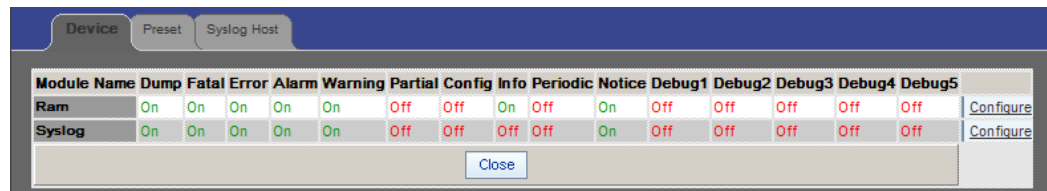
1. From the menu, select **Logging**.
The **Set Level** button is displayed (Figure 3-3).

Figure 3-3. Set Level Button



2. Click **Set Level**.
3. The **Log System Configurator (Device Tab)** window is displayed (Figure 3-4).

Figure 3-4. Log System Configurator: Device Tab



Module Name	Dump	Fatal	Error	Alarm	Warning	Partial	Config	Info	Periodic	Notice	Debug1	Debug2	Debug3	Debug4	Debug5	
Ram	On	On	On	On	On	Off	Off	On	Off	On	Off	Off	Off	Off	Off	Configure
Syslog	On	On	On	On	On	Off	Off	Off	Off	On	Off	Off	Off	Off	Off	Configure

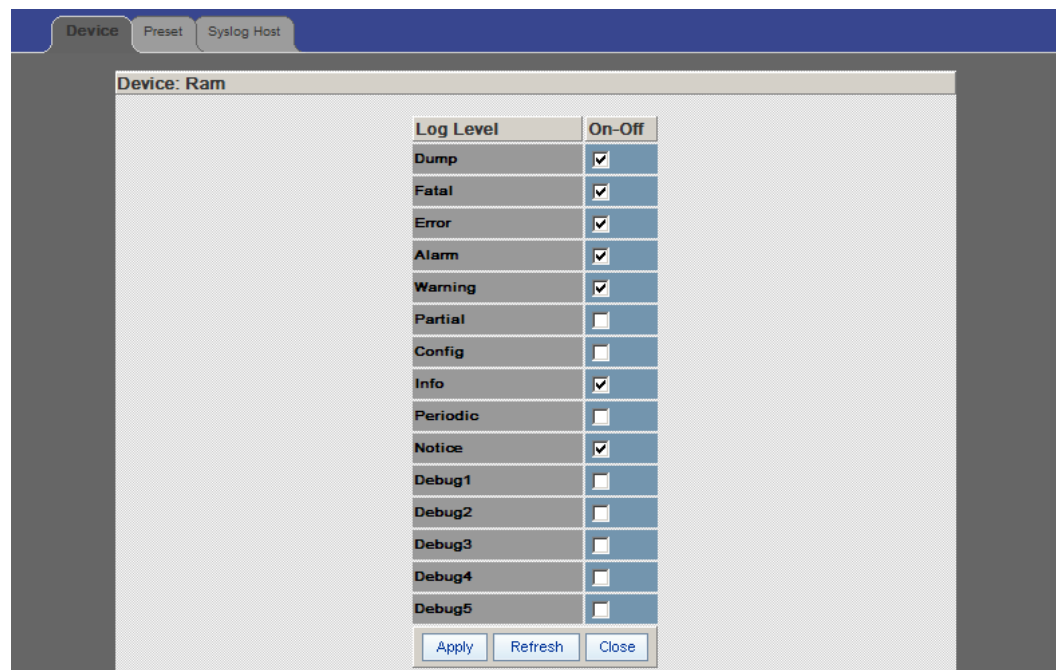
3.2.1.1 Device Tab

The **Device** tab (Figure 3-5) 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 3-5. Device Tab: Software Module Configurator



Log Level	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 type="checkbox"/>
Config	<input type="checkbox"/>
Info	<input checked="" type="checkbox"/>
Periodic	<input 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"/>

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.

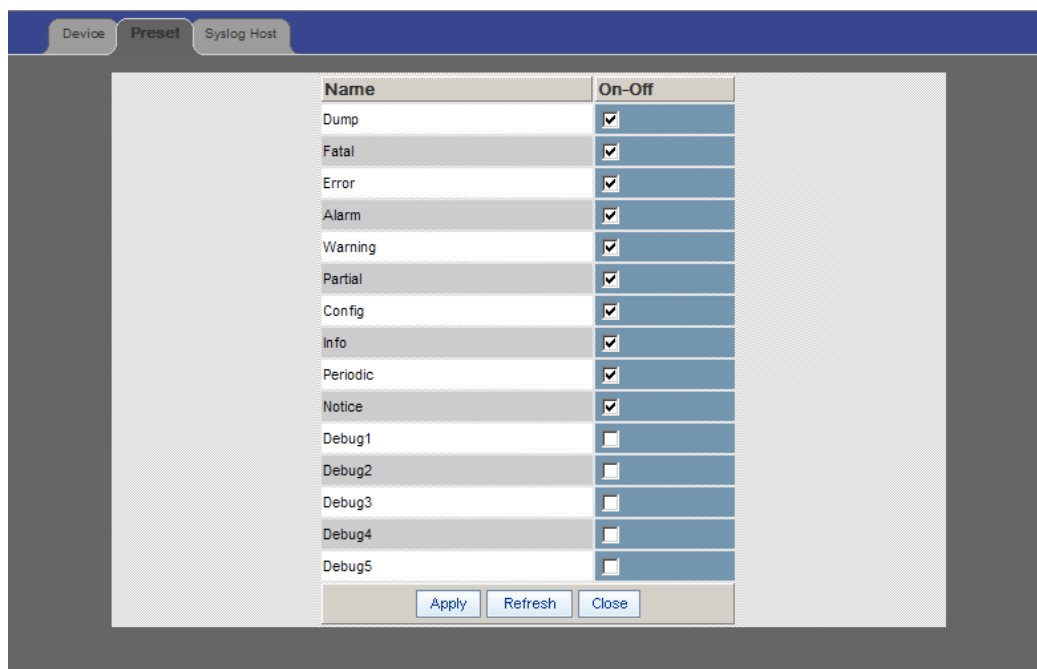
- **DEBUG1** – Messages that describe the states of connections and links.
- **DEBUG2** – Messages that describe major configuration changes or operations.
- **DEBUG3** – Messages that describe the I/O flow.
- **DEBUG4** – Messages that contain the packet dumps within an I/O flow. I/O flows contain multiple 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 3-6) allows the user to quickly change log level settings for all software modules on the switch.

Figure 3-6. Log System Configurator: Preset Tab



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 3-7) 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.

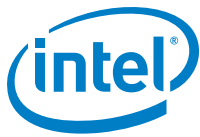
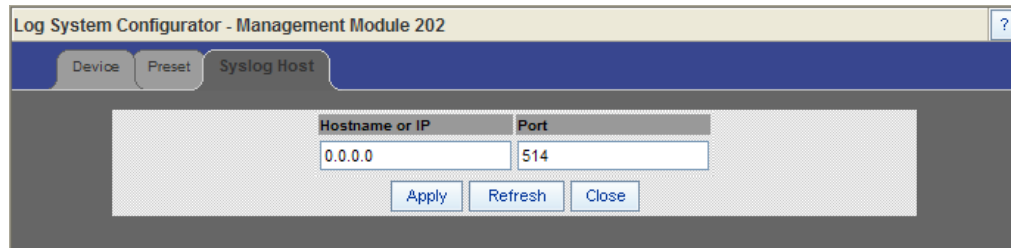


Figure 3-7. Log System Configurator: Syslog Host Tab



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:

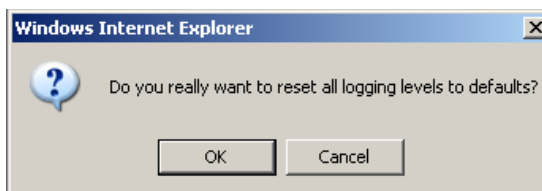
1. From the menu, select **Logging**.
The **Reset Levels** button is displayed (Figure 3-8).

Figure 3-8. Reset Levels Button



2. Click **Reset Levels**.
The **Reset Levels** window is displayed (Figure 3-9).

Figure 3-9. Reset Log Levels Window

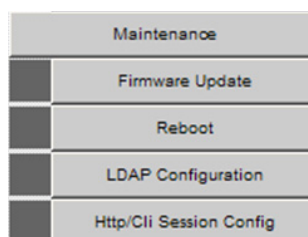


3. To reset the logging levels, click **OK**.

3.3 Maintenance

The **Maintenance** menu (Figure 3-10) 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 3-10. Maintenance Menu



Note: For rebooting information, see [Section 2.4.4.2, “Rebooting the 12800 Switches”](#) on page 20.

3.3.1 Firmware Update

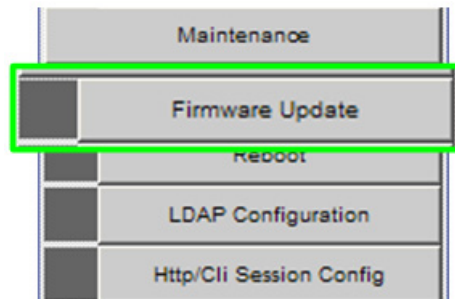
The **Firmware Update** button allows the user to select an alternate firmware file for the switch. These alternate files are reflected in the drop-down lists in the **Firmware Update** window.

To download firmware:

1. From the menu, select **Maintenance**.
The **Firmware Update** button is displayed (Figure 3-11).

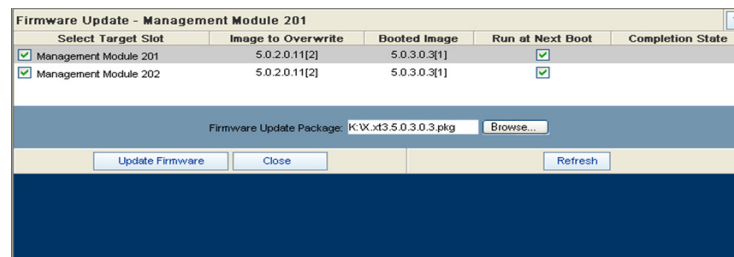


Figure 3-11. Firmware Update Button



2. Click **Firmware Update**.
The **Firmware Update** window is displayed (Figure 3-12).

Figure 3-12. 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

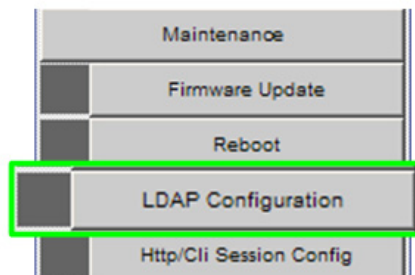
LDAP server receives the request, passes it on to the authentication services, and responds to the client with a yes or no, either allowing or denying the user access to the box.

When LDAP is disabled internal authentication becomes the default.

To set up LDAP authentication:

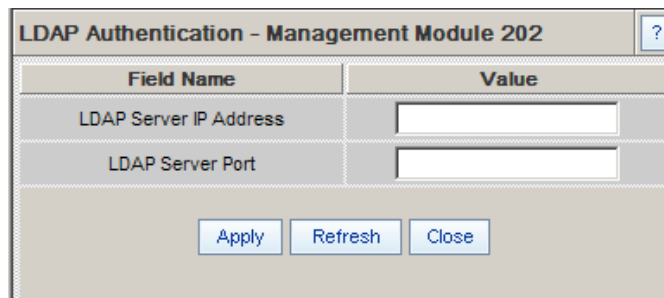
1. From the menu, select **Maintenance**.
The **LDAP Configuration** button is displayed (Figure 3-13).

Figure 3-13. LDAP Configuration Button



2. Click **LDAP Configuration**.
The **LDAP Authentication** window is displayed (Figure 3-14).

Figure 3-14. LDAP Authentication Window



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

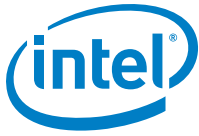
Apply Refresh Close

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.

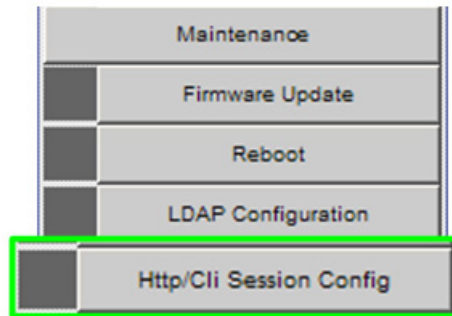


To modify the HTTP and CLI configurations:

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

The **HTTP/CLI Session Config** button is displayed (Figure 3-15).

Figure 3-15. HTTP/CLI Session Config Button



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

The **HTTP/CLI Session Configuration** window is displayed (Figure 3-16).

Figure 3-16. HTTP/CLI Session Configuration Window

The screenshot shows the 'Http Session Configuration - Management Module 202' window. It contains a table with the following columns: Http Timeout Duration (Seconds), Cli Timeout Duration (Seconds), User Authentication, Http Mode, and Https Mode. The first row shows values: 0, 600, Login Enabled, Disabled, and Disabled. Below the table are buttons for Apply, Refresh, and Close.

Http Timeout Duration (Seconds)	Cli Timeout Duration (Seconds)	User Authentication	Http Mode	Https Mode
0	600	Login Enabled	Disabled	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 3-17).

Figure 3-17. User Authentication Dropdown List

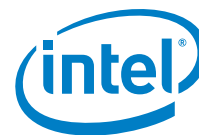
The screenshot shows the 'Http Session Configuration - Management Module 202' window. The 'User Authentication' dropdown menu is open, showing the following options: Login Disabled, Login Enabled, User Only Required, Login Disabled, and Ldap. The first row in the table is highlighted in orange.

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

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 3-18).

Figure 3-18. 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 3-19).

Figure 3-19. 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 3-20) allows the user to view and modify SNMP trap configuration information.

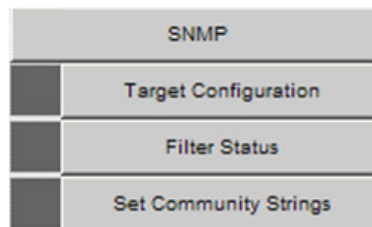
Note:

The following Chassis SNMP MIBs are provided:

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



Figure 3-20. SNMP Submenu



3.4.1 Target Configuration

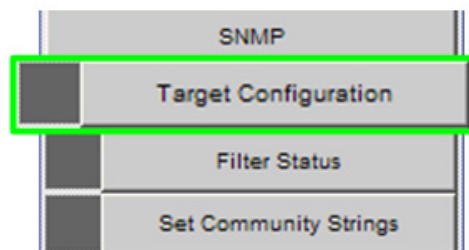
The **Target Configuration** button displays the **SNMP Target Configuration** window, allowing the user to view and edit existing SNMP trap destinations.

To display the **Target Configuration** window:

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

The **Target Configuration** button is displayed (Figure 3-21).

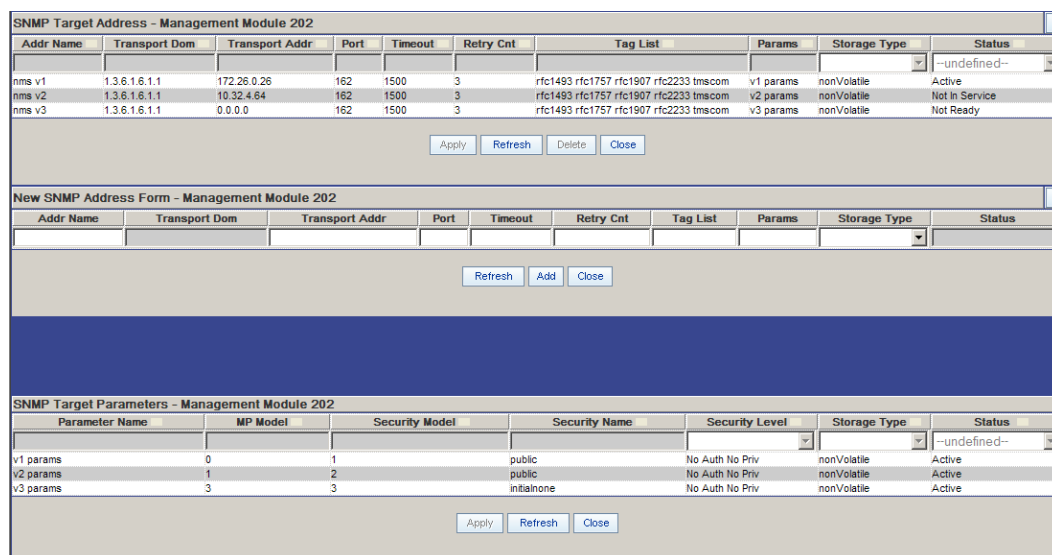
Figure 3-21. Target Configuration Button



2. Select **Target Configuration**.

The **SNMP Target Configuration** window is displayed (Figure 3-22).

Figure 3-22. SNMP Target Configuration Window



The screenshot shows the 'SNMP Target Configuration Window' with three main sections:

- SNMP Target Address - Management Module 202:** A table with columns: Addr Name, Transport Dom, Transport Addr, Port, Timeout, Retry Cnt, Tag List, Params, Storage Type, and Status. It lists three entries: nms v1, nms v2, and nms v3.
- New SNMP Address Form - Management Module 202:** A form with the same column headers as the first table, currently empty.
- SNMP Target Parameters - Management Module 202:** A table with columns: Parameter Name, MP Model, Security Model, Security Name, Security Level, Storage Type, and Status. It lists three entries: v1 params, v2 params, and v3 params.

Buttons for 'Apply', 'Refresh', 'Delete', and 'Close' are present in the first section. Buttons for 'Refresh', 'Add', and 'Close' are present in the second section. Buttons for 'Apply', 'Refresh', and 'Close' are present in the third section.

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.

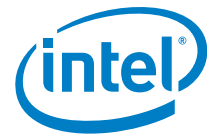
- **Parameters**
Specifies a mapping to an entry in the SNMP Target Parameters table, determining the version of SNMP to use.
- **Storage Type**
This field determines whether or not the entry is saved for each reboot of the switch.
 - *Nonvolatile* means that the value is saved, and remains after each 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 3-23](#)).

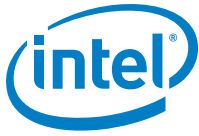
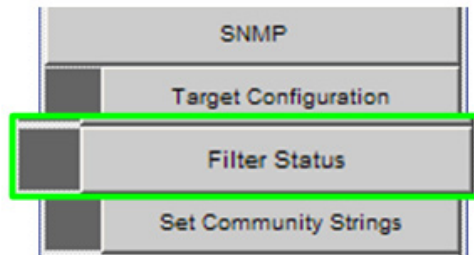


Figure 3-23. Filter Status Button



2. Click **Filter Status**.

The **SNMP Filter Status** window is displayed (Figure 3-24).

Figure 3-24. 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:

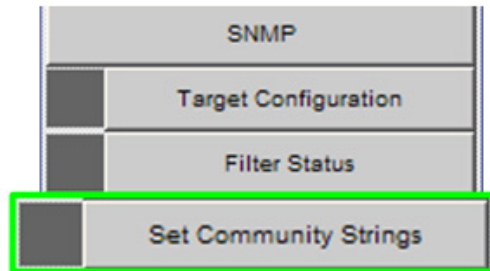
- Read Only Community Name
- Read/Write Community Name

To set the Community Strings:

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

The **Set Community Strings** button is displayed (Figure 3-25).

Figure 3-25. Set Community Strings Button



2. Click **Set Community Strings**.
The **Set Community Strings** window is displayed (Figure 3-26).

Figure 3-26. 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 3-26), and click on **Apply**.

3.5 Configuration File Administration

The **Config File Admin** menu (Figure 3-27) allows the user to perform various administrative tasks related to the configuration files for each module populating the switch.

Figure 3-27. 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 3-1), select **Config File Admin**.
The **Administer** button is displayed (Figure 3-28).

Figure 3-28. Configuration File Administration - Administer



2. Click **Administer**.
The **Configuration File Administration** window is displayed (Figure 3-29).

Figure 3-29. 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 3-30).

Figure 3-30. 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	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 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**.

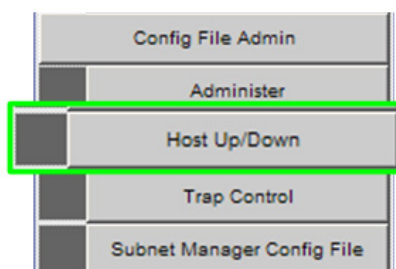
Note: The **Clear** button deletes the configuration file from the switch.

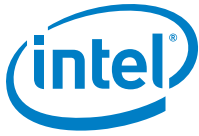
3.5.2 Host Upload/Download

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.
- From the **Chassis View** menu (Figure 3-1), select **Config File Admin**. The **Host Up/Down** button is displayed (Figure 3-31).

Figure 3-31. Configuration File Administration - Host Up/Down





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

The **Configuration File Upload/Download** window is displayed (Figure 3-32).

Figure 3-32. 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	<input type="button" value="Upload"/>
2	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<input type="button" value="Upload"/>
3	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<input type="button" value="Upload"/>
4	Auto Backup	None	--Empty; No Value Set--	--Empty; No Value Set--	Never	No file	<input type="button" value="Upload"/>

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 3-33).

Figure 3-33. Upload Window

Slot occupied by (NULL)

File Name:

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 3-1), select **Config File Admin**.
The **Trap Control** button is displayed (Figure 3-34).

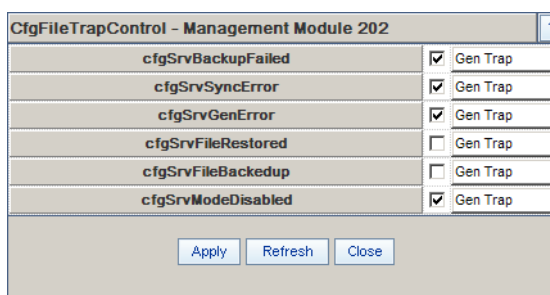
Figure 3-34. Trap Control



2. Click **Trap Control**.

The **Trap Control** window is displayed (Figure 3-35).

Figure 3-35. Configuration File Trap Control Window



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

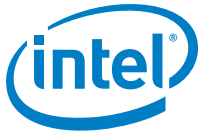
Note: To generate an immediate trap, click the applicable **Gen Trap** button.

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.

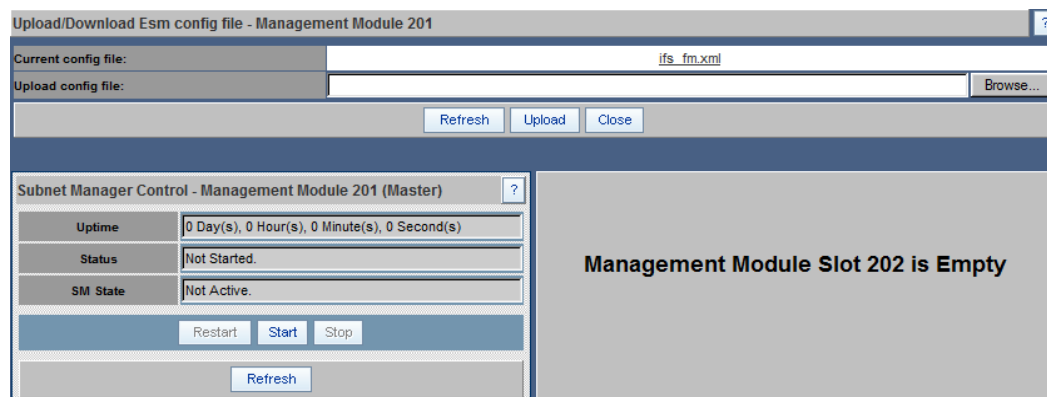
1. From the **Chassis View** menu (Figure 3-1), select **Config File Admin**.
The **Subnet Manager Config File** button is displayed (Figure 3-36).

Figure 3-36. Subnet Manager Configuration File



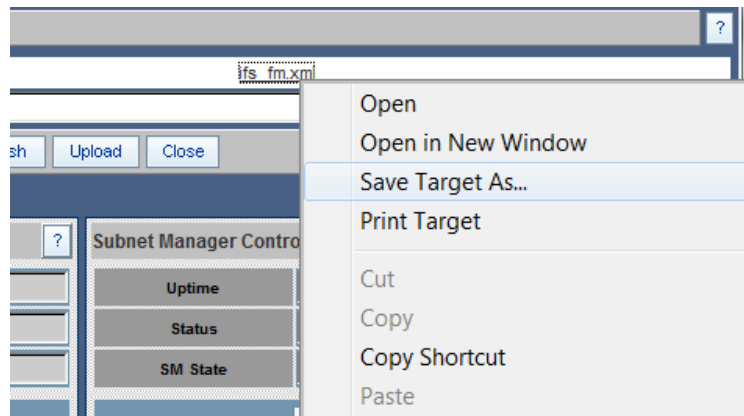
2. Click **Subnet Manager Config File**.
The **Subnet Manager Configuration** window is displayed (Figure 3-37).

Figure 3-37. Subnet Manager Configuration File Window



3. To download the current configuration file, right-click on the file name in the **Current config file** text box, then choose either **Save Target As** or **Save Link As** (depending upon which browser is being used) as displayed in Figure 3-38.

Figure 3-38. Subnet Manager Configuration File Save As



4. To upload a configuration file, 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.
5. Once the new file is located, click the **Upload** button.
6. In the **Subnet Manager Control** window for the master subnet manager, click **Stop**, **Refresh**, then **Restart** to have the new file become active.
7. 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 3-1), select **Chassis Traps**.
The **Trap Control** button is displayed (Figure 3-39).

Figure 3-39. Chassis Trap Control



2. Click **Trap Control**.
The **Chassis Trap Control** window is displayed (Figure 3-40).



Figure 3-40. 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
icsChassisTrapSystemMgmtSrcvStarted	<input checked="" type="checkbox"/> Gen Trap	icsChassisTrapModuleRemoved	<input checked="" type="checkbox"/> Gen Trap
icsChassisTrapSystemMgmtSrcvAborted	<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
<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="Close"/>		<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="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		
<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="Close"/>		<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="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.
- **icsChassisTrapSystemMgmtSrcvStarted**
This trap indicates that the internal service used to support the management of the chassis is operational.
- **icsChassisTrapSystemMgmtSrcvAborted**
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.

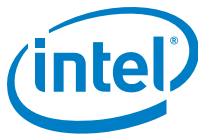
- **icsChassisTrapModuleFailed**
This trap indicates that a module has failed and is not operational.
- **icsChassisTrapModuleSelfTestFailure**
This trap indicates that the module failed one or more of its self tests.
- **icsChassisTrapModuleEEPROMReadFailure**
This trap indicates that an error condition 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 3-1), click **Port Stats**.
The **IB Port Stats** button is displayed (Figure 3-41).

Figure 3-41. IB Port Statistics



2. Click **IB Port Stats**.
The **IB Port Statistics** window is displayed (Figure 3-42).

Figure 3-42. 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	Transmits 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	4X	4X	4X	4X	10.00Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	314928	314928	4374	4374	0	0	0	0	0	0	0	0	0	0	0	0
L101P02	1.2	down	Poling	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P03	1.3	active Up	4X	4X	4X	4X	10.00Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	374032	375468	8041	8043	0	0	0	0	0	0	0	0	0	0	0	0
L101P04	1.4	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P05	1.5	active Up	4X	4X	4X	4X	10.00Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	328304	325296	4532	4518	0	0	0	0	0	0	0	0	0	0	0	0
L101P06	1.6	down	Poling	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P07	1.7	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P08	1.8	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P09	1.9	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P10	1.10	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P11	1.11	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P12	1.12	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P13	1.13	down	Poling	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P14	1.14	down	Poling	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P15	1.15	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P16	1.16	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P17	1.17	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P18	1.18	down	Poling	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P19	1.19	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P20	1.20	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P21	1.21	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P22	1.22	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P23	1.23	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L101P24	1.24	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L102P01	2.1	active Up	4X	4X	4X	4X	10.00Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	598929	600766	8319	8344	0	0	0	0	0	0	0	0	0	0	0	0
L102P02	2.2	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L102P03	2.3	active Up	4X	4X	4X	4X	10.00Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	587016	588800	8153	8178	0	0	0	0	0	0	0	0	0	0	0	0
L102P04	2.4	down	Sleep	4X	4X	4X	2.50Gbps	2.5/5.0/10.00Gbps	2.5/5.0/10.00Gbps	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:

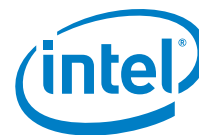
L = Leaf module number

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.

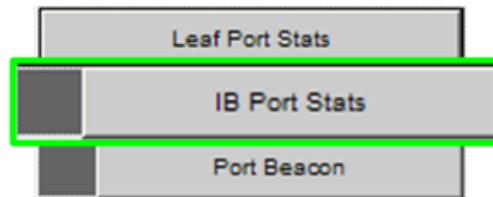
3.7.4 Leaf and Spine Module IB Port Statistics

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 3-43](#)).

Figure 3-43. Leaf IB Port Stats Menu



3. Click **IB Port Stats**.
The **IB Port Statistics - Leaf** window is displayed ([Figure 3-44](#)).



Figure 3-44. Leaf Port Statistics Window

IB Port Statistics - Leaf 103

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Port Name	Port #	Link State	Physical State	Active Link Width	Link Width Enabled	Link Width Supported	Active Link Speed	Link Speed Enabled	Link Speed Reported	Transmit 32Bit Words	Receive 32Bit Words	Transmit Packets	Receive Packets	Symbol Errors	Link Error Recovery	Link Downed	Receive Errors	Remote Physical Errors Received	Transmit Discards	Local Link Integrity Errors	Excessive Buffer Overrun	Play Violations Inbound	Play Violations Outbound	Raw Violations Inbound	Raw Violations Outbound
LI03P01	3.1	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P02	3.2	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	373569	370800	5189	5150	0	0	0	0	0	0	0	0	0	0	
LI03P03	3.3	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P04	3.4	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P05	3.5	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P06	3.6	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P07	3.7	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P08	3.8	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P09	3.9	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	3732081	36296712	51635	504121	0	0	0	0	0	0	0	0	0	0	
LI03P10	3.10	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P11	3.11	down	Poling	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P12	3.12	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	318273	318384	4421	4422	0	0	0	0	0	0	0	0	0	0	
LI03P13	3.13	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	4294967295	4294967295	171284247	160165769	0	0	0	0	0	0	0	0	0	0	
LI03P14	3.14	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	318129	318096	4419	4418	0	0	0	0	0	0	0	0	0	0	
LI03P15	3.15	down	Poling	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P16	3.16	down	Poling	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P17	3.17	down	Sleep	4K	4K	4K	2.5Gbps	2.5G	0/10.0Gbps	2.5G/10.0Gbps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LI03P18	3.18	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	42841844	10281312	595027	142796	0	0	0	0	0	0	0	0	0	0	
LI03P19	3.19	active	Up	4K	4K	4K	10.0Gbps	10.0G	0/10.0Gbps	2.5G/10.0Gbps	318273	318384	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 51.

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 3-45).


Figure 3-45. Spine IB Port Stats Menu



3. Click **IB Port Stats**.
The **IB Port Statistics - Spine** window is displayed (Figure 3-46).

Figure 3-46. Spine Port Statistics Window

IB Port Statistics - Spine 105A



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	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP02L104P20	5.2	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP03L104P21	5.3	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP04L104P22	5.4	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP05L104P23	5.5	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP06L104P24	5.6	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP07L102P25	5.7	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP08L102P26	5.8	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP09L102P27	5.9	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP10L102P28	5.10	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP11L102P29	5.11	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP12L102P30	5.12	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP13L102P31	5.13	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP14L102P32	5.14	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP15L104P33	5.15	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP16L102P34	5.16	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP17L104P35	5.17	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP18L104P36	5.18	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP19L103P19	5.19	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP20L103P20	5.20	init	Up	4X	1X or 4X	1X or 4X	10.0Gbps	10.0Gbps	10.0Gbps	0	0	0	0	0	0	0
S105AP21L101P21	5.21	init	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 51.

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 3-47](#)).

Figure 3-47. Set Field Thresholds



2. Click on **Set Field Thresholds**.

The **Set Field Thresholds** window is displayed ([Figure 3-48](#)).



Figure 3-48. 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
portIPKeyViolInThresh	0	1 Second
portIPKeyViolOutThresh	0	1 Second
portRawViolInThresh	0	1 Second
portRawViolOutThresh	0	1 Second
portLocalLinkIntegThresh	0	1 Second
portExcBufferOverrunThresh	0	1 Second

Apply Refresh Close

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

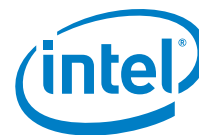
The threshold for the number of 32-bit data words received by the port.

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

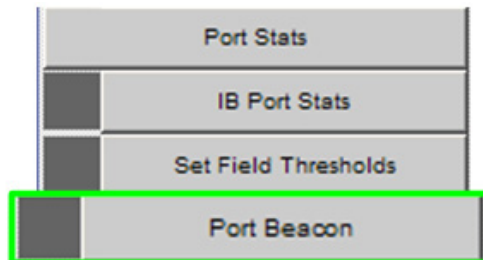
The Port Beacon feature allows the user to enable IB port(s) LEDs to flash, assisting a user in locating a port.

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 3-49).

Figure 3-49. Port Beacon



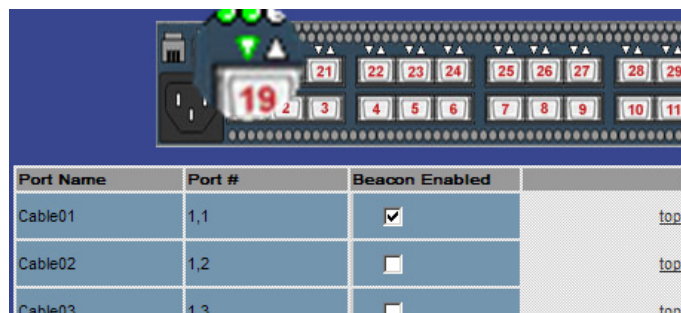
2. Click **Port Beacon**.
The **Port Beacon** window is displayed (Figure 3-50).

Figure 3-50. Port Beacon Window

Port Beacons - Management Module 202			
			
Port Name	Port #	Beacon Enabled	
L101P01	1,1	<input type="checkbox"/>	top
L101P02	1,2	<input type="checkbox"/>	top
L101P03	1,3	<input type="checkbox"/>	top
L101P04	1,4	<input type="checkbox"/>	top
L101P05	1,5	<input type="checkbox"/>	top
L101P06	1,6	<input type="checkbox"/>	top
L101P07	1,7	<input type="checkbox"/>	top
L101P08	1,8	<input type="checkbox"/>	top
L101P09	1,9	<input type="checkbox"/>	top
L101P10	1,10	<input type="checkbox"/>	top
L101P11	1,11	<input type="checkbox"/>	top
L101P12	1,12	<input type="checkbox"/>	top
L101P13	1,13	<input type="checkbox"/>	top
L101P14	1,14	<input type="checkbox"/>	top
L101P15	1,15	<input type="checkbox"/>	top
L101P16	1,16	<input type="checkbox"/>	top

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 3-51.

Figure 3-51. Port Beacon Highlight



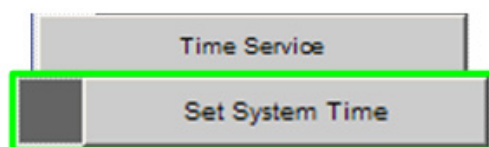
3.8 Time Service

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 3-52).

Figure 3-52. Switch Time Service



2. Click **Set System Time**.
The **System Time Information** window is displayed (Figure 3-53).

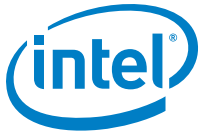


Figure 3-53. System Time Information Window

Set System Time - Management Module 202									
NTP Settings									
Current Date & Time	Mon, 16 Aug 2010 09:53:51 (GMT -5)								
Use Network Time Protocol?	<input checked="" type="checkbox"/>								
NTP Hostname or IP	172.26.0.254								
Set Current Date and Time	Month	Day	Year	Hour	Minute	Second	AM/PM		
	Aug	16	2010	09	53	28	AM		
<input type="button" value="Apply"/>									
Time Zone and DST Settings									
Time Zone	-5								
Daylight Saving Time	Start Date			End Date					
	Which	Day	in Month	Which	Day	in Month			
	1st	Mon	Apr	1st	Mon	Nov			
<input type="button" value="Apply"/>									
<input type="button" value="Refresh"/> <input type="button" value="Close"/>									

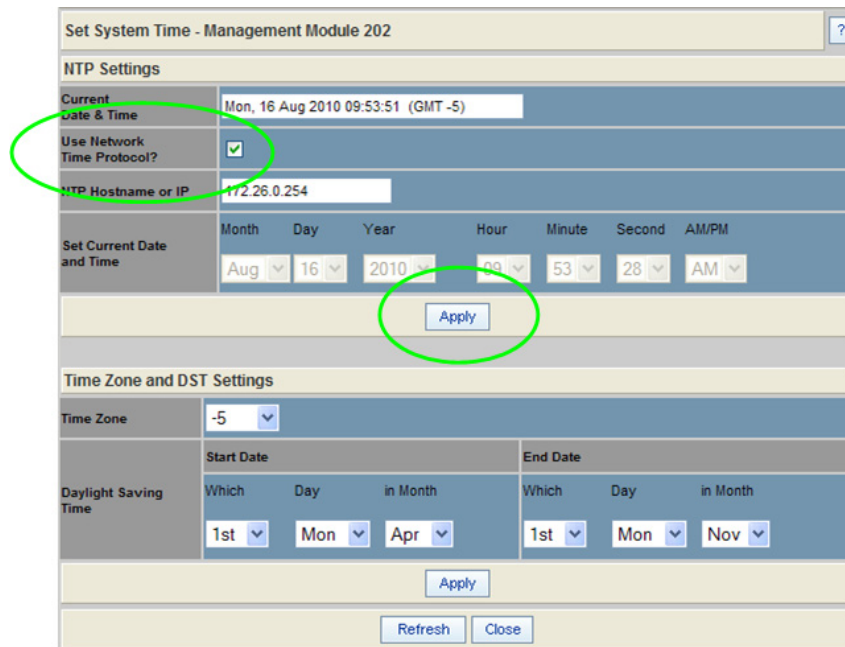
Note: If using Network Time Protocol (NTP) and host names (instead of IP addresses), DNS information must first be set up using the CLI command `dnsParamsSet`. Remember to reboot the switch after executing this command.

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 3-54).

Figure 3-54. Time Service - NTP Setup



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 3-55).

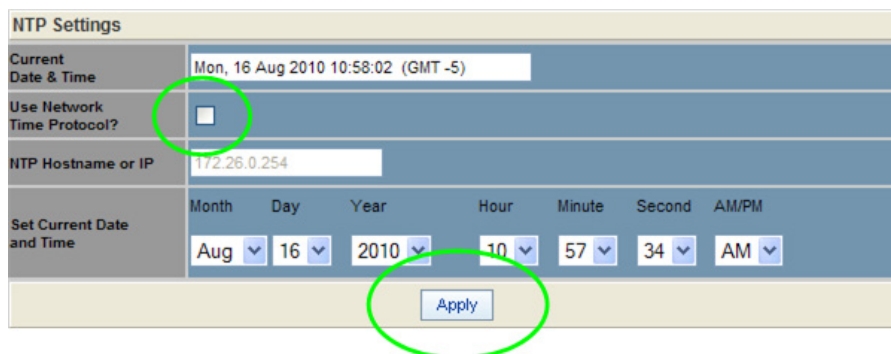


Figure 3-55. Time Service - Manual Setup

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 3-56).



Figure 3-56. Time Service - Time Zone/Daylight Saving Time Setup

Time Zone and DST Settings

Time Zone: -5

Daylight Saving Time

Start Date: Which: 1st, Day: Mon, in Month: Mar

End Date: Which: 1st, Day: Mon, in Month: Oct

Apply, Refresh, Close

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**.

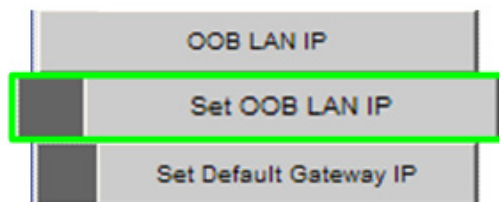
3.9 OOB LAN IP Submenu

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 3-57).

Figure 3-57. Set Switch OOB IP Address Button



2. Click **Set OOB LAN IP**.

The **Set OOB LAN IP** window is displayed (Figure 3-58).

Figure 3-58. Set OOB LAN IP Window



Set OOB LAN IP - Management Module 202	
Out of Band LAN IP	172.26.3.19
Net Mask	255.255.240.0
<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="Close"/>	

Set OOB LAN IPv6 - Management Module 202	
Out of Band LAN IP	3ffe::8/64
IPv6 Autoconfig Enable/Disable	
Auto Config	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
<input type="button" value="Apply"/> <input type="button" value="Refresh"/> <input type="button" value="Close"/>	

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 3-59).



Figure 3-59. Set OOB LAN IPv6 Window

Set OOB LAN IP - Management Module 202

Out of Band LAN IP: 172.26.3.19

Net Mask: 255.255.240.0

Buttons: Apply, Refresh, Close

Set OOB LAN IPv6 - Management Module 202

Out of Band LAN IP: 3ffe::8/64

IPv6 Autoconfig Enable/Disable

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

Buttons: Apply, Refresh, Close

- 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.

- Click **Apply**.

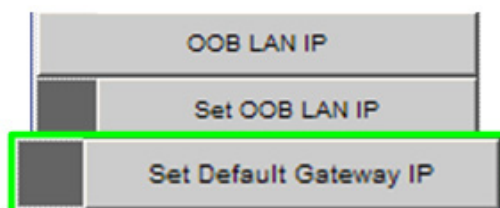
3.9.2 Configuring the Switch Default Gateway IP Address

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:

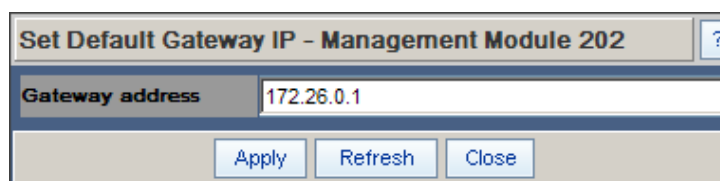
- From the menu, select **OOB LAN IP**.
The **Set Default Gateway IP** button is displayed (Figure 3-60).

Figure 3-60. Set Switch Default Gateway IP Address Button



- Click **Set Default Gateway IP**.
The **Set Default Gateway IP** window is displayed (Figure 3-61).

Figure 3-61. 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" entered. 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

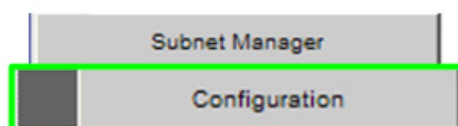
Note: This section assumes the user has purchased and activated the embedded version of the Fabric Manager.

3.10.1 Automatically starting the Fabric Manager

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

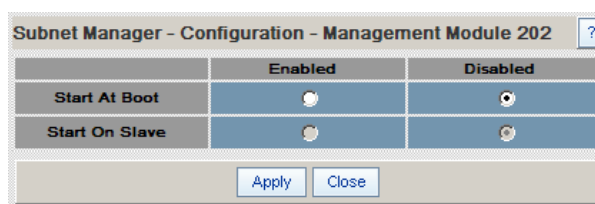
1. From the menu, select **Subnet Manager**.
The **Configuration** button is displayed (Figure 3-62).

Figure 3-62. Subnet Manager Submenu



2. Click **Configuration**.
The **Subnet Manager Configuration** window is displayed (Figure 3-63).

Figure 3-63. Subnet Manager Configuration Window



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

	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**.

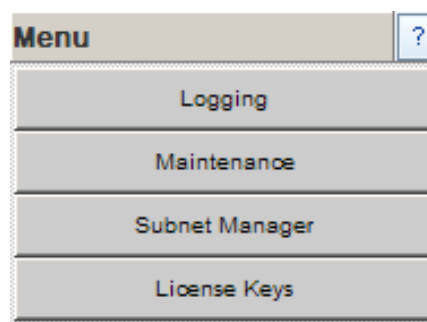
In the event that the Fabric Manager on the master Management Module is disabled, the Fabric Manager on the slave Management Module will turn on automatically when it becomes the chassis management module.

5. Click **Apply**.

3.11 Management Module Menu

The Management Module Menu contains selections for logging, maintenance, subnet manager, and license keys (Figure 3-64).

Figure 3-64. Management Module Menu



3.11.1 Logging

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

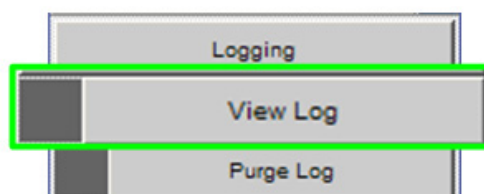
3.11.2 Viewing the Log

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

To view the message log:

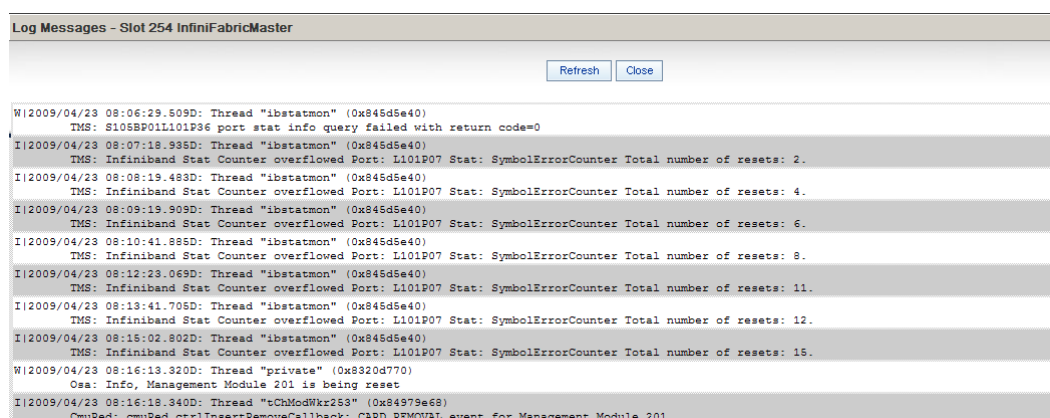
1. From the menu, select **Logging**.
The **View Log** button is displayed (Figure 3-65).

Figure 3-65. View Log Button



2. Click **View Log**.
The **Log Message** window is displayed (Figure 3-66).

Figure 3-66. 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.

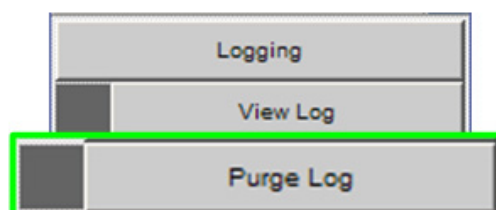
3.11.3 Purging the Log

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 3-67).

Figure 3-67. Purge Log Button



2. Click **Purge Log**.
3. The **Purge Log** confirmation window is displayed (Figure 3-68).

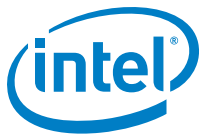
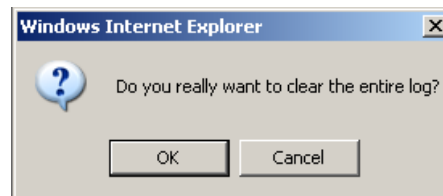


Figure 3-68. Purge Log Confirmation Window



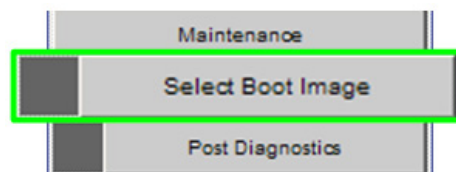
4. Click **OK**.
5. The message log file is now purged.

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:

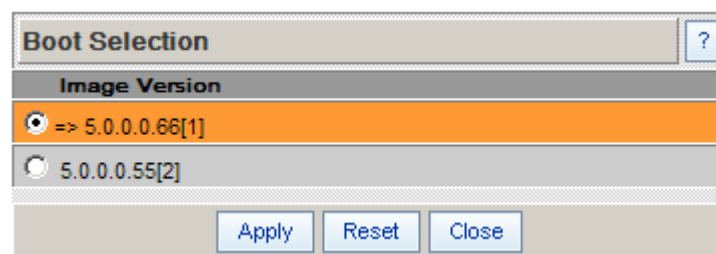
1. From the menu, select **Maintenance**.
The **Select Boot Image** button is displayed (Figure 3-69).

Figure 3-69. Select Boot Image Button



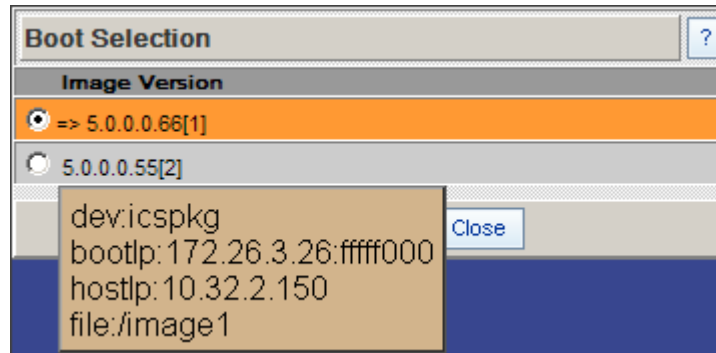
2. Click **Select Boot Image**.
The **Boot Image Selection** window is displayed (Figure 3-70).

Figure 3-70. 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 3-71.

Figure 3-71. Boot Image File Pop Up



To choose a new boot image:

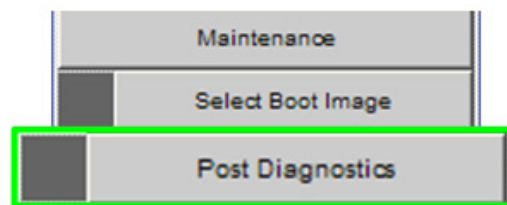
1. Click on a radio button of the new boot image.
2. Click **Apply**.
This is the image that will run after the next reboot.

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 3-72).

Figure 3-72. Post Diagnostics Button



2. Click **Post Diagnostics**.
3. The **Post Diagnostics** window is displayed (Figure 3-73).



Figure 3-73. 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 3-74). Additional information is posted to the **Result-Ext** column:

Figure 3-74. 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

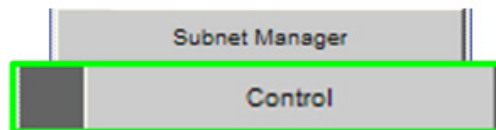
This section assumes the user has purchased and activated the embedded version of the Fabric Manager.

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.

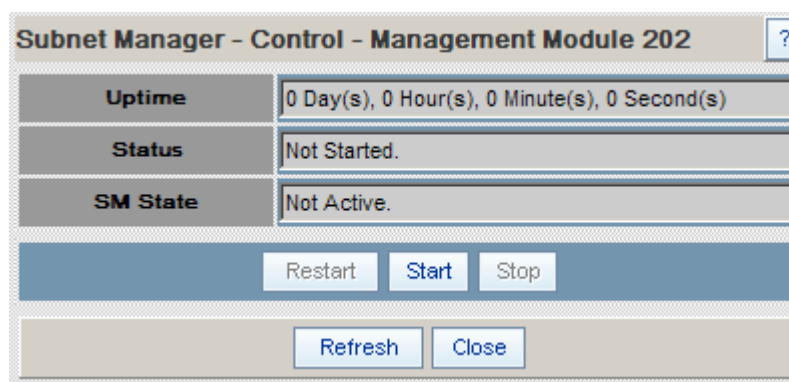
- From the Management Module menu, click **Subnet Manager**.
The **Control** button is displayed (Figure 3-75).

Figure 3-75. Subnet Manager Control Button



- Click **Control**.
The **Subnet Manager Control** window is displayed (Figure 3-76).

Figure 3-76. Subnet Manager Control Window



3. To start the Fabric Manager, click **Start**.
The system responds by displaying **Starting up** in the **Status** box of the **Subnet Manager Control** window.
4. 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.
5. Click **Close**.

3.12.1.1 Restarting the Fabric Manager

1. From the menu, click **Subnet Manager**.
2. Click **Control**. The **Subnet Manager Control** window is displayed.
3. To restart the Fabric Manager, click **Restart**.
The system responds by displaying **Shutting Down** in the **Status** box of the **Subnet Manager Control** window.
4. 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.
5. Click **Close**.

3.12.1.2 Stopping the Fabric Manager

1. From the menu, click **Subnet Manager**.
2. Click **Control**.
The **Subnet Manager Control** window is displayed.
3. To stop the Fabric Manager, click **Stop**.
The system responds by displaying **Shutting Down** in the **Status** box of the **Subnet Manager Control** window.
4. 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.
5. 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.

Note: The following instructions detail adding a six port upgrade to a 12300-BS18 switch. The user may add up to three upgrades (with three separate license keys), bringing the total active port count to 36. The general guidelines are:

- Cable ports 1 – 18 are the default, active ports.
- A license key is not specific to a set of ports. The number of installed keys increases the number of active ports by six. For example:
 - If one license key is installed, ports 19-24 become active
 - If two keys are installed, ports 19-24 and 25-30 become active.
 - If one license key is removed, ports 25-30 become inactive.

3.13.1 Adding a New License Key

1. Click **License Keys**.

The **Key Administration** button is displayed (Figure 3-77).

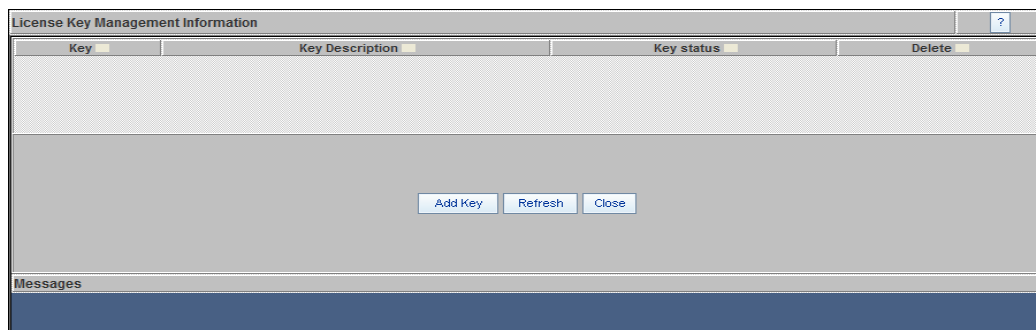
Figure 3-77. License Key Submenu



2. Click **Key Administration**.

The **Key Management** window is displayed (Figure 3-78).

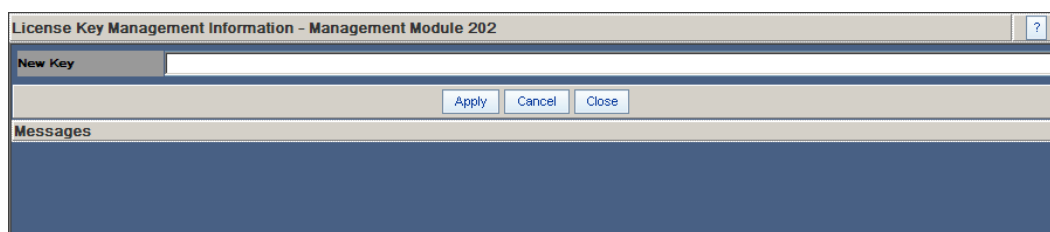
Figure 3-78. Key Management Window



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

The **License Key Management Information** window is displayed (Figure 3-79).

Figure 3-79. License Key Management Information Window

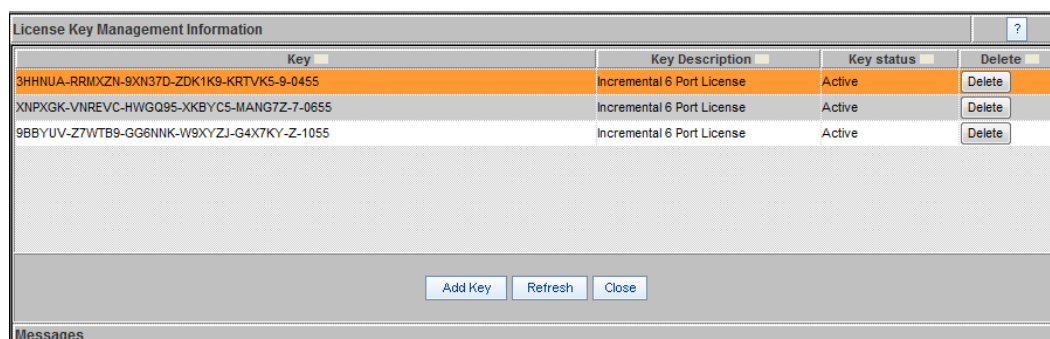


4. Enter the license key information in the **New Key** text box, and click **Apply**.

3.13.2 Deleting a License Key

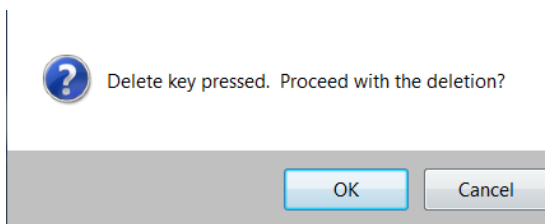
1. Click on the **License Keys** submenu.
2. Click on **Key Administration**.
The **Key Management** window is displayed (Figure 3-80).

Figure 3-80. Key Management Delete



3. To delete a license key, click the **Delete** button.
The system prompts with **Are you sure you want to clear key: ()?** dialog box (Figure 3-81).

Figure 3-81. License Key Delete Prompt



4. Click **OK** to delete.

§ §