Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide

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• Move the equipment farther away from the television or radio.

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New and Changed Information

The *Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide* applies to the SFS 7024 Release 3.1 or later.

Table 1 lists the new and changed features available with each supported SFS 7024 release.

Table 1 Documented Features for the Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide

Feature	Description	Changed in Release	Where Documented
	Initial release of the *Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide*		
Redundant Management	Added redundant management information.	3.3	Installing the Spine and Leaf Modules, page 1-17 Updating Management Spine IP Addresses in a Redundant Management Configuration, page 1-27
Double Data Rate (DDR) capabilities	Added DDR information	3.4	Product Overview, page 1-1 Port Statistics Field Descriptions, page 2-36 CLI command ismPortSetSpeed in the section IbSwitchInfo, page B-55 of Appendix B: Command Line Interface.

Table 1 Documented Features for the Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide (continued)

Feature	Description	Changed in Release	Where Documented
User authentication via command line interface (CLI), serial console and Chassis Viewer GUI	User login and password required to access the SFS 7024	4.1.1.1.11	LDAP Configuration, page 2-20 HTTP/CLI Session Configuration, page 2-21 Accessing the CLI, page B-3
Added the following CLI commands: • `userAdd` • `userRem` • `userListShow`	• `userAdd` allows multiple user accounts to be created. • `userRem` allows user accounts to be removed. • `userListShow` allows the list of user accounts to be displayed.	4.1.1.1.11	Refer to the CLI command group General, page B-4

Preface

This preface describes the audience, organization, and conventions of the *Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide* . It also provides information on how to obtain related documentation.

Audience

The intended audience for this document are network administrators responsible for configuring and operating network equipment. It assumes a basic working knowledge of:

- Local Area Networks (LANs)
- Ethernet concepts
- Simple Network Management Protocol (SNMP)
- InfiniBand

Organization

This guide is organized as follows:

Chapter	Title	Description
Chapter 1	Installation	Task-oriented information for installing the SFS 7024
Chapter 2	Operations and Administration	Task-oriented information for configuring and monitoring the SFS 7024
Appendix A	Technical Specifications	SFS 7024 technical specifications
Appendix B	Command Line Interface	Reference information for the SFS 7024 command line interface (CLI)
Appendix C	Troubleshooting	Troubleshooting symptoms and resolutions for the SFS 7024

Conventions

This document uses the following conventions for notes, cautions, and safety warnings.

Notes and Cautions contain important information that you should be aware of.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. You are capable of doing something that might result in equipment damage or loss of data.

Safety warnings appear throughout this publication in procedures that, if performed incorrectly, may harm you. A warning symbol precedes each warning statement.

Warning **This warning symbol means *danger*. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.**

Related Documentation

The documentation set for the SFS 7012 and SFS 7024 includes the following documents:

- *Regulatory Compliance and Safety Information for the Cisco Server Fabric Switches: 7000P, 7000D, 7008P, 7012, 7024, and 3012R*
- *Cisco SFS 7024 InfiniBand Server Switch Release Notes for Cisco Releases*
- *Cisco SFS 7024 InfiniBand Server Switch Hardware Users Guide*
- *Cisco SFS 7024 InfiniBand Server Switch Installation and Configuration Note*

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

CHAPTER 1

Installation

This chapter describes how to install the Cisco SFS 7024 and its components, and it includes the following information:

- Planning the Installation, page 1-7
- Installation Tasks, page 1-12
- Hot Swapping Components, page 1-32

Note Before you install, operate, or service the system, read the *Regulatory Compliance and Safety Information for the Cisco Server Fabric Switches: 7000P, 7000D, 7008P, 7012, 7024, and 3012R* for important safety information.

Warning **IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Warning **This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

Warning **A readily accessible two-poled disconnect device must be incorporated in the fixed wiring.** Statement 1022

Statement 1019—Main Disconnecting Device

Warning **The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.** Statement 1019

Waarschuwing **De combinatie van de stekker en het elektrisch contactpunt moet te allen tijde toegankelijk zijn omdat deze het hoofdmechanisme vormt voor verbreking van de aansluiting.**

Varoitus **Pistoke/liitinkohta toimii pääkatkaisumekanismina. Pääsy siihen on pidettävä aina esteettömänä.**

Attention **La combinaison de prise de courant doit être accessible à tout moment parce qu'elle fait office de système principal de déconnexion.**

Warnung **Der Netzkabelanschluß am Gerät muß jederzeit zugänglich sein, weil er als primäre Ausschaltvorrichtung dient.**

Avvertenza **Il gruppo spina-presa deve essere sempre accessibile, poiché viene utilizzato come dispositivo di scollegamento principale.**

Advarsel **Kombinasjonen støpsel/uttak må alltid være tilgjengelig ettersom den fungerer som hovedfrakoplingsenhet.**

Aviso **A combinação ficha-tomada deverá ser sempre acessível, porque funciona como interruptor principal.**

¡Advertencia! **El conjunto de clavija y toma ha de encontrarse siempre accesible ya que hace las veces de dispositivo de desconexión principal.**

Varning! **Man måste alltid kunna komma åt stickproppen i uttaget, eftersom denna koppling utgör den huvudsakliga frånkopplingsanordningen.**

Figyelem **A dugaszolóaljzat és a dugasz együttesének mindig hozzáférhetőnek kell lennie, mivel ez szolgál főmegszakítóként.**

Предупреждение Штепсельная розетка всегда должна быть доступна, поскольку она служит основным устройством отключения.

警告 插销和插座必须便于随时插拔，因为它是主要断电设备。

警告 主要な切断装置となるので、プラグとソケットは常に手が届く場所に置く必要があります。

Statement 1045—Short-circuit Protection

Warning **This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.**

Waarschuwing **Voor dit product moet kortsluitbeveiliging (overstroombeveiliging) deel uitmaken van de installatie in het gebouw. De installatie moet voldoen aan de nationale en lokale bedradingvoorschriften.**

Varoitus **Tämä tuote vaatii suojauksen oikosulkuja (ylivirtaa) vastaan osana asennusta rakennukseen. Asenna ainoastaan kansallisten ja paikallisten johdotussäännösten mukaisesti.**

Attention **La protection de ce produit contre les courts-circuits (surtensions) doit être assurée par la configuration électrique du bâtiment. Vérifiez que l'installation a lieu uniquement en conformité avec les normes de câblage en vigueur au niveau national et local.**

Warnung **Für dieses Produkt ist eine Kurzschlußsicherung (Überstromsicherung) erforderlich, die als Teil der Gebäudeinstallation zur Verfügung gestellt wird. Die Installation sollte nur in Übereinstimmung mit den nationalen und regionalen Vorschriften zur Verkabelung erfolgen.**

Avvertenza **Questo prodotto richiede una protezione contro i cortocircuiti, da fornirsi come parte integrante delle dotazioni presenti nell'edificio. Effettuare l'installazione rispettando le Norme CEI pertinenti.**

Advarsel **Dette produktet krever beskyttelse mot kortslutninger (overspenninger) som en del av installasjonen. Bare installer utstyret i henhold til nasjonale og lokale krav til ledningsnett.**

Aviso **Este produto requer proteção contra curto-circuitos (sobreintensidade de corrente), que deve estar instalada nos edifícios. Instale apenas de acordo com as normas de instalação elétrica nacionais e locais.**

Advertencia **Este producto necesita estar conectado a la protección frente a cortacircuitos (sobretensiones) que exista en el edificio. Instálelo únicamente en conformidad con las regulaciones sobre cableado, tanto locales como nacionales, a las que se tenga que atener.**

Varning! **Denna produkt kräver att kortslutningsskydd (överström) tillhandahålles som en del av byggnadsinstallationen. Installera bara i enlighet med nationella och lokala kabeldragningsbestämmelser.**

Figyelem **A termékhez kötelező rövidzárlat (túláram) elleni védelmet használni, amelyet az épület kábelezésének részeként kell biztosítani. Csak az országos és helyi kábelezési előírásoknak megfelelően helyezhető üzembe.**

Предупреждение Для этого устройства необходима защита от короткого замыкания (перегрузки), являющаяся частью электропроводки здания. При установке устройства необходимо соблюдать региональные и местные требования к электрооборудованию.

警告 此产品需要短路（过载电流）保护，这种保护要由建筑物内的供电电路提供。安装时必须遵守国家和当地有关布线的规章。

警告 この製品は、設置する建物にショート(過電流)保護機構が備わっていることを前提に設計されています。電気配線に関する一般規定および地域の規定に従って設置してください。

주의 이 제품은 단락(과전류) 보호가 필요하며, 이는 건물 설치의 일부로 제공됩니다. 국가 및 해당 지역 배선 규정에 따라 설치하십시오.

Aviso **Este produto requer uma proteção contra curto-circuito (sobrecorrente) que deve fazer parte da instalação do edifício. Faça a instalação somente de acordo com as regulamentações de cabeamento nacionais e locais.**

Advarsel **Dette produkt kræver beskyttelse mod kortslutning (overstrøm). Dette skal være en del elinstallationen i bygningen. Installation skal ske i overensstemmelse med nationale og lokale ledningsregler.**

تحذير **يجب وجود حماية من الدوائر الكهربائية القصير كجزء من تركيب الجهاز. قم بالتركيب طبقاً للتشريعات السلكية المحلية.**

Upozorenje **Za ovaj je proizvod potrebna zaštita od prekomjerne količine struje (kratkoga spoja), koja mora biti ugrađena kao dio električnoga strujnog kruga. Zaštitu ugradite samo u skladu s važećim zakonima i propisima o ožičenju.**

Upozornění **Upozornění: Tento výrobek vyžaduje ochranu proti zkratu (nadproudu), která je součástí instalace budovy. Instalaci provádějte pouze v souladu s platnými předpisy pro elektroinstalaci.**

Προειδοποίηση Αυτό το προϊόν απαιτεί στην κτιριακή εγκατάσταση να περιλαμβάνεται προστασία από βραχυκύκλωμα (υπέρ-ένταση). Η τοποθέτηση να γίνεται μόνο σύμφωνα με τους εθνικούς και τοπικούς κανονισμούς για την καλωδίωση.

אזהרה למוצר זה נדרשת הגנה מפני קצר (זרם-יתר), המסופקת כחלק ממערך ההתקנה. יש להתקין רק בהתאם להנחיות החיווט הנהוגות המדינה וההנחיות המקומיות.

Opomena За производот треба да се обезбеди заштита од краток спој (преголем напон) што е вградена во инсталацијата на зградата. Местете ја инсталацијата само во согласност со националните и помесните прописи за електрично ожичување.

Ostrzeżenie **To urządzenie wymaga zastosowania zabezpieczenia przeciwzwarciowego (nadprądowego) jako elementu instalacji elektrycznej budynku. Należy je instalować zgodnie z krajowymi i lokalnymi przepisami dotyczącymi instalacji elektrycznych.**

Upozornenie **Upozornenie Tento výrobok vyžaduje ochranu proti krátkemu spojeniu (nadprúdu), ktorá je súčasťou inštalácie budovy. Inštaláciu uskutočňujte iba v súlade s platnými predpismi pre elektroinštaláciu.**

Statement 1074—Comply with Local and National Electrical Codes

Warning **Installation of the equipment must comply with local and national electrical codes.** Statement 1074

Waarschuwing **Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.**

Varoitus **Laitteisto tulee asentaa paikallisten ja kansallisten sähkömääräysten mukaisesti.**

Attention **L'équipement doit être installé conformément aux normes électriques nationales et locales.**

Warnung **Die Installation der Geräte muss den Sicherheitsstandards entsprechen.**

Avvertenza **L'installazione dell'impianto deve essere conforme ai codici elettrici locali e nazionali.**

Advarsel **Installasjon av utstyret må samsvare med lokale og nasjonale elektrisitetsforskrifter.**

Aviso **A instalação do equipamento tem de estar em conformidade com os códigos eléctricos locais e nacionais.**

¡Advertencia! **La instalación del equipo debe cumplir con las normativas de electricidad locales y nacionales.**

Varning! **Installation av utrustningen måste ske i enlighet med gällande elinstallationsföreskrifter.**

Figyelem **A berendezés üzembe helyezését a helyi és a nemzeti elektromossági előírások figyelembevételével kell elvégezni.**

Предупреждение **Установка оборудования должна соответствовать местным и национальным электротехническим нормам.**

警告 设备安装必须符合本地与本国电气法规。

警告 機器の取り付けは地域および国内の電気工事規定に遵守する必要があります。

Statement 1075—Hazardous Voltage or Energy Present on DC Power Terminals

Warning **Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place.** Statement 1075

Waarschuwing **Op DC-aansluitingspunten kunnen zich gevaarlijke voltages of energieën voordoen. Plaats altijd de afsluiting wanneer de aansluitingspunten niet worden gebruikt Zorg ervoor dat blootliggende contactpunten niet toegankelijk zijn wanneer de afsluiting is geplaatst.**

Varoitus **Tasavirtaliittimissä saattaa olla huomattava jännite tai teho. Sulje suojus aina, kun liittimet eivät ole käytössä. Suojuksen ollessa suljettuna varmista, että kohde on suojattu eristämättömiltä johtimilta.**

Attention **Le voltage ou l'énergie électrique des terminaux à courant continu peuvent être dangereux. Veillez à toujours replacer le couvercle lors les terminaux ne sont pas en service. Assurez-vous que les conducteurs non isolés ne sont pas accessibles lorsque le couvercle est en place.**

Warnung **In mit Gleichstrom betriebenen Terminals kann es zu gefählicher Spannung kommen. Die Terminals müssen abgedeckt werden, wenn sie nicht in Betrieb sind. Stellen Sie bei Benutzung der Abdeckung sicher, dass alle nicht isolierten, stromführenden Kabel abgedeckt sind.**

Avvertenza **I terminali di alimentazione DC potrebbero contenere voltaggio o energia pericolosi. Accertarsi di sostituire il coperchio ogni qualvolta i terminali non sono operativi. Accertarsi che i conduttori scoperti non siano accessibili quando il coperchio è inserito.**

Advarsel **Det kan forekomme farlig spenning eller energi i likestrømsterminaler. Sett alltid dekselet på plass når terminalene ikke er i bruk. Kontroller at uisolerte ledere ikke er tilgjengelige når dekselet er på plass.**

Aviso **Os terminais de corrente contínua podem fornecer tensão ou energia perigosa. Volte a colocar a tampa, sempre que os terminais não estiverem a ser utilizados. Certifique-se de que os condutores sem isolamento não estão acessíveis, quando a tampa estiver colocada.**

¡Advertencia! **Puede haber energía o voltaje peligrosos en los terminales eléctricos de CC. Reemplace siempre la cubierta cuando no estén utilizándose los terminales. Asegúrese de que no haya acceso a conductores descubiertos cuando la cubierta esté colocada.**

Varning! **Farlig spänning eller skadlig energi kan finnas i likströmsterminalerna. Sätt alltid tillbaka höljet när terminalerna inte används. Försäkra att inga oisolerade ledare kan nås när höljet sitter på plats.**

Figyelem **Az egyenáramú csatlakozókon veszélyes feszültség vagy energia léphet fel. Ha a csatlakozók nincsenek bekötve, feltétlenül tegye vissza a fedelet. Ügyeljen rá, hogy a szigeteletlen vezetékeket ne lehessen megérinteni, ha a fedél fel van szerelve.**

Предупреждение **На контактах питания постоянного тока может присутствовать опасное напряжение или энергия. Всегда устанавливайте крышку на место после завершения обслуживания. Когда крышка установлена, все неизолированные проводники должны быть недоступны.**

警告 直流电源终端可能产生危险的电压或能量。终端不使用时，务必将机盖盖上。确认机盖盖上时，无法使用不绝缘导体。

警告 直流電力端子に危険な電圧やエネルギーが発生している可能性があります。使用していない端子には常にカバーを付けてください。カバーが付いているときは非絶縁形コンダクタに接触できないことを確認してください。

Planning the Installation

Rack Specifications and Recommendations

The SFS 7024 switch is designed to be installed in an existing 19-inch equipment rack or server rack.

Note The SFS 7024 switch is designed for a four-post server cabinet. *It is not designed for a two-post telco cabinet.*

Racks should conform to conventional standards. In the United States, use American National Standards Institute (ANSI)/Electronic Industries Association (EIA) standard ANSI/EIA-310-D-92, and International Electrotechnical Commission (IEC) 297

- Racks should meet the following mechanical recommendations:
  - Four-post, 19" rack to facilitate easy maintenance
  - Universal mounting rail hole pattern identified in IEC Standard 297
  - Mounting holes flush with the rails to accommodate the switch
- Use a rack grounding kit and a ground conductor that is carried back to earth or to another suitable building ground. Ground the equipment rack to earth ground.
- Provide enough room to work on the equipment. Clear the work site of any unnecessary materials. Make sure the equipment will have enough clearance for front and rear access.

Cable Requirements

Cable Distances

When planning the location of the switches, consider the distance limitations for signaling, EMI, and connector compatibility. It is recommended that the user does not exceed specified transmission rate and distance limits.

Note Building and electrical codes vary depending on the location. Comply with all code specifications when planning the site and installing cable.

When running cables to the equipment, consider the following:

- Do not run cables where they can be stepped on or rolled over.
- Be sure cables are intact with no cuts, bends, or nicks.
- If the user is making a cable, ensure that the cable is properly crimped.
- Provide proper strain relief for standard IB cables.
- Support cable using a cable manager mounted above connectors to avoid unnecessary weight on the cable bundles.
- Bundle cable using velcro straps to avoid injuring cables.
- Keep all ports and connectors free of dust.
- Untwisted Pair (UTP) cables can build up Electrostatic Discharge (ESD) charges when being pulled into a new installation. Before installing category 5 UTP cables, discharge ESD from the cable by plugging it into a port on a system that is not powered on.
- When required for safety and fire rating requirements, plenum-rated cable can be used. Check the local building codes to determine when it is appropriate to use plenum-rated cable, or refer to IEC standard 850.

Uninterruptible Power Supply

Consider the following when selecting Uninterruptible Power Supply (UPS) equipment:

- The minimum amperage requirements for a UPS:
  - Calculate VA (Volt-Amps): Locate the voltage and amperage requirements for each piece of equipment (usually located on a sticker on the back or bottom of the equipment). Multiply the numbers together to get VA.
  - Add the VA from each piece of equipment together to find the total VA requirement. Then add 30% to determine the minimum amperage requirements for the UPS.
- Transition time (the time necessary for the UPS to transfer from utility power to full-load battery power).
- The longest potential time period the UPS might be required to supply backup power.
- Whether or not the UPS unit also provides online protection.

Installation Tasks Checklist

To perform the actual switch installation, the site implementation engineer must perform the following tasks, which are detailed in this section.

Caution Be sure to review the Safety Information on page 1-9 *before* starting the installation and *during* the installation process. Check the installation site to verify the installation of cabinet power feeds, rails, and grounding.

Step 1 Unpack the equipment and inspect for any shipping damage. Any shipping damage should be reported to the shipping company.

Step 2 Verify that the equipment shipped matches the packing list.

Step 3 Mark the rack and install the mounting rails.

Step 4 Physically install the switch in the rack.

Safety Information

The following safety guidelines are provided to ensure both personal safety for the user and to protect the system from potential damage. These precautions cover the following categories:

- Precautions for Rack-Mountable Products
- Protecting Against Electrostatic Discharge
- Electrical Safety Precautions

Precautions fit into one of three categories:

Note A textual callout designed to emphasize:

  - Tasks of particular importance.
  - Tips and reminders to maximize the use of the equipment.

Caution Potential for damage to system equipment. Damage to the system caused by the user may have potential warranty implications.

Warning **Potential for personal injury.**

Precautions for Rack-Mountable Products

Warning **Installing system components in a rack without the front and side stabilizers installed could cause the rack to tip over. Therefore, always install the stabilizers before installing components in the rack.**

Warning **After installing system components in a rack never pull more than one component at one time out of the rack on its slide assemblies. The weight of more than one extended component could cause the rack to tip over.**

Warning **Do not step on or stand on any component when servicing other components in a rack.**

Warning **The chassis, when fully populated with leaf modules, spine modules, power and fan supplies, is very heavy (approximately 175 lbs.). It is recommended that a lifting device be used to handle a fully loaded chassis.**

Caution Always load the rack from the bottom up, loading the heaviest item first.

Caution Make sure the rack is level and stable before extending any component from the rack.

Note Ensure that proper airflow is provided to components of the rack.

Protecting Against Electrostatic Discharge

Caution Use a grounded wrist strap designed to prevent static discharge.

Caution Static electricity can harm delicate components inside the system. To prevent ESD damage, users need discharge any static electricity from their bodies before touching any electronic components. Touching an unpainted metal surface will discharge static electricity.

Caution When transporting an ESD sensitive component, first place it in an antistatic container or packaging.

Electrical Safety Precautions

Warning **Do not work alone when working with high voltage components.**

Warning **This unit may have more than one power cord. To reduce the risk of electrical shock, disconnect both cords before servicing the unit.**

Warning **To avoid potential electrical shock, operate this unit only when the cover is in place.**

Warning **To avoid potential electrical shock, use only a grounded (three wire) electrical outlet.**

Warning **Keep objects that might damage this unit and liquids that might spill clear from this unit. Liquids and foreign objects that come into contact with voltage points could create the risk of fire or electrical shock.**

Caution Do not overload the power supply branch circuit providing power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.

Caution Keep power cord and connection cables clear of obstructions that might cause damage.

Caution Do not attempt to service the unit yourself. The first course of action is to contact Technical Support.

Note Unplug this unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:

- The power cord is damaged or frayed.
- The unit has been dropped or the case has been damaged.
- The unit has been exposed to any liquids.
- The unit does not operate normally when all operating instructions have been followed.
- The unit exhibits a distinct change in performance, indicating a need for service.

Tools, Equipment and Personnel Required

- An ESD wrist strap
- A #2 Phillips screwdriver
- Pen (felt-tip) to mark the mounting holes\
- Three people to complete the installation (highly recommended). The SFS 7024 switch chassis weighs up to 180 pounds fully loaded.

Check the Installation Site

The SFS 7024 switch is designed to be installed in an existing server cabinet (not a telco cabinet), where it can be mounted in a standard equipment rack. Mounting brackets are integrated with the switch.

Be sure of the following:

- The cabinet has a full earth ground to provide reliable grounding.
- There is enough room to work on the equipment.
- The equipment will have enough clearance for front and rear access.
- The IB cables can be accessed easily.
- Water or moisture cannot enter the switch.
- The ambient temperature stays between 50° - 113°F (5° - 45° C).
- Cabinet doors do not interfere with front-to-back air flow.

The cabinet should have its own power distribution (with switch). If the switch has two power supplies, it is suggested that a cabinet with dual power distribution units is used.

It is recommended that cabinet anti-tip devices are used. This is especially true if installing or removing an SFS 7024 switch in the upper half of the cabinet when the lower half is empty.

Unpack the Equipment

Warning **Read all installation instructions before connecting the system to its power source.**

Step 1 Carefully open the box and unpack the SFS 7024 switch. The SFS 7024 is shipped fully populated and should contain.

- SFS 7024 Chassis
- Leaf modules (up to 24)
- Leaf module blanks (up to 23). These blanks populate unused leaf module slots to help maintain the thermal integrity of the chassis.
- Spine modules (up to 6)
- Spine module blanks (up to 4). These blanks populate unused spine module slots to help maintain the thermal integrity of the chassis.
- Power Supplies: up to twelve (12)
- Power supply blanks (up to 6). These blanks populate unused power supply slots to help maintain the thermal integrity of the chassis.
- Fans (8)
- Mounting hardware kits

Step 2 Inspect the equipment for any shipping damage and report any problems to the shipping company.

Step 3 Verify that the equipment serial numbers match those on the packing slip.

Step 4 Resolve any issues with incorrect serial numbers or missing/incorrect parts ***before*** installing the equipment.

Installation Tasks

The following is an overview of the installation tasks detailed in this section:

Step 1 If applicable, remove the doors of the rack.

Step 2 Mark the rack, allowing 14 U (24.50 inches) of vertical space to install the SFS 7024 switch.

Step 3 Install the support rails.

Step 4 Rack mount the switch.

Step 5 If applicable, replace the doors of the rack.

Mounting Kit

The mounting kit hardware contains all of the necessary parts for installing and mounting the SFS 7024 switch into a rack. These kits are intended for use in cabinets with a depth ranging from 28 - 34 inches.

Note If the rack is less than 28”, or more than 34” deep, instead of using the rails, a support shelf able to support 175 lbs is required.

Mounting Hardware Kit Contents:

- **Kit Mounting Rails** containing:
  - One pair (left and right) of bottom support rail assemblies
  - One pair of top support rail assemblies
  - One pair of lower rear mounting brackets
  - Four heyclips
- **Kit Mounting Hardware 3/8” Square Hole** containing:
  - Twenty-four 10/32” x 0.375” pan-head Phillips screws
  - Twenty caged nut adapters for square-holed racks

Mark the Rack

Allow 14U (24.50 inches) of vertical space to install the SFS 7024 switch in the rack.

Step 1 Determine the location on the rack of the bottom of the switch.

Step 2 Mark the upper and lower mounting positions on the vertical rails on the front of the rack.

Step 3 Mark the upper and lower mounting positions on the vertical rails on the back of the rack.

Install the Rails in the Rack

Note The front flange (chassis fan side) of the rail has 3 holes. The back flange of the rail (chassis leaf module side) has two holes, which correspond to the bottom two holes on the front flange.

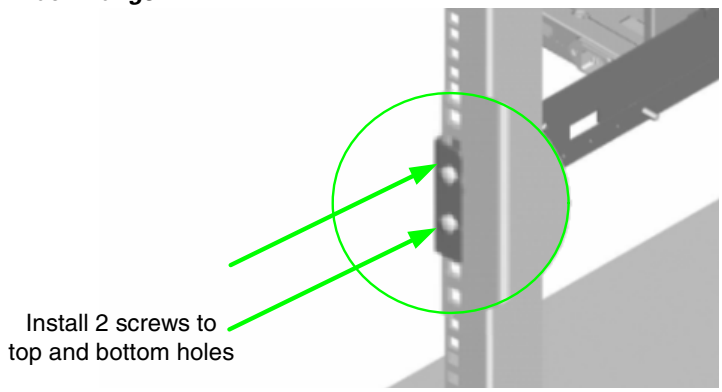
Step 1 Install the caged nuts into the 2 back holes (chassis leaf module side) and the top and bottom holes (chassis fan side) in the front of the rack.

Note The 2 front holes should match up with the *top and bottom* holes of the rail front flange.

All holes should correspond to the rail mounting positions (i.e., the holes marked with pen or tape).

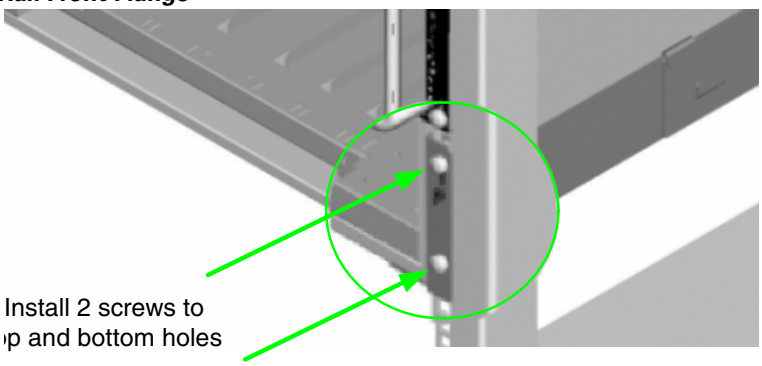
Step 2 Fasten the rail back flange (chassis leaf module side) to the rack by installing two screws into the rail and rack.

Figure 1 Rail Back Flange



Step 3 Fasten the rail front flange (chassis fan side) to the rack by installing one screw into the top hole of each rail.

Figure 2 Rail Front Flange



Install the second rail on the other side of the rack by repeating steps 1 through 3.

Rack-Mount the Switch

Caution Because of its size and weight, it is recommended that either a lifting device or three (3) people install the SFS 7024.

To install the switch into the rack, perform the following steps:

Step 1 Clear the area of any unnecessary materials.

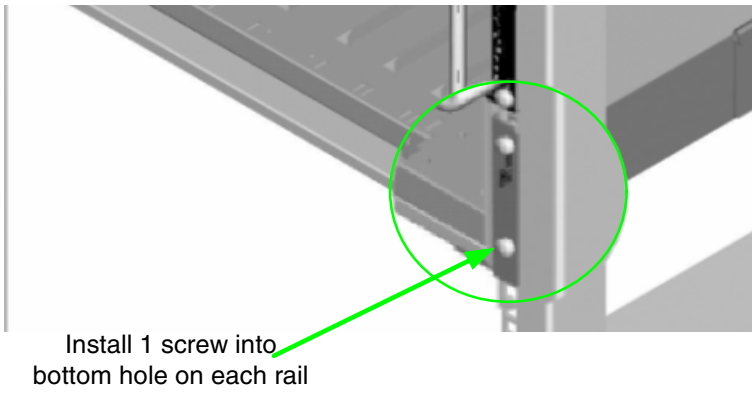
Step 2 Attach the clip of the ESD wristband (strap) to bare metal on the cabinet. Put the wristband around one wrist with the metal button against the skin.

Step 3 Lift the switch and from the front of the cabinet, slide it onto the rails. The fans and power supplies are on the *front* of the chassis; leaf modules are to the *rear*.

Caution Never lift the switch with the handles on the spine modules, leaf modules, power supplies, and fan trays. These handles are not designed to support the weight of the SFS 7024.

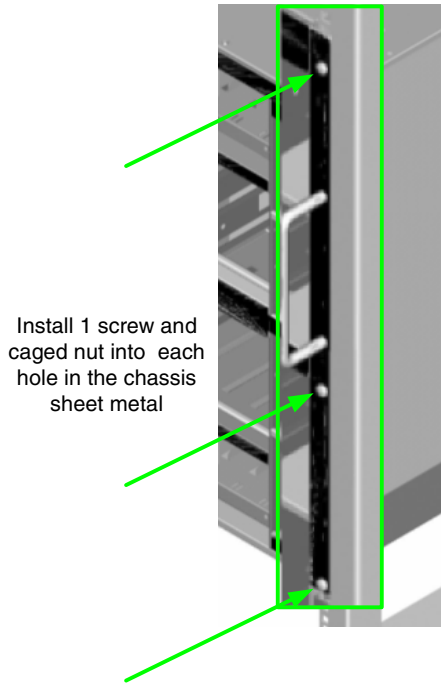
Step 4 Tighten the screw on the bottom of each side of the chassis into the corresponding bottom hole of the front flange of each rail.

Figure 3 Secure Chassis to Rail



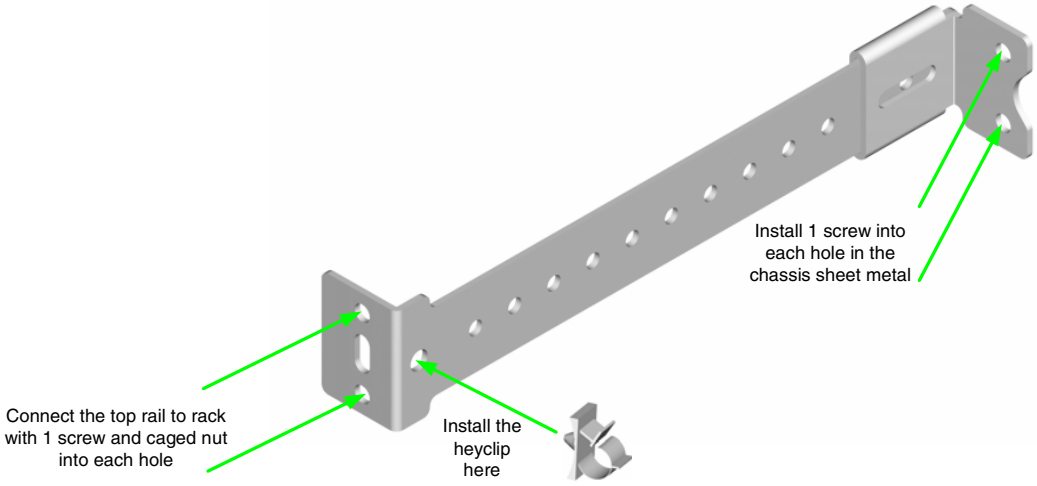
Step 5 On each side of the chassis, install a screw and caged nut into the three holes in the chassis sheet metal.

Figure 4 Secure Chassis to Rack



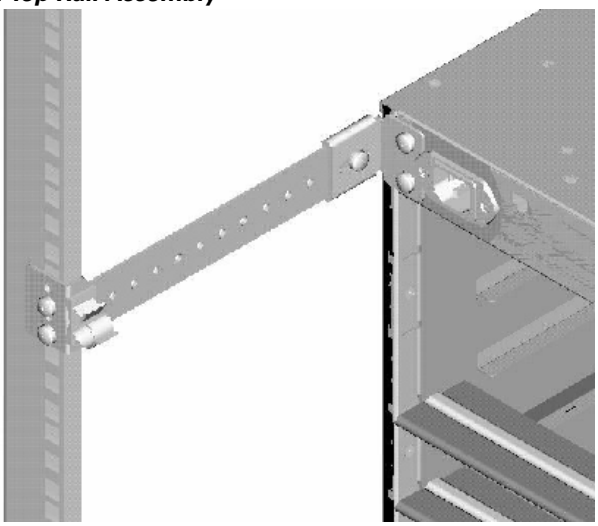
Step 6 Attach the top support rails to the chassis rear side as shown in Figure 5:

Figure 5 Top Rail Assembly



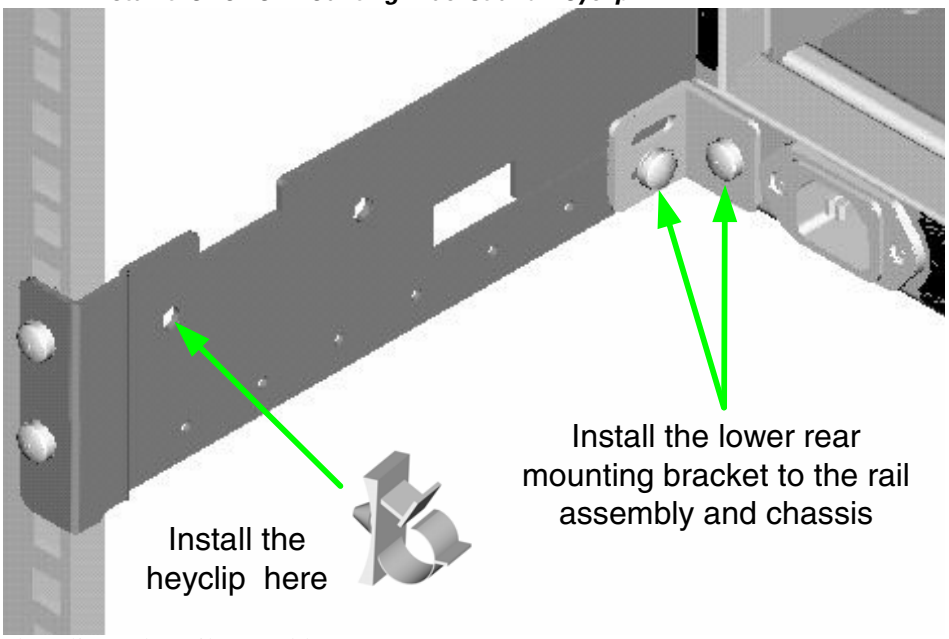
a. When complete, the top rail assembly should look like Figure 6:

Figure 6 Completed Top Rail Assembly



Step 7 Using two screws, install the lower mounting bracket to the rail assembly and chassis as shown in Figure 7.

Figure 7 Install the Lower Mounting Bracket and Heyclip



Step 8 Install the heyclip to the rail assembly.

Step 9 If applicable, reinstall the chassis fascia(s).

Installing the Switch Face Plate

To install the switch face plate(s):

Step 1 On the switch fan side, insert the notches on the top of the fascia into the two slots on the chassis frame. Snap the bottom of the faceplate in place.

Installing the Spine and Leaf Modules

Note The purchased configuration for the SFS 7024 is shipped fully populated. Follow these steps when it becomes necessary to install or replace spine modules and leaf modules.

Step 1 Remove the necessary spine modules, spine module blanks, leaf modules, and leaf module blanks. For detailed instructions, please refer to the section Removing a Module or Blank, page 1-19.

Note If the user is only adding additional modules, remove only the blank(s) for the slot(s) to be populated. These will not be replaced.

Step 1 When placing the spine modules and leaf modules into chassis slots, the following recommendations apply:

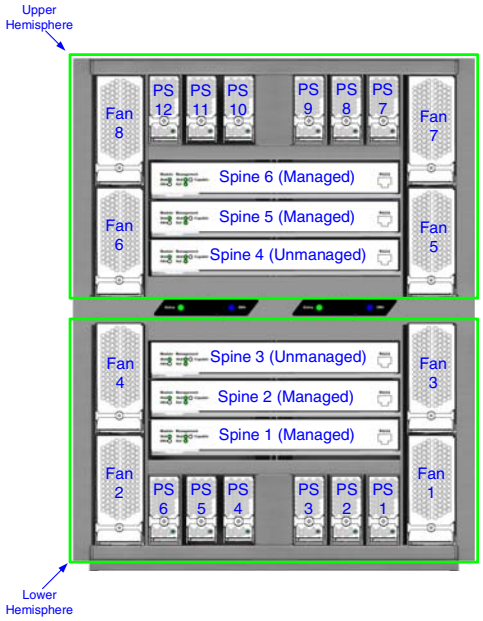
a. Spine Modules — It is recommended that the spine module(s) be installed into:

- Lower Hemisphere: Slot 1 for managed. For redundant management, populate slots 1 and 2 with management-capable spines. Use slot 3 for unmanaged.

– Upper Hemisphere: Slot 5 for managed. For redundant management, populate slots 5 and 6 with management-capable spines. Use slot 4 for unmanaged.

Refer to Figure 1-8 below:

Figure 1-8 SFS 7024 Chassis — Spine Module Slot Numbering



b. Leaf Modules— Leaf modules should be populated beginning with slot 1, then slot 2, then slots 3 through 24 respectively. Refer to Figure 1-9:

Figure 1-9 SFS 7024 Chassis — Leaf Module Slot Numbering

Step 2 To install a module or filler, hold it so that the ejector handles are on the bottom.

Step 3 Pull the handles out to extend them. Slide the module into the appropriate slot of the chassis until it makes contact with the backplane. As the module seats in the chassis, the handles will begin to close.

Step 4 Push the handles in to fully close.

Note Be sure that all cards are fully inserted in their respective chassis slots, and that the handles are in the locked position. This prevents accidental removal, provides proper grounding for the system, and helps to seat the bus connectors in the backplane receptacles.

Removing a Module or Blank

The handles are self-locking. To unlock, push up on the handles to disengage from the lock notch. Then gently pull the handles out and slide the module out of the slot.

Note If removing, but not *replacing* a module, remember to replace with a module blank. All slots must be either populated with a module or have blanks for EMI and thermal integrity.

Connect Equipment to the Ports and Power On the System

Note Before performing the tasks in this section, take a few minutes to review Figure 1-10 and Figure 1-11 below. It is important to understand the slot numbering for the leaf modules and spine modules (and the corresponding spine RJ-45 ports). It is also important to understand the slot numbering for the fans and power supplies (and the corresponding AC power inlets for the power supplies).

Figure 1-10 SFS 7024 Chassis Front View

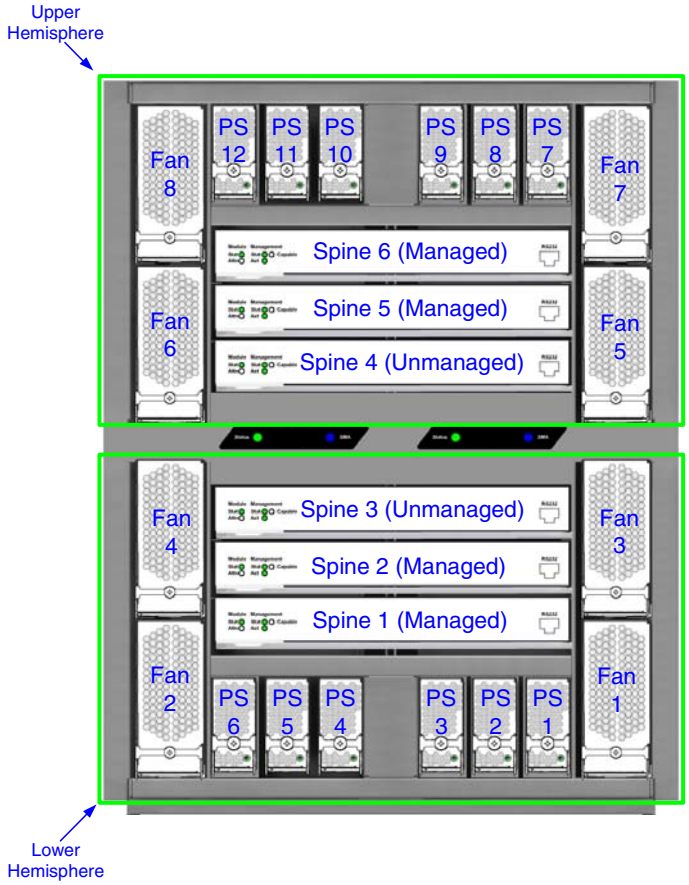
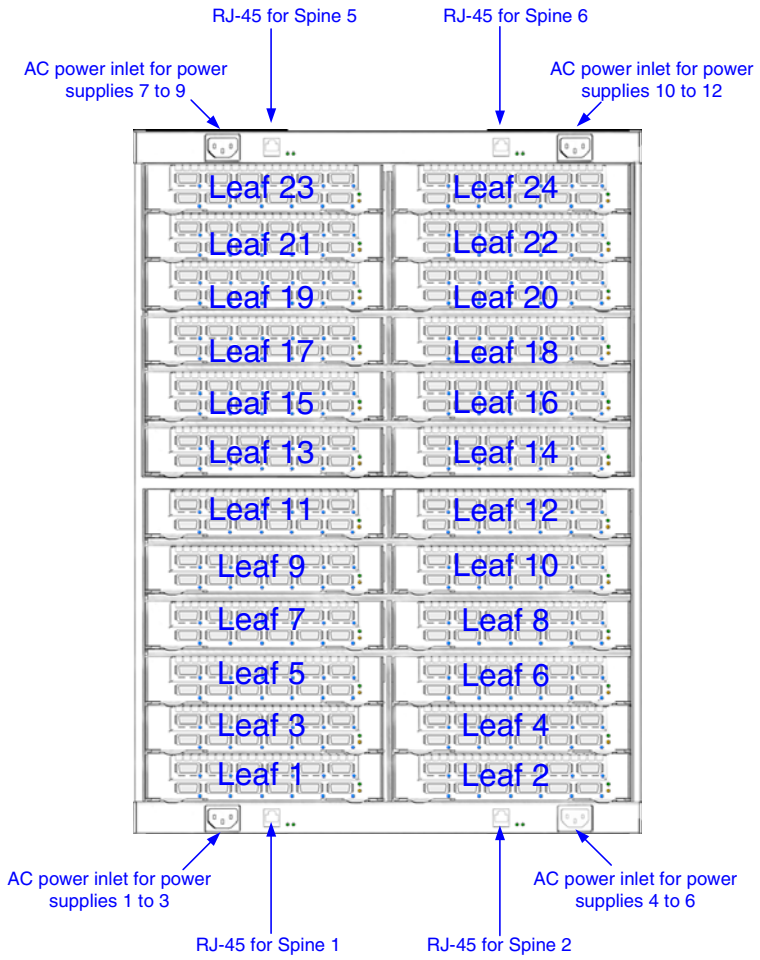


Figure 1-11 SFS 7024 Chassis Back View



Step 1 Connect a Category 5 or 6 (Cat 5/6) Ethernet cable to one of the RJ-45 connectors on the SFS 7024. Connect the other end of the Cat 5/6 to the OOB LAN workstation. Refer to Figure 1-11 for which RJ-45 connector(s) to use:

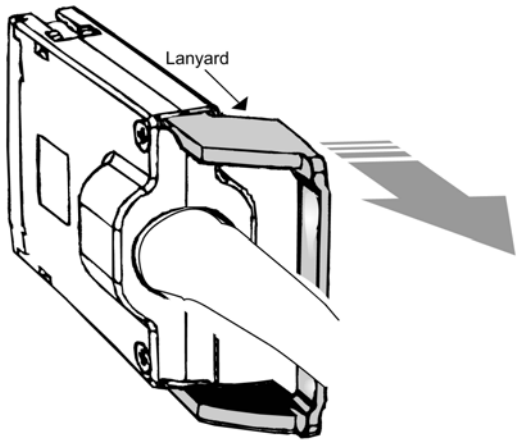
Step 2 Connect the switch to IB-enabled hosts using 4X-to-4X IB cables.

Note Make sure all cables latch securely into the corresponding port connectors. If the IB cable connector is not properly oriented to fit onto the port receptacle (i.e., while attempting to insert the cable in the port), *do not* twist the connector to achieve the correct orientation. Instead, reach back a few feet on the cable, and twist the bulk cable to allow the connector to rotate to the proper orientation. Doing this prevents all of the rotational forces from acting right at the connector terminations.

Caution It is important to provide strain relief for the IB cable connector.

Note When handling IB connectors, make certain to remove the connectors by pulling on the *center of the lanyard only* as shown in Figure 1-12 below. Pulling abruptly on the lanyard, or pulling on only one side of the lanyard will prevent the latch/unlatch operation from occurring, and could damage or break the lanyard.

Figure 1-12 4X IB Cable Connector



Connecting Power

Step 1 Provide strain relief for the power cable(s) by feeding them into the heyclips on the support rails.

Note Be certain that the power cords are firmly seated into the SFS 7024 AC power inlets. Depending upon the purchased configuration, refer to Figure 1-11 to determine the correct AC power inlet to use.

Step 2 If necessary, replace the faceplates over the switch fans.

Step 3 Connect the power cables to an AC power outlet.

Step 4 When the SFS 7024 switch is plugged into an AC power outlet:

- **a.** The system powers up.
- **b.** The fans start.
- **c.** The system performs a power-on self test (POST).

Step 5 The switch, power supply, and fan LEDs light up.

Bringing Up the System For the First Time

Start-up Procedures

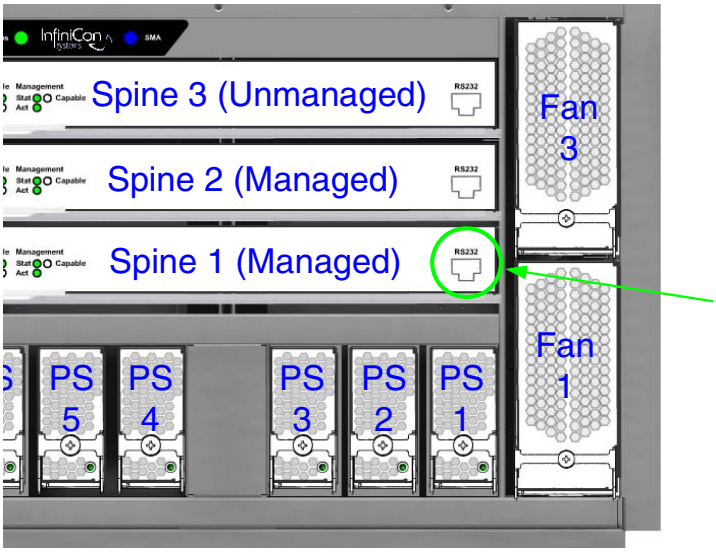
Step 1 Power up the SFS 7024.

Step 2 From its flash image on the CMU spine module, the switch begins its boot process.

Note If the spine module RS-232 port is connected to a terminal emulation program, the user will be able to view the switch boot process. Be certain to use a *null-modem/crossover* serial cable for the console port. The settings for the terminal emulation device should be:

- 8 data bits
- no parity bits
- 1 stop bit
- 57600 baud
- Use VT100 emulation.
- Flow control = XON/XOFF

Figure 1-13 SFS 7024 RS-232 Connector



Step 3 The system prompts for a user name. In order to change the IP address and default gateway, the user must be logged in as the administrator. At the prompt enter:

```
super
```

Step 4 The system prompts for a password. At the prompt enter:

```
super
```

The system responds with:

```
Welcome to the SFS 7024 CLI. Type 'list' for the list of commands.
```

Step 5 Verify the IP address with the command line interface (CLI) command **showChassisIpAddr** command. The system returns the information similar to the following:

```
Chassis IP Address: 192.168.100.9 Net mask: 0xffffff00
```

Changing the IP Address and Default Gateway

There are 3 methods to change the IP address and default gateway of the chassis:

- Using the serial port.
- Logging into the CLI over Ethernet from a system that can reach the chassis using the default IP address (192.168.100.9).

- Use the Chassis Viewer GUI from a system that can reach the chassis using the default IP address (192.168.100.9).

Note One of the following procedures need to be performed on each hemisphere of the 7024.

Using the RS232 Serial Port

Step 1 Connect null-modem/crossover serial cables to the RS-232 port of lower hemisphere spine 1 (upper hemisphere spine 6). If using a terminal emulation device, the settings should be:

- 8 data bits
- no parity bits
- 1 stop bit
- 57.6K baud
- Use VT100 emulation.
- Flow control = XON/XOFF

Step 2 Power up the switch.

Step 3 The system prompts for a user name. In order to change the IP address and default gateway, the user must be logged in as the administrator. At the prompt enter:

```
super
```

Step 4 The system prompts for a password. At the prompt enter:

```
super
```

The system responds with:

```
Welcome to the SFS 7024 CLI. Type 'list' for the list of commands.
```

Step 5 To change the SFS 7024 default IP address enter:

```
setChassisIpAddr -h ipaddress -m netMask
```

where **-h ipaddress** is the new IP address in dotted decimal (i.e., xxx.xxx.xxx.xxx) format, and **-m netMask** is the new subnet mask in dotted decimal (i.e., xxx.xxx.xxx.xxx) format.

Step 6 To change the SFS 7024 default gateway IP address enter:

```
setDefaultRoute -h ipaddress
```

where **-h ipaddress** is the new default gateway IP address in dotted decimal (i.e., xxx.xxx.xxx.xxx) format.

Step 7 To to exit the CLI enter:

```
logout
```

Using Telnet or SSH

Step 1 Power up the switch.

Step 2 Connect a Category 5 or 6 (Cat 5/6) Ethernet cable to the RJ-45 connector on lower hemisphere spine 1 or upper hemisphere spine 6. Connect the other end of the Cat 5/6 to an OOB LAN Ethernet hub or Ethernet switch where a work station can access the 7024. A work station can be connected directly to the Ethernet port of spine 1 of the lower hemisphere (spine 6 of the upper hemisphere) if using a crossover Ethernet cable. Power up the switch.

Step 3 Access the lower hemisphere of the switch with the following command:

```
telnet 192.168.100.9
```

Note Access the upper hemisphere with `telnet 192.168.100.10`

Step 4 The system prompts for a user name. In order to change the IP address and default gateway, the user must be logged in as the administrator. At the prompt enter:

```
super
```

Step 5 The system prompts for a password. At the prompt enter:

```
super
```

The system responds with:

```
Welcome to the SFS 7024 CLI. Type 'list' for the list of commands.
```

Step 6 To change the SFS 7024 default IP address enter:

```
setChassisIpAddr -h ipaddress -m netMask
```

where **`-h ipaddress`** is the new IP address in dotted decimal (i.e., xxx.xxx.xxx.xxx) format, and **`-m netMask`** is the new subnet mask in dotted decimal (i.e., xxx.xxx.xxx.xxx) format.

Note After changing the IP address the chassis TELNET/SSH session is terminated and must be reopened using the new IP address.

Step 7 To change the SFS 7024 default gateway IP address enter:

```
setDefaultRoute -h ipaddress
```

where **`-h ipaddress`** is the new default gateway IP address in dotted decimal (i.e., xxx.xxx.xxx.xxx) format.

Step 8 To to exit the CLI enter:

```
logout
```

Using the Chassis Viewer GUI

Step 1 Power up the switch.

Step 2 Connect a Category 5 or 6 (Cat 5/6) Ethernet cable to the RJ-45 connector on lower hemisphere spine 1 or upper hemisphere spine 6. Connect the other end of the Cat 5/6 to an OOB LAN Ethernet hub or Ethernet switch where a work station can access the 7024. A work station can also be connected directly to the Ethernet port of spine 1 of the lower hemisphere (spine 6 of the upper hemisphere). Power up the switch.

Step 3 To start Chassis Viewer, open a web browser and enter the default IP of the switch (i.e., 192.168.100.9).

Note The browser must be on a workstation connected to the same Ethernet LAN, and on the same TCP/IP subnet as the OOB LAN port of spine 1 (lower hemisphere) or spine 6 (upper hemisphere).

Note Chassis Viewer supports the following browsers: Microsoft Internet Explorer 6.0+ (Windows) and Mozilla FireFox version 1.5.0.4 or later (Linux).

Note If the user is leaving their workstation for a period of time, be sure to close the browser window.

Step 4 If web authentication is enabled, the following screen will be displayed:

Note If web authentication is not enabled, skip to **Step 5**.

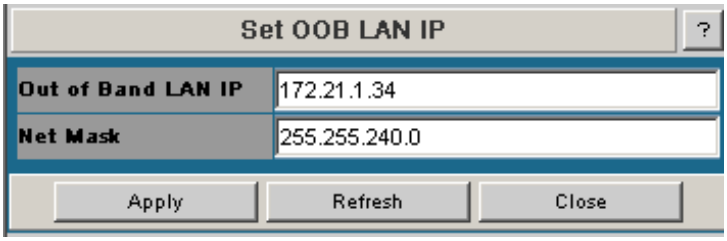
Figure 14 SFS 7024 Web Authentication

Enter the user name **super** and password **super**.

Step 5 From the chassis **OOB LAN IP** submenu, click **Set OOB LAN IP**. The **Set OOB LAN IP** is displayed:

Step 6 Click in the **OOB IP Address** field.

Figure 15 Set OOB LAN IP Window



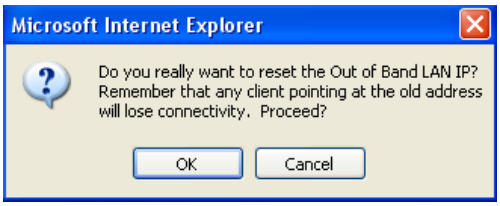
Step 7 Enter the new switch IP address.

Step 8 Click in the **Net Mask** field.

Step 9 Enter the new net mask.

Step 10 Click **Apply**. The following screen is displayed:

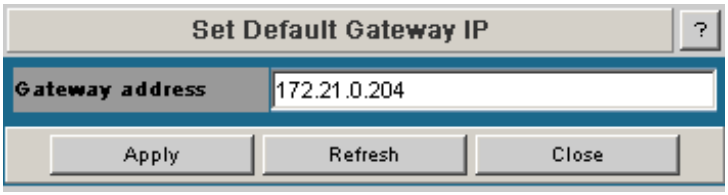
Figure 16 OOB LAN IP Confirmation Window



When the user clicks **OK** the Chassis Viewer refreshes and uses the new IP address.

Step 11 To change the switch default gateway, from the main menu select **OOB LAN IP** then **Set Default Gateway IP**. The following screen is displayed:

Figure 17 Set Default Gateway IP Window



Step 12 Click in the **Gateway address** field.

Step 13 Enter the new switch default gateway IP address.

Step 14 Click Apply.

Note A reboot is required to activate the new gateway IP address.

Updating Management Spine IP Addresses in a Redundant Management Configuration

Note This procedure should be performed the first time the SFS 7024 is powered on.

Each managed spine must have a unique IP address that is different than the chassis IP address of the SFS 7024. Therefore, a redundantly-managed SFS 7024 will have six (6) unique IP addresses; three (3) for each hemisphere. The current default IP addresses are:

Lower Hemisphere

- Chassis: 192.168.100.9
- Spine 1: 192.168.100.11
- Spine 2: 192.168.100.12

Upper Hemisphere

- Chassis: 192.168.100.10
- Spine 5: 192.168.100.13
- Spine 6: 192.168.100.14

It is necessary for each managed spine to have a unique IP address for the following reasons:

- Unique IP addresses are used when sending syslog messages from a managed spine to a syslog server.
- Gives the user the ability to ping each management spine separately.
- If the IP addresses are not unique, collisions will occur, causing IP operations to fail.

To update the IP address on managed spine, do the following:

Step 1 Ensure that the spine module is connected to a COM port on a serial terminal device via the RS-232 port.

Step 2 Get to a **`[boot]:`** prompt by following Step a or b.

a. If the managed spine is running, enter the following command at the console:

```
reboot
```

Then press **Enter**.

b. If the managed spine is not running, power on the switch.

Step 3 After selecting **image1** or **image2**, press the **Spacebar** to interrupt the auto load sequence before the counter expires (within 5 seconds).

Step 4 At the **[boot]:** prompt enter the new spine IP address with the following syntax:

```
spineip <NEW IP ADDRESS>
```

Then press **Enter**.

Step 5 At the **[boot]:** prompt, enter **reboot**, and press **Enter**. Upon reboot the managed spine will display information similar to the following:

```
Unified Boot Manager For The T3 Platform.
Image Date:  Jan 19 2006, 15:03:31
Checking L2 functionality...
BCM1125
L2 caches initialized and invalidated
CPU0 caches initialized
Initialized SMBUS Channels
SPD Checksum ok.
MEM_SEL = 0x00000007
CPU_REV = 0x00000001_112421FF
CPU speed = 400 MHz
IO Bridge 0,1 speed = 133, 200 MHz
Memory size = 128 MB
MC1 Configured for 128M SODIMM, CAS=2, 100 MHz
Configured Memory Size = 0x08000000
Channel Interleave Bit = 0
Number of Mem Channels = 1
Testing memory
Memory tests pass
CPU0 flushing caches
L2 flush complete
Start type = 0xBFC006A0
Jumping to romStart
Initializing HyperTransport bus
HyperTransport initialization completed
rintf MBOX connect interrupt_source=28 vector=62 status=0
Printf MBOX intEnable status=0
Found Intel Strata Flash 128 MBit (0x8918).
Mounted raw file system on device /image1. (size=6291456 bytes)
Mounted raw file system on device /image2. (size=6291456 bytes)
Mounted raw file system on device /dump0. (size=1048576 bytes)
Mounted flash file system on device /rfa1. (size=2097152 bytes)

Unified Boot Manager
[1] image1
[2] image2

CPU: Broadcom BCM1125
VxWorks Version: 5.4

[boot]:

Unified Boot Manager For The T3 Platform.
Image Date:  Jan 19 2006, 15:03:31
Checking L2 functionality...
BCM1125
L2 caches initialized and invalidated
CPU0 caches initialized
Initialized SMBUS Channels
SPD Checksum ok.
MEM_SEL = 0x00000007
CPU_REV = 0x00000001_112421FF
CPU speed = 400 MHz
IO Bridge 0,1 speed = 133, 200 MHz
Memory size = 128 MB
MC1 Configured for 128M SODIMM, CAS=2, 100 MHz
```

```
Configured Memory Size = 0x08000000
Channel Interleave Bit = 0
Number of Mem Channels = 1
Testing memory
Memory tests pass
CPU0 flushing caches
L2 flush complete
Start type = 0xBFC006A0
Jumping to romStart
Initializing HyperTransport bus
HyperTransport initialization completed
rintf MBOX connect interrupt_source=28 vector=62 status=0
Printf MBOX intEnable status=0
Found Intel Strata Flash 128 MBit (0x8918).
Mounted raw file system on device /image1. (size=6291456 bytes)
Mounted raw file system on device /image2. (size=6291456 bytes)
Mounted raw file system on device /dump0. (size=1048576 bytes)
Mounted flash file system on device /rfa1. (size=2097152 bytes)

Unified Boot Manager
[1] image1
[2] image2

CPU: Broadcom BCM1125
VxWorks Version: 5.4

boot device          : icspkg0
processor number     : 0
host name            : home
file name            : /image1
inet on ethernet (e) : <NEW IP ADDRESS>
inet on backplane (b):
host inet (h)        : 192.168.100.1
gateway inet (g)     :
user (u)             : ftp
ftp password (pw) (blank = use rsh): ftp
flags (f)            : 0x0
target name (tn)     :
startup script (s)   :
other (o)            : sbe

Loading package from flash device /image1 ...
Boot System             = 7024
Boot Image Information:
  Product               = SFS7024
  BSP                   = t3
Version                 = 4.1.1.1.11
Compressed Image Size = 3616523 bytes
  md5                   = 46086777be1b5bae45140a440425b915
  vxWorks Image Type    = loadable
  Computed md5          = 46086777be1b5bae45140a440425b915
  md5 values match!
11088736
Starting at 0x80010000...

sysI
REGS
BOOT
Initializing HyperTransport bus
HyperTransport initialization completed
Found Intel Strata Flash 128 MBit (0x8918).
Mounted raw file system on device /image1. (size=6291456 bytes)
Mounted raw file system on device /image2. (size=6291456 bytes)
Mounted raw file system on device /dump0. (size=1048576 bytes)
Mounted flash file system on device /rfa1. (size=2097152 bytes)
Network configuration requested.
cliEnabled=1
```

```
sbe0 speed=100 fullDuplex=0 flowControl=0
sbe1 speed=100 fullDuplex=1 flowControl=0
```

Note The command **spineip** changes the IP address for **image1** and **image2**,

SFS 7024 Component LEDs

Chassis Status LED

The chassis status LED (one per hemisphere) is **Green** when the system is functioning normally.

The chassis status LED is **Amber** when one of the following conditions exists:

- The system ambient temperature exceeds 52 C but remains less than 60 C.
- Any Fan Alarm is amber.
- Any power supply AC OK LED is off.
- Any power supply DC OK LED is off
- Any spine module Attention LED is on, or it has been determined that a spine is not functioning (even if it is unable to light the LED).
- Any leaf module Attention LED is on, or it has been determined that a leaf is not functioning (even if it is unable to light the LED).

The chassis status LED is **Red** when the system can no longer function properly and indicates one of the following conditions:

- The system ambient temperature exceeded 60 degrees C.
- No functional fan trays are present.
- No functional spines are present.
- No functional leaves are present.

The chassis status LED is **off** when:

- There are no functional power supplies present.
- There are no management cards in the system
- AC power has been removed from the system.

Subnet Manager Agent (SMA) LED

There is a single SMA LED associated with the system. This LED is Blue if any external InfiniBand links have been established. If no external IB links have been established, the LED if **off**.

RJ45 LEDs

The SFS 7024 RJ45 connector has two LEDs, **Act** and **100**. The **100** LED is **Green** when a 100Mbps link is connected. The **Act** LED is **Green** when an Ethernet link has been established, and blinking when the link is active.

Fan LEDs

Fan LEDs indicate the following status(es):

- **Green** indicates that the fan is functioning properly.
- **Amber** indicates that the following warning condition exists:
  - A single fan rotation failure at less than 4000 RPM or greater than 10950 RPM.
- **Red** indicates a possible problem, including:
  - The fan tray is not responding to commands for configuration and temperature-related operations.
  - A fan is not responding to commands for temperature and speed related operations.
  - The fan speed has fallen below the minimum allowed RPM for a fan.

Power Supply LEDs

Each SFS 7024 power supply has two LEDs: DC OK and AC OK. Following are the statuses for each.

DC OK

- **Green** indicates that DC power is normal.
- **Off** indicates a DC power failure or no DC power is present.

AC OK

- **Green** indicates that AC power is normal.
- **Off** indicates a AC power failure or no AC power is present.

SFS 7024 Leaf and Spine Module LEDs

Leaf Module IB Port LEDs

Each SFS 7024 leaf module port has a **Blue** IB link status LED that provide the following indications:

- **On** - the logical link is up (port is in the Active state).
- **Off** - the physical link is down (port is in the Down state).

Spine and Leaf Module Status LED

The status LED indicates one of the following conditions:

- Steady **Green** - the module is operating normally.
- Blinking **Green** - LED test state.
- **Off** - module is in the removable state.

Spine and Leaf Module Attention LED

The Attention LED indicates one of the following conditions:

- **Off** - the system functioning normally.
- Steady **Amber** - the system requires some attention, which could indicate one of the following conditions:
  - The switch temperature is at a warning level on the module.
  - The switch silicon temperature is at a warning level (approximately 90 degrees C).

  - DC voltages on the board are slightly out of tolerance (12V Bulk, 5V, 3.3V, 1.8V, VBIO are all monitored).
  - The module can no longer function properly. The system will take the appropriate actions to ensure that no damage is done to its components.
- Blinking **Amber** (once every four seconds) - LED test state.

Spine Module Management LEDs

Each SFS 7024 spine module has three management LEDs:

- Capable:
  - **Green** indicates that the spine slot supports management.
  - **Off** indicates that the spine slot does not support management.
- Stat:
  - **Green** indicates that a management board is present.
  - **Off** indicates that no management board is present.
- Act:
  - **Green** indicates that management board is in the active mode. In a redundantly-managed system, this would indicate the master spine.
  - **Off** indicates that the management board is in the standby mode (if the STAT LED is **Green**). In a redundantly-managed system, if the Capable LED is also Green, this would indicate the slave spine.
- DDR:
  - **Green** indicates that the switch is capable of running at DDR speeds.
  - **Off** indicates that the switch is not capable of running at DDR speeds (i.e., SDR only).

Shutdown Procedures

In order to shutdown the SFS 7024:

Step 1 Power down the switch by removing the power cords from the AC power inlets.

Hot Swapping Components

Hot Swapping Spine and Leaf Modules

Note Following are the general guidelines for hot swapping leaf and spine modules:

Caution Be certain that the managed spine to be hot swapped is a that same firmware level as all other components in the SFS 7024. A hot swap of a managed spine with another firmware level will cause a disruptive reboot (i.e., I/O traffic is interrupted).

- Hot swap one module at a time, allowing the chassis to completely update it before hot-swapping the next module. The module update is complete when it becomes visible within the Chassis Viewer GUI. Listed below are the approximate times to fully update each module type:
  - Spines modules: up to 4 minutes
  - Leaf modules: up to 2 minutes
- When a management spine is hot swapped, the rest of the chassis will continue to move packets without interruption.
- There is no need to reboot the chassis when replacing either a spine or leaf module.

Step 1 Remove the module by pushing up on the handles to disengage from the lock notch. Once the handles are disengaged, gently pull the handles out and slide the module out of the slot.

Step 2 To install a module, hold it so that the ejector handles are on the bottom.

Step 3 Pull the handles out to extend them. Slide the module into the appropriate slot of the chassis until it makes contact with the backplane. As the module seats in the chassis, the handles will begin to close.

Step 4 Push the handles in to fully close.

Hot Swapping the Fan Unit

Step 1 Loosen the captive panel screw.

Step 2 Pull the panel screw down to partially disengage the unit.

Step 3 Slowly pull the unit. The unit will disengage from the connector.

Step 4 Carefully slide the fan out until it is completely removed from its slot.

To install a fan unit:

Step 1 Place the unit into the slot. Slowly slide the fan unit in until it engages into the connector.

Step 2 Using the panel screw, push up to re-engage the unit.

Step 3 Tighten the captive panel screw.

Hot Swapping Power Supplies

The SFS 7024 switch requires a minimum of six power supplies for normal operation. Power supplies can be hot swapped without powering down the switch. To replace a power supply:

Step 1 Loosen the captive panel screw.

Step 2 Pull the panel screw down to partially disengage the unit.

Step 3 Slowly pull the unit. The unit will disengage from the connector.

Step 4 Carefully slide the power supply out until it is completely removed from its slot.

Step 5 To install a power supply:

Step 6 Place the unit into the slot. Slowly slide the power supply in until it engages into the connector.

Step 7 Using the panel screw, push up to re-engage the unit.

Step 8 Tighten the captive panel screw.

Operations and Administration

This chapter describes how to administer and configure the Cisco SFS 7024 and its components. It includes the following information:

- Logging, page 2-14
- Maintenance, page 2-19
- SNMP, page 2-22
- Configuration File Administration, page 2-27
- Chassis Traps, page 2-32
- SFS 7024 Port Statistics, page 2-35
- Time Service, page 2-41
- Configuring the Chassis OOB IP Address, page 2-43

Chassis Viewer

The Chassis Viewer is Cisco's browser-based management software. The Chassis Viewer provides the primary management interface for each hemisphere of the SFS 7024 switch (one Chassis Viewer for each hemisphere), allowing the user to perform management, configuration, and monitoring tasks related to InfiniBand networks.

- The Chassis Viewer runs on the Chassis Management Unit (CMU) of the SFS 7024 managed spine modules.
- The browser must be on a workstation which has connectivity to the RJ-45 OOB LAN port on the switch.
- Management Workstation Requirements
  - Browser Level: Internet Explorer 6.0 (Windows) or Mozilla Firefox 1.5.0.4+ (Linux)
- To access the Chassis Viewer, point a browser to the IP address of the SFS 7024.
- If user authentication is enabled, the following screen is displayed:

Figure 1 SFS 7024 Web Authentication

- Enter the default user name and password:
  - Administrator-level user name: super
  - Administrator-level password: super
  - Operator-level user name: admin
  - Operator-level password: admin
- The Chassis Viewer home page is displayed.

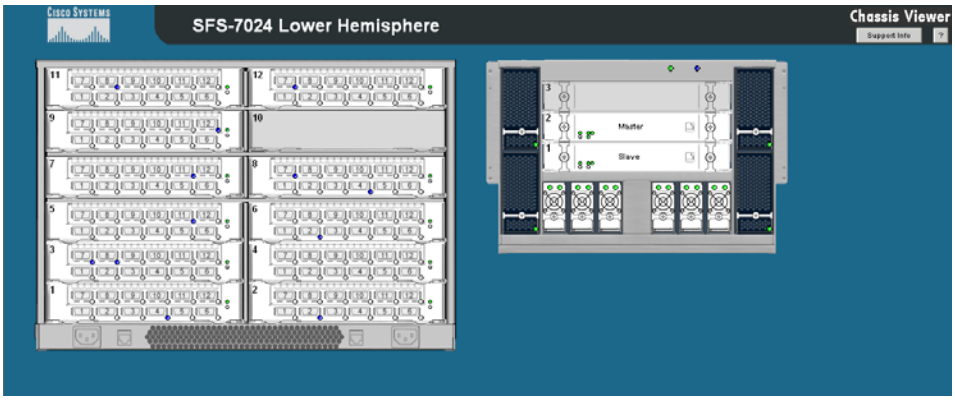
The Chassis Viewer Manages

For each hemisphere (lower or upper):

- The SFS 7024 hemisphere.
- Each SFS 7024 leaf module.
- Each SFS 7024 spine module.
- Logging and monitoring functionality.

Home Page

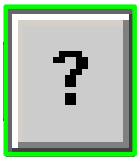
Figure 2-2 Chassis Viewer Home Page (7024 Lower Hemisphere)



The Chassis Viewer home page provides a high-level overview of a hemisphere of the SFS 7024 switch and individual leaf and spine modules. This area is the starting point to more detailed information for the SFS 7024 chassis and components (fans and power supplies), leaf modules and spine modules. The selected component provides hyperlinks to related menus and information where the user can perform configuration and monitoring tasks.

? (Help) Button

Figure 2-3 Help Button



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

Support Button

Figure 2-4 Support Button

The Support button displays key contact information for support, displayed in the following window:

Figure 2-5 Support Contact Screen

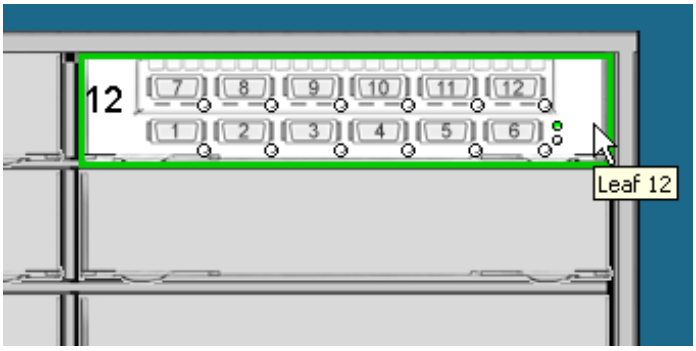
Displaying the Leaf and Spine Module Views

Leaf Module View

To display the leaf module view for the SFS 7024:

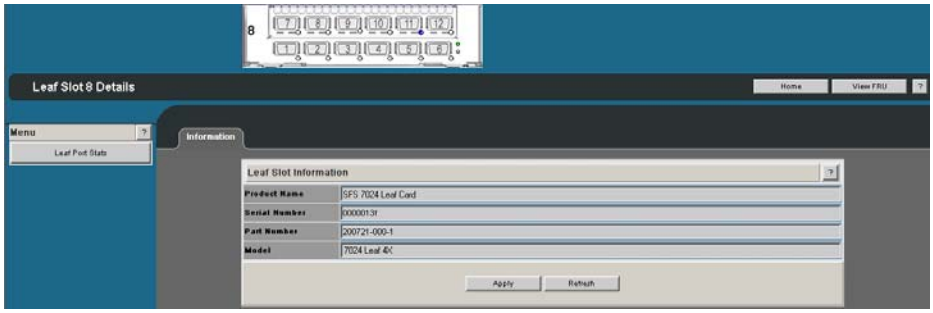
Step 1 Mouse over the leaf module to display. The edges of the leaf module are highlighted green as shown in Figure 2-6 below:

Figure 2-6 Leaf Module Mouseover



Left click the mouse. The leaf module view will be displayed.

Figure 2-7 Leaf Module View

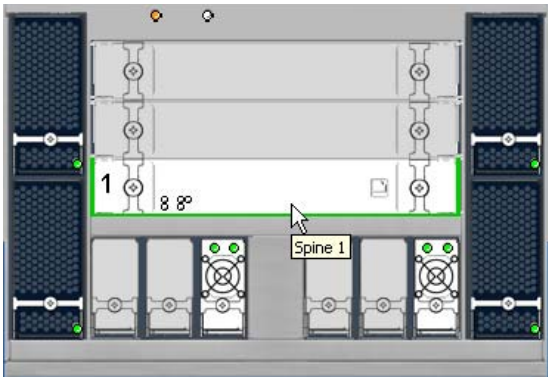


Spine Module View

To display the spine module view for the SFS 7024:

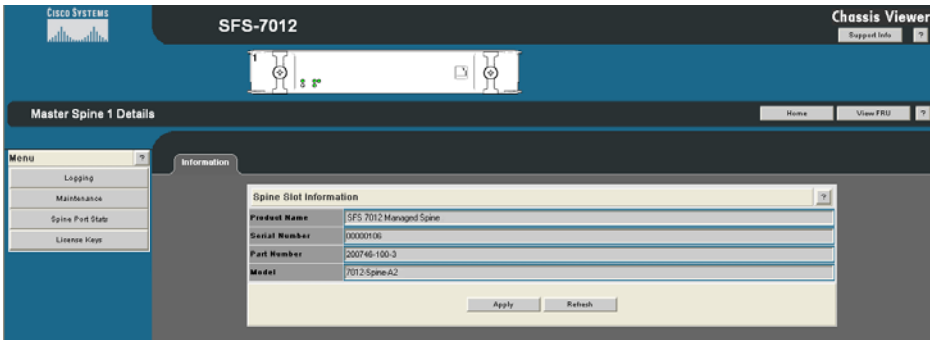
Step 1 Mouse over the spine module to display. The edges of the spine module are highlighted green as shown in Figure 2-8 below:

Figure 2-8 Spine Module Mouseover



Left click the mouse. The spine module view will be displayed.

Figure 2-9 Spine Module View

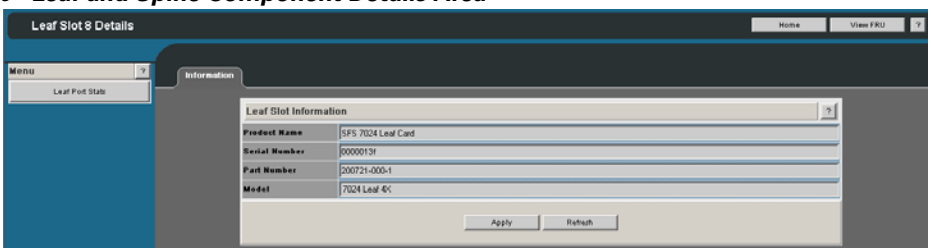


Leaf and Spine Module Component Details Area

The **Component Details Area** contains three areas.

- Details Header
- Information area.
- Menu

Figure 2-10 Leaf and Spine Component Details Area



Leaf and Spine Details Header

The leaf and spine Details Header allows the user to execute the most common tasks for the SFS 7024 switch:

- Display the applicable hemisphere Home page
- View field-replaceable unit (FRU) information.
- Access online help

Figure 2-11 Leaf and Spine Details Header

Leaf and Spine Information Area

The **Leaf and Spine Information Area** allows the user to view high-level information for each specific leaf or spine module. The information area contains two different fields:

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

Additionally, the Component Information Area has **Apply** and **Refresh** buttons, which perform the following functionality:

Apply:

Saves any user edits within the white fields to flash memory.

Refresh:

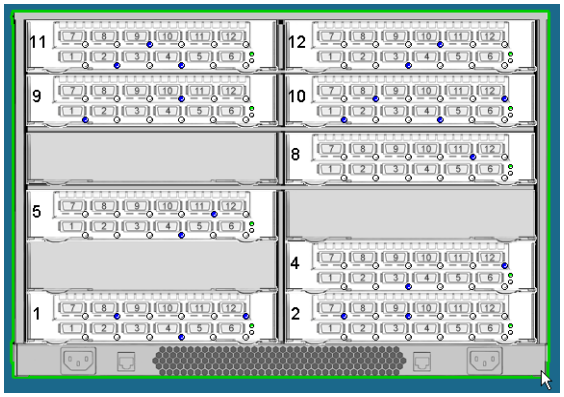
Refreshes all fields in the information areas.

Displaying the Chassis View

There are two ways to display the chassis view for the SFS 7024:

Step 1 Mouse over the outer region of the leaf module view. The edges of the chassis are highlighted green as shown in Figure 2-12 below:

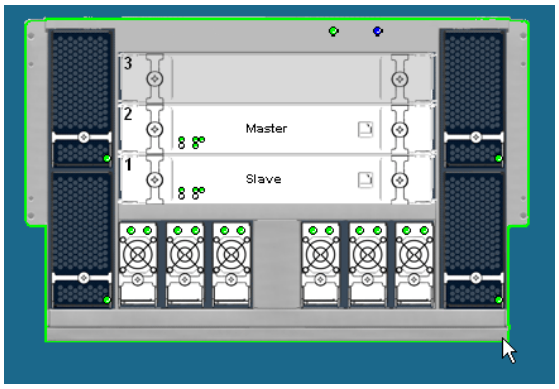
Figure 2-12 Leaf Module Chassis Mouseover



Left click the mouse. The chassis view will be displayed.

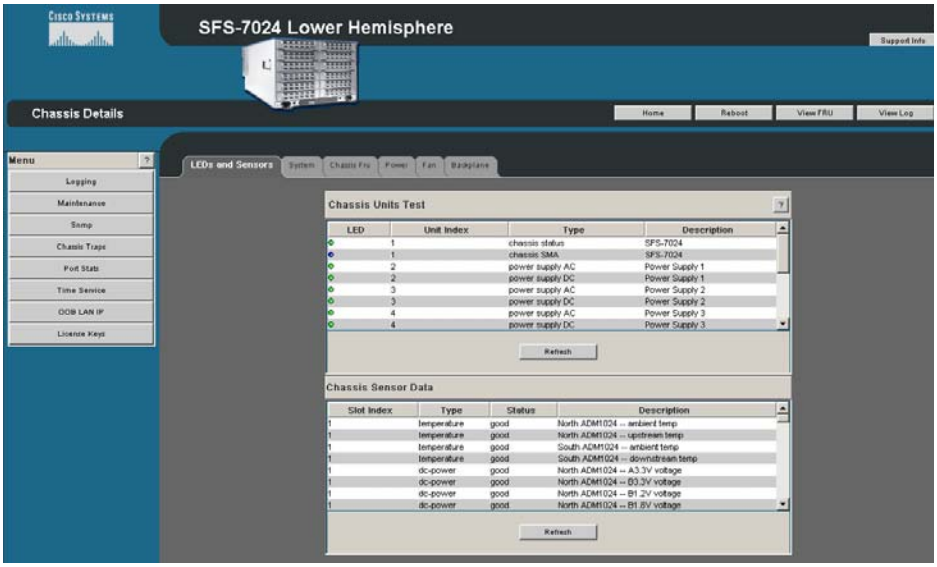
Step 2 The second way is to mouse over the outer region of the spine module view. The edges of the chassis are highlighted green as shown in Figure 2-13 below:

Figure 2-13 Spine Module Chassis Mouseover



Left click the mouse. The chassis view will be displayed.

Figure 2-14 Chassis Viewer Component Details Area



Chassis View Component Details Area

The **Component Details Area** contains three areas.

- Details Header
- Information area.
- Menu

Chassis Details Header

The Chassis Details Header allows the user to execute the most common tasks for the SFS 7024 switch:

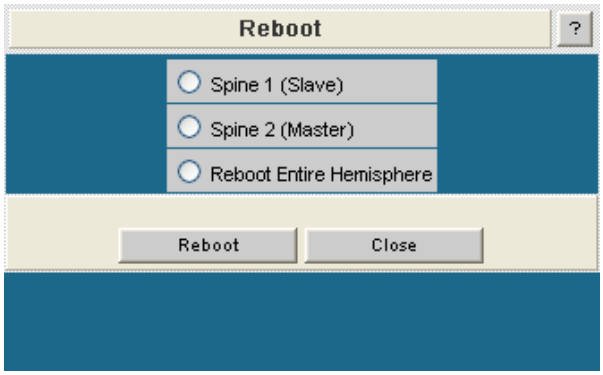
- Display the applicable hemisphere Home page
- View Log

Figure 2-15 Chassis Details Header

Rebooting Components from Chassis Viewer

Step 1 From the **Chassis Details** header, click **Reboot**. A screen similar to the following is displayed.

Figure 2-16 Reboot Window

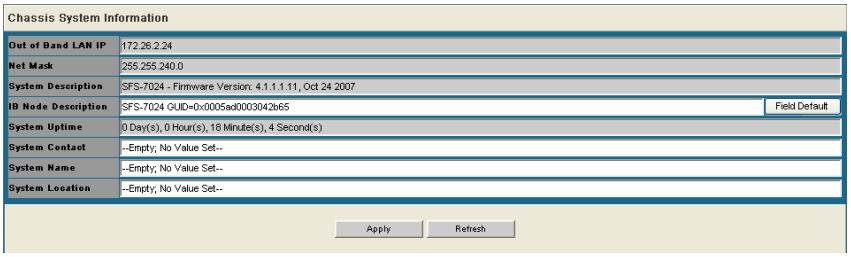


Step 2 Select the radio button of the spine to be rebooted, or select the radio button to reboot the entire hemisphere.

Step 3 Click **Reboot**.

Chassis View Component Information Area

Figure 2-17 Component Information Area



The **Chassis View Component Information Area** 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 which is specific to their environment.
- The gray fields are tied to live data from the selected hardware component as well as live system information.

Additionally, the Component Information Area has **Apply** and **Refresh** buttons, which perform the following functionality:

Apply:

Saves any user edits within the white fields to flash memory.

Refresh:

Refreshes all fields in the information areas.

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

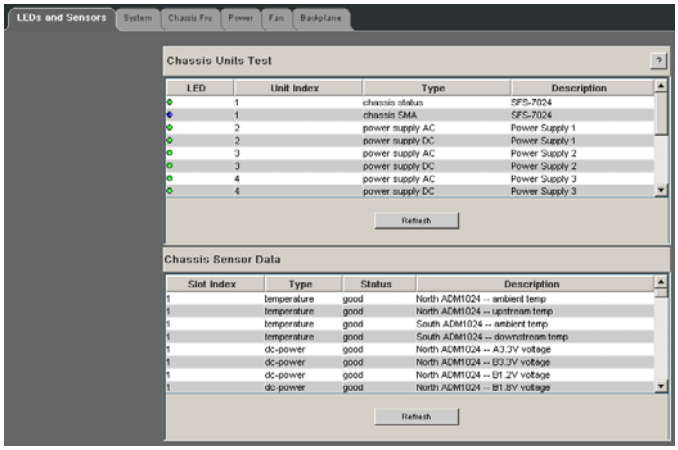
- Switch Field Replaceable Unit (FRU) Information
- Power supply information
- Fan information
- Switch backplane information

LEDs and Sensors Tab

The LEDs and Sensors tab displays for the applicable hemisphere:

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

Figure 2-18 LEDs and Sensors Tab



Note For a detailed explanation of physical LEDs on the hardware components, please refer to the section SFS 7024 Component LEDs, page 1-30.

System Tab

The System tab displays the overall system information for the applicable hemisphere of the SFS 7024. This information includes the following items:

Out of Band LAN IP

The IP address for the applicable hemisphere of the switch.

Netmask

The current net mask settings for the Chassis.

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 a subnet manager GUI. Note that changes to this field will be visible to the outside systems only after the chassis is rebooted. 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 spine, the next reboot will be treated as disruptive.

System Uptime

The elapsed time since the last time the applicable hemisphere 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 as the **System 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.

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.

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: Model, Version, Manufacturer Name, Product Name, Manufacturer Id, Manufactured Date

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

The Backplane tab displays switch backplane information. For descriptions of the fields, see the Power Tab.

Additionally, the user can modify the **Description** field, adding information specific to their network environment.

Modifying Switch Component Information

Following is the procedure for modifying the fields for switch components:

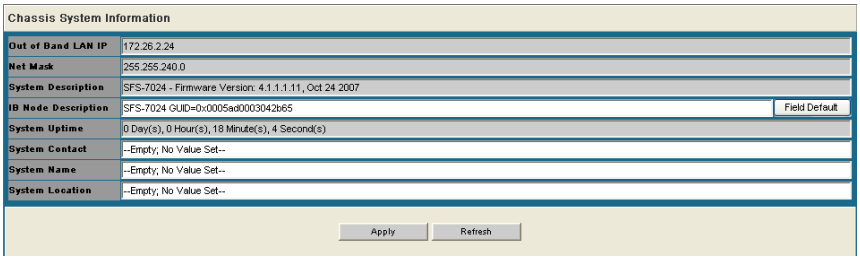
Step 1 Select the applicable tab; **System**, **Chassis FRU**, **Power**, **Fan**, or **Backplane**.

Step 2 Click on the row to be modified.

Step 3 In the text boxes, enter information which is applicable to the existing network environment.

Step 4 To save, click the **Apply** button at the bottom of the screen.

Figure 2-19 System Information Area

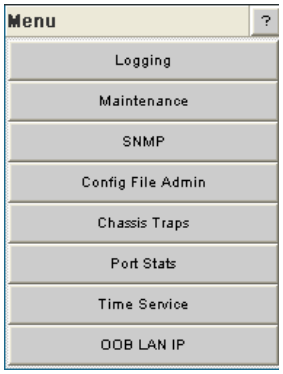


Configuration and Monitoring Features

The following section provides detailed, task-oriented descriptions for configuring and monitoring the SFS 7024 switch and its feature functionality.

Chassis View Menu

Figure 2-20 Chassis View Menu



The **Chassis View Menu** allows the user to execute all configuration and operation tasks available for the SFS 7024 switch.

Logging

The Logging submenu allows the user to set and reset levels for the message log file.

Figure 2-21 Logging Submenu

Set Level

Figure 2-22 Set Level Button

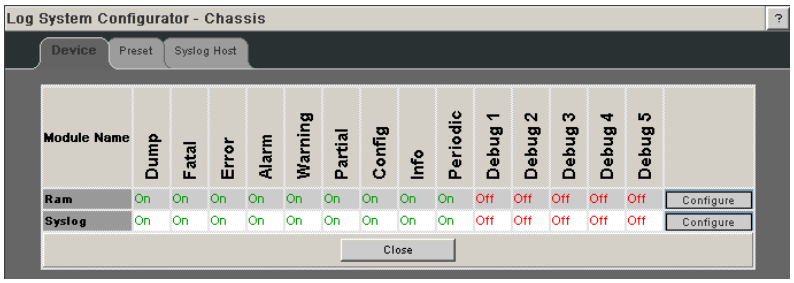
The Set Level button allows the user to set log level configuration parameters for all software modules on the SFS 7024.

To set log levels:

Step 1 From the menu, select **Logging.**

Step 2 From **Logging**, select **Set Level**. The Log System Configurator (Device Tab) window is displayed:

Figure 2-23 Log System Configurator (Device Tab)

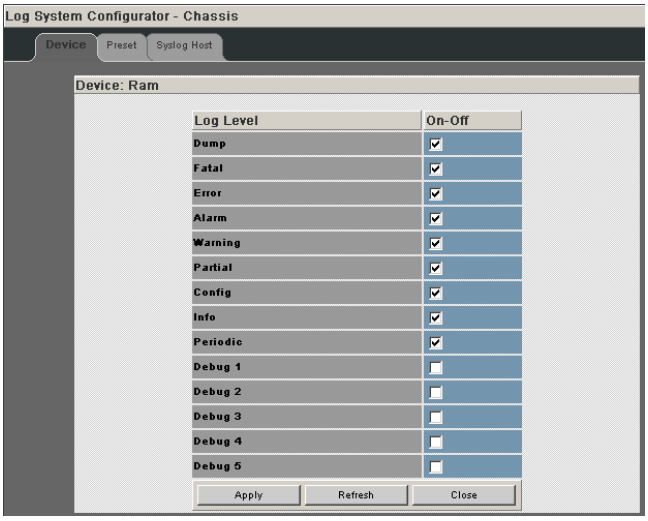


The Device tab presents current log level configuration settings for the following software modules:

- **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 a syslog host specified on the Syslog tab.

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

Figure 2-24 Device Tab: Software Module Configurator



To change any Log Level settings:

Step 1 Click the **On-Off** checkbox to the right of the setting.

Step 2 Click the **Submit** button to save any changes.

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

- **DUMP** – 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.

Debug message levels 1 through 5: Debug messages are for supplier and/or Cisco engineering use and are not necessarily indicative of actions that an end user may need to take.

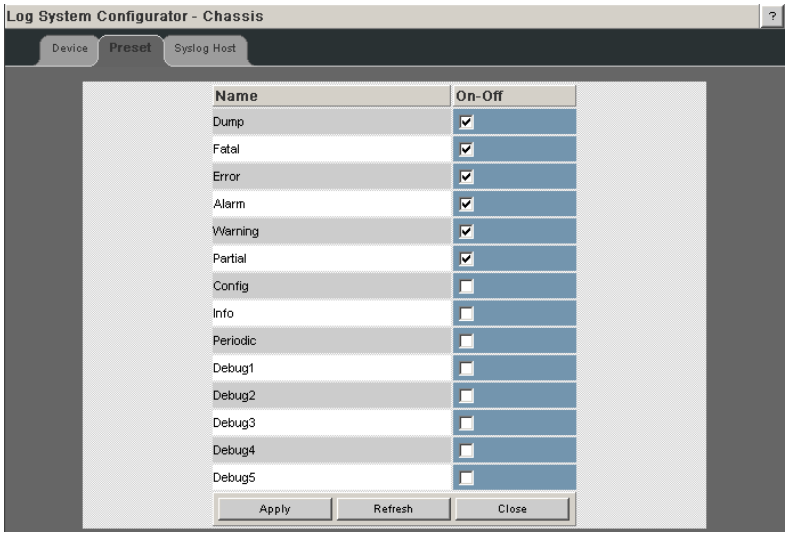
- **DEBUG1** – Messages that describe the states of connections and links.
- **DEBUG2** – Messages that describe major configuration changes or operations.
- **DEBUG3** – Messages that describe the I/O flow.
- **DEBUG4** – Messages that contain the packet dumps within an I/O flow. I/O flows contain multiple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

Note 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, debug levels 3-5 have the most effect on system performance.

Preset Tab

The Preset tab allows the user to quickly change log level settings for all software modules on the switch.

Figure 2-25 Log System Configurator: Preset Tab



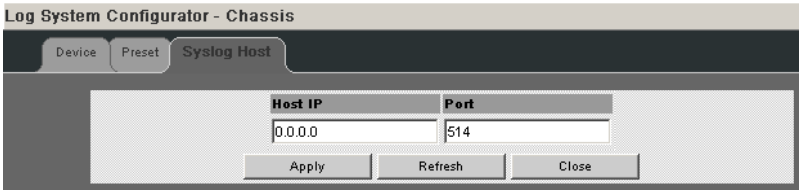
To change the log level settings:

Step 1 Click the **On-Off** checkbox to the right of the setting(s).

Step 2 Click the **Submit** button to save any changes.

Syslog Tab

Figure 2-26 Log System Configurator: Syslog Host Tab



The Syslog tab allows the user to configure logging messages to be sent to a syslog host. 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.

To setup the syslog host:

Step 1 In the **Host IP** dialog box, enter the IP address of the syslog host where the log files are to be saved.

Step 2 Click the **Apply** button to save the IP address.

Configure Syslog on a Linux Server

Step 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"
```

Step 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 that has the syslog daemon (**`syslogd`**) running. When messages are sent to a syslog server, they will appear in the log as being sent from the IP address of the master spine.

Reset Log Levels

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

Figure 2-27 Reset Levels Button

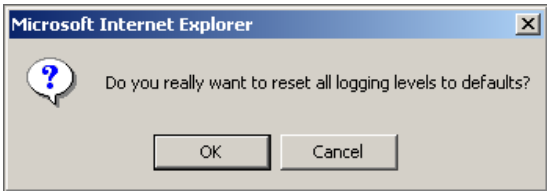
To reset the logging levels:

Step 1 From the menu, select **Logging.**

Step 2 Click **Logging**.

Step 3 Click **Reset Levels**. The Reset Levels window is displayed:

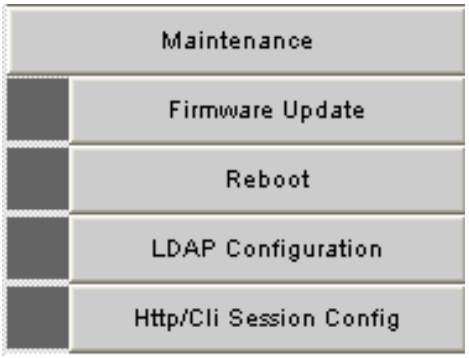
Figure 2-28 Reset Log Levels Window



Step 4 To reset the logging levels, click **OK**.

Maintenance

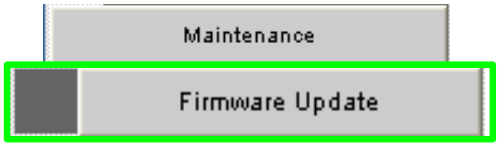
Figure 2-29 Maintenance Menu



Note For rebooting information, see Rebooting Components from Chassis Viewer, page 2-8

Firmware Update

Figure 2-30 Firmware Update Button



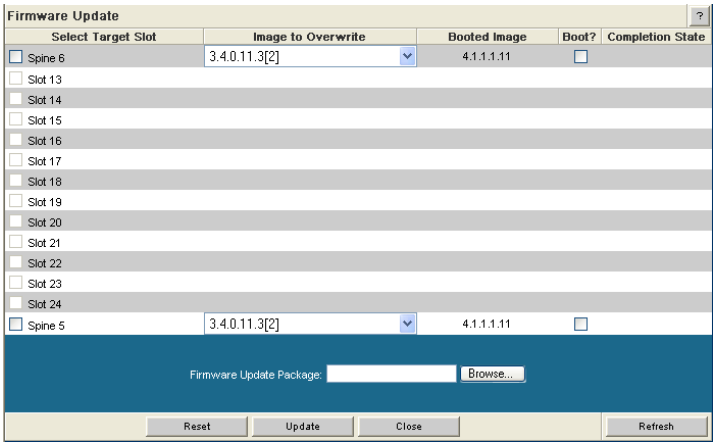
The Firmware Update button allows the user to select an alternate firmware file for the SFS 7024. These alternate files are reflected in the drop-down lists in the Firmware Update screen.

To download firmware:

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

Step 2 Click **Firmware Update**. The Firmware Update screen is displayed.

Figure 2-31 Firmware Update Screen



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

Note If there are multiple spine modules, the user can select all applicable slots.

Step 4 From the **Image to Overwrite** drop-down list, choose a firmware image to overwrite.

Step 5 In the **Firmware Update Package:** text box, enter the path to the alternate firmware file. If the path is not known, the user can use the **Browse...** button to locate it.

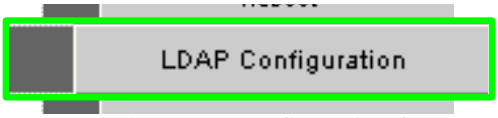
Step 6 To have the new image become active after the next reboot, check the box in the **Boot?** Column.

Step 7 Click the **Update Firmware** button.

Note Before using the **Browse...** button, make certain that the browser can connect to the server where the firmware files reside.

LDAP Configuration

Figure 2-32 LDAP Configuration Button



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 user code and password database.

On a SFS 7024 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.

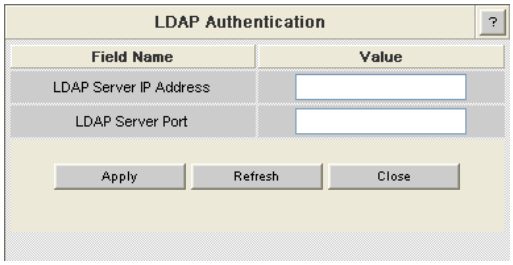
When LDAP is disabled internal authentication becomes the default.

To setup LDAP authentication:

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

Step 2 Click **LDAP Configuration**. The **LDAP Authentication** screen is displayed.

Figure 2-33 LDAP Authentication Screen



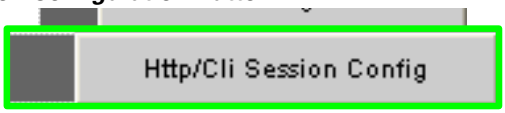
Step 3 In the **LDAP Server IP Address** box, enter the address of the applicable LDAP server.

Step 4 In the **LDAP Server Port** box, enter the applicable server port number (the default is 389).

Step 5 When finished, click the **Apply** button.

HTTP/CLI Session Configuration

Figure 2-34 HTTP/CLI Session Configuration Button



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

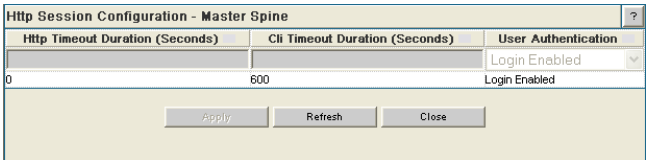
The session timeout duration is the length of time that a session remains active if there is no GUI activity. If a session is inactive for a time exceeding the timeout duration, the user will be logged out.

To modify the HTTP and CLI configurations:

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

Step 2 Click **HTTP/CLI Session Config**. The **HTTP/CLI Session Configuration** screen is displayed.

Figure 2-35 HTTP/CLI Session Configuration Screen



Step 3 To modify the session timeout duration (in seconds), click on the existing configuration. The row changes to orange.

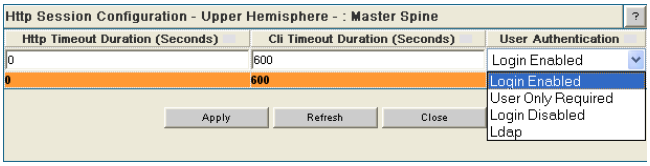
Step 4 In the **HTTP Timeout Duration** field, enter the new timeout duration (in seconds). The default is 0 seconds (i.e., no timeout).

Note If the user is leaving their workstation for a period of time, be sure to close the browser window.

Step 5 In the **CLI Timeout Duration** field, enter the new timeout duration (in seconds). The default is 600 seconds.

Step 6 To change the User Authentication parameter, click on the dropdown list. The following is displayed:

Figure 2-36 User Authentication Dropdown List



Step 7 Select the preferred user authentication method. These are:

- LDAP - use an LDAP server. If the user name/password validation fails to complete successfully, check in the database of the local switch.
- Login Enabled - User Name and Password must be entered, and must match what is in the database of the local switch.
- UserOnly Required - According to the local switch database, a valid user name must be entered. A password is not required.

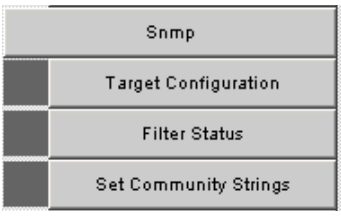
- Login Disabled - Does not require username or password.

Step 8 When finished, click the **Apply** button.

SNMP

The SNMP submenu allows the user to configure and filter SNMP trap information.

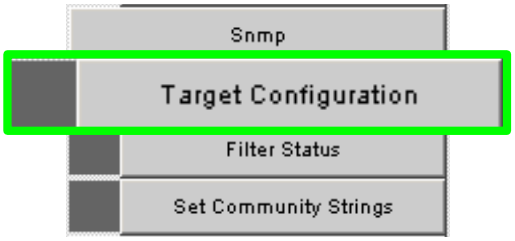
Figure 2-37 SNMP Submenu



Target Configuration

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

Figure 2-38 Target MIB Configuration Button



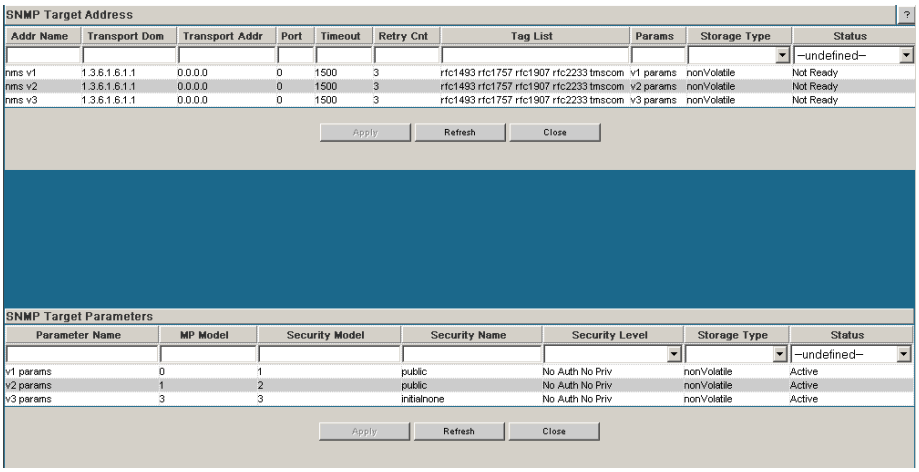
To display the Target Configuration window:

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

Step 2 Select **Target Configuration**.

Step 3 The **SNMP Target Configuration** window is displayed:

Figure 2-39 SNMP Target Configuration Window



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 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.

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 v1traps:

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

Target Configuration Window Field Descriptions

The following are descriptions for each field in the Target MIB 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 that 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 a 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 SFS 7024.
  - *Nonvolatile* means that the value is saved, and remains with 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:

- 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 SFS 7024.

  - *Nonvolatile* means that the value is saved, and remains with 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:

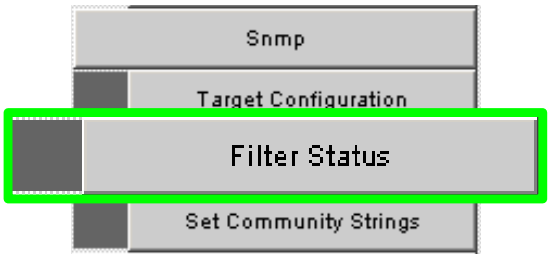
  - Active
  - Not in service
  - Not Ready

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.

Filter Status

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

Figure 2-40 Filter Status Button

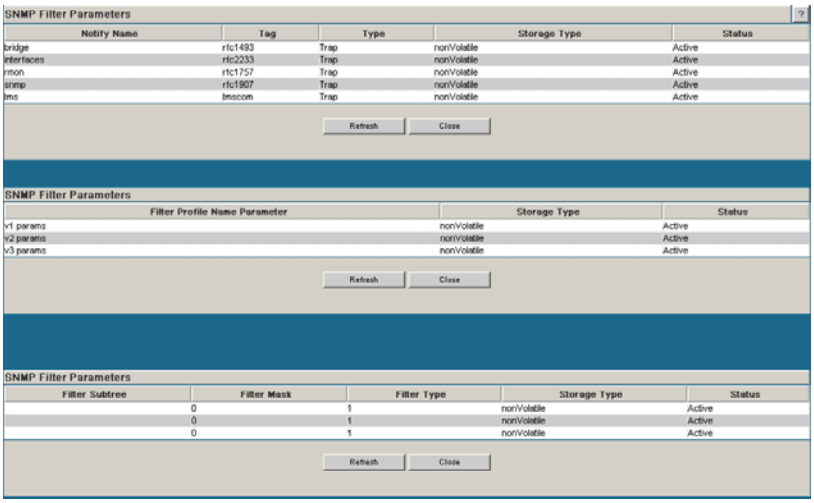


To view the SNMP filter status:

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

Step 2 Click **Filter Status**. The **SNMP Filter Status** screen is displayed.

Figure 2-41 Filter Status Screen



Setting Community Strings

The Set Community Stings screen allows the user to set two SNMP community names:

- Read Only Community Name
- Read/Write Community Name

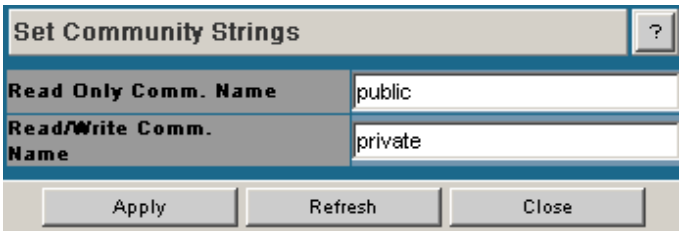
Figure 2-42 Set Community Strings Button

To set the Community Strings:

Step 1 Click **SNMP**

Step 2 Click **Set Community Strings**. The **Set Community Strings** screen is displayed.

Figure 2-43 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.

Step 3 In each field, enter a meaningful name (such as **public** and **private** shown above), and click **Apply**.

Configuration File Administration

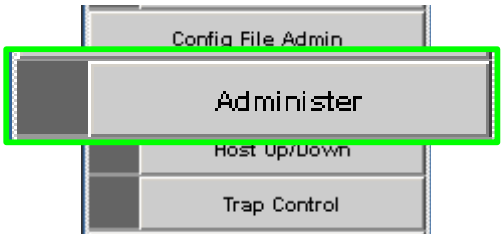
The Configuration File Administration menu allows the user to perform various administrative tasks related to the configuration files for each line card populating the switch.

Figure 2-44 Configuration File Administration Menu

Administer

The Administer screen allows the user to set backup and restore scenarios for the configuration file of each line card.

Figure 2-45 Configuration File Administration - Administer

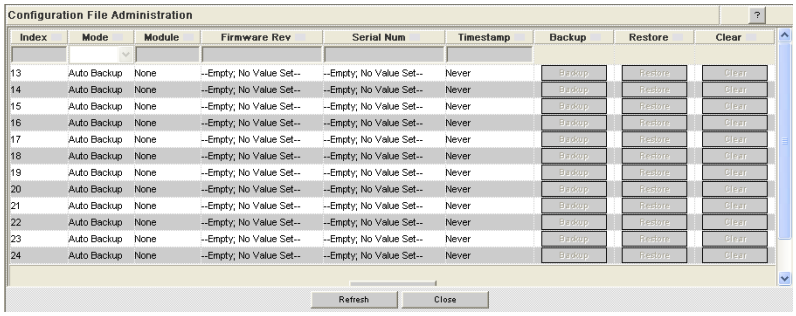


Step 1 Click the chassis view.

Step 2 Click **Config File Admin**.

Step 3 Click **Administer**. The **Configuration File Administration** screen is displayed:

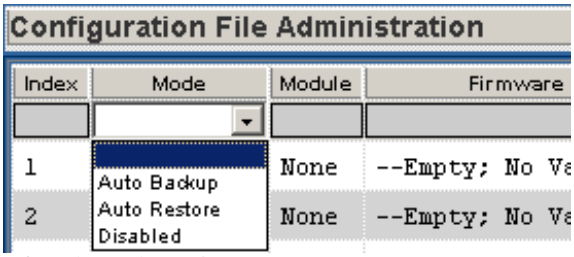
Figure 2-46 Configuration File Administration Screen



Step 4 Click on the line card to be modified. The row changes to orange.

Step 5 In the **Mode** column, click the drop-down and select the configuration file administration mode for a line card.

Figure 2-47 Configuration File Administration - Mode Drop-down



Following is a description of each mode option:

- Disabled

  Following an Auto Restore of a configuration file to a line card, the system sets the card mode to **Disabled**. This allows the user to verify that the configuration file is correct, before returning the card 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 line card are automatically backed up to the CMU.·

- Auto Restore

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

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

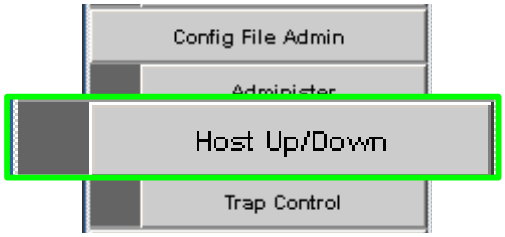
Note The **Clear** button deletes the configuration file from the CMU on the switch.

Host Upload/Download

The Host Up/Download screens allows the user to:

- Upload configuration files from a server to the CMU.
- Download saved configuration files from the CMU to a server.

Figure 2-48 Configuration File Administration - Host Up/Download

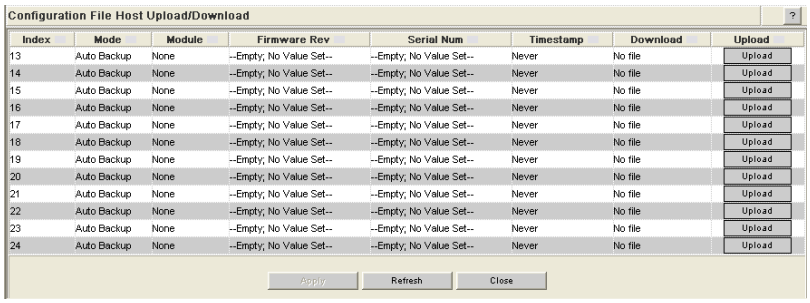


Step 1 Click the chassis view.

Step 2 Click Config File Admin.

Step 3 Click Host Up/Download. The Configuration File Upload/Download screen is displayed:

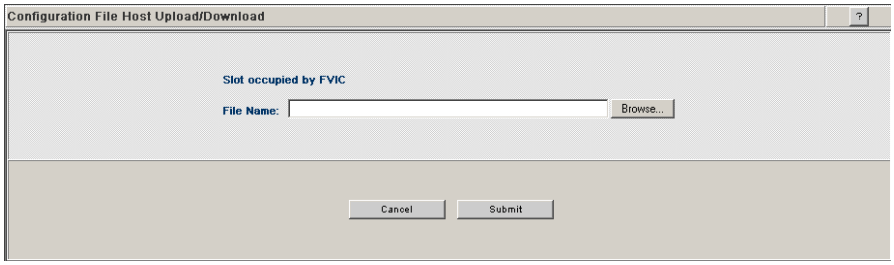
Figure 2-49 Configuration File Upload/Download Screen



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

Step 1 For a selected module, click the **Upload** button. The following screen is displayed:

Figure 2-50 Upload Screen



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

Step 3 Click **Submit**.

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

Step 1 For a selected module, click the **Download** button. The **File Download** screen is displayed.

Step 2 Click **Save**.

Step 3 In the **Save As** window, locate the correct path to the desired server location, and click **Save**.

Trap Control

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

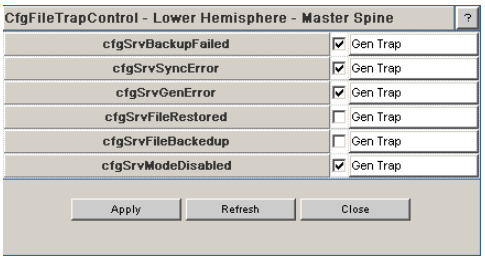
Figure 2-51 Trap Control

Step 1 Click the chassis view.

Step 2 Click **Config File Admin**.

Step 3 Click **Trap Control**. The **Trap Control** screen is displayed:

Figure 2-52 Configuration File Trap Control Screen



Step 4 Select or deselect the desired trap(s).

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

Step 5 To save settings, click on **Apply**.

Note If the checkbox is not checked the **Gen Trap** button will not generate a trap.

Following are definitions for each configuration file trap:

- CfgSrvBackupFailed

  The server was instructed to backup a file for a particular slot, which failed.
- CfgSrvSyncError

  Synchronization to the slave CMU 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 screen are as shown above. The user should not change the defaults unless instructed by Technical Support.

Chassis Traps

The Chassis Trap Control screen allows the user to set default trap scenarios related to SFS 7024.

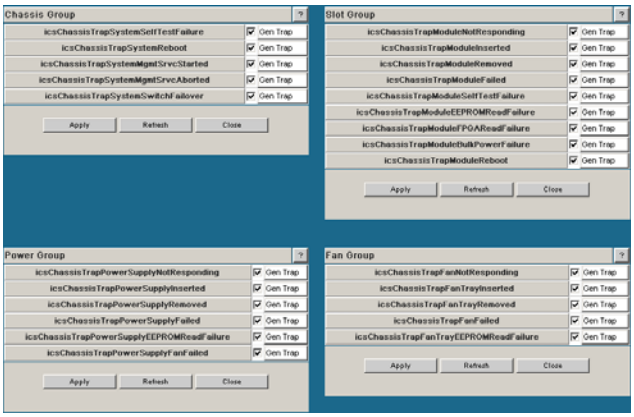
Figure 2-53 Chassis Trap Control

Step 1 Click **Chassis**.

Step 2 Click **Chassis Traps**

Step 3 Click **Trap Control**. The **Chassis Trap Control** screen is displayed.

Figure 2-54 Chassis Trap Control Screen



Step 4 Select or deselect the desired trap(s).

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

Step 5 To save settings, click on **Apply**.

Following are definitions for each chassis trap:

Chassis Group

icsChassisTrapSystemSelfTestFailure

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

icsChassisTrapSystemReboot

This trap indicates that the chassis is in the process of rebooting.

icsChassisTrapSystemMgmtSrvcStarted

This trap indicates that the internal service used to support the management of the chassis is operational.

icsChassisTrapSystemMgmtSrvcAborted

This trap indicates that the internal service used to support the management of the chassis has terminated abnormally.

icsChassisTrapSystemSwitchFailover

This trap indicates that there was a fail over from one switch in the chassis to the other.

Slot Group

icsChassisTrapModuleNotResponding

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

icsChassisTrapModuleInserted

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

IcsChassisTrapModuleRemoved

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

icsChassisTrapModuleFailed

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

icsChassisTrapModuleSelfTestFailure

This trap indicates, that the module failed one or more of its self-test.

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 chassis 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.

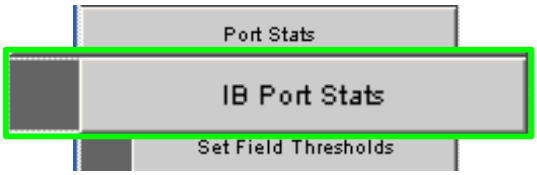
icsChassisTrapFanTrayEEPROMReadFailure

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

SFS 7024 Port Statistics

The **Chassis View Port Statistics** area provides IB port information for all of the external and internal ports of the SFS 7024.

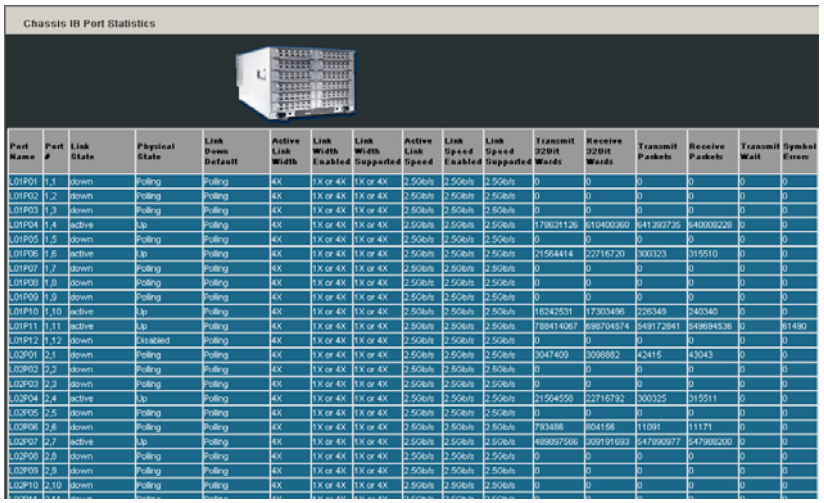
Figure 2-55 IB Port Statistics



To view port statistical information, do the following:

Step 1 From the Chassis View Port Statistics submenu, select **IB Port Stats**. The IB Port Statistics window is displayed:

Figure 2-56 IB Port Statistics



Port Name	Port #	Link State	Physical State	Link Down Default	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	Transmit Wait	Symbol Errors
L01P01	1,1	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P02	1,2	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P03	1,3	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P04	1,4	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	178631126	610400360	641393735	640806228	0	0
L01P05	1,5	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P06	1,6	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	21564414	22716720	300323	315510	0	0
L01P07	1,7	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P08	1,8	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P09	1,9	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L01P10	1,10	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	16242531	17303496	226349	240340	0	0
L01P11	1,11	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	788414067	698704574	549172841	549694536	0	61490
L01P12	1,12	down	Disabled	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P01	2,1	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	3047409	3098882	42415	43043	0	0
L02P02	2,2	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P03	2,3	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P04	2,4	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	21564550	22716792	300325	315511	0	0
L02P05	2,5	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P06	2,6	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	793486	804156	11091	11171	0	0
L02P07	2,7	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	499097566	309191693	547990977	547998200	0	0
L02P08	2,8	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P09	2,9	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0
L02P10	2,10	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0	0	0

Understanding Port Naming Conventions

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: L13P01 is leaf module 13 port number 1.

Interswitch Link (ISL) Ports:

S = Spine module number

L = Leaf leaf module number

A = Spine module switch chip A

B = Spine module switch chip B

Example: S4AL24 is the ISL between spine module 4, switch chip A and leaf module 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).

Port Statistics Field Descriptions

Port Name/Port Number:

Corresponds to external leaf module number/port number, spine module number/port number, and all interswtich links.

Link State:

Indicates whether the InfiniBand 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 InfiniBand 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 subnet 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).

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) or both.

InfiniBand Statistics:

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 does not increment past 255. 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 does not increment 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 Error 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 OverrunErrors 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 InfiniBand 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 InfiniBand feature for logically partitioning a physical subnet into logical access domains.

Raw Violations Inbound:

Number of times a raw inbound packet discarded.

Raw Violations Outbound:

Number of times a raw outbound packet was discarded.

Leaf and Spine Module IB Port Statistics

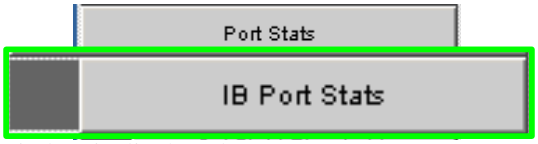
To access IB port statistics for a specific leaf or spine module, perform the following steps.

Leaf Modules

Step 1 Select a leaf module. The leaf module view is displayed.

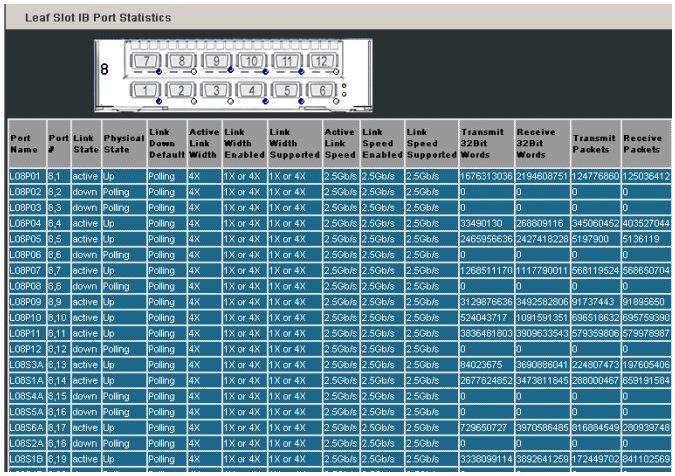
1. From the Leaf Port Stats menu, select IB Port Stats.

Figure 2-57 Leaf Port Stats Menu



The leaf port statistics window is displayed:

Figure 2-58 Leaf Port Statistics Window



Port Name	Port #	Link State	Physical State	Link Down Default	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
L08P01	8,1	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	1676313036	2194606751	124776860	125036412
L08P02	8,2	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08P03	8,3	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08P04	8,4	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	33490130	268809116	3450604 52	403527044
L08P05	8,5	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	2465956636	2427418228	5197900	5136119
L08P06	8,6	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08P07	8,7	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	1268511170	1117790011	568119524	568650704
L08P08	8,8	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08P09	8,9	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	3129876636	3492582806	91737443	91895650
L08P10	8,10	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	524043717	1091591351	696518632	695759390
L08P11	8,11	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	3836481803	3909633543	579359806	579978987
L08P12	8,12	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08S3A	8,13	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	84023675	3690886041	224807473	197605406
L08S1A	8,14	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	2677824652	3473811645	268000467	659191584
L08S4A	8,15	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08S5A	8,16	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08S6A	8,17	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	729650727	3970586485	816884549	280939748
L08S2A	8,18	down	Polling	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	0	0	0	0
L08S1B	8,19	active	Up	Polling	4X	1X or 4X	1X or 4X	2.5Gb/s	2.5Gb/s	2.5Gb/s	3338099114	3892641259	172449702	841102569

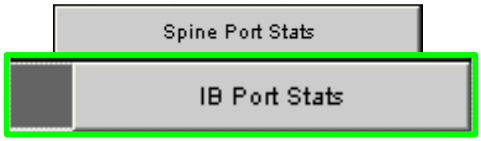
For information on the each IB port statistic field, refer to the section Port Statistics Field Descriptions, page 2-36

Spine Modules

Step 1 Select a spine module. The spine module view is displayed.

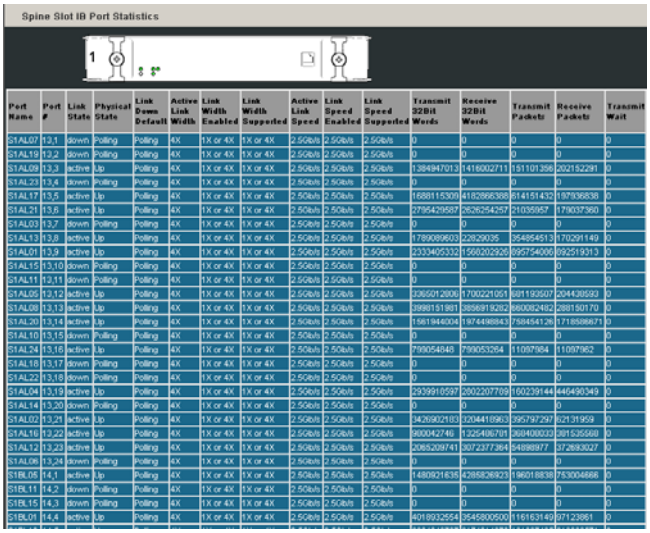
Step 2 From the Spine Port Stats menu, select IB Port Stats.

Figure 2-59 Spine Port Stats Menu



The spine port statistics window is displayed:

Figure 2-60 Spine Port Statistics Window

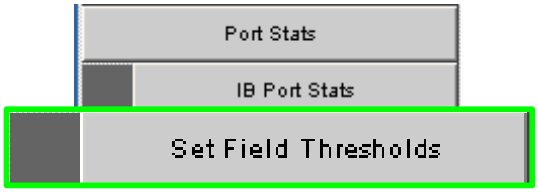


For information on the each IB port statistic field, refer to the section Port Statistics Field Descriptions, page 2-36

Set Field Thresholds

The Set Field Thresholds screen allows the user to set, for a specific parameter(s), an error message threshold for cable ports on the SFS 7024.

Figure 2-61 Set Field Thresholds

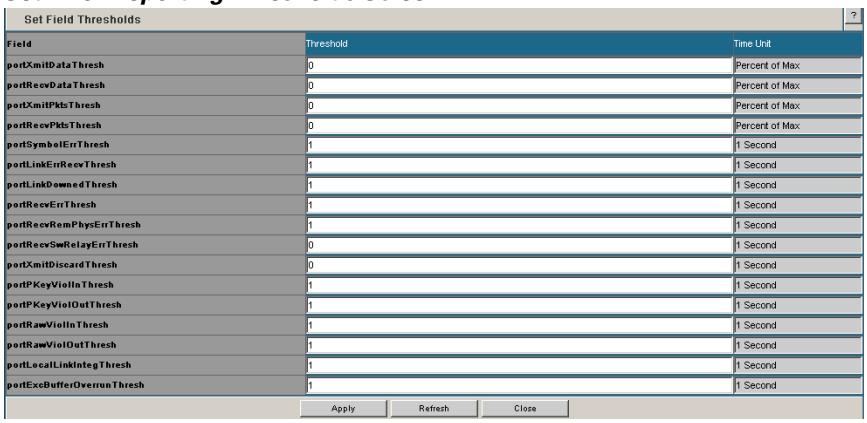


To change error reporting thresholds, do the following:

Step 1 Click on **Port Stats**.

Step 2 Click on **Set Field Thresholds**. The Set Field Thresholds screen is displayed:

Figure 2-62 Set Error Reporting Thresholds Screen



Step 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 Any port which exceeds the configured thresholds will be displayed as red on the home page.

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 the IB fabric configuration can be:

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

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 message 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.

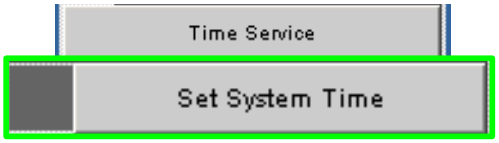
portExcBufferOverrunThresh

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

Time Service

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

Figure 2-63 Switch Time Service

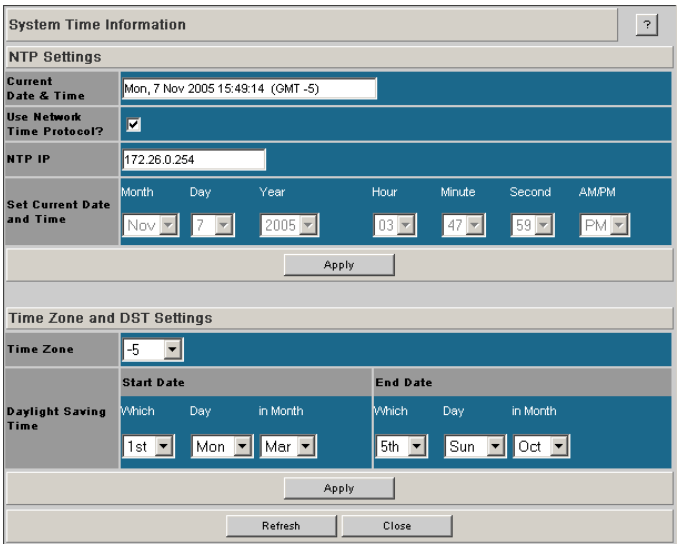


To set the system time:

Step 1 From the menu, click **Time Service**.

Step 2 Click **Set System Time**. The **System Time Information** screen is displayed:

Figure 2-64 System Time Information Screen



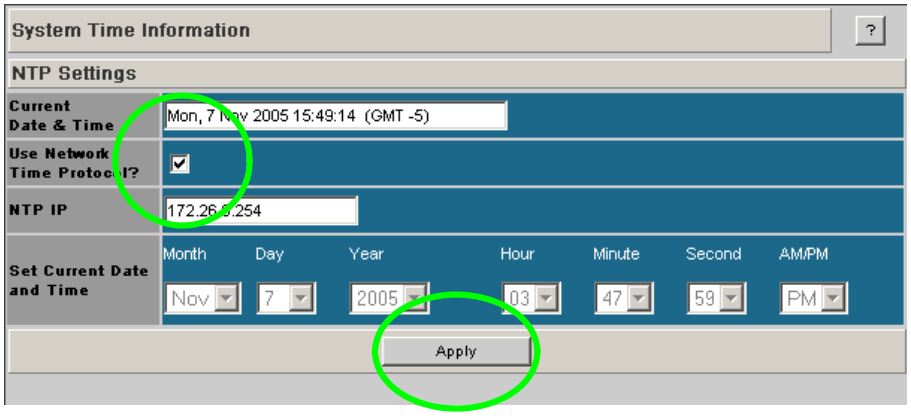
To use NTP:

Step 1 Click the **Use Network Time Protocol?** checkbox.

Step 2 Enter the IP address for the NTP server.

Step 3 To save, click on **Apply**.

Figure 2-65 Time Service - NTP Setup



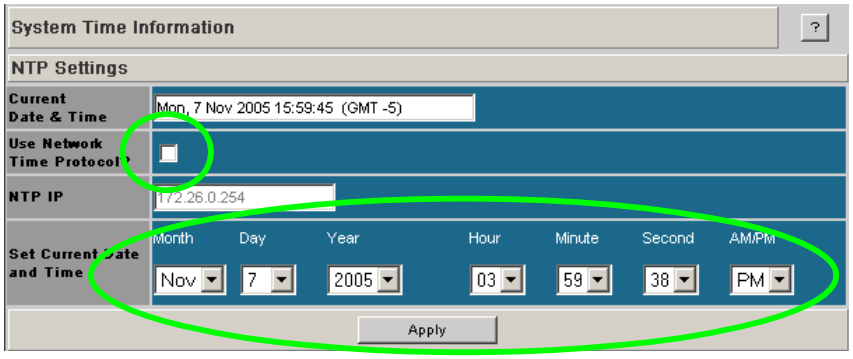
To manually set the system time:

Step 1 Make sure the **Use Network Time Protocol?** checkbox is unchecked.

Step 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**.

Step 3 To save, click on **Apply**.

Figure 2-66 Time Service - Manual Setup



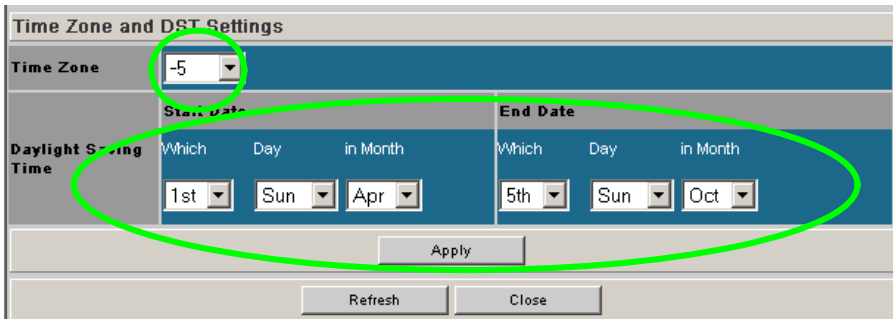
To set time zone and daylight saving time (DST) settings:

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

Step 2 Using the **Which**, **Day**, **in Month** drop-downs, set the start and end dates for daylight saving time.

Step 3 To save, click on **Apply**.

Figure 2-67 Time Service - Time Zone/Daylight Saving Time Setup



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 in the United States begins at 2 a.m. on the second Sunday of March, and ends at 2 a.m. on the first Sunday in November.

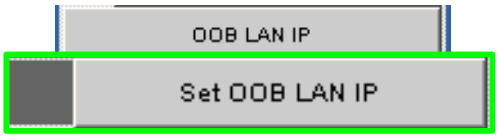
Additionally, for those US regions that do not observe DST, the start and end dates in the **Which**, **Day**, **in Month** settings, should be set to the **exact same date**.

Configuring the Chassis OOB IP Address

To configure the chassis IP address:

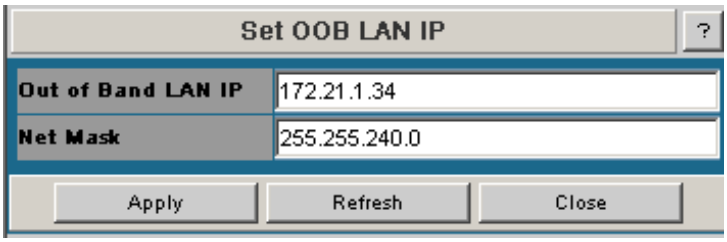
Step 1 From the **OOB LAN IP** submenu, click **Set OOB LAN IP**.

Figure 2-68 Set Switch OOB IP Address Button



Step 2 Click in the **OOB IP Address** field.

Figure 2-69 Set OOB LAN IP Window

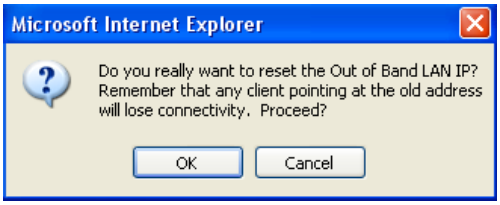


Step 3 Enter the correct switch IP address.

Step 4 Enter the correct net mask.

Step 5 Click **Apply**. The following screen is displayed:

Figure 70 OOB LAN IP Confirmation Window



When the user clicks **OK** the Chassis Viewer refreshes and uses the new IP address.

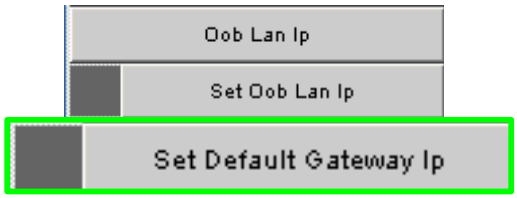
Configuring the Switch Default Gateway IP Address

The **Set Default Gateway IP** address 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:

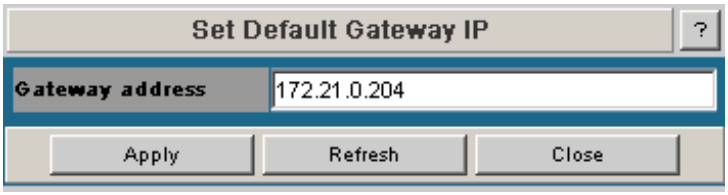
Step 1 From the **OOB LAN IP** submenu, click **Set Default Gateway IP**.

Figure 2-71 Set Switch Default Gateway IP Address Button



Step 2 Click in the **Gateway Address** field.

Figure 2-72 Set Default Gateway IP Window



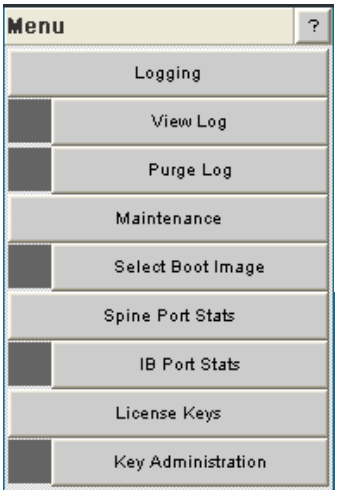
Step 3 Type in the correct switch default gateway IP address.

Step 4 Click **Apply**.

Note A reboot is required to activate the new gateway IP address.

Spine View Menu

Figure 2-73 Spine View Menu



Note For information on IB port statistics refer to the section SFS 7024 Port Statistics, page 2-35.

Logging

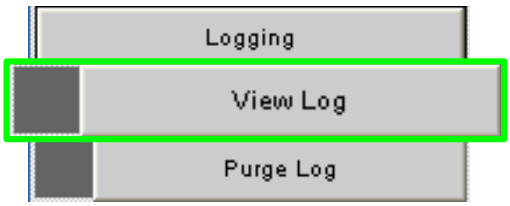
The Logging submenu allows the user to view, set levels, reset levels, and purge the message log file.

Figure 2-74 Logging Submenu

Viewing the Log

The View Log button allows the user to view the message log.

Figure 2-75 View Log Button

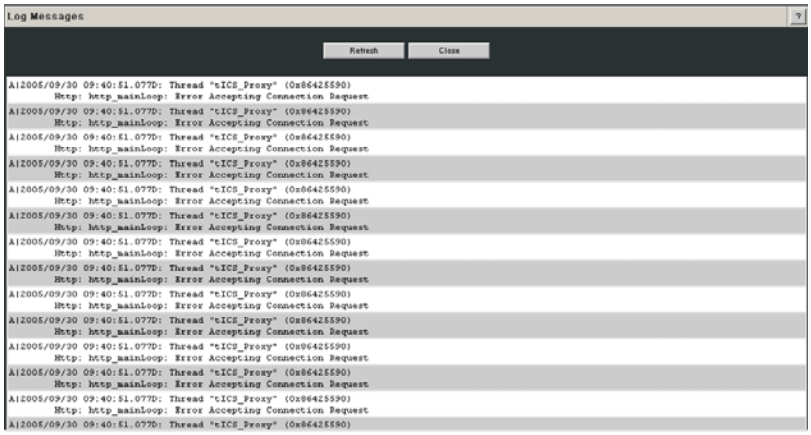


To view the message log:

Step 1 From the menu, select **Logging.**

Step 2 Click **View Log**. The log message window is displayed:

Figure 2-76 Sample Message Log



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

Step 1 From the Messages window, select **Edit**, **Select All** (or **CTRL + A**).

Step 2 Select **Edit**, **Copy** (or **CTRL + C**).

Step 3 Open a text editing package, such as Notepad.

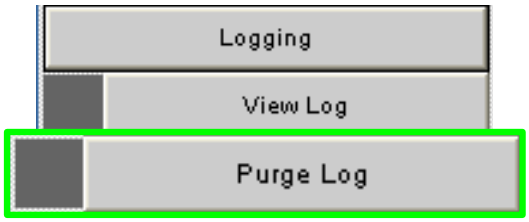
Step 4 Select **Edit**, **Paste** (or **CTRL + V**).

Step 5 Save as a plain text (.txt) file.

Purging the Log

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

Figure 2-77 Purge Log Button

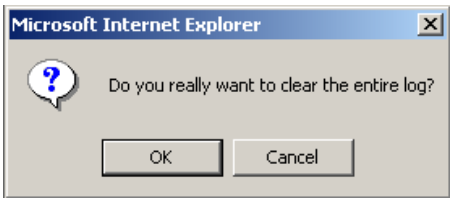


To purge the log:

Step 1 From the menu, click **Logging**.

Step 2 Click **Purge Log**. The Purge Log confirmation window is displayed:

Figure 2-78 Purge Log Confirmation Window



Step 3 Click **OK**.

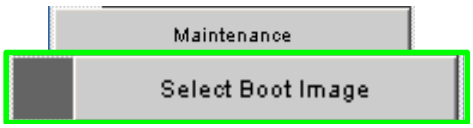
Step 4 The message log file is now purged.

Maintenance

Select Boot Image

The Select Boot Image button allows the user to choose an alternative boot image for the SFS 7024. To select a boot image:

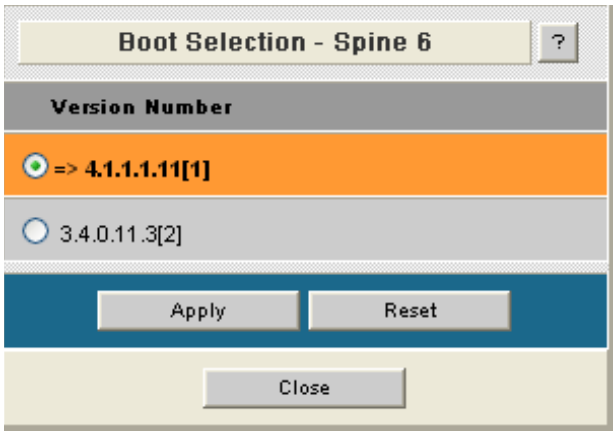
Figure 2-79 Select Boot Image Button



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

Step 2 Click **Select Boot Image**. The Boot Image Selection screen is displayed:

Figure 2-80 Boot Image Selection Screen



To choose a new boot image:

Step 1 Click on the radio button of the new boot image.

Step 2 Click **Apply**.

Note The image preceded with **=>** is the image that is currently running.

License Keys; Key Administration

The **License Key** submenu allows the user to activate and deactivate feature functionality that is sold as an add-on to the SFS 7024.

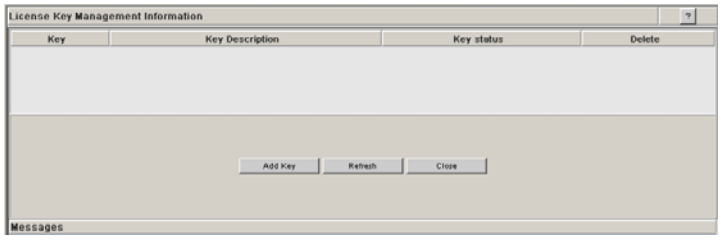
Adding a New License Key

Step 1 Click **License Keys**. The **Key Administration** button is displayed:

Figure 2-81 License Key Submenu

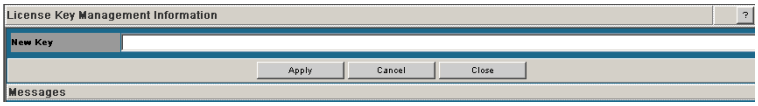
Step 2 Click **Key Administration**. The **Key Management** window is displayed:

Figure 2-82 Key Management Window



Step 3 To add a new license key, click the **Add Key** button. The **License Key Management Information** window is displayed:

Figure 2-83 License Key Management Information Window



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

Note The license key number should be part of the paperwork shipped with the product. If the feature functionality is purchased at a later date, the license key number will be provided via e-mail.

Deleting a License Key

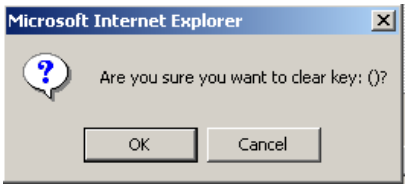
Step 1 Click on the **License Keys** submenu.

Figure 2-84 License Key Submenu

Step 2 Click on **Key Administration**. The **Key Management** window is displayed.

Step 3 To delete a license key, click the **Delete** button. The system prompts with the following:

Figure 2-85 License Key Delete Prompt



Step 4 Click **OK** to delete.

Technical Specifications

Table A-1 SFS 7024 Technical Specifications

Switch Physical Dimensions	• 14U high (24.5”) • 19" rack mount (17.32" wide) • 25 3/4" deep (without cables)
Weight	• 175 lb. (80 kg.) (including power supplies)
Cooling	• Air cooled with 8 hot plug fan trays • Hot plug with two axial, brushless, 12V fans per Fan Tray • Chassis: Front-to-back airflow • Power Supply: Power supplies intake air from a pressurized chamber inside a chassis and exhaust to the front of a chassis. • Temperatures of all major heat producing components are continuously monitored by system management modules. Fan speed is monitored and automatically adjusted by system management modules to maintain appropriate temperatures of major heat producing components. Monitoring is performed via a two wire I2C interface to each Fan Tray.
Environmental	• Operating temperature: 50° - 104°F (5° - 40°C) at sea level, altitude derating 2°F (1°C) per 300m to 2,000m • Non-operating temperature: -35°C to 65°C • Relative humidity (non-condensing): operating 5% – 85%; non-operating 5% – 90% • Self-contained thermal management

Table A-1 SFS 7024 Technical Specifications

Power Supply	• Up to twelve redundant, hot plug supplies • 90/264 VAC operation • 350W max power per supply • Input: • 90–264 VAC, 50-60Hz, 1 Phase, 4.0A max current at 115VAC • Inrush Current: • 15A @ 115VAC (25°C cold start) 30A @ 230VAC (25°C cold start) • Power Factor 0.95 • Two IEC320-C14 connectors for independent AC inputs
Certification Marks	• UL, CSA, CE, VCCI, GS, FCC Class B, IC Class B, ICES - 003

Command Line Interface

This appendix includes the following information:

- Commands and Functional Groups, page B-2
- Accessing the CLI, page B-3
- Groups and Commands, page B-4

Overview

This section details the usage of the Command Line Interface (CLI) feature for the Cisco SFS 7024. The CLI allows the user to perform remote configuration and management tasks, which in many respects mirrors the functionality of the Chassis Viewer GUI.

The CLI is accessed via a terminal attached to the SFS 7024 spine module(s) RS232 port(s) or via the OOB management port using Telnet and secure shell (SSH). For a standalone SFS 7024, the user would Telnet to the unit's IP address(es). Once connected, the CLI works as any telnet session does.

To access the CLI, a login and password is required. There are two user modes, operator and administrator with the following access privileges:

Operator:

- Read only access.

Administrator:

- Read and write Access.
- Reboot access.
- Can change operator and administrator passwords.
- Can disable user login and passwords. This would allow all users administrator-level access without the need for a user name or password.
- Can view all current user sessions
- Can access all of the commands executed from any open operator session.
- Can log out any open user sessions

Can send messages to the open user sessions

The CLI allows multiple users to be logged in simultaneously. However, some commands will be locked to a user(s) if another user is executing the same command.

The CLI is also accessible through the RS232 serial port of the SFS 7024. Providing access through the serial port means that users will always have access to the SFS 7024, even if Telnet and SSH are not functioning.

Commands and Functional Groups

The list of available commands can be accessed by typing **`list`**. To keep the list short, the commands are grouped into functional groups, which are:

General:

General administrative commands

Deprecated:

Commands that have been deprecated.

Note The Deprecated group contains CLI commands that been replaced or are to be removed. Please use the new command where appropriate.

Chassis:

Provides commands for configuring and managing chassis-level functionality. This includes commands for changing the SFS 7024 IP address, and displaying fan tray, power supply, and FRU information.

Network:

General network commands.

Firmware:

Provides commands for updating the firmware via a File Transfer Protocol (FTP) server or Secure Copy Protocol (SCP) (if using SSH to access the SFS 7024). The SFS 7024 has the ability to store the location of the firmware files for future upgrades. Additionally, the Firmware functional group includes commands for viewing the current firmware revisions and for changing the boot image.

SubnetManagement:

InfiniBand subnet manager configuration and management.

Log:

Provides commands for viewing log files as well as configuring logging parameters. This includes commands for changing the SFS 7024 IP address, and displaying fan tray, power supply, and FRU information.

KeyManagement:

Provides commands for adding, removing and displaying license keys on the SFS 7024.

IbSwitchInfo:

Provides commands for displaying InfiniBand (IB) statistics for all IB ports on the SFS 7024.

TimeManagement:

Provides commands for retrieving and setting the current system time, as well as commands for setting the time zone and daylight saving time parameters.

Snmp:

Provides commands for configuring SNMP trap destinations and security parameters required to access the SFS 7024 from an SNMP manager.

Capture:

Provides commands for capturing switch-specific information for the purposes of analysis and debugging.

To list commands within a functional group, simply type in the functional group name. For example, to list all of the firmware commands, type **`Firmware`**. The system would display the following:

```
-> Firmware
fwUpdateSlot        Update units firmware
fwUpdateChassis     Update units firmware
fwListFiles         List the contents of the firmware ramdisk
fwShowUpdateParams  Display firmware default update parameters
fwSetUpdateParams   Configure firmware default update parameters
showCapability      Display the capabilities/features
fwVersion           Display Firmware revisions
bootQuery           Query boot image information
bootSelect          Change boot selection
```

Online Help

The online help for the CLI provides, for each command, all necessary information to successfully execute the command. For example, typing **`help fwShowUpdateParams`** displays the following information:

```
NAME
fwShowUpdateParams
SYNOPSIS
fwShowUpdateParams
DESCRIPTION
Display the default update firmware settings.
OPTIONS
None.
```

Keyboard Shortcuts

- The CLI keeps a history of recently executed commands. This history is available via the **Up** and **Down** arrow keys.
- Users may edit the current command with the **Left** and **Right** arrow keys.
- Tab completion: pressing the **Tab** key after typing at least one character either completes a command or lists all the available commands that begin with the characters already typed.

Accessing the CLI

Note The CLI can be accessed via Telnet, SSH, or through the SFS 7024 RS232 serial port. The following instructions use Telnet.

Step 1 Telnet to the IP address of the SFS 7024 (the default IP address is 192.168.100.9) with the following command:

```
telnet <IP ADDRESS>
```

Step 2 The system prompts for a username. The CLI has the following default user names:

- Operator access: **admin**
- Administrator access: **super**

Type the appropriate username and press **Enter**.

Step 3 The system prompts for a password. The CLI has the following default passwords:

- Operator access: **admin**
- Administrator access: **super**

Type the appropriate password and press **Enter**. The system responds with:

```
Welcome to the SFS 7024 CLI. Type 'list' for the list of commands.
```

Groups and Commands

The following section lists the CLI's functional groups along with the commands for each group. For more specific information for each functional group, the user would execute the **help <GROUP NAME>** command. For more specific command information, the user would execute the **help <COMMAND NAME>** command.

General

help

Displays help information for a specific command.

Syntax:

```
help [command]
```

Options:

[command]

The command to display help for.

Sample Output:

```
-> help list

NAME
       list

SYNOPSIS
       list [group] [-noprompt]

DESCRIPTION
       List available commands.

OPTIONS
       group     - List the commands in that particular group

       -noprompt - Just list the command groups.
```

NOTES: General Help

Type list or ? for the list of commands.

To get help on a particular command type: commandname help.

For convienence purposes you can also type: help commandname

Use the Up and Down arrow keys to browse command history, Left and Right arrow keys to edit the current command and the Tab key for tab completion of a command.

Two alternate key bindings exist for the backspace and delete keys. If these keys are not responding as expected use the swapBsDel command to swap the bindings.

Commands are grouped into subcategories, to list the commands in a subcategory type in the category heading. Category headings are identified by starting with a capitol letter. For example, to list all the commands that handle log configuration type Log.

list

Displays a list of all valid commands.

Syntax:

```
list [group] [-noprompt] [-verbose]
```

Options:

group

Displays a list of commands for a particular group

-noprompt

Displays a list of the command groups only.

-verbose

Print full help for each command, instead of summary.

Sample Output:

```
list
List of Valid Commands:
General         General commands for user management and CLI configuration.
Deprecated      These commands have been deprecated
Network         Snmp configuration commands.
Firmware        Update firmware and display current revision levels.
Log             Log file display and configuration
IbSwitchInfo    InfiniBand port configuration and statistics
TimeManagement Display and configure the system time
Snmp            Snmp configuration commands.
Ethernet        Provides commands for managing the Ethernet interface.

Type the name of the group you want to list or return to exit:
```

NOTES: Specify the group name or use 'all' to list all available commands.

history

Displays the history of a command.

Syntax:

```
history
```

Options:

None.

Sample Output:

```
-> history
command history [30 max lines]:
  list
  Deprecated
  Network
  Firmware
  Log
  IbSwitchInfo
  TimeManagement
  Snmp
  Ethernet
  help
  list
  history
```

reboot

Reboots the device.

Syntax:

```
reboot [now][-m][slot n][-s][-n][all]
```

Options:

now

Does not prompt the user before rebooting.

-m

Reboot Master (local) Spine 1 (non-disruptive).

slot n

reset specific device where n = slotNumber (disruptive).

-s

Reboot Slave (remote) Spine 2.

-n

Reboot Slave (remote) management card only (non-disruptive)

all

Reboot All local devices (excludes -n/-m/-s).

Sample Output:

```
-> reboot
Disruptive reboot selected
Proceed with reboot? [N]
```

NOTES: You may reboot the local (Master) Spine or the remote (Slave) Spine with one or multiple arguments.

Non-disruptive arguments will not interfere with switch traffic.

Providing argument all performs disruptive reboot of all present Spines and cards.

If rebooting the local device from telnet, ssh, etc., you will have to reconnect after rebooting.

Default (no arguments) reboots local device disruptively after prompt.

See also: 'resetCard', 'showInventory'.

killCliSession

Terminates an existing CLI session

Syntax:

```
killCliSession sessionNumber
```

Options:

sessionNumber

The sessionNumber that is returned from the **who** command.

Sample Output:

```
-> killCliSession
must supply session number
```

NOTES: This command logs out remote sessions. Use 'who' to obtain the list of active sessions.

who

Displays all active CLI sessions.

Syntax:

```
who
```

Options:

None.

Sample Output:

```
user                 role       index   logged in             last cmd
-------------------------------------------------------------------------------
super                admin      0       00:08:26 12/21/2006   21:51:09 12/21/2006
admin                operator   1       00:08:19 12/21/2006   21:51:21 12/21/2006
```

NOTES: Displays a list of currently active CLI sessions. Note that a session can be 'active', but no user information available (in most cases, this indicates the session is waiting for the user to enter login information).

For each session the following information is displayed:

- user: username of the logged in user
- role: security role of the user
- index: internal session index
- logged in: timestamp of when the user logged in
- last cmd: timestamp of the users last command
- type: method used to connect to the system
- ip address: ip address of the user (if applicable)

broadcast

Write a message to all active CLI sessions

Syntax:

```
broadcast msg
```

Options:

msg

Message (Note: the message text must be encapsulated in quotes "".

Sample Output:

```
-> broadcast "The system will be rebooted in 5 minutes."
```

NOTES: Writes the supplied message to all other active CLI sessions. The message to be written must be encapsulated in quotes, and non-empty.

swapBsDel

Swaps the backspace and delete character key bindings.

Syntax:

```
swapBsDel
```

Options:

None.

Sample Output:

```
-> swapBsDel
```

NOTES: Terminals may bind the backspace and delete key bindings differently. This command swaps two commonly used bindings, which allow the user to use the backspace and delete keys properly without having to adjust their terminal settings.

setTermWidth

Change the terminal width for text formatting purposes.

Syntax:

```
setTermWidth width
```

Options:

width

Width of the user's terminal window. Minimum width is 20 characters.

Sample Output:

```
-> setTermWidth 100
```

NOTES: Allows modification of the terminal width used for text formatting purposes. Note that not all commands adhere to this setting. The minimum width is 20 characters.

getTermWidth

Displays the terminal width for text formatting purposes.

Syntax:

```
getTermWidth
```

Options:

None.

Sample Output:

```
-> getTermWidth
Current terminal width: 80 characters.
```

NOTES: Displays the terminal width used for text formatting purposes. Note that not all commands adhere to this setting.

prompt

Set the CLI prompt (global for all active CLI sessions).

Syntax:

```
prompt str
```

Options:

str

The new prompt.

Sample Output:

```
prompt "->:"
```

NOTES: This changes the prompt for all CLI sessions. The prompt may not exceed 11 characters and is not saved across reboots. If the prompt contains a space, asterick, comma, parenthesis or semicolon it must be enclosed with double quotes ". For example: "*a prompt*". Also, if a prompt is not accepted try to enclose it with double quotes.

showLastRetCode

Display the return code from the last executed command.

Syntax:

```
showLastRetCode
```

Options:

None.

Sample Output:

```
-> showLastRetCode
Last Exit Code: 0: Success
```

NOTES: This allows for automated systems to determine if a command was successful or not.

rlogin

Creates I/O terminal to local cards.

Syntax:

```
rlogin [hostName]
```

Options:

hostName

The name of the device to connect to.

Sample Output:

```
-> rlogin slot2
```

NOTES: This command allows users to open a terminal to local I/O devices within the chassis/hemisphere. The command rcmd is an alias of rlogin. See also hostShow.

rcmd

Creates I/O terminal to local cards.

Syntax:

```
rcmd [hostName]
```

Options:

hostName

The name of the device to connect.

Sample Output:

```
-> rcmd
```

NOTES: This command allows users to open a terminal to local I/O devices within the chassis/hemisphere. The command rcmd is an alias of rlogin. See also hostShow.

resetCard

Reboot a specific slot in the chassis.

Syntax:

```
resetCard n [now]
```

Options:

n

Chassis slot number.

now

No prompt before resetting the card.

Sample Output:

```
-> resetCard 2 now
```

NOTES: If you reset the switch you are connected to you will have to reconnect. You can find out the valid slots for this device with the 'showInventory' command.

logout

Logout of the current CLI session.

Syntax:

```
logout
```

Options:

None.

Sample Output:

```
logout
```

user

Change user accounts.

Syntax:

```
user [user]
```

Options:

[user]

Name of user account to change to.

Sample Output:

```
-> user operator
User changed to: operator
```

NOTES: Use this command to change to the 'operator' account, or to the 'admin' account.

passwd

Change users password(s).

Syntax:

```
passwd [username]
```

Options:

[username]

Name of the user whose password needs to be changed.

Sample Output:

```
-> passwd operator1
User password changed successfully
```

NOTES: Allows the modification of the user's password.

userAdd

Add a user account.

Syntax:

```
userAdd [role] [username] [password]
```

Options:

[role]

Can be either **admin** or **operator**.

[username]

The name of the user to be added. This name must be at least 4 characters in length.

[password]

Optional password. If not supplied the default password for that role is used. The password must must be at least 5 characters in length.

Sample Output:

```
-> userAdd admin testuser testpass
User added: testuser
->
```

During a Telnet session, if a user is added with `userAdd` the first time that user attempts to log in the user will see a message:

```
Please change your passwords now.
Use Control-C to exit or press 'Enter' key to proceed.
```

If the password is not entered (ie **Ctrl+C** is done) then the next time this user logs in the same message will be presented.

If the Enter key is chosen, the user is asked to enter a password:

```
changing password for user: testuser
(new) password: xxxxx
confirm the new password:xxxxx
Password was updated successfully
Welcome to the SFS-7012 CLI. Type 'list' for the list of commands.
```

Once the password has been entered, the user will no longer receive this prompt upon logging in.

NOTES: The password entered can be the same as the current password.

userRem

Remove a user account.

Syntax:

```
userRem [username]
```

Options:

username

Name of the user to be removed.

Sample Output:

```
-> userRem testuser
User deleted: testuser
```

userListShow

List all user accounts for this device.

Syntax:

```
userListShow
```

Options:

None.

Sample Output:

```
-> userListShow
username              role
operator1             operator
USERID                admin
Bob                   admin
```

loginMode

Change the login authentication mode.

Syntax:

```
loginMode [mode]
```

Options:

[mode]

0-3, 0 = Username/password required, 1=username required, 2=no authentication, 3=LDAP authentication.

Sample Output:

```
-> loginMode 1
Mode successfully changed to: 1 = Password is not required
```

NOTES: This sets the authentication for the CLI. By disabling logins altogether the user is logged in the admin account by default. There is no way to modify this default.

setldapSvrIpAddr

Modify the LDAP Server IP Address.

Syntax:

```
setldapSvrIpAddr [ipaddress]
```

Options:

[ipaddress]

The IP address of the ldap server you wish to set to authenticate in the format "192.168.0.1"

Sample Output:

```
-> setldapSvrIpAddr 123.45.6.789
```

NOTES: This sets the LDAP server ip address. The LDAP server will be contacted for remote authentication.

setldapSvrPort

Modify the LDAP Server Port.

Syntax:

```
setldapSvrPort [port]
```

Options:

[port]

The Port of the ldap server you wish to set to authenticate.

Sample Output:

```
-> setldapSvrPort 1
```

NOTES: This sets the LDAP server port. The LDAP server will be contacted for remote authentication.

idleTimeoutGet

Get the CLI and Chassis Viewer GUI idle timeout values.

Syntax:

```
idleTimeoutGet
```

Options:

None.

Sample Output:

```
-> idleTimeoutGet
CLI timeout is 600 seconds.
GUI timeout is 0 seconds.
```

idleTimeoutSet

Set idle timeout settings.

Syntax:

```
idleTimeoutSet [--all | --cli | --gui] seconds
```

Options:

[--all]

Set the idle timeout for both the CLI and the GUI to the same value.

[--cli]

Set the idle timeout for only the CLI. This is the default if no identifier is specified.

[--gui]

Set the idle timeout for only the GUI.

Sample Output:

```
-> idleTimeoutSet 700
CLI timeout is set to 700 seconds.
```

NOTES: Modifies the idle timeout for the CLI or GUI interfaces. Timeouts are in number of seconds, with zero meaning the timeout is disabled.

sessionTimeoutDisable

Disable the idle timeout for the current CLI session.

Syntax:

```
sessionTimeoutDisable
```

Options:

None.

Sample Output:

```
-> sessionTimeoutDisable
Disabled session idle timeout.
```

sessionTimeoutEnable

Enable the idle timeout for this CLI session.

Syntax:

```
sessionTimeoutEnable
```

Options:

None.

Sample Output:

```
-> sessionTimeoutEnable
Enabled session idle timeout.
```

loginMsgGet

Displays the CLI login message for this device.

Syntax:

```
loginMsgGet
```

Options:

None.

Sample Output:

```
-> loginMsgGet
Welcome message: Be certain to logout when you are finished using the
CLI.
```

NOTES: Displays the current login welcome message for the CLI. This message can be customized with the loginMsgSet command.

loginMsgSet

Set the CLI login message for this device.

Syntax:

```
loginMsgSet [message]
```

Options:

```
[message]
```

The login message (should be encapsulated in quotes " ").

Sample Output:

```
-> loginMsgSet "Be certain to logout when you are finished using the
CLI."
Welcome message set successfully
```

NOTES: This command can be used to modify the welcome message displayed when logging onto the CLI. The current message can be viewed with the loginMsgGet command.

loginNameGet

Display the name of the device displayed when logged into via telnet.

Syntax:

```
loginNameGet
```

Options:

None.

Sample Output:

```
-> loginNameGet
login-name:
```

NOTE: The login name is an arbitrary string displayed prior to a user attempting a login to a new CLI session. This command displays the current value of this string.

loginNameSet

Sets the name of the device displayed when logged into via telnet.

Syntax:

```
loginNameSet <text string>
```

Options:

None.

Sample Output:

```
-> loginNameSet
```

NOTES: The login name is an arbitrary string displayed prior to a user attempting a login to a new CLI session. This command modifies this string.

serialAuthGet

Displays the current serial authentication status.

Syntax:

```
serialAuthGet
```

Options:

None.

Sample Output:

```
-> serialAuthGet
```

NOTES: Displays whether user login and authentication is required on the serial console of the system.

serialAuthSet

Enable or disable authentication on the systems serial console.

Syntax:

```
serialAuthSet [enable]
```

Options:

[enable]

Boolean value to enable or disable serial authentication.

Sample Output:

```
-> serialAuthSet 1
```

NOTES: This command is used to enable or disable user authentication on the serial console. Use 1 as the only parameter to enable authentication, or 0 to disable authentication.

exit

Exit the CLI.

Syntax:

```
exit
```

Options:

None.

Sample Output:

```
exit
```

Deprecated

- smDisplayLids
  use 'smShowLids'
- smGetPriority
  use 'smShowPriority'
- smDumpGroups
  use 'smShowGroups'
- smDumpServices
  use 'smShowServices'
- smDumpSubscriptions
  use 'smShowSubscriptions'
- smDisplayMasterLMC
  use 'smShowMasterLMC'
- smDisplaySmMasterLid -
  use 'smShowMasterLid'
- smDumpLidMap
  use 'smShowLidMap'
- smDisplayMaxLid
  use 'smShowMaxLid'
- smDisplaySMParms
  use 'smShowSMParms'

Chassis

hwMonitor

Displays current port states, fan speeds, temperatures, and voltages.

Syntax:

```
hwMonitor slot
```

Options:

[slot]

Slot number to display. 0 for current slot of the management board.

Sample Output:

```
-> hwMonitor 0
[2J[0;0H    [7mSystem monitor, Uptime: 1 days 23 hours, 33 minutes[27m
  PS1  Fan Speed: [5m   -1 RPM[0m PS2  Fan Speed: [5m   -1 RPM[0m PS3  Fan Speed: [5m   -1 RPM[0m
  PS4  Fan Speed:  9642 RPM[0m PS5  Fan Speed:  9642 RPM[0m PS6  Fan Speed:  9507 RPM[0m
  FT1 Fan Speeds:  8940 RPM[0m  8820 RPM[0m FT2 Fan Speeds:  9120 RPM[0m  8880 RPM[0m
  FT3 Fan Speeds:  9060 RPM[0m  8700 RPM[0m FT4 Fan Speeds:  8640 RPM[0m  8760 RPM[0m
  Device          T1    T2    A1    A2    1.2V     1.6V     1.8V
     Spine 1      34C   38C   26C   30C   1.226    1.489    1.773
     Spine 2      41C   39C   28C   28C   1.240    1.499    1.764
     Spine 3      36C   41C   24C   27C   1.226    1.509    1.770
     Leaf 1       ---   ---   ---   ---   -----    -----    -----
     Leaf 2       ---   ---   ---   ---   -----    -----    -----
     Leaf 3       ---   ---   ---   ---   -----    -----    -----
     Leaf 4       ---   ---   ---   ---   -----    -----    -----
     Leaf 5       ---   ---   ---   ---   -----    -----    -----
     Leaf 6       ---   ---   ---   ---   -----    -----    -----
     Leaf 8       ---   ---   ---   ---   -----    -----    -----
     Leaf 9       ---   ---   ---   ---   -----    -----    -----
     Leaf 11      38C   33C   26C   27C   1.184    1.499    1.783
     Leaf 12      ---   ---   ---   ---   -----    -----    -----
```

NOTES: To exit monitoring, press the enter key.

showIBNodeDesc

Displays the IB Node subnet management agent (SMA) Description.

Syntax:

```
showIBNodeDesc [-d]
```

Options:

[-d]

Show the default Node Name for this unit.

Sample Output:

```
-> showIBNodeDesc
IB Node (SMA) Description is = SFS-7024  GUID=0x0005ad0003042b65
```

NOTES: Entering this command with no parameters displays the current Node Description. The -d option will display the unit's default value.

setIBNodeDesc

Changes the IB Node (SMA) Description.

Syntax:

```
setIBNodeDesc "New Node String"
```

Options:

None.

Sample Output:

```
-> setIBNodeDesc "Upper Hemisphere in Rack 1"
```

NOTES: New node name must be enclosed in quotes. Node name must be less than 128 characters.

fruInfo

Displays the EEProm contents.

Syntax:

```
fruInfo [slot|'-all']
```

Options:

[slot]

Slot that you wish to display EEProm contents. Defaults to 0 (chassis EEProm)

NOTE: The '-all' parameter performs this command against all available slots for this device.

Sample Output:

```
-> fruInfo

Display chassis info
xInfo_ChassisInfo:
RecType:       1LastRec:       0LenMult:       0
ReadOnly:      1RecordFormat:  2RecLen:       14
LogicalLen:  020
HdrChkSum:    c6
ChassisGuid:  00066a000300012a
SlotCount:     1(IB Mods in Chassis)
SlotNumbers:  81(pairs:ext0|Slt1)
CmeAccess:    80(bits:ext0|Slt1|Cme)
SlotNumber:    0 <-Record accessed via this slot
CmeAccessBits: 2(Access slot relative)
ProxyAccess:   0(Access slot relative)
LockDrivesCTR: 0(Clear to Remove interlock)
MechLock:      1
NodeCount:     0
```

chassisQuery

Displays information about the line cards in a chassis.

Syntax:

```
chassisQuery [slot] [-showType] [-type card_type]
[-ignoreInvalidType]
```

Options:

[slot]

slot number

[-showType]

display the card type

[-type card_type]

display slots that have given card type

[-ignoreInvalidType]

do not return an error if an invalid card type is supplied

NOTE: Entering this command with no parameters will display all currently occupied card slots.

Sample Output:

```
-> chassisQuery 10

slots: 10
```

NOTES: Entering this command with no parameters will display all currently occupied card slots.

showInventory

Displays a detailed list of all hardware within the chassis.

Syntax:

```
showInventory
```

Options:

None.

Sample Output:

```
MasterSpine1-> showInventory

NAME: "Slot 2",  DESCR: "4X 12-Port Card"
PID: 74-4316-02, VID: V02, SN: SST0639000C

NAME: "Spine 1",  DESCR: "Fabric Module-MGR'D"
PID: 74-4319-02, VID: V02, SN: SST06390002

NAME: "Chassis",  DESCR: "144 Port IB Server Switch"
PID: 74-4314-02, VID: V02, SN: SST06390001

NAME: "Power Supply 1",  DESCR: "SFS 7012/7024 Power Supply"
PID: 74-4321-01, VID: N/A, SN: N/A

NAME: "Power Supply 2",  DESCR: "SFS 7012/7024 Power Supply"
PID: 74-4321-01, VID: N/A, SN: N/A

NAME: "Fan Tray 1",  DESCR: "SFS 7012/7024 Fan Tray"
PID: 74-4323-01, VID: N/A, SN: N/A

NAME: "Fan Tray 2",  DESCR: "SFS 7012/7024 Fan Tray"
PID: 74-4323-01, VID: N/A, SN: N/A

NAME: "Fan Tray 3",  DESCR: "SFS 7012/7024 Fan Tray"
PID: 74-4323-01, VID: N/A, SN: N/A

NAME: "Fan Tray 4",  DESCR: "SFS 7012/7024 Fan Tray"
PID: 74-4323-01, VID: N/A, SN: N/A

Total devices found: 9
```

Network

ifShow

Displays information for all the network interfaces for the switch, including the management port and the internal Ethernet network.

Syntax:

```
ifShow [ifName]
```

Options:

[ifName]

The network interface name.

Sample Output:

```
MasterSpine2-> ifShow
sbe0 (unit number 0):
        Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
        Type: ETHERNET_CSMACD
        Internet address: 172.26.2.6
        Broadcast address: 172.26.15.255
        Internet address: 172.26.2.25
        Broadcast address: 172.26.15.255
        Netmask 0xffff0000 Subnetmask 0xfffff000
        Net 0xac1a0000 Subnet 0xac1a0000
        Ethernet address is 00:06:6a:00:2b:20
        Metric is 0
        Maximum Transfer Unit size is 1500
        31112517 octets received
        14240407 octets sent
        451992 packets received
        117551 packets sent
        341350 broadcast packets received
        12 broadcast packets sent
        0 multicast packets received
        0 multicast packets sent
        0 input discards
        1313 input unknown protocols
        0 input errors
        0 output errors
lo0 (unit number 0):
        Flags: (0x8069) UP LOOPBACK MULTICAST ARP RUNNING
        Type: SOFTWARE_LOOPBACK
        Internet address: 127.0.0.1
        Netmask 0xff000000 Subnetmask 0xff000000
        Net 0x7f000000 Subnet 0x7f000000
        Metric is 0
        Maximum Transfer Unit size is 32768
sbe1 (unit number 1):
        Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
        Type: ETHERNET_CSMACD
        Internet address: 127.1.1.2
        Broadcast address: 127.1.255.255
        Internet address: 127.2.0.101
        Broadcast address: 127.2.255.255
        Netmask 0xff000000 Subnetmask 0xffff0000
        Net 0x7f000000 Subnet 0x7f010000
        Ethernet address is 02:06:6a:ff:ff:66
        Metric is 0
        Maximum Transfer Unit size is 1500
        967022840 octets received
        943085920 octets sent
        12404105 packets received
        12405678 packets sent
        91 broadcast packets received
        1618 broadcast packets sent
        0 multicast packets received
        0 multicast packets sent
        0 input discards
        0 input unknown protocols
        0 input errors
        0 output errors
```

NOTES: In the `sbe0` output, the first Internet Address shown is the spine IP address. The second Internet Address shown is the chassis IP address.

routeShow

Displays the OOB LAN IP routes.

Syntax:

```
routeShow
```

Options:

None.

Sample Output:

```
-> routeShow

ROUTE NET TABLE
destination      gateway              flags  Refcnt  Use           Interface
------------------------------------------------------------------------
0.0.0.0          172.26.0.254         3      2       1470          mgmt_eth1
172.26.0.0       172.26.0.221         101    0       0             mgmt_eth1
------------------------------------------------------------------------

ROUTE HOST TABLE
destination      gateway              flags  Refcnt  Use           Interface
------------------------------------------------------------------------
127.0.0.1        127.0.0.1             5      2       593            lo0
------------------------------------------------------------------------
```

ping

Send ping packets to a specified host.

Syntax:

```
ping [ipAddress] [packetCount]
```

Options:

[IpAddress]

The IP address of the network host to ping.

[packetCount]

The number of packets with which to ping the host (default is 5).

Sample Output:

```
PING 172.26.0.254: 56 data bytes
64 bytes from 172.26.0.254: icmp_seq=0. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=1. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=2. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=3. time=0. ms
64 bytes from 172.26.0.254: icmp_seq=4. time=0. ms
----172.26.0.254 PING Statistics----
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0
```

NOTES: This routine spawns a process to send ping packets to the specified IP address. If packetCount is given, the process exits after that number of packets are sent. If packetCount is ommitted, a default the number of packets defaults to 5. If packetCount is 0, the ping task will continue until the CLI is restarted (ctrl+c).

showChassisIpAddr

Displays the chassis IP address.

Syntax:

```
showChassisIpAddr
```

Options:

None.

Sample Output:

```
-> showChassisIpAddr
Chassis IP Address: 172.26.0.221 Net mask: 255.255.240.0
```

setChassisIpAddr

Change the module IP address.

Syntax:

```
setChassisIpAddr -h ipaddress -m netMask
```

Options:

-h ipaddress

The new IP address in dotted notation format 'xxx.xxx.xxx.xxx'.

-m netMask

The network mask. (may be in dotted notation or hexidecimal format)

Sample Output:

```
-> setChassisIpAddr -h 172.26.0.221 -m 255.255.240.0
```

NOTES: Changing the chassis IP address will drop the connection to the CLI if not using the console port, and may cause the device to become unreachable.

showDefaultRoute

Displays the default gateway IP address.

Syntax:

```
showDefaultRoute
```

Options:

None.

Sample Output:

```
-> showDefaultRoute
Gateway IP Address: 172.26.0.254
```

NOTES: This is the IP address for the default gateway to route packets from the OOB mangement port to an external network.

setDefaultRoute

Change the default gateway IP address.

Syntax:

```
setDefaultRoute -h ipaddress
```

Options:

-h ipaddress

The default gateway IP address in dotted decimal format (xxx.xxx.xxx.xxx).

Sample Output:

```
setDefaultRoute -h 172.26.0.235
```

NOTES: This allows the user to configure the IP address for the default gateway to route packets from the OOB management port to an external network.

arpShow

Displays the contents of the ARP table.

Syntax:

```
arpShow
```

Options:

None.

Sample Output:

```
-> arpShow

LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use           Interface
------------------------------------------------------------------------------
172.26.0.203     00:11:25:c3:07:c5    405    0       0             mgmt_eth1
172.26.0.254     00:11:25:c3:07:c5    405    1       1419          mgmt_eth1
------------------------------------------------------------------------------
```

hostShow

Displays a list of remote hosts names, internet address and alias(es).

Syntax:

```
hostShow
```

Options:

None.

Sample Output:

```
-> hostShow
hostname         inet address       aliases
--------         ------------       -------
localhost        127.0.0.1
home             10.90.90.0
slot1            127.1.0.1
slot2            127.1.0.2
slot3            127.1.0.3
slot4            127.1.0.4
slot5            127.1.0.5
slot6            127.1.0.6
slot7            127.1.0.7
slot8            127.1.0.8
slot9            127.1.0.9
slot10           127.1.0.10
slot11           127.1.0.11
slot12           127.1.0.12
slot13           127.1.0.13
slot14           127.1.0.14
slot15           127.1.0.15
slot16           127.1.0.16
slot17           127.1.0.17
slot18           127.1.0.18
slot19           127.1.0.19
slot20           127.1.0.20
slot21           127.1.0.21
slot22           127.1.0.22
slot23           127.1.0.23
slot24           127.1.0.24
switchA          127.1.1.1          spine1
switchB          127.1.1.2          spine2
switchC          127.1.1.3          spine3
Master           127.2.0.101
Slave            127.2.0.102
```

Firmware

fwUpdateSlot

Updates the firmware on a specific line card.

Syntax:

```
fwUpdateSlot slotnumber [host user password dir
filename]
```

Options:

slotnumber

The chassis slot numberto update.

host

The name of the host where the firmware file resides.

user

The FTP user name.

password

The FTP user password.

dir

After logging in, the directory to **cd** to.

filename

The name of the firmware file.

Sample Output:

```
-> fwUpdateSlot 1
Enter 1 for FTP, 2 for local file: 1
Ftp Server IP Address:[192.168.0.195]
Ftp username:[ftp] xxxxx
Ftp password:[ftp] xxxxx
File Directory:[PATH TO FIRMWARE FILE]
File name:[9000.pkg]
```

NOTES: Firmware update works by using ftp to retrieve the firmware file, then writes the file to flash. Omitting any of the options causes the user to be prompted for the information.

fwUpdateChassis

Updates the firmware for all cards in a chassis of a particular type, or everything.

Syntax:

```
fwUpdateChassis (all,management) [noprompt] [reboot]
```

Options:

(all,management)

Type of card to update. See notes for details.

noprompt

Will not prompt the user for ftp information (uses the saved values).

reboot

Upon successful completion, reboots the updated cards .

Sample Output:

```
-> fwUpdateChassis all reboot
```

NOTES: Firmware update works by retrieving the firmware file from an ftp server. The file is saved locally and then written to flash. Using the 'all' option, all cards in the chassis will be updated. This assumes that all firmware files are in the same location. The user will be prompted for the names of each file for each line card type present. The system can save the values entered as defaults for future firmware updates.

fwListFiles

Note This command is not currently supported.

Lists the contents of the firmware directory.

Syntax:

```
fwListFiles
```

Options:

None.

Sample Output:

```
-> fwListFiles

Listing Directory /firmware:
[PATH TO FIRMWARE FILE] / [FIRMWARE FILE NAME]
```

NOTES: The firmware directory temporarily stores firmware files before they are written to flash.

fwShowUpdateParams

Display the default update firmware settings.

Syntax:

```
fwShowUpdateParams
```

Options:

None.

fwSetUpdateParams

Change the default update firmware settings.

Syntax:

```
fwSetUpdateParams -c cardtype [-h hostname] [-u
username] [-p password] [-d directory] [-f filename]
```

Options:

-c - cardtype

Choices are: 'manangement', 'vfx', 'vex', 'ibx'.

-h - hostname

The host name or IP address of the FTP server.

-u - username

The name of the user accessing the ftp server.

-p - password

The password of the user accessing the ftp server.

-d - directory

The directory containing the firmware file.

-f - filename

The firmware file name.

NOTES: Modifies the default update firmware parameters. Except for the filename option, all parameters are shared across all card types. The cardtype parameter is only required when specifying the filename.

showCapability

Display capability and feature information for a specific release.

Syntax:

```
showCapability [-key feature]
```

Options:

-key feature

Displays information for a particular feature.

Sample Output:

```
-> showCapability
fwPush: 1
```

showLastScpRetCode

Display the return code from the last SCP Firmware Push.

Syntax:

```
showLastScpRetCode slot | -all
```

Options:

-slot

The slot number in the chassis.

-all

All slots in the chassis.

Sample Output:

```
-> showLastScpRetCode 101
SCP: Slot 101 Last Exit Code: 0: Success
```

NOTES: This allows for automated systems to determine if a SCP firmware push was successful or not.

fwVersion

Displays the firmware versions for a unit.

Syntax:

```
fwVersion [slot]
```

Options:

slot

Slot number.

Sample Output:

```
-> fwVersion
Slot 105 Information -----------------
  Firmware Version: 4.1.1.1.11
  Firmware build:   4_1_1_1_11
  Firmware BSP:     t3
  MBC Version:      None
  Bootrom Version:  4.1.1.1.11

Slot 106 Information -----------------
  Firmware Version: 4.1.1.1.11
  Firmware build:   4_1_1_1_11
  Firmware BSP:     t3
  MBC Version:      None
  Bootrom Version:  4.1.1.1.11
```

bootQuery

Displays boot image version information.

Syntax:

```
bootQuery slot [-active | -alternate | -all]
```

Options:

-slot

Slot number.

-active

Displays the version of the active firmware image.

-alternate

Displays the version of the alternate firmware image.

-all

Displays the versions for the primary and alternate firmware images.

Sample Output:

```
-> bootQuery 105 -all
Primary firmware version: 4.1.1.1.11
Alternate firmware version: 3.4.0.11.3
Active firmware version: 4.1.1.1.11
```

bootSelect

Select the next boot image to be used.

Syntax:

```
bootSelect slot [-i index] [-alternate] [-version
version] [-noprompt]
```

Options:

slot

The slot number using the next boot image.

-i index

The index of the boot image to be used next.

-alternate

Chooses the alternate image to be used next.

-version version

Chooses a specific version to be the image to be used next.

-noprompt

Displays the current configuration only.

Sample Output:

```
-> bootSelect 105 -noprompt
Currently installed firmware versions
index : alias    : version
--------------------------
*# 1   : image1   : 4.1.1.1.11;
   2   : image2   : 3.4.0.11.3;

  * - indicates Default image (will run at next reboot)
  # - indicates Active image

Default boot image index = 1
```

NOTES: This command allows the user to set the next boot image for the device. A '*' next to the image entry indicates the currently selected bootimage. A '#' indicates the currently active bootimage.

SubnetManagement

Note The Subnet Management CLI commands are not currently supported.

smControl

Starts and stops the embedded subnet manager.

Syntax:

```
smControl start | stop | restart | status
```

Options:

Start

Start the SM.

Stop

Stop the SM.

restart

Restarts the SM.

status

Prints out the SM Status.

Sample Output:

```
-> smControl start
Starting the SM...
```

smConfig

Configure startup parameters of the embedded subnet manager.

Syntax:

```
smConfig
```

Options:

None.

Sample Output:

```
-> smConfig
Start at boot? [Y]
Start on slave CMU? [N]
MasterSpine1->
```

NOTES: Use this command to configure the subnet manager. Note that for runtime-type parameters the Subnet manager may need to be restarted for them to take effect.

smShowLids

Display all fabric LID information as known by the subnet manager.

Syntax:

```
smShowLids
```

Options:

None.

Sample Output:

```
sm_state = MASTER   count = 572781   LMC = 0, Topology Pass count = 339, Priority = 0, Mkey = 0x0

-------------------------------------------------------------------------------------------
SFS 7024 GUID=0x00066a00da000100 172.26.2.2 Spine 1, Ch
-------------------------------------------------------------------------------------------
Node[  0] => 00066a000600013c  (2)  ports=24, path=
       Port ----  GUID  ----  (S)   LID       LMC     _VL_   __MTU__  _WIDTH_  _____SPEED_____  CAP_MASK
N#  P#
          0 00066a000600013c   4  LID=0001  LMC=0000   8  8    2k  2k   4X  4X   2.5     2.5   00000a4a
0   0
          4 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
1  22  4 22
          5 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
1  23  4 23
          6 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
1  24  4 24
          7 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
2  24  7 24
          8 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
2  23  7 23
          9 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
2  22  7 22
         22 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
3  16 22 16
         23 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
3  18 22 18
         24 0000000000000000   4                      8  8    2k  2k   4X  4X  2.5/5    5.0   00000000
3  17 22 17
```

NOTES: Use this command to display the current LID assignments for the devices in the InfiniBand fabric.

smShowPriority

Get the priority of the embedded subnet manager.

Syntax:

```
smShowPriority
```

Options:

None.

Sample Output:

```
-> smShowPriority
The SM Priority is 0
```

NOTES: Use this command to display the priority of the subnet manager.

smSetPriority

Set the priority of the embedded subnet manager.

Syntax:

```
smSetPriority
```

Options:

None.

Sample Output:

```
-> smSetPriority 0
The SM Priority has been set to 0
```

NOTES: Use this command to set the priority of the subnet manager. Valid values are 0-15.

smSetSweepRate

Set the sweep rate of the embedded subnet manager.

Syntax:

```
smSetSweepRate
```

Options:

None.

Sample Output:

```
-> smSetSweepRate 300
The SM sweep rate has been set to 300 seconds
```

NOTES: Use this command to set the sweep rate (in seconds) of the subnet manager. Valid values are 3-86400, or 0 to turn the sweep off.

bmSetSweepRate

Set the sweep rate of the embedded baseboard manager.

Syntax:

```
bmSetSweepRate [sweepRate}
```

Options:

```
sweepRate
Valid values are 30-86400, or 0 to turn the sweep off.
```

Sample Output:

```
-> bmSetSweepRate
```

NOTES: Use this command to set the sweep rate (in seconds) of the baseboard manager. Valid values are 30-86400, or 0 to turn the sweep off.

smForceSweep

Force a fabric sweep by the embedded subnet manager.

Syntax:

```
smForceSweep
```

Options:

```
None.
```

Sample Output:

```
-> smForceSweep
```

NOTES: Use this command to force a sweep by the subnet manager.

bmForceSweep

Force a fabric sweep by the embedded baseboard manager.

Syntax:

```
bmForceSweep
```

Options:

```
None.
```

Sample Output:

```
-> bmForceSweep
```

NOTES: Use this command to force a sweep by the baseboard manager.

smShowGroups

Display multicast group information in the embedded subnet manager.

Syntax:

```
smShowGroups [-h]
```

Options:

-h

Display the host name as part of the output.

Sample Output:

```
-> smShowGroups
Multicast Groups:
  join state key: F=Full N=Non S=SendOnly Member

0xff12601bffff0000:00000001ffffd5bb (c001)
  qKey = 0x00000000  pKey = 0xFFFF  mtu = 4  rate = 3  life = 19  sl = 0
  0x0011750000ffd5bb F

0xff12401bffff0000:00000000ffffffff (c000)
  qKey = 0x00000000  pKey = 0xFFFF  mtu = 4  rate = 3  life = 19  sl = 0
  0x00066a01a0007116 F  0x0002c902003fffd5 F  0x00066a00a00001ac F
  0x00066a01a000015d F  0x00066a00a00001a3 F  0x00066a00a00001dc F
  0x00066a00a000035a F  0x0011750000ffd5c2 F  0x0011750000ffd664 F
  0x0011750000ffd9c2 F  0x0011750000ffd9f8 F  0x0011750000ffd5b9 F
  0x0011750000ffda4a F  0x0011750000ffd5bb F  0x0011750000ffd9de F
```

NOTES: Use this command to display multicast group information in the subnet manager.

smShowServices

Display subnet administration service records of the subnet manager.

Syntax:

```
smShowServices
```

Options:

None.

Sample Output:

```
-> smShowServices
****************************************************************
                  There is 1 Service Records
****************************************************************
Service ID           = 0x1100D03C34834444
Service GID          = 0xFE80000000000000:00066A000600013C
Service P_Key        = 0x0000
Service Lease        = infinite
Service Key          =
0x00 0x00 0x00 0x00  0x00 0x00 0x00 0x00  0x00 0x00 0x00 0x00  0x00
0x00 0x00 0x00
Service Name         = Service Rev 1.1
Service Data 8       =
0x00 0x00 0x00 0x00  0x00 0x00 0x00 0x00  0x00 0x00 0x00 0x00  0x00
0x00 0x00 0x00
Service Data 16      =
0x0000 0x0000  0x0000 0x0000  0x0000 0x0000  0x0000 0x0000
Service Data 32      =
0x0000 0x0000 0x0000 0x0000
Service Data 64      =
0x0000000000000000 0x0000000000000000
Service Expire Time = 0x0100000000000000
```

NOTES: The components(fields) of each service record are displayed. Each service record is stored in a location identified by a 'Slot' number which is displayed before any component of that Service Record. If a group of slots do not contain Service Records, the first slot of the empty group is displayed as 'empty'.

smShowSubscriptions

Display event forwarding (subscription) table in the embedded subnet manager.

Syntax:

```
smShowSubscriptions
```

Options:

None.

Sample Output:

```
-> smShowSubscriptions
****************************************************************
                There are 2 subscriptions
****************************************************************
Subscriber GID         = 0xFE80000000000000:00066A00D8000163
Subscriber LID         = 0x0071
Subscriber PKey        = 0xFFFF
Subscriber Start LID   = 0x0001
Subscriber End LID     = 0xBFFF
Subscriber Record ID   = 0x00000001
Subscriber Inform Info =
GID                  = 0x0000000000000000:0000000000000000
Start LID            = 0xFFFF
End LID              = 0x0000
Is Generic?          = Yes
Subscribe?           = Subscribe
Type                 = All Types
Trap Number            = 0x0040
Queue Pair Number      = 0x000001
Response Time Value    = 19
Producer Type          = Subnet Management
****************************************************************
Subscriber GID         = 0xFE80000000000000:00066A01A0007116
Subscriber LID         = 0x0007
Subscriber PKey        = 0xFFFF
Subscriber Start LID   = 0x0001
Subscriber End LID     = 0xBFFF
Subscriber Record ID   = 0x00000036
Subscriber Inform Info =
GID                  = 0x0000000000000000:0000000000000000
Start LID            = 0xFFFF
End LID              = 0x0000
Is Generic?          = Yes
Subscribe?           = Subscribe
Type                 = All Types
Trap Number            = 0x0043
Queue Pair Number      = 0x000001
Response Time Value    = 18
Producer Type          = Channel Adapter
****************************************************************
                There are 2 subscriptions
```

NOTES: Use this command to display the event forwarding (subscription) table in the subnet manager.

smShowMasterLMC

Display the Master SM's LMC value to be used on CA ports.

Syntax:

```
smShowMasterLMC
```

Options:

None.

Sample Output:

```
-> smShowMasterLMC
Master SM LMC: 0 (1 LID(s) per port)
```

NOTES: Use this command to display the Master SM's LMC value to be used on CA ports.

smSetMasterLMC

Set the SM's LMC value to be used on CA ports.

Syntax:

```
smSetMasterLMC
```

Options:

None.

Sample Output:

```
-> smSetMasterLMC 1
```

NOTES: Use this command to set the SM's LMC value to be used on CA ports. The default is zero.

smShowMasterLid

Display the LID of the subnet manager.

Syntax:

```
smShowMasterLid
```

Options:

None.

Sample Output:

```
-> smShowMasterLid
The SM LID is 0x0001
```

NOTE: Use this command to display the SM's LID. It may be the local LID if the SM is the master.

smShowLidMap

Display the LID-to-port GUID map for the subnet manager.

Syntax:

```
smShowLidMap
```

Options:

None.

Sample Output:

```
-> smShowLidMap
-------------------------------------------------------------------------------
SM is currently in the MASTER state, with Topology Pass count = 341
-------------------------------------------------------------------------------
Lid 0x0001: guid = 0x00066a000600013c, pass = 341, SFS 7024 GUID=0x00066a00da000100 172.26.2.2 Spine 1,
Ch
Lid 0x0002: guid = 0x00066a0007000170, pass = 341, SFS 7024 GUID=0x00066a00da000100 172.26.2.2 Leaf 4,
Chi
Lid 0x0003: guid = 0x00066a100600013c, pass = 341, SFS 7024 GUID=0x00066a00da000100 172.26.2.2 Spine 1,
Ch
```

NOTES: Use this command to display the LID-to-port GUID map of the subnet manager.

smShowMaxLid

Display the highest LID allocated by the subnet manager.

Syntax:

```
smShowMaxLid
```

Options:

None.

Sample Output:

```
-> smShowMaxLid
The maximum LID is 0x0138
```

NOTES: Use this command to display the highest LID allocated by the subnet manager.

smSetSwitchLifetime

Set the default switch lifetime in the subnet manager.

Syntax:

```
smSetSwitchLifetime [switch-lifetime}
```

Options:

```
switch-lifetime
```

Sample Output:

```
-> smSetSwitchLifetime 13
The SM Switch Lifetime has been set to 13
```

NOTES: Use this command to set the default switch lifetime in the subnet manager.

smSetHoqLife

Set the head of queue lifetime for the subnet manager.

Syntax:

```
smSetHoqLife [hoq-lifetime]
```

Options:

```
hoq-lifetime
```

Sample Output:

```
-> smSetHoqLife 11
The SM Head of Queue Lifetime has been set to 11
```

NOTES: Use this command to set the head of queue lifetime in the subnet manager.

smSetVLStall

Set the VL stall value in the subnet manager.

Syntax:

```
smSetVLStall [vl-stall]
```

Options:

```
vl-stall
```

Sample Output:

```
-> smSetVLStall 7
The SM VL Stall value has been set to 7
```

NOTES: Use this command to set the VL stall value in the subnet manager.

smShowSMParms

Display subnet manager parameters switch lifetime, HOQ lifetime, VLStall val, pkt lifetime, and dynamic PLT.

Syntax:

```
smShowSMParms
```

Options:

None.

Sample Output:

```
-> smShowSMParms
SM priority is set to 0
SM LMC is set to 0
SM sweep rate is set to 300
SM max retries on receive set to 3
SM max receive wait interval set to 250 millisecs
switchLifetime set to 13
HoqLife set to 11
VL Stall set to 7
packetLifetime constant is set to 18
Dynamic PLT ON using values: 1 hop=16, 2 hops=17, 3 hops=17, 4 hops=18,
5 hops=18, 6 hops=18, 7 hops=18, 8+hops=19
MasterSpine1->
```

NOTES: Use this command to display a sampling of subnet manager parameters.

smSetPKey

Configure a PKey in the PKey table.

Syntax:

```
smSetPKey [index] [pkey] [description]
```

Options:

index

PKey index.

pkey

Pkey 16 Bit value.

description

User-defined description of the PKey.

Sample Output:

```
-> smSetPKey 0 0xffff "Default PKey"
Successfully set PKey index: 0 to 0xffff
```

NOTES: PKeys are used for partitioning the subnet. Only configure PKeys if the host driver supports this. Invalid configuration of the PKey may render the fabric inoperable.

smShowPKeys

Displays all of the PKeys within the PKey table of the subnet manager.

Syntax:

```
smShowPKeys
```

Options:

None.

Sample Output:

```
-> smShowPKeys
Index:    0 PKey: 0xffff   Desc: Default PKey
```

NOTES: PKeys are used for partitioning the subnet. Only configure PKeys if it is supported by the host driver.

smSetKey

Set the subnet manager key (SMInfo) value.

Syntax:

```
smSetKey MKey
```

Options:

None.

Sample Output:

```
-> smSetKey MKey
```

NOTES: Use this command to set the SM key. The subnet manager must be offline and key value is up to 8 byte hex.

smShowKey

Display SMInfo key of the Subnet manager.

Syntax:

```
smShowKey
```

Options:

None.

Sample Output:

```
-> smShowKey
```

NOTES: The SMInfo Key (smkey) is used to authenticate multiple SM's and authorize priviledged SA operations.

smSetMKey

Set the subnet manager management key (portInfo) value.

Syntax:

```
smSetMKey MKey
```

Options:

None.

Sample Output:

```
-> sm SetMKey
SM MKey: 0x0
```

NOTES: Use this command to set the SM management key. SM must be offline and mkey value is up to 8 byte hex.

smShowMKey

Displays the management key (MKey) of the subnet manager.

Syntax:

```
smShowMKey
```

Options:

None.

Sample Output:

```
-> sm ShowMKey
SM MKey: 0x0
```

NOTES: The Management Key is used to authorize priviledged subnet operations such as inititializion aliases and configuration.

smOptionConfig

Use this command to configure support for non-default modes of operation.

Syntax:

```
smOptionConfig [clear | [rmpp-mod] [mp-mod]]
```

Options:

clear

Clears all set options.

rmpp-mod

Alternate RMPP response implementation.

Sample Output:

```
-> smOptionConfig clear
```

NOTES: Use of these options without explicit direction may cause the fabric to be inoperable.

smSetDefBcGroup

Set a default broadcast group in the subnet manager.

Syntax:

```
smSetDefBcGroup [clear] | [pKey] [mtu] [rate] [sl]
[qKey]
```

Options:

clear

Clear the configuration.

pKey

Partition Key. 0 defaults to use the default PKey at index 0.

mtu

Maximum tranfer unit. 0 will default to use the port's mtu.

rate

Data Rate. 0 will default to use the port's current rate.

sl

Service level.

qKey

Queue Key. If no value entered, defaults to 0..

Sample Output:

```
-> smSetDefBcGroup 0xffff 4 3 0
```

NOTES: This will create a default broadcast group with 1 member with a GUID of 0x00066A00FACADE01ull. Executing this command with no parameters creates the default broadcast group with pkey=0xffff, MTU=4 (2048), RATE=3 (10GB), SL=0, QKey=0 Valid MTU values are 1(256), 2(512), 3(1024), 4(2048), and 5(4096) Valid RATE values are 2(2.5GB), 3(10GB), 4(30GB), 5(5GB), 6(20GB), 7(40GB), 8(60GB), 9(80GB), 10(120GB) Valid Values for SL is 0 (only value supported at this time) DO NOT CREATE THIS GROUP WITH PARAMETERS THAT YOUR FABRIC CANNOT SUPPORT!

smShowDefBcGroup

Display the default broadcast group configuration.

Syntax:

```
smShowDefBcGroup
```

Options:

None.

Sample Output:

```
-> smShowDefBcGroup
Default Muticast group: PKey: 0xffff MTU: 4 Rate: 3 SL: 0
```

smSetGidPrefix

Set the subnet's Subnet Prefix (default=0xfe80000000000000).

Syntax:

```
smSetGidPrefix Gid Prefix
```

Options:

None.

Sample Output:

```
-> smSetGidPrefix Gid Prefix
```

NOTES: Use this command to set the SM's Subnet Prefix. SM must be offline and Subnet Prefix value is 8 byte hex.

smShowGidPrefix

Display Subnet manager's Subnet Prefix.

Syntax:

```
smShowGidPrefix
```

Options:

None.

Sample Output:

```
-> smShowGidPrefix
```

NOTES: The Subnet manager's assigned Subnet Prefix (default=0xfe80000000000000).

smSetSubnetSize

Set the Subnet manager's subnet size.

Syntax:

```
smSetSubnetSize subnetSize
```

Options:

subnetSize

Size as number of end ports on the subnet.

Sample Output:

```
-> smSetSubnetSize 32
```

NOTES: Use this command to tune the SM to handle the configured fabric size. This should be expressed in terms of the upper limit of HCA ports on the subnet. Setting this value will not take effect until the Subnet Manager is restarted.

smShowSubnetSize

Display the size of the subnet.

Syntax:

```
smShowSubnetSize
```

Options:

None.

Sample Output:

```
-> smShowSubnetSize
```

NOTES: This value is used to tune the SM to handle the configured fabric size, expressed in terms of HCA ports.

Log

logShow

Displays the log file.

Syntax:

```
logShow
```

Options:

None.

Sample Output:

```
-> logshow

W|2006/10/04 20:26:31.176U: Thread "Log" (0x8fdab3b0)
        Log: Unable to Send Trap: 523:Bad:65535
W|2006/10/04 20:26:31.176U: Thread "CPU1" (0x1)
        Fcpi: Target Device 1 (2e7 p1) NPort Id 0x0106d1: Connection
Restored
W|2006/10/04 20:26:31.196U: Thread "Log" (0x8fdab3b0)
        Log: Unable to Send Trap: 523:Bad:65535
W|2006/10/04 20:26:31.216U: Thread "CPU1" (0x1)
        Fcpi: Target Device 2 (b31 p2) NPort Id 0x0106d2: Connection
Restored
W|2006/10/04 20:26:31.236U: Thread "CPU1" (0x1)
        Fcpi: Target Device 3 (d94 p3) NPort Id 0x0106d3: Connection
Restored
W|2006/10/04 20:26:31.246U: Thread "Log" (0x8fdab3b0)
        Log: Unable to Send Trap: 523:Bad:65535
W|2006/10/04 20:26:31.256U: Thread "CPU1" (0x1)
        Fcpi: Target Device 6 (ac6 p6) NPort Id 0x0106d6: Connection
Restored
W|2006/10/04 20:26:31.276U: Thread "Log" (0x8fdab3b0)
        Log: Unable to Send Trap: 523:Bad:65535
W|2006/10/04 20:26:31.326U: Thread "Log" (0x8fdab3b0)
        Log: Unable to Send Trap: 523:Bad:65535
W|2006/10/04 20:28:29.912U: Thread "tTelnetd" (0x8fe143e0)
        Osa: telnetd: connection requested by 192.168.0.107
W|2006/10/04 20:46:26.113U: Thread "tTelnetd" (0x8fe143e0)
        Osa: telnetd: connection requested by 192.168.0.107
W|2006/10/05 19:37:08.727U: Thread "tTelnetd" (0x8fe143e0)
        Osa: telnetd: connection requested by 192.168.0.46
W|2006/10/05 20:19:20.101U: Thread "tTelnetd" (0x8fe143e0)
```

logClear

Clears the log file.

Syntax:

```
logClear
```

Options:

None.

Sample Output:

```
-> logClear
Ram Log cleared
```

logConfigure

Configures the log settings.

Syntax:

```
logConfigure
```

Options:

None.

Sample Output:

```
-> logConfigure
Type Q or X to exit.
Please enter the number corresponding to what you want to configure.
index : name          : description
-------------------------
  1   : Device        : Logging device. (IE. Ram, syslog, etc)
  2   : Preset        : General log filter.

Select: 1
Configurable devices
index : name     : |D|F|E|A|W|P|C|I|P|1|2|3|4|5|
-----------------------------------------------------
  1   : Ram      : |X|X|X|X|X|X|X|X| | | | | |
  2   : BriefRam : | | | | | | | | | | | | | |
  3   : Console  : |X|X|X|X|X|X|X|X| | | | | |
  4   : Trap     : |X|X|X|X|X| |X| | | | | | |
  5   : Syslog   : |X|X|X|X|X|X|X|X| | | | | |
Type Q or X to exit

Enter the device index you wish to configure: 5
Level: Dump [1]
Level: Fatal [1]
Level: Error [1]
Level: Alarm [1]
Level: Warning [1]
Level: Partial [1]
Level: Config [1]
Level: Info [1]
Level: Periodic [1]
Level: Debug1 [0]
Level: Debug2 [0]
Level: Debug3 [0]
Level: Debug4 [0]
Level: Debug5 [0]
Log device configuration changed
```

NOTES: This is an interactive command to configure log settings. This involves setting which log levels are active.

Definitions:

- Preset: Enable or disable each log level that may be generated on the system
- Device: Enable a device to display or process log messages of each level.
- Syslog: Configure the syslog host ip address and port.

logResetToDefaults

Restores the log file default settings.

Syntax:

```
logResetToDefaults
```

Options:

None.

Sample Output:

```
-> logResetToDefaults
Log configuration has been reset
```

logSyslogConfig

Configure the syslog host IP address.

Syntax:

```
logSyslogConfig [-h xxx.xxx.xxx.xxx] [-p xxxx] [-f xx]
```

Options:

-h ip_address

Sets the host IP address in dotted decimal format (xxx.xxx.xxx.xxx).

-p port

The host port number on which the syslog server is listening.

-f facility

The syslog facility to use in the messages.

Sample Output:

```
-> logSyslogConfig -h 172.26.0.202
Successfully configured the syslog host
```

NOTES: The device can forward its log messages to a syslog host if configured. This command allows a user to configure the host and port to send messages to and the facility to use in the messages. Additional configuration may be necessary to fully configure the log system.

logShowConfig

Display the current log configuration settings.

Syntax:

```
logShowConfig
```

Options:

None.

Sample Output:

```
-> logShowConfig


Log Configuration for Slot 3:
-----------------------------
Configurable devices
index : name     : |D|F|E|A|W|P|C|I|P|1|2|3|4|5|
-----------------------------------------------------
  1   : Ram      : |X|X|X|X|X|X|X|X| | | | | |
  2   : BriefRam : | | | | | | | | | | | | | |
  3   : Console  : |X|X|X|X|X|X|X|X| | | | | |
  4   : Trap     : |X|X|X|X|X| | |X| | | | | |
  5   : Syslog   : |X|X|X|X|X|X|X|X| | | | | |

Configurable presets
index : name     : state
-----------------------------
  1   : Dump     : Enabled
  2   : Fatal    : Enabled
  3   : Error    : Enabled
  4   : Alarm    : Enabled
  5   : Warning  : Enabled
  6   : Partial  : Enabled
  7   : Config   : Disabled
  8   : Info     : Disabled
  9   : Periodic : Disabled
  10  : Debug1   : Disabled
  11  : Debug2   : Disabled
  12  : Debug3   : Disabled
  13  : Debug4   : Disabled
  14  : Debug5   : Disabled
->
```

KeyManagement

showKeys

Display the license keys for the unit.

Syntax:

```
showKeys
```

Options:

None.

Sample Output:

```
-> showKeys
-----------------------------------------------------
Key number:  1
Key:         xxxxxx-xxxxxx-xxxxxx-xxxxxx-xxxxxx-x
Description: Subnet Manager License
Status:      Active
```

NOTES: License keys unlock various software features of the product.

addKey

Add a license key.

Syntax:

```
addKey [key]
```

Options:

-key

The license key to add.

Sample Output:

```
-> addKey XXxxx-YYYYY-ZZZZZ-11111-222222-3
```

removeKey

Remove a license key.

Syntax:

```
removeKey
```

Options:

None.

Sample Output:

```
-> removeKey
-----------------------------------------------------------
Key number:  1
Key:         xxxxxx-xxxxxx-xxxxxx-xxxxxx-xxxxxx-x
Description: Subnet Manager License
Status:      Active

Please enter the key number you wish to remove:
```

NOTES: After entering this command a list of available keys will be displayed. The keys are shown along with an associated number. At the prompt, enter the number of the key you wish to remove.

IbSwitchInfo

Note The following commands require a reboot of the affected chassis component. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded:

- ismPortSet12x
- ismChassisSetSpeed
- ismPortEnable

- ismChassisSetEnable
- ismPortDisable
- ismPortSetSpeed
- ismIslSet12x
- ismChassisSetMtu
- ismIslSetSpeed

ismPortStats

Displays link error information associated with each switch port. These statistics include errors, dropped packets, discarded packets, and invalid packets.

Syntax:

```
ismPortStats [-clear] [-noprompt] [-cols X] [-port X]
[-leaf X] [-spine X]
```

Options:

-clear

Clears the statistics. Statistics are displayed first, then cleared.

-noprompt

Does not give the user a 'Continue' prompt for each page of display.

-cols X

Sets the number of columns to be displayed per line.

-port X

Specifies a port(s) to display.

-leaf X

Displays all ports for a specific leaf.

-spine X

Displays all ports for a specific spine.

Sample Output:

```
-> ismPortStats -spine 6
Name         S6AL09  S6AL15  S6AL19  S6AL11  S6AL21  S6AL23  S6AL01  S6AL03
PhysState        Up      Up      Up      Up      Up      Up      Up      Up
PortState       Act     Act     Act     Act     Act     Act     Act     Act
LinkWidth        4X      4X      4X      4X      4X      4X      4X      4X
LinkSpeed   5.0Gbps 5.0Gbps 5.0Gbps 5.0Gbps 5.0Gbps 5.0Gbps 5.0Gbps 5.0Gbps
SymblErrors      0       0       0       0       0       0       0       0
ErrRecovery      0       0       0       0       0       0       0       0
LinkDowned       0       0       0       0       0       0       0       0
RcvErrors        0       0       0       0       0       0       0       0
RmtPhysErr       0       0       0       0       0       0       0       0
TxDiscards       0       0       0       0       0       0       0       0
InPKeyViol       0       0       0       0       0       0       0       0
OutPKeyViol      0       0       0       0       0       0       0       0
InRawViol        0       0       0       0       0       0       0       0
OutRawViol       0       0       0       0       0       0       0       0
LLIntegrity      0       0       0       0       0       0       0       0
ExcesBufOvr      0       0       0       0       0       0       0       0
```

Note Port statistic descriptions:

- PhysState - The physical state of the port.
- PortState - The state of the link on this port.
- LinkWidth - The currently active link width on this port.
- LinkSpeed - The currently active link speed on this port. Port speed is LinkWidth * LinkSpeed.
- SymblErrors - 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.
- ErrRecovery - The number of times the link error recovery proccess happened successfully.
- LinkDowned - The number of times the link error recovery process failed.
- RcvErrors - Number of errors received on the port.
- RmtPhysErr - Number of remote physical errors received on the port.
- TxDiscards - Number of port transmit discards.
- InPKeyViol - Number of times PKey inbound invalid.
- OutPKeyViol - Number of times PKey outbound invalid.
- InRawViol - Number of times raw inbound packet discarded.
- OutRawViol - Number of times raw outbound packet was discarded.
- LLIntegrity - Number of local link integrity errors.
- ExcesBufOvr - Number of excessive buffer overrun errors.

- The options -leaf and -spine are only available on platforms with removable leaf and spine modules.

ismPortCounters

Displays a table comparision of transmit, receive and error counters cooresponding to each port of the module.

Syntax:

```
ismPortCounters [-clear] [-active] [-errors]
[-potential] [-noprompt]
```

Options:

-clear

Clears the counters. Counters are first displayed, then cleared.

-active

Displays only the counters for ports in the active state.

-errors

Displays only the counters for ports with receive symbol errors.

-potential

Displays only the counters for ports with active link or width under their maximum supported value.

-noprompt

Does not give the user a 'Continue' prompt for each page of display on switches with more than 24 ports.

Sample Output:

```
-> ismPortCounters -errors
No ports with symbol errors.
```

Note Port counter descriptions:

- Transmit, Packets - The number of packets transmitted by the port, not including flow control packets.
- Transmit, Words - The number of data words transmitted by the port, not including flow control and VCRC data.
- Transmit, Wait - The number of 4ns ticks during which the port had data to transmit but no data was sent either because of insufficient credits or because of lack of arbitration.
- Receive, Packets - The number of data packets received by the port, not including flow control packets.
- Receive, Words - The number of data words received by the port, not including flow control and VCRC data.
- Errors, Rcv - Number of symbol errors received on the port.
- Errors, Rmt - Number of switch relay errors received on the port.

- For the SFS 7024, the counters for the cable ports as well as the ports for each line card are shown. For switches with more than 24 ports, the user is prompted to continue the output after each group of 24 ports are displayed. This command is best displayed with a terminal width of at least 120 columns.

ismLinearFwdb

Displays the entries in the linear forwarding table. LIDs and a cooresponding port are shown. A packet addressed to a LID will be forwared to the cooresonding port listed in the displayed table.

Syntax:

```
ismLinearFwdb [switch]
```

Options:

-switch

switch number.

Sample Output:

```
-> ismLinearFwdb
Switch Leaf 3 Linear Fwdb:
 LID :: Port
0001      19 (L03S1Aa)
0002      0 ( )
0003      12 (L03P12 )
0004      13 (L03S1Ba)

Switch Spine 1-A Linear Fwdb:
 LID :: Port
0001      0 ( )
0002      9 (S1AL03a)
0003      9 (S1AL03a)
0004      11 (S1AL03b)
```

ismMultiFwdb

Show Multicast Forwarding Database for switch.

Syntax:

```
ismMultiFwdb [switch]
```

Options:

-switch

Switch identifier.

Sample Output:

```
-> ismMultiFwdb
Switch Leaf 3 Multicast Fwdb:
c000      12 (L03P12 ) 19 (L03S1Aa)
c001      12 (L03P12 ) 19 (L03S1Aa)

Switch Spine 1-A Multicast Fwdb:
c000       9 (S1AL03a)
c001       9 (S1AL03a)
```

Note This command is best displayed with a terminal width of at least 120 columns.

ismAutoClearConf

This feature will clear the InfiniBand port statistic counters that have reached their maximum.

Syntax:

```
ismAutoClearConf [disable | enable [warn] [log_first]]
```

Options:

-enable

Enable the auto-clear feature.

-disable

Disable the auto-clear feature.

-warn

Generate warning log messages instead of the default information messages.

-log_first

Log first clear (otherwise the first clear is not logged).

Sample Output:

```
-> ismAutoClearConf enable
Auto clear is enabled
```

Note This feature will log every time a counter has reached its maximum capacity. This may be useful for diagnostics purposes, specifically for bad cables. This feature is only available on certain switch hardware platforms.

ismPortSet12x

Note This command is not currently supported.

Allows the user to view, set and unset port link width to 12X for specific port(s).

Syntax:

```
ismPortSet12x portName [enable12xBit]
```

Options:

-portName

A valid 6 or 7 character port name (e.g., S1AL01a or L01P01).

-enable12xBit

1=enable, 0=disable.

Sample Output:

```
-> ismPortSet12x S1AL01a
S1AL01a 12x mode is DISABLED
```

Note This command works only on platforms supporting 12X link aggregation.

The option portName is case sensitive. If it contains spaces, it must be bounded by quotes (e.g., ismPortSet12x "Cable 1", 1). Using this command without the option enable12xBit displays the current values of the port.

Devices with affected ports MUST BE REBOOTED to activate changes made with ismPortSet12x.This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismChassisSet12x

Note This command is not currently supported.

Allows the user to view, set and unset the chassis link width to 12X (including external ports).

Syntax:

```
ismChassisSet12x [enable12xBit]
```

Options:

-enable12xBit

1=enable, 0=disable.

Sample Output:

```
-> ismChassisSet12x
L01P01  12x mode is DISABLED
L01P02  12x mode is DISABLED
L01P03  12x mode is DISABLED
L01P04  12x mode is DISABLED
L01P05  12x mode is DISABLED
L01P06  12x mode is DISABLED
L01P07  12x mode is DISABLED
L01P08  12x mode is DISABLED
L01P09  12x mode is DISABLED
L01P10  12x mode is DISABLED
L01P11  12x mode is DISABLED
```

Note This command works only on platforms supporting 12X link aggregation.

This command will enable 12X link aggregation so that internal and external switching will be 12x. Each 12X port is 3 aggregated 4x ports (i.e., a TRIO), where one will be reported as a 12x port, and the other two ports are reported as disabled. Each of the three aggregated 4x ports must be connected to another enabled 12X TRIO to establish a 12X link. Using this command without the option enable12xBit displays the ports current values. The device must be rebooted to activate changes made with this command.

Calling this command without the enable12xBit will display the current values of the port(s).

ismChassisSetSpeed

Allows the user to view and set port link speeds (including external ports) for the entire chassis to 2.5 (SDR), 5.0 (DDR) or AutoNegotiate.

Syntax:

```
ismChassisSetSpeed [speed]
```

Options:

-speed

1=2.5, 2=5.0 or 3=AutoNegotiate.

Sample Output:

```
-> ismChassisSetSpeed
L01P01  link speed is AUTO NEGOTIATE
L01P02  link speed is AUTO NEGOTIATE
L01P03  link speed is AUTO NEGOTIATE
L01P04  link speed is AUTO NEGOTIATE
L01P05  link speed is AUTO NEGOTIATE
L01P06  link speed is AUTO NEGOTIATE
L01P07  link speed is AUTO NEGOTIATE
L01P08  link speed is AUTO NEGOTIATE
```

Note DDR links (5.0) are only available on chassis supporting DDR. This command sets link speeds for both internal and external ports .Each external DDR port must be connected to another DDR port to establish a 5.0 link. Using this function without the speed option displays the current values of the port(s).A reboot of the chassis is required to activate changes made with this command.

Note This command requires a reboot of the affected chassis component. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismPortEnable

Allows the user to enable or disable a port.

Syntax:

```
ismPortEnable port
```

Options:

-port

Port name.

Sample Output:

```
-> ismPortEnable S3BL08b
```

Note The option portName is case sensitive. If it contains spaces, it must be bounded by quotes (e.g., ismPortEnable "Cable 1"). A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismChassisSetEnable

Allows the user to view ports for the entire hemisphere, to disable all the leaf-cable ports in a hemisphere, and to enable all ports (leaf-cable and leaf-spine) in a hemisphere. If [enable] is set to 1, all ports in the hemisphere will be enabled. If [enable] is set to 0, all leaf-cable ports will be disabled.

Syntax:

```
ismChassisSetEnable [enable]
```

Options:

-enable

1=enable, 0=disable.

Sample Output:

```
-> ismChassisSetEnable
L01P01  is ENABLED
L01P02  is ENABLED
L01P03  is ENABLED
L01P04  is ENABLED
L01P05  is ENABLED
L01P06  is ENABLED
L01P07  is ENABLED.
```

Note Using this command without the enable option displays current value of the port(s). A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismPortDisable

Allows the user to view and disable ports for entire chassis.

Syntax:

```
ismPortDisable port
```

Options:

-port

Port name.

Sample Output:

```
-> ismPortDisable S3BL10a
```

Note The option port is case sensitive. If it contains spaces, it must be bounded by quotes (e.g., ismPortEnable "Cable 1"). A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismPortSetSpeed

Allows the user to view and set port speeds.

Syntax:

```
ismPortSetSpeed port [speed]
```

Options:

-port

Port name.

-speed

The port speed (1=SDR, 2=DDR, 3=AutoNegotiate).

Sample Output:

```
-> ismPortSetSpeed S3BL08b
S3BL08b link speed is AUTO NEGOTIATE.
```

Note The option port is case sensitive. If it contains spaces, it must be bounded by quotes (e.g., ismPortSetSpeed "Cable 1"). Using this command with only the port option displays its current values. A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismIslSet12x

Allows the user to view, set and unset the chassis link width to 12X (except external ports).

Syntax:

```
ismIslSet12x [enable12xBit]
```

Options:

-enable12xBit

1=enable, 0=disable.

Sample Output:

```
-> ismIslSet12x.
```

Note This command works only on chassis supporting 12X link aggregation. This command enables 12X link aggregation so that internal switching will be 12X. External ports remain configured to 4X and do not require special cabling configuration to function correctly. Using this function without the option enable12xBit displays current values of a port. A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismChassisSetMtu

View/Set/Unset chassis maximum packet MTU size (all ports)

Syntax:

```
ismChassisSetMtu [mtu]
```

Options:

```
[mtu]
  4=2048, 5=4096.
```

Sample Output:

```
MasterSpine5-> ismChassisSetMtu 4

REBOOT of ALL DEVICES is REQUIRED to activate changes made with ismChassisSetMtu
```

Note REBOOT of ALL DEVICES is REQUIRED to activate changes made with ismChassisSetMtu. This command will set maximum packet mtu size for both Internal AND External switching. Calling this function without an mtu designator will display the ports' current value. A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismIslSetSpeed

Allows the user to view and set internal port link speeds to 2.5 (SDR), 5.0 (DDR) or AutoNegotiate.

Syntax:

```
ismIslSetSpeed [speedFlag]
```

Options:

```
-speedFlag
  1 = 2.5, 2 = 5.0, 3 = AutoNegotiate.
```

Sample Output:

```
-> ismIslSetSpeed
L01S3Ba link speed is AUTO NEGOTIATE
L01S1Ba link speed is AUTO NEGOTIATE
L01S1Bb link speed is AUTO NEGOTIATE
L03S1Ba link speed is fixed 2.5 (SDR only device)
L03S3Ba link speed is fixed 2.5 (SDR only device)
```

Note This command works only on chassis supporting DDR links. This command sets inter-switch link speeds to either 2.5, 5.0, or AutoNegotiate. External ports remain configured to SDR rate (2.5) and do not require special cabling configuration to function correctly. Using this command without the option enable12xBit displays the current values of the port. A reboot is required to activate changes made with this command. This reboot will be disruptive and will cause the affected switch chips to be reset and have a part of their EEPROM to be reloaded.

ismShowPStatThresh

Displays the port statistic thresholds.

Syntax:

```
ismShowPStatThresh
```

Options:

None.

Sample Output:

```
-> ismShowPStatThresh
        Field              Threshold  Time Unit
        -----              ---------  ---------
 1           portXmitData:         0  (Percent of Max)
 2           portRecvData:         0  (Percent of Max)
 3           portXmitPkts:         0  (Percent of Max)
 4           portRecvPkts:         0  (Percent of Max)
 5           portXmitWait:         0  (1 Second)
 6         portSymbolErr:          0  (1 Second)
 7       portLinkErrRecv:          0  (1 Second)
 8        portLinkDowned:          0  (1 Second)
 9           portRecvErr:          0  (1 Second)
10    portRecvRemPhysErr:          0  (1 Second)
12       portXmitDiscard:          0  (1 Second)
13        portPKeyViolIn:          0  (1 Second)
14       portPKeyViolOut:          0  (1 Second)
15         portRawViolIn:          0  (1 Second)
16        portRawViolOut:          0  (1 Second)
17    portLocalLinkInteg:          0  (1 Second)
18  portExcBufferOverrun:          0  (1 Second)
19 portRelayedVL15Dropped:         0  (1 Second)
20  portLocalVL15Dropped:          0  (1 Second)
21     portNonSMPDropped:          0  (1 Second)
```

Note The following are the available port statics thresholds:

- 1 portXmitData: 32-bit data words transmitted
- 2 portRecvData: 32-bit data words received
- 3 portXmitPkts: data packets transmitted
- 4 portRecvPkts: data packets received
- 6 portSymbolErr: a 8B10B encoding violation, or a displarity violation was detected
- 7 portLinkErrRecv: link error recovery process happened successfully

- 8 portLinkDowned: link error recovery process failed
- 9 portRecvErr: errors received
- 10 portRecvRemPhysErr: remote physical errors received
- 12 portXmitDiscard: port transmit discards
- 13 portPKeyViolIn: PKey inbound was invalid
- 14 portPKeyViolOut: PKey outbound was invalid
- 15 portRawViolIn: raw inbound packet discarded
- 16 portRawViolOut: raw outbound packet discarded
- 17 portLocalLinkInteg: link integrity errors
- 18 portExcBufferOverrun: excessive buffer overrun errors
- 19 portRelayedVL15Dropped: remote VL15 packet was dropped
- 20 portLocalVL15Dropped: local VL15 packet was dropped
- 21 portNonSMPDropped: non SMP packet was dropped

ismSetPStatThresh

Modifies the port statistic thresholds.

Syntax:

```
ismSetPStatThresh field threshold
```

Options:

-field

The name of the port status threshold field.

-threshold

The numeric threshold value.

Sample Output:

```
-> ismSetPStatThresh  portXmitData 0
successfully set port stat threshold portXmitData
```

Note The available thresholds are:

- portXmitData
- portRecvData
- portXmitPkts
- portRecvPkts
- portSymbolErr
- portLinkErrRecv
- portLinkDowned
- portRecvErr

- portRecvRemPhysErr
- portXmitDiscard
- portPKeyViolIn
- portPKeyViolOut
- portRawViolIn
- portRawViolOut
- portLocalLinkInteg
- portExcBufferOverrun
- portRelayedVL15Dropped
- portLocalVL15Dropped
- portNonSMPDropped

TimeManagement

time

Configure the time on the device.

Syntax:

```
time -S ipaddr | -T hhmmss[mmddyyyy]
```

Options:

-S ipaddr

Sets the NTP Server IP address.

-T hhmmss[mmddyyyy]

Set the local clock time hour, minutes, and seconds along with the month, day, and year.

Sample Output:

```
-> time -S 172.26.0.254
Configured the NTP server ip address successfully
13:53:02  10/06/2006
Configured to use NTP server IP address: 172.26.0.254
```

Note Time can be configured locally (using a local clock) or set to be updated by an SNTP server. Please note that if you set the time locally, the unit will unconfigure the NTP server IP address if set. If no options are passed in, the current system time will be printed out.

timeZoneConf

Display/configure the time zone setting.

Syntax:

```
timeZoneConf [offset]
```

Options:

offset

The time offset in relation to Greenwich Mean Time (GMT).

Sample Output:

```
-> timeZoneConf -5
Timezone offset successfully configured
Current time zone offset is: -5
```

Note The offset parameter specifies a time zone the system should use when setting the time. 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. GMT = GreenwichMean Time..

timeDSTConf

Configure and display the Daylight Saving Time settings.

Syntax:

```
timeDSTConf [sw sd sm ew ed em]
```

Options:

sw

Start which, valid values: 1 = 1st, 2 = 2nd, 3 = 3rd, 4 = 4th, 5 = 5th

sd

Start day, valid values: 1 = Sunday, 2 = Monday, 3 = Tuesday, 4 = Wednesday, 5 = Thursday, 6 = Friday, 7 = Saturday

sm

Start month, valid values: 3 = March, 4 = April, 5 = May, 6 = June, 7 = July, 8 = August, 9 = September, 10 = October, 11 = November

ew

End which, valid values: 1 = 1st, 2 = 2nd, 3 = 3rd, 4 = 4th, 5 = 5th

ed

End day, valid values: 1 = Sunday, 2 = Monday, 3 = Tuesday, 4 = Wednesday, 5 = Thursday, 6 = Friday, 7 = Saturday

em

End month, valid values: 3 = March, 4 = April, 5 = May, 6 = June, 7 = July, 8 = August, 9 = September, 10 = October, 11 = November

Sample Output:

```
-> timeDSTConf 2 1 3 1 1 11
Timezone offset successfully configured
Current DST = Start: 2'nd Sunday of March End: 1'st Sunday of November
```

Note Example: To set the daylight savings time to start on the 1st Sunday of April and end on the 4th Sunday of October the command would be: 'timeDSTConf 1 1 4 4 1 10'.

timeNtpTimeout

Display or set the number of seconds to wait for a NTP response.

Syntax:

```
timeNtpTimeout numSeconds
```

Options:

numSeconds

New timeout setting.

Sample Output:

```
-> timeNtpTimeout
Current NTP timeout value: 2 seconds
-> timeNtpTimeout 3
Current NTP timeout changed to 3 seconds
```

Note With no arguments, this command displays the current NTP timeout settings. This is the amount of time (in seconds) for the system to wait for a response from the NTP server. This setting can be configured by using the same command with the new timeout value (in whole seconds) as the only argument. The default settings is 2 seconds. The NTP timeout value is not used on linecards or slave CMUs.

timeNtpRefreshTime

Display or set the delay between syncing the clock via NTP.

Syntax:

```
timeNtpRefreshTime numSeconds
```

Options:

numSeconds

New refresh delay setting.

Sample Output:

```
-> timeNtpRefreshTime
Current NTP refresh delay value: 60 seconds
-> timeNtpRefreshTime 50
Current NTP refresh delay changed to 50 seconds.
```

Note With no arguments this command displays the current NTP refresh time, which is the delay in seconds between attempts to sync the clock via NTP. This value can be configured by using this same command with the new refresh time (in whole seconds) as the only argument. The NTP refresh time is not used on linecards or slave CMUs.

SNMP

snmpCommunityConf

Displays and allows the changing of the SNMP community strings.

Syntax:

```
snmpCommunityConf [-r readonly_comm_str]
[-w read_write_comm_str]
```

Options:

-r

A read-only community string.

-w

A read/write community string.

Sample Output:

```
-> snmpCommunityConf -r public
Read Only Community String Was Set To: public
```

Note If no options are entered the current SNMP read-only community string and read-write community string is displayed. If options are entered then the corresponding community string is changed.

snmpTargetAddr

Displays and allows the changing of the **snmpTargetAddrTable** entries.

Syntax:

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

Options:

show

Displays the contents of the **snmpTargetAddrTable**.

add

Adds a row to the **snmpTargetAddrTable**.

edit

Modifies an existing row in the **snmpTargetAddrTable**.

delete

Removes an existing row of the **snmpTargetAddrTable**.

-n

Name. A unique name used to identify a row. Any name with a space (e.g. xxx v3) must be surrounded by double quotes (").

-a

Address. The target machine IP address in dotted decimal form.

-p

Port. The target port to send traps and information.

-t

Timeout. The time to wait for an information response.

-r

Retry count. The number of re-send attempts for information.

-l

Tag list. Indicates the traps and information that is sent.

-v

Parameters. This maps to an entry in the **snmpTargetAddrTable.**

-s

Storage type. Determines whether the entry is saved in flash memory.

Sample Output:

```
-> snmpTargetAddr
rfc2573t:snmpTargetAddrTDomain: nms v1 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTDomain: nms v2 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTDomain: nms v3 : 1.3.6.1.6.1.1
rfc2573t:snmpTargetAddrTAddress: nms v1 :  (ip addr)00.00.00.00 (port)0000
rfc2573t:snmpTargetAddrTAddress: nms v2 :  (ip addr)00.00.00.00 (port)0000
rfc2573t:snmpTargetAddrTAddress: nms v3 :  (ip addr)00.00.00.00 (port)0000
```

Note The output is in the form: 'mib : mib_object : table_index : value' . For more details on the snmpTargetAddrTable see SNMP-TARGET-MIB, RFC 2573.

snmpTargetParams

Displays the **snmpTargetParamsTable** entries.

Syntax:

```
snmpTargetParams [show]
```

Options:

show

Displays the contents of the **snmpTargetParamsTable**.

Sample Output:

```
-> snmpTargetParams
rfc2573t:snmpTargetParamsMPModel: v1 params : 0
rfc2573t:snmpTargetParamsMPModel: v2 params : 1
rfc2573t:snmpTargetParamsMPModel: v3 params : 3
rfc2573t:snmpTargetParamsSecurityModel: v1 params : 1
rfc2573t:snmpTargetParamsSecurityModel: v2 params : 2
rfc2573t:snmpTargetParamsSecurityModel: v3 params : 3
```

Note The output is in the form: 'mib : mib_object : table_index : value' . For more details on the snmpTargetParamsTable see SNMP-TARGET-MIB, RFC-2573.

snmpNotifyProfile

Displays the **snmpNotifyFilterProfileTable** entries.

Syntax:

```
snmpNotifyProfile [show]
```

Options:

show

Displays the contents of the **snmpNotifyFilterProfileTable**.

Sample Output:

```
-> snmpNotifyProfile
rfc2573n:snmpNotifyFilterProfileName: v1 params : v1 params
rfc2573n:snmpNotifyFilterProfileName: v2 params : v2 params
rfc2573n:snmpNotifyFilterProfileName: v3 params : v3 params
rfc2573n:snmpNotifyFilterProfileStorType: v1 params : 3
rfc2573n:snmpNotifyFilterProfileStorType: v2 params : 3
rfc2573n:snmpNotifyFilterProfileStorType: v3 params : 3
```

Note The output is in the form: 'mib : mib_object : table_index : value' . For more details on the snmpNotifyFilterProfileTable see SNMP-NOTIFICATION-MIB, RFC-2573.

snmpNotifyFilter

Displays the **snmpNotifyFilterTable** entries.

Syntax:

```
snmpNotifyFilter [show]
```

Options:

show

Displays the contents of the **snmpNotifyFilterTable**.

Sample Output:

```
-> snmpNotifyFilter
rfc2573n:snmpNotifyFilterMask:  v1 params : 0
rfc2573n:snmpNotifyFilterMask:  v2 params : 0
rfc2573n:snmpNotifyFilterMask:  v3 params : 0
rfc2573n:snmpNotifyFilterType:  v1 params : 1
rfc2573n:snmpNotifyFilterType:  v2 params : 1
rfc2573n:snmpNotifyFilterType:  v3 params : 1
```

Note The output is in the form: 'mib : mib_object : table_index : value' . For more details on the snmpNotifyFilterTable see SNMP-NOTIFICATION-MIB, RFC-2573.

snmpNotify

Displays the **snmpNotifyTable** entries.

Syntax:

```
snmpNotify [show]
```

Options:

show

Displalys the contents of the **snmpNotifyTable**.

Sample Output:

```
-> snmpNotify
rfc2573n:snmpNotifyTag: switch : rfc1493
rfc2573n:snmpNotifyTag: interfaces : rfc2233
rfc2573n:snmpNotifyTag: rmon : rfc1757
rfc2573n:snmpNotifyTag: snmp : rfc1907
rfc2573n:snmpNotifyTag: tms : tmscom
rfc2573n:snmpNotifyType: switch : 1
```

Note The output is in the form: 'mib : mib_object : table_index : value' . For more details on the snmpNotifyTable see SNMP-NOTIFICATION-MIB, RFC-2573.

snmpSystem

Displays and allows the changing of the Mib-2 system entries.

Syntax:

```
snmpSystem [show | edit] [-n sysName] [-l sysLocation]
[-c sysContact]
```

Options:

show

show the contents of the snmpTargetAddrTable.

edit

modify an existing row in the snmpTargetAddrTable.

-n

sysName.

-c

sysContact.

-l

sysLocation.

Sample Output:

```
-> snmpSystem show
rfc1907:sysDescr:  : 7024
rfc1907:sysObjectID:  : 1.3.6.1.4.1.10222.7.2.2
rfc1907:sysUpTime:  : 0 Day(s), 0 Hour(s), 28 Minute(s), 28 Second(s)
rfc1907:sysContact:  :
2D.2D.45.6D.70.74.79.3B.20.4E.6F.20.56.61.6C.75.65.20.53.65.74.2D.2D
rfc1907:sysName:  : 7024
rfc1907:sysLocation:  : Main Chassis Unit, Slot 4
rfc1907:sysServices:  : 79
```

Note The output is in the form: 'mib : mib_object : table_index : value'.

snmpUsrSec

Configure and display SNMP V3 users.

Syntax:

```
snmpUsrSec [add | show | edit | delete] [name] [-a algo
[key]]
```

Options:

add

add an entry to the V3 user table.

show

show entries in the V3 user table.

edit

modify an entry in the V3 user table.

delete

remove an entry in the V3 user table.

-a

authentication algorithm and key. Options: MD5, SHA, NONE. Passphrase is required unless NONE is specified.

Sample Output:

```
-> snmpUsrSec
User    : initialmd5
Auth    : MD5
Auth Key: 0x047b473f93211a17813ce5fff290066b
Priv    : NONE

User    : initialsha
Auth    : SHA
Auth Key: 0x1c8cbd687fb0f0a22ddd24315db0d84c09eb5ff3
Priv    : NONE

User    : initialnone
Auth    : NONE
Priv    : NONE
```

Note Handles configuration and display of SNMP v3 users. Supported authentication algorithms are: NONE, MD5, and SHA. A passphrase is required for all except the NONE algorithm. No privacy algorithms are currently supported.

Capture

capture

Display information for this device.

Syntax:

```
capture
```

Options:

None.

Note This command is intended for support personnel.

captureFw

Display firmware information for this device.

Syntax:

```
captureFw
```

Options:

None.

Note This command is intended for support personnel.

captureLog

Display log information for this device.

Syntax:

```
captureLog
```

Options:

None.

Note This command is intended for support personnel.

captureSm

Display Subnet Management information for this device.

Syntax:

```
captureSm
```

Options:

None.

Note This command is intended for support personnel.

captureIsm

Display Infiniband switch information for this device.

Syntax:

```
captureIsm
```

Options:

None.

Note This command is intended for support personnel.

captureChassis

Display chassis information for this device.

Syntax:

```
captureChassis
```

Options:

None.

Note This command is intended for support personnel.

captureNetwork

Display chassis information for this device.

Syntax:

```
captureNetwork
```

Options:

None.

Note This command is intended for support personnel.

captureMisc

Display miscellaneous information for this device.

Syntax:

```
captureMisc
```

Options:

None.

Note This command is intended for support personnel.

captureSnmp

Display SNMP information for this device.

Syntax:

```
captureSnmp
```

Options:

None.

Note This command is intended for support personnel.

captureShell

Display shell command information for this device.

Syntax:

```
captureShell
```

Options:

None.

Note This command is intended for support personnel.

Troubleshooting

This appendix describes how to troubleshoot the Cisco SFS 7024, and it includes the following information:

- Hardware Checks, page C-1
- Troubleshooting Scenarios, page C-3

Hardware Checks

Switch

Problem	Fix
The Switch has no power	Ensure that the power cord(s) is attached to the Switch and the power outlet. Ensure that the power supply(s) is seated properly.

Power Supply

Problem	Fix
DC OK LED is off	Indicates DC power failure or no DC power is present
AC OK LED is off	Indicates AC power failure or no AC power is present

Fan

Problem	Fix
Red LED is lit	Call Tech Support
Fan not running	Ensure fan is seated properly. If fan continues to be inoperable, call Tech Support

OOB Ethernet RJ45 Port

Problem	Fix
The SFS 7024 Ethernet Port(s) have a RJ45 Cable with a Noise Problem: This problem would occur if there is a RJ45 cable that has poor shielding or contact of pins.	Ensure that the cable is a straight-through Cat 5 cable (not a crossover cable). If using a straight-through cable and still experiencing this problem: Test with a known good cable.
Absence of Ethernet link and/or intermittent Ethernet connectivity.	Ensure that the Ethernet cable is Cat 5E or Cat 6 certified.

SFS 7024 Leaf Module IB Ports

Problem	Fix
No LED	Make sure the IB cable is properly connected to both the leaf port and to the destination device. Make sure the other end of the connection is plugged into a functioning HCA or switch. Make sure the cable does not exceed maximum distances.
Bad IB Cable	Test with a known good IB cable.

Troubleshooting Scenarios

InfiniBand

This section documents common problems seen with the SFS 7024 switch.

Invalid IP Address entered via Console Port

Symptoms

Cannot access the Chassis Viewer browser window. The browser window times out and Chassis Viewer will not come up.

Resolution / Workaround

1. Invalid IP Address entered for the chassis or spine modules via the console port. Use the `showChassisIpAddr` command to be sure the address has been set correctly.
2. If attempting to access the switch from a remote LAN, ensure that the default gateway/default route addresses are set correctly.