Sun™ IB Switch 9P Administration Guide

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Contents

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Declaration of Conformity

Compliance Model Number: Loki
Product Family Name: Sun IB switch

EMC

USA—FCC Class A

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This equipment may not cause harmful interference.
2. This equipment must accept any interference that may cause undesired operation.

European Union

This equipment complies with the following requirements of the EMC Directive 89/336/EEC:

As Information Technology Equipment (ITE) Class A per (as applicable):

EN55022:1998/CISPR22:1997	Class A
EN61000-3-2:2000	Pass
EN61000-3-3:1995+A1:2000	Pass
EN61000-4-2	4 kV (Direct), 8 kV (Air)
EN61000-4-3	3 V/m
EN61000-4-4	1 kV AC Power Lines, 0.5 kV Signal and DC Power Lines
EN61000-4-5	1 kV AC Line-Line and Outdoor Signal Lines, 2 kV AC Line-Gnd, 0.5 kV DC Power Lines
EN61000-4-6	3 V
EN61000-4-8	1 A/m
EN61000-4-11	Pass

Safety: This equipment complies with the following requirements of the Low Voltage Directive 73/23/EEC:

EC Type Examination Certificates:

IEC 60950-1:2001. 1st Edition	UL/GS Certificate No. 1365, Demko Certificate No. 139831-01
IEC 60950-1:2001. 1st Edition	CB Scheme Certificate No. US/9545/UL
Evaluated to all CB Countries	
UL 60950-1:2003. 1st Edition, CSA C22.2 No. 60950-1-03	File: E138989-A44-UL-1

Supplementary Information: This product was tested and complies with all the requirements for the CE Mark.

/S/
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Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

FCC Class B Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

ICES-003 Class A Notice - Avis NMB-003, Classe A

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

ICES-003 Class B Notice - Avis NMB-003, Classe B

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

VCCI 基準について

クラス A VCCI 基準について

クラス A VCCIの表示があるワークステーションおよびオプション製品は、クラスA情報技術装置です。これらの製品には、下記の項目が該当します。

> この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

クラス B VCCI 基準について

クラス B VCCI の表示 ⓋⓒⒾ があるワークステーションおよびオプション製品は、クラスB情報技術装置です。これらの製品には、下記の項目が該当します。

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BSMI Class A Notice

The following statement is applicable to products shipped to Taiwan and marked as Class A on the product compliance label.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用
時，可能會造成射頻 干擾，在這種情況下，
使用者會被要求採取某些適當的對策。

CCC Class A Notice

The following statement is applicable to products shipped to China and marked with "Class A" on the product's compliance label.

以下声明适用于运往中国且其认证标志上注有 "Class A" 字样的产品。

声明
此为A级产品，在生活环境中，该产品可能会造成无线电干扰。
在这种情况下，可能需要用户 对其干扰采取切实可行的措施。

GOST-R Certification Mark
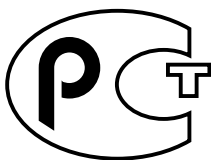
Safety Agency Compliance Statements

Read this section before beginning any procedure. The following text provides safety precautions to follow when installing a Sun Microsystems product.

Safety Precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all cautions and instructions marked on the equipment.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment's electrical rating label.
- Never push objects of any kind through openings in the equipment. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could cause fire, electric shock, or damage to your equipment.

Symbols

The following symbols may appear in this book:

Caution – There is a risk of personal injury and equipment damage. Follow the instructions.

Caution – Hot surface. Avoid contact. Surfaces are hot and may cause personal injury if touched.

Caution – Hazardous voltages are present. To reduce the risk of electric shock and danger to personal health, follow the instructions.

Depending on the type of power switch your device has, one of the following symbols may be used:

On – Applies AC power to the system.

Off – Removes AC power from the system.

Standby – The On/Standby switch is in the standby position.

Modifications to Equipment

Do not make mechanical or electrical modifications to the equipment. Sun Microsystems is not responsible for regulatory compliance of a modified Sun product.

Placement of a Sun Product

Caution – Do not block or cover the openings of your Sun product. Never place a Sun product near a radiator or heat register. Failure to follow these guidelines can cause overheating and affect the reliability of your Sun product.

Noise Level

In compliance with the requirements defined in DIN 45635 Part 1000, the workplace-dependent noise level of this product is less than 70 db(A).

SELV Compliance

Safety status of I/O connections comply to SELV requirements.

Power Cord Connection

Caution – Sun products are designed to work with power systems having a grounded neutral (grounded return for DC-powered products). To reduce the risk of electric shock, do not plug Sun products into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.

Caution – Not all power cords have the same current ratings. Do not use the power cord provided with your equipment for any other products or use. Household extension cords do not have overload protection and are not meant for use with computer systems. Do not use household extension cords with your Sun product.

注意 – 添付の電源コードを他の装置や用途に使用しない
添付の電源コードは本装置に接続し、使用することを目的として設計され、その安全性が確認されているものです。決して他の装置や用途に使用しないでください。火災や感電の原因となる恐れがあります。

The following caution applies only to devices with a Standby power switch:

Caution – The power switch of this product functions as a standby type device only. The power cord serves as the primary disconnect device for the system. Be sure to plug the power cord into a grounded power outlet that is nearby the system and is readily accessible. Do not connect the power cord when the power supply has been removed from the system chassis.

The following caution applies only to devices with multiple power cords:

Caution – For products with multiple power cords, all power cords must be disconnected to completely remove power from the system.

Battery Warning

Caution – There is danger of explosion if batteries are mishandled or incorrectly replaced. On systems with replaceable batteries, replace only with the same manufacturer and type or equivalent type recommended by the manufacturer per the instructions provided in the product service manual. Do not disassemble batteries or attempt to recharge them outside the system. Do not dispose of batteries in fire. Dispose of batteries properly in accordance with the manufacturer's instructions and local regulations. Note that on Sun CPU boards, there is a lithium battery molded into the real-time clock. These batteries are not customer replaceable parts.

System Unit Cover

You must remove the cover of your Sun computer system unit to add cards, memory, or internal storage devices. Be sure to replace the cover before powering on your computer system.

Caution – Do not operate Sun products without the cover in place. Failure to take this precaution may result in personal injury and system damage.

Rack System Warning

The following warnings apply to Racks and Rack Mounted systems.

⚠ **Caution –** For safety, equipment should always be loaded from the bottom up. That is, install the equipment that will be mounted in the lowest part of the rack first, then the next higher systems, etc.

⚠ **Caution –** To prevent the rack from tipping during equipment installation, the anti-tilt bar on the rack must be deployed.

⚠ **Caution –** To prevent extreme operating temperature within the rack insure that the maximum temperature does not exceed the product's ambient rated temperatures.

⚠ **Caution –** To prevent extreme operating temperatures due to reduced airflow consideration should be made to the amount of air flow that is required for a safe operation of the equipment.

Laser Compliance Notice

Sun products that use laser technology comply with Class 1 laser requirements.

> Class 1 Laser Product
> Luokan 1 Laserlaite
> Klasse 1 Laser Apparat
> Laser Klasse 1

CD and DVD Devices

The following caution applies to CD, DVD, and other optical devices.

⚠ **Caution –** Use of controls, adjustments, or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Conformité aux normes de sécurité

Veuillez lire attentivement cette section avant de commencer. Ce texte traite des mesures de sécurité qu'il convient de prendre pour l'installation d'un produit Sun Microsystems.

Mesures de sécurité

Pour votre sécurité, nous vous recommandons de suivre scrupuleusement les mesures de sécurité ci-dessous lorsque vous installez votre matériel:

- Suivez tous les avertissements et toutes les instructions inscrites sur le matériel.
- Assurez-vous que la tension et la fréquence de votre source d'alimentation correspondent à la tension et à la fréquence indiquées sur l'étiquette de la tension électrique nominale du matériel
- N'introduisez jamais d'objets quels qu'ils soient dans les ouvertures de l'équipement. Vous pourriez vous trouver en présence de hautes tensions dangereuses. Tout objet étranger conducteur risque de produire un court-circuit pouvant présenter un risque d'incendie ou de décharge électrique, ou susceptible d'endommager le matériel.

Symboles

Vous trouverez ci-dessous la signification des différents symboles utilisés:

⚠ **Attention –** Vous risquez d'endommager le matériel ou de vous blesser. Veuillez suivre les instructions.

⚠ **Attention –** Surfaces brûlantes. Evitez tout contact. Les surfaces sont brûlantes. Vous risquez de vous blesser si vous les touchez.

Attention – Tensions dangereuses. Pour réduire les risques de décharge électrique et de danger physique, observez les consignes indiquées.

Selon le type d'interrupteur marche/arrêt dont votre appareil est équipé, l'un des symboles suivants sera utilisé:

Marche – Met le système sous tension alternative.

Arret – Met le système hors tension alternative.

Veilleuse – L'interrupteur Marche/Veille est sur la position de veille.

Modification du matériel

N'apportez aucune modification mécanique ou électrique au matériel. Sun Microsystems décline toute responsabilité quant à la non-conformité éventuelle d'un produit Sun modifié.

Positionnement d'un produit Sun

Attention – Evitez d'obstruer ou de recouvrir les orifices de votre produit Sun. N'installez jamais un produit Sun près d'un radiateur ou d'une source de chaleur. Si vous ne respectez pas ces consignes, votre produit Sun risque de surchauffer et son fonctionnement en sera altéré.

Niveau de pression acoustique

Le niveau de pression acoustique du lieu de travail définie par la norme DIN 45 635 Part 1000 doit être au maximum de 70 db(A).

Conformité SELV

Le niveau de sécurité des connexions E/S est conforme aux normes SELV.

Connexion du cordon d'alimentation

Attention – Les produits Sun sont conçus pour fonctionner avec des systèmes d'alimentation équipés d'un conducteur neutre relié à la terre (conducteur neutre pour produits alimentés en CC). Pour réduire les risques de décharge électrique, ne branchez jamais les produits Sun sur une source d'alimentation d'un autre type. Contactez le gérant de votre bâtiment ou un électricien agréé si vous avez le moindre doute quant au type d'alimentation fourni dans votre bâtiment.

Attention – Tous les cordons d'alimentation ne présentent pas les mêmes caractéristiques électriques. Les cordons d'alimentation à usage domestique ne sont pas protégés contre les surtensions et ne sont pas conçus pour être utilisés avec des ordinateurs. N'utilisez jamais de cordon d'alimentation à usage domestique avec les produits Sun.

L'avertissement suivant s'applique uniquement aux systèmes équipés d'un interrupteur Veille:

Attention – L'interrupteur d'alimentation de ce produit fonctionne uniquement comme un dispositif de mise en veille. Le cordon d'alimentation constitue le moyen principal de déconnexion de l'alimentation pour le système. Assurez-vous de le brancher dans une prise d'alimentation mise à la terre près du système et facile d'accès. Ne le branchez pas lorsque l'alimentation électrique ne se trouve pas dans le châssis du système.

L'avertissement suivant s'applique uniquement aux systèmes équipés de plusieurs cordons d'alimentation:

Attention – Pour mettre un système équipé de plusieurs cordons d'alimentation hors tension, il est nécessaire de débrancher tous les cordons d'alimentation.

Mise en garde relative aux batteries

Attention – Les batteries risquent d'exploser en cas de manipulation maladroite ou de remplacement incorrect. Pour les systèmes dont les batteries sont remplaçables, effectuez les remplacements uniquement selon le modèle du fabricant ou un modèle équivalent recommandé par le fabricant, conformément aux instructions fournies dans le manuel de service du système. N'essayez en aucun cas de démonter les batteries, ni de les recharger hors du système. Ne les jetez pas au feu. Mettez-les au rebut selon les instructions du fabricant et conformément à la législation locale en vigueur. Notez que sur les cartes processeur de Sun, une batterie au lithium a été moulée dans l'horloge temps réel. Les batteries ne sont pas des pièces remplaçables par le client.

Couvercle de l'unité

Pour ajouter des cartes, de la mémoire ou des périphériques de stockage internes, vous devez retirer le couvercle de votre système Sun. Remettez le couvercle supérieur en place avant de mettre votre système sous tension.

Attention – Ne mettez jamais des produits Sun sous tension si leur couvercle supérieur n'est pas mis en place. Si vous ne prenez pas ces précautions, vous risquez de vous blesser ou d'endommager le système.

Mise en garde relative au système en rack

La mise en garde suivante s'applique aux racks et aux systèmes montés en rack.

Attention – Pour des raisons de sécurité, le matériel doit toujours être chargé du bas vers le haut. En d'autres termes, vous devez installer, en premier, le matériel qui doit se trouver dans la partie la plus inférieure du rack, puis installer le matériel sur le niveau suivant, etc.

Attention – Afin d'éviter que le rack ne penche pendant l'installation du matériel, tirez la barre anti-basculement du rack.

Attention – Pour éviter des températures de fonctionnement extrêmes dans le rack, assurez-vous que la température maximale ne dépasse pas la fourchette de températures ambiantes du produit déterminée par le fabricant.

Attention – Afin d'empêcher des températures de fonctionnement extrêmes provoquées par une aération insuffisante, assurez-vous de fournir une aération appropriée pour un fonctionnement du matériel en toute sécurité

Avis de conformité des appareils laser

Les produits Sun qui font appel aux technologies lasers sont conformes aux normes de la classe 1 en la matière.

Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

Périphériques CD et DVD

L'avertissement suivant s'applique aux périphériques CD, DVD et autres périphériques optiques:

Attention – L'utilisation de contrôles et de réglages ou l'application de procédures autres que ceux spécifiés dans le présent document peuvent entraîner une exposition à des radiations dangereuses.

Einhaltung sicherheitsbehördlicher Vorschriften

Lesen Sie vor dem Ausführen von Arbeiten diesen Abschnitt. Im folgenden Text werden Sicherheitsvorkehrungen beschrieben, die Sie bei der Installation eines Sun Microsystems-Produkts beachten müssen.

Sicherheitsvorkehrungen

Treffen Sie zu Ihrem eigenen Schutz bei der Installation des Geräts die folgenden Sicherheitsvorkehrungen:

- Beachten Sie alle auf den Geräten angebrachten Warnhinweise und Anweisungen.
- Stellen Sie sicher, dass Spannung und Frequenz der Stromversorgung den Nennleistungen auf dem am Gerät angebrachten Etikett entsprechen.
- Führen Sie niemals Fremdobjekte in die Öffnungen am Gerät ein. Es können gefährliche Spannungen anliegen. Leitfähige Fremdobjekte können einen Kurzschluss verursachen, der einen Brand, Stromschlag oder Geräteschaden herbeiführen kann.

Symbole

Die Symbole in diesem Handbuch haben folgende Bedeutung:

Achtung – Gefahr von Verletzung und Geräteschaden. Befolgen Sie die Anweisungen.

Achtung – Heiße Oberfläche. Nicht berühren, da Verletzungsgefahr durch heiße Oberfläche besteht.

Achtung – Gefährliche Spannungen. Befolgen Sie die Anweisungen, um Stromschläge und Verletzungen zu vermeiden.

Je nach Netzschaltertyp an Ihrem Gerät kann eines der folgenden Symbole verwendet werden:

Ein – Versorgt das System mit Wechselstrom.

Aus– Unterbricht die Wechselstromzufuhr zum Gerät.

Wartezustand – Der Ein-/Standby-Netzschalter befindet sich in der Standby-Position.

Modifikationen des Geräts

Nehmen Sie keine elektrischen oder mechanischen Gerätemodifikationen vor. Sun Microsystems ist für die Einhaltung der Sicherheitsvorschriften von modifizierten Sun-Produkten nicht haftbar.

Aufstellung von Sun-Geräten

Achtung – Geräteöffnungen Ihres Sun-Produkts dürfen nicht blockiert oder abgedeckt werden. Sun-Geräte sollten niemals in der Nähe von Heizkörpern oder Heißluftklappen aufgestellt werden. Die Nichtbeachtung dieser Richtlinien kann Überhitzung verursachen und die Zuverlässigkeit Ihres Sun-Geräts beeinträchtigen.

Lautstärke

Gemäß den in DIN 45 635 Teil 1000 definierten Vorschriften beträgt die arbeitsplatzbedingte Lautstärke dieses Produkts weniger als 70 dB(A).

SELV-Konformität

Der Sicherheitsstatus der E/A-Verbindungen entspricht den SELV-Anforderungen.

Anschluss des Netzkabels

Achtung – Sun-Geräte sind für Stromversorgungssysteme mit einem geerdeten neutralen Leiter (geerdeter Rückleiter bei gleichstrombetriebenen Geräten) ausgelegt. Um die Gefahr von Stromschlägen zu vermeiden, schließen Sie das Gerät niemals an andere Stromversorgungssysteme an. Wenden Sie sich an den zuständigen Gebäudeverwalter oder an einen qualifizierten Elektriker, wenn Sie nicht sicher wissen, an welche Art von Stromversorgungssystem Ihr Gebäude angeschlossen ist.

Achtung – Nicht alle Netzkabel verfügen über die gleichen Nennwerte. Herkömmliche, im Haushalt verwendete Verlängerungskabel besitzen keinen Überlastschutz und sind daher für Computersysteme nicht geeignet. Verwenden Sie bei Ihrem Sun-Produkt keine Haushalts-Verlängerungskabel.

Die folgende Warnung gilt nur für Geräte mit Standby-Netzschalter:

Achtung – Beim Netzschalter dieses Geräts handelt es sich nur um einen Ein/Standby-Schalter. Zum völligen Abtrennen des Systems von der Stromversorgung dient hauptsächlich das Netzkabel. Stellen Sie sicher, dass das Netzkabel an eine frei zugängliche geerdete Steckdose in der Nähe des Systems angeschlossen ist. Schließen Sie das Stromkabel nicht an, wenn die Stromversorgung vom Systemchassis entfernt wurde.

Die folgende Warnung gilt nur für Geräte mit mehreren Netzkabeln:

Achtung – Bei Produkten mit mehreren Netzkabeln müssen alle Netzkabel abgetrennt werden, um das System völlig von der Stromversorgung zu trennen.

Warnung bezüglich Batterien

Achtung – Bei unsachgemäßer Handhabung oder nicht fachgerechtem Austausch der Batterien besteht Explosionsgefahr. Verwenden Sie bei Systemen mit austauschbaren Batterien ausschließlich Ersatzbatterien desselben Typs und Herstellers bzw. einen entsprechenden, vom Hersteller gemäß den Anweisungen im Service-Handbuch des Produkts empfohlenen Batterietyp. Versuchen Sie nicht, die Batterien auszubauen oder außerhalb des Systems wiederaufzuladen. Werfen Sie die Batterien nicht ins Feuer. Entsorgen Sie die Batterien entsprechend den Anweisungen des Herstellers und den vor Ort geltenden Vorschriften. CPU-Karten von Sun verfügen über eine Echtzeituhr mit integrierter Lithiumbatterie. Diese Batterie darf nur von einem qualifizierten Servicetechniker ausgewechselt werden.

Gehäuseabdeckung

Sie müssen die Abdeckung Ihres Sun-Computersystems entfernen, um Karten, Speicher oder interne Speichergeräte hinzuzufügen. Bringen Sie vor dem Einschalten des Systems die Gehäuseabdeckung wieder an.

Achtung – Nehmen Sie Sun-Geräte nicht ohne Abdeckung in Betrieb. Die Nichtbeachtung dieses Warnhinweises kann Verletzungen oder Geräteschaden zur Folge haben.

Warnungen bezüglich in Racks eingebauter Systeme

Die folgenden Warnungen gelten für Racks und in Racks eingebaute Systeme:

Achtung – Aus Sicherheitsgründen sollten sämtliche Geräte von unten nach oben in Racks eingebaut werden. Installieren Sie also zuerst die Geräte, die an der untersten Position im Rack eingebaut werden, gefolgt von den Systemen, die an nächsthöherer Stelle eingebaut werden, usw.

 Achtung – Verwenden Sie beim Einbau den Kippschutz am Rack, um ein Umkippen zu vermeiden.

 Achtung – Um extreme Betriebstemperaturen im Rack zu vermeiden, stellen Sie sicher, dass die Maximaltemperatur die Nennleistung der Umgebungstemperatur für das Produkt nicht überschreitet

 Achtung – Um extreme Betriebstemperaturen durch verringerte Luftzirkulation zu vermeiden, sollte die für den sicheren Betrieb des Geräts erforderliche Luftzirkulation eingesetzt werden.

Hinweis zur Laser-Konformität

Sun-Produkte, die die Laser-Technologie verwenden, entsprechen den Laser-Anforderungen der Klasse 1.

Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

CD- und DVD-Geräte

Die folgende Warnung gilt für CD-, DVD- und andere optische Geräte:

 Achtung – Die hier nicht aufgeführte Verwendung von Steuerelementen, Anpassungen oder Ausführung von Vorgängen kann eine gefährliche Strahlenbelastung verursachen.

Normativas de seguridad

Lea esta sección antes de realizar cualquier operación. En ella se explican las medidas de seguridad que debe tomar al instalar un producto de Sun Microsystems.

Medidas de seguridad

Para su protección, tome las medidas de seguridad siguientes durante la instalación del equipo:

- Siga todos los avisos e instrucciones indicados en el equipo.
- Asegúrese de que el voltaje y frecuencia de la fuente de alimentación coincidan con el voltaje y frecuencia indicados en la etiqueta de clasificación eléctrica del equipo.
- No introduzca objetos de ningún tipo por las rejillas del equipo, ya que puede quedar expuesto a voltajes peligrosos. Los objetos conductores extraños pueden producir cortocircuitos y, en consecuencia, incendios, descargas eléctricas o daños en el equipo.

Símbolos

En este documento aparecen los siguientes símbolos:

 Precaución – Existe el riesgo de que se produzcan lesiones personales y daños en el equipo. Siga las instrucciones.

 Precaución – Superficie caliente. Evite todo contacto. Las superficies están calientes y pueden causar lesiones personales si se tocan.

 Precaución – Voltaje peligroso. Para reducir el riesgo de descargas eléctricas y lesiones personales, siga las instrucciones.

En función del tipo de interruptor de alimentación del que disponga el dispositivo, se utilizará uno de los símbolos siguientes:

Encendido – Suministra alimentación de CA al sistema.

Apagado – Corta la alimentación de CA del sistema.

Espera – El interruptor de encendido/espera está en la posición de espera.

Modificaciones en el equipo

No realice modificaciones de tipo mecánico ni eléctrico en el equipo. Sun Microsystems no se hace responsable del cumplimiento de normativas en caso de que un producto Sun se haya modificado.

Colocación de un producto Sun

Precaución – No obstruya ni tape las rejillas del producto Sun. Nunca coloque un producto Sun cerca de radiadores ni fuentes de calor. Si no sigue estas indicaciones, el producto Sun podría sobrecalentarse y la fiabilidad de su funcionamiento se vería afectada.

Nivel de ruido

De conformidad con los requisitos establecidos en el apartado 1000 de la norma DIN 45635, el nivel de ruido en el lugar de trabajo producido por este producto es menor de 70 db(A).

Cumplimiento de la normativa para instalaciones SELV

Las condiciones de seguridad de las conexiones de entrada y salida cumplen los requisitos para instalaciones SELV (del inglés *Safe Extra Low Voltage*, voltaje bajo y seguro).

Conexión del cable de alimentación

Precaución – Los productos Sun se han diseñado para funcionar con sistemas de alimentación que cuenten con un conductor neutro a tierra (con conexión a tierra de regreso para los productos con alimentación de CC). Para reducir el riesgo de descargas eléctricas, no conecte ningún producto Sun a otro tipo de sistema de alimentación. Póngase en contacto con el encargado de las instalaciones de su empresa o con un electricista cualificado en caso de que no esté seguro del tipo de alimentación del que se dispone en el edificio.

Precaución – No todos los cables de alimentación tienen la misma clasificación eléctrica. Los alargadores de uso doméstico no cuentan con protección frente a sobrecargas y no están diseñados para su utilización con sistemas informáticos. No utilice alargadores de uso doméstico con el producto Sun.

La siguiente medida solamente se aplica a aquellos dispositivos que dispongan de un interruptor de alimentación de espera:

Precaución – El interruptor de alimentación de este producto funciona solamente como un dispositivo de espera. El cable de alimentación hace las veces de dispositivo de desconexión principal del sistema. Asegúrese de que conecta el cable de alimentación a una toma de tierra situada cerca del sistema y de fácil acceso. No conecte el cable de alimentación si la unidad de alimentación no se encuentra en el bastidor del sistema.

La siguiente medida solamente se aplica a aquellos dispositivos que dispongan de varios cables de alimentación:

Precaución – En los productos que cuentan con varios cables de alimentación, debe desconectar todos los cables de alimentación para cortar por completo la alimentación eléctrica del sistema.

Advertencia sobre las baterías

Precaución – Si las baterías no se manipulan o reemplazan correctamente, se corre el riesgo de que estallen. En los sistemas que cuentan con baterías reemplazables, reemplácelas sólo con baterías del mismo fabricante y el mismo tipo, o un tipo equivalente recomendado por el fabricante, de acuerdo con las instrucciones descritas en el manual de servicio del producto. No desmonte las baterías ni intente recargarlas fuera del sistema. No intente deshacerse de las baterías echándolas al fuego. Deshágase de las baterías correctamente de acuerdo con las instrucciones del fabricante y las normas locales. Tenga en cuenta que en las placas CPU de Sun, hay una batería de litio incorporada en el reloj en tiempo real. Los usuarios no deben reemplazar este tipo de baterías.

Cubierta de la unidad del sistema

Debe extraer la cubierta de la unidad del sistema informático Sun para instalar tarjetas, memoria o dispositivos de almacenamiento internos. Vuelva a colocar la cubierta antes de encender el sistema informático.

Precaución – No ponga en funcionamiento los productos Sun que no tengan colocada la cubierta. De lo contrario, puede sufrir lesiones personales y ocasionar daños en el sistema.

Advertencia sobre el sistema en bastidor

Las advertencias siguientes se aplican a los sistemas montados en bastidor y a los propios bastidores.

Precaución – Por seguridad, siempre deben montarse los equipos de abajo arriba. A saber, primero debe instalarse el equipo que se situará en el bastidor inferior; a continuación, el que se situará en el siguiente nivel, etc.

Precaución – Para evitar que el bastidor se vuelque durante la instalación del equipo, debe extenderse la barra antivolcado del bastidor.

Precaución – Para evitar que se alcance una temperatura de funcionamiento extrema en el bastidor, asegúrese de que la temperatura máxima no sea superior a la temperatura ambiente establecida como adecuada para el producto.

Precaución – Para evitar que se alcance una temperatura de funcionamiento extrema debido a una circulación de aire reducida, debe considerarse la magnitud de la circulación de aire requerida para que el equipo funcione de forma segura.

Aviso de cumplimiento de la normativa para la utilización de láser

Los productos Sun que utilizan tecnología láser cumplen los requisitos establecidos para los productos láser de clase 1.

Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

Dispositivos de CD y DVD

La siguiente medida se aplica a los dispositivos de CD y DVD, así como a otros dispositivos ópticos:

⚠ **Precaución –** La utilización de controles, ajustes o procedimientos distintos a los aquí especificados puede dar lugar a niveles de radiación peligrosos.

Nordic Lithium Battery Cautions

Norge

⚠ **Advarsel –** Litiumbatteri — Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

Sverige

⚠ **Varning –** Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Danmark

⚠ **Advarsel! –** Litiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Suomi

⚠ **Varoitus –** Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Preface

This *Sun™ IB Switch 9P Administration Guide* describes how to configure the Sun IB switch. This book is intended for experienced network administrators who have a working knowledge of local area network operations and familiarity with InfiniBand technology.

Before You Read This Book

To fully use the information in this document, you must first install the Sun IB switch, using the *Sun™ InfiniBand Switch Nine Port Hardware Installation Guide.*

How This Book Is Organized

Chapter 1 provides an overview of the Sun IB switch hardware and software, including the hardware and software requirements for using the switch.

Chapter 2 describes how to set up and boot the switch, and how to access the command-line interface (CLI).

Chapter 3 describes the CLI commands.

Appendix A provides information about troubleshooting problems.

Appendix B provides the technical specifications for the Sun IB switch.

Appendix C describes how to set up a TFTP server and update the firmware.

Appendix D describes how to set up a blueprint for your switch topology.

Typographic Conventions

Typeface[*]	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% `**`su`** `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

* The settings on your browser might differ from these settings.

Related Documentation

Application	Title	Part Number
Installation	*Sun IB Switch 9P Hardware Installation Guide*	819-7246
Installation	*Sun Dual Port 4x IB Host Channel Adapter PCI-X Installation and User's Guide*	819-1280
Addendum	*Sun Dual Port 4x IB Host Channel Adapter PCI-X Release Notes*	819-1281
Addendum	*Sun IB Switch 9P Release Notes*	819-7248

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

http://www.sun.com/documentation

Third-Party Web Sites

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Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

http://www.sun.com/service/contacting

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

http://www.sun.com/hwdocs/feedback

Please include the title and part number of your document with your feedback:

Sun IB Switch 9P Administration Guide, part number 819-0502-11

Introduction

This chapter provides an overview of the Sun IB switch hardware and software, including the hardware and software requirements for using the switch. This chapter includes the following sections:

- "Switch Description" on page 1
- "Hardware and Software Requirements" on page 4
- "Key Features" on page 4

Switch Description

The Sun IB switch is a nine-port, rack-dense, standalone switch optimized for scaling systems and building clusters and distributed I/O systems based on InfiniBand.

The Sun nine-port, 12x/4x InfiniBand switch is housed in a 19-inch 1RU chassis with two redundant hot-plug power supply units (PSU) and cooling modules. Both the InfiniBand Subnet Management and Sun Advanced Lights Out Manager (ALOM) software are preinstalled. ALOM is a system controller that enables you to remotely manage and administer the switch.

Front Panel LED Displays

Two sets of LEDs are displayed on the front panel of the Sun IB switch. TABLE 1-1 describes the meaning of each LED. FIGURE 1-1 shows the location of the LEDs.

TABLE 1-1   Front Panel LEDs for the Sun Nine-Port InfiniBand Switch

Location	Color	Meaning if Lit	Meaning if Blinking
Front panel status	White		Locate function started
	Green	Switch is up and running	
	Amber	Switch requires attention	
PSU and fan module	Green	AC on	
	Green	DC on	
	Amber	Fault—the PSU requires attention	
	Blue	Ready-to-remove	

Front panel status LEDs   PSU and fan module LEDs
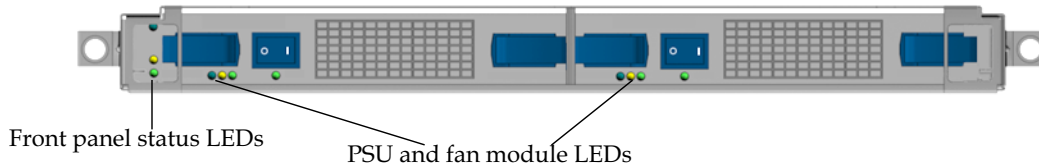
FIGURE 1-1   Front Panel LEDs

Rear LED Displays

Three sets of LEDs are displayed on the rear of the Sun IB switch. TABLE 1-2 describes the meaning of each LED. FIGURE 1-2 shows the location of the LEDs.

TABLE 1-2   Rear Display LEDs for the Sun Nine-Port InfiniBand Switch

Location	Color	Meaning if Lit	Meaning if Blinking
IB ports	Green	Operational/Link up	Traffic activity
	Amber	Fault—port requires attention	
RJ-45/Ethernet link status	Green	Operational	
	Amber	Status/Fault	
Rear status	White		Locate function started
	Green	Operational	
	Amber	Status/Fault	
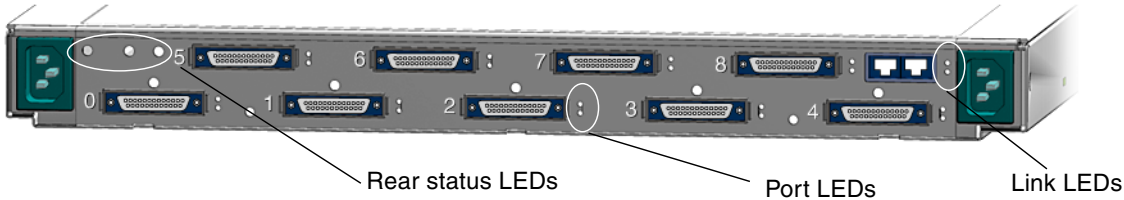
FIGURE 1-2   Sun Nine-Port Infiniband Switch Showing Rear LEDs

Hardware and Software Requirements

Before installing the Sun IB switch, ensure that your system meets the following hardware and software requirements:

Hardware and Software	Requirements
Hardware	Sun Fire™ V240, V440, V490, V890, V1280, E2900, E4900, E6900 V20z, V40z, X4100, T1000, T2000, X2100, and X4200
Sun Dual Port 4x IB Host Channel Adapter PCI-E	Sun Dual Port 4x IB Host Channel Adapter PCI-E
Software	Solaris™ 10 1/06 Operating System and future compatible releases

Key Features

- Nine 12x/4x InfiniBand ports
- True non-blocking switch fabric with aggregate bandwidth of 540Gbps
- All removable modules are hot-swappable
- Intelligent switch with embedded Sun Advanced Lights Out Management (ALOM) system controller and integrated InfiniBand management

Initial Configuration

This chapter describes how to set up and boot the switch and how to access the command-line interfaces (CLI).

This chapter contains the following sections:

Initial Set Up

The Sun IB switch is initialized with a default IP address (10.0.0.1), a default IP mask (255.255.255.0) and a default IP router (10.0.0.5) when shipped, so that the switch could be used with no pre-configurations. However, without the configuration described in the following procedure, access to the switch could be limited, and the use of the System Log proxy would be impossible.

The IP address, IP mask, and IP router values can be changed either by using the setupsc command (see "setupsc" on page 29) in ALOM CLI accessed through the default IP address or through the serial line or by connecting a serial cable between your host and the switch and following the steps below. If you are replacing a switch in a running cluster, read Appendix D before setting the IP address.

1. **To connect to the switch, enter the following command on the host:**

```
# tip -9600 /dev/ttya
```

2. **Power on the switch.**

   When the switch boots, press CTRL–X on the keyboard to stop the boot at the boot monitor with the > prompt.

3. **Issue the following commands:**

   ```
   > set ipv4-addr 129.189.145.52
   > set ipv4-mask 255.255.255.0
   > set ipv4-router 129.189.145.5
   ```

   Note – Ensure that you use your own IP addresses instead of those shown in the example. Use only numerical IP addresses. Symbolic host names are not supported.

   Note – If you need to get back to the boot monitor to change any addresses, do the following:
   Connect to the serial management port. Reboot the switch while you press CTRL-X on the keyboard.

4. **To continue booting the switch, issue the boot command:**

   ```
   > boot
   ```

   The system boots. When the system is booted, it asks for a username.

5. **Log in with the username admin:**

   ```
   Sun Advanced Lights Out Manager for Sun IB Switch 9P
   Copyright 2003-2005 Sun Microsystems, Inc. All Rights Reserved.
   username: admin
   Password:
   sc>
   ```

   No default password is set. Press the Return key.

6. **To access all the ALOM commands, set the password for the** `admin` **user:**

```
sc> password
Enter new password: type your password
Enter new password again: type your password again
New password set for user admin successfully
sc>
```

Accessing the Command-Line Interface

The Sun IB switch uses the ALOM command-line interface (CLI).

▼ To Access the CLI

1. **Log in as** `admin` **and enter in the password you just set up:**

```
Sun Advanced Lights Out Manager for Sun IB Switch 9P
Copyright 2003-2005 Sun Microsystems, Inc. All Rights Reserved.
ALOM-B 1.2

username: admin
password:
```

2. **Use the** `setdate` **command to synchronize the switch with the time at your site:**

```
sc> setdate mmddHHMMccyy.SS
```

Note – ALOM uses Coordinated Universal Time (UTC). ALOM does not accept time zone conversions or daylight time changes.

You can use all the `setdate` command options or just set the time:

■ This example sets the time to August 30, 2005, at 11:28 (11:28 AM) (Coordinated Universal Time).

```
sc> setdate 083011282005
Tue Aug 30 11:28:03 UTC 2005
```

- This example sets the time to 11:28 (11:28 AM) of the current month, day, and year (Coordinated Universal Time).

```
sc> setdate 1128
Tue Aug 30 11:28:03 UTC 2005
```

3. **Type help at the** sc> **prompt to get a list of the valid CLI commands.**

```
sc> help
flashupdate [-v] [-y] [-F] -s IPaddress -f pathname
help [command]
logout
password
poweroff [-y] [-f] [-r] [-F] {frulist}
poweron [-F] {frulist}
removefru [-y] [-f] [-F] {frulist}
resetsc [-y][-F]
setbp [-i]
setdate [mmdd]HHMM[.SS] | mmddHHMM[cc]yy[.SS]
setdefaults [-y]
setlocator {on|off}
setupsc
showbp [-r]
showdate
showenvironment [-v] [{frulist}]
showfru {frulist}
showib [-v]
showlocator
showlogs [-b lines | -e lines | -v] [-g lines] [-t] {frulist}
showplatform [-v] [{frulist}]
showsc
showusers
useradd username
userdel username
userpassword username
userperm username [a] [u] [c] [r]
usershow [username]sc>
```

See Chapter 3 for a full description of the CLI commands.

4. **Install and set up the system log (syslog) proxy.**

See "Installing and Setting Up the System Log Proxy" on page 9 for instructions.

Event and Message Logs

The Sun IB switch provides the following types of logs and related messages:

- Errors and important state changes related to a specific FRU are logged as part of the dynamic FRU information in non-volatile memory on the FRU itself. (This helps in diagnosing problems associated with FRUs being returned to Sun.)
- Local system events are logged to the ALOM non-volatile event log and displayed on serial console and active Telnet connections.
- Syslog servers support integration with event and message logs for the entire site and facilitate remote management through NetConnect and similar services.

System Log Proxy

Events occurring at or detected by software running at the switch are reported through system log (`syslog`) messages. The `syslog` messages are transferred to a Solaris host through a `syslog` proxy mechanism. The SUNWsibs9p Solaris package contains the necessary Solaris software and must be installed on a Solaris host in order to retrieve these messages from the switch.

Note – The switch will function fine without the `syslog` proxy installed, but the messages will be lost.

Installing and Setting Up the System Log Proxy

If you already have the syslog proxy installed or running, please stop it and remove the proxy first. See .

The SUNWsibs9p Solaris package is available from the following web site:

http://www.sun.com/download

▼ To Install the System Log Proxy

1. Become superuser:

```
$ su
Password:
#
```

2. Install the package on a Solaris host that connects to the switch:

```
# cd /tmp
# cp path_of_SUNWsibs9p_tarfile .
# gunzip SUNWsibs9p.tar.gz
# tar xvf SUNWsibs9p.tar
# pkgadd -d .
```

The package is now installed and the binaries and start scripts reside in the
/opt/SUNWsibs9p/bin directory.

▼ To Set Up the System Log Proxy

Before you can start the syslog proxy, you must update the config file with the IP
address(es) of the IB switch(es) you want to access. Update two columns in each line
of the config file (see format inside the config file). The config file is named
/opt/SUNWsibs9p/bin/start_syslog.config

1. You can start the proxy in either of the following two ways:

a. Reboot the host system.

b. Perform a manual start:

```
$ /opt/SUNWsibs9p/bin/start_syslog -d /opt/SUNWsibs9p/bin start &
```

Multiple hosts can have a syslog proxy for the same IB switch running, but only
one host actually receives and logs the messages.

2. Check to see which proxy is currently the selected proxy for the cluster:

```
$ /opt/SUNWsibs9p/bin/start_syslog -d /opt/SUNWsibs9p/bin who
```

The proxy receives messages from the switch and transfers them to the Solaris host
syslog API for further processing, depending on the configuration of
/etc/syslog.conf file. Then the proxy logs the message in an appropriate

system log, writes it to the system console, forwards it to a list of users, or forwards it to `syslogd` on another host over the network. Default user `LOG_ALERT` is used to add the `syslog` messages in the `/var/adm/messages` file on the host.

3. **You can use the tail command to watch the messages:**

```
$ tail -f /var/adm/messages
```

Note – If communication between the switch and the host is broken the 40 first messages are queued into a FIFO in the switch and are dequeued on the host when the proxy gets communication again. If the `syslog` proxy is never started or the switch `syslog` message FIFO is full, the next messages will be lost.

4. **Verify that you have started the proxy:**

```
$ ps -ef | grep syslog
```

You should see output similar to the following:

```
root 772 671 ...... /opt/SUNWsibs9p/bin/syslogProxy_x86
129.159.145.81 2740 start
root 292 1 0 14:08:36 ? 0:00 /usr/sbin/syslogd
root 671 667 ...... /bin/sh /opt/SUNWsibs9p/bin/start_syslog -d
/opt/SUNWsibs9p/bin start
root 796 671 ...... /opt/SUNWsibs9p/bin/syslogProxy_x86
129.159.145.82 2740 start
```

Note – It is important that the `start_syslog` script is running all the time to ensure that the proxy is restarted if communication between the switch and the host times out or as a failover in case another proxy in the cluster is stopped.

You have now completed the initial configuration of the Sun IB switch.

Removing the System Log Proxy

If you need to remove the `syslog` proxy, use the following procedure.

▼ To Remove the Proxy

1. Check to ensure that the proxy is running:

```
$ ps -ef | grep syslog
```

2. Stop the proxy:

```
$ /opt/SUNWsibs9p/bin/start_syslog -d /opt/SUNWsibs9p/bin stop
```

3. Remove the proxy:

```
$ pkgrm SUNWsibs9p
```

Command-Line Reference

This chapter describes how to use the command-line interface (CLI).

This chapter contains the following sections:

- "Overview of the Command Shell" on page 13
- "CLI Shell Commands" on page 14
- "Descriptions of CLI Commands" on page 15

Overview of the Command Shell

The command shell is a simple command-line interface. Through the command shell, you can administer your Sun IB switch.

After you log in to your account, the shell prompt (sc>) appears, and you can enter shell commands. See "CLI Shell Commands" on page 14 for more information.

▼ Entering Command Options

If the command you want to use has multiple options, you can either enter the options individually or grouped together, as shown in this example. These two commands are identical.

```
sc> poweroff -f -y
sc> poweroff -fy
```

CLI Shell Commands

The following table lists the CLI shell commands and briefly describes what these commands do.

TABLE 3-1 List of CLI Shell Commands by Function

CLI Command	Summary Description	Full Description
password	Changes the login password of the current user.	"password" on page 19
setdate	Sets the date and time.	"setdate" on page 26
setdefaults	Resets all ALOM configuration parameters to their default values.	"setdefaults" on page 28
setupsc	Runs the interactive configuration command. It configures NVRAM parameters	"setupsc" on page 29
showplatform	Displays information about the hardware configuration, and whether the hardware is providing service.	"showplatform" on page 44
showfru	Displays FRUID PROM contents for two PSUs (PSU0 and PSU1) and the switch itself (SSC0).	"showfru" on page 35
showusers	Displays a list of users currently logged in to ALOM. The display for this command has a similar format to that of the UNIX command who. The -g option pauses the display after the number of lines you specify for *lines*.	"showusers" on page 46
showsc	Displays the current nonvolatile random access memory (NVRAM) configuration parameters.	"showsc" on page 45
showdate	Displays the ALOM date.	"showdate" on page 32
usershow [*username*]	Displays a list of all user accounts, permission levels, and whether passwords are assigned.	"usershow" on page 51
useradd	Adds a user account to ALOM.	"useradd" on page 47
userdel	Deletes a user account from ALOM.	"userdel" on page 48
userpassword	Sets or changes a user password.	"userpassword" on page 48
userperm	Sets the permission level for a user account.	"userperm" on page 49
showlogs	Displays the history of all events logged in the ALOM event buffer.	"showlogs" on page 40
showenvironment	Displays the environmental status of the switch	"showenvironment" on page 32

TABLE 3-1 List of CLI Shell Commands by Function *(Continued)*

CLI Command	Summary Description	Full Description
flashupdate	Updates the ALOM firmware. This command downloads main and bootmonitor firmware images to ALOM.	"flashupdate" on page 15
poweroff	Removes the main power from the PSU.	"poweroff" on page 20
poweron	Applies the main power to the PSU.	"poweron" on page 21
showlocator	Displays the current state of the Locator LED as either on or off.	"showlocator" on page 40
setlocator	Turns the locator LED on or off.	"setlocator" on page 29
removefru	Prepares a FRU (for example, a power supply) for removal, and illuminates the management system's OK-to-Remove indicator light.	"removefru" on page 22
help	Displays a list of all ALOM commands with their syntax and a brief description of how each command works.	"help" on page 17
resetsc	Reboots ALOM.	"resetsc" on page 23
logout	Logs out from an ALOM shell session.	"logout" on page 19
setbp	Sets the Blueprint of the switch. (See Appendix D for more information about Blueprints)	"setbp" on page 24
showbp	Displays the running and stored Blueprints of the switch. (See Appendix D for more information about Blueprints)	"showbp" on page 31
showib	Displays InfiniBand switch status.	"showib" on page 37

Descriptions of CLI Commands

The following pages provide full descriptions of the shell commands in alphabetical order.

flashupdate

Use the flashupdate command to install a new version of the firmware from a location that you specify. The values you enter for command options specify the IP address of the site from which you download and the path at which the firmware image is located.

Caution – Do not use the `resetsc` command while a firmware update is in progress. If you need to reset, wait until after the update is complete. Otherwise, you could corrupt the firmware and render it unusable.

▼ To Use the `flashupdate` Command

To use this command, you must know the following:

- IP address of the server from which you want to download the firmware image
- Path at which the image is stored

1. At the `sc>` prompt, type the following command for the main firmware image.

```
sc> flashupdate -s ipaddr -f /tftpboot/ibswitch-sc.flash
```

Substitute the IP address of the server where the firmware image is stored for *ipaddr*, and the path name for *pathname*.

2. Type the `resetsc` command to load the new image:

```
sc> resetsc -y
sc> Connection closed by foreign host.
```

`flashupdate` Command Options

The `flashupdate` command uses the following options.

TABLE 3-2   `flashupdate` Command Options

Option	Description
`-s` *ipaddr*	Directs ALOM to download the firmware image from a server located at *ipaddr*. *ipaddr* describes an IP address in standard dot notation, such as 123.145.167.189
`-f` *pathname*	Directs ALOM to the location of the image file. *pathname* is a full directory path, including the name of the image file, such as `/tftp/X3152A_1.0.0.flash` or `/tftp/ibswitch-sc.flash`.
`-v`	Displays verbose output. This option provides detailed information about the progress of the download process as it occurs.

help

Use the `help` command to display a list of all ALOM commands and the syntax for each.

▼ To Use the `help` Command

Note – You do not need user permissions to use this command.

- **Do one of the following:**
  - To display help for all available commands, at the `sc>` prompt type the following command:

```
sc > help
```

The following example shows the output you see when you type `help` without specifying a command.

```
sc> help
flashupdate [-v] [-y] [-F] -s IPaddress -f pathname
help [command]
logout
password
poweroff [-y] [-f] [-r] [-F] {frulist}
poweron [-F] {frulist}
removefru [-y] [-f] [-F] {frulist}
resetsc [-y][-F]
setbp [-i]
setdate [mmdd]HHMM[.SS] | mmddHHMM[cc]yy[.SS]
setdefaults [-y]
setlocator {on|off}
setupsc
showbp [-r]
showdate
showenvironment [-v] [{frulist}]
showfru {frulist}
showib [-v]
showlocator
showlogs [-b lines | -e lines | -v] [-g lines] [-t] {frulist}
showplatform [-v] [{frulist}]
showsc
showusers
useradd username
userdel username
userpassword username
userperm username [a] [u] [c] [r]
usershow [username]
```

■ To display help for a specific command, at the `sc>` prompt type `help` and the name of the command:

```
sc> help command-name
```

where *command-name* is the name of the specific command.

For example:

```
sc> help poweron
poweron [-F] {frulist}
sc>
```

logout

Use the `logout` command to end your session and close your serial or Telnet connection.

▼ To Use the `logout` Command

Note – You do not need user permissions to use this command.

● **At the `sc>` prompt, type the following command:**

```
sc> logout
```

password

Use the `password` command to change the password for the account to which you are currently logged in. This command works like the UNIX `passwd(1)` command.

▼ To Use the `password` Command

Note – This command enables you to change the password for your own account. You do not need user permissions to use this command. If you are an administrator and want to change a user account's password, use the `userpassword` command. See "userpassword" on page 48 for more information.

● **At the `sc>` prompt, type `password`.**

When you use this command, ALOM prompts you for your current password. If you enter the password correctly, it prompts you twice to enter the new password.

For example:

```
sc> password
Enter current password:
Enter new password:
Enter new password again:
New password set for user admin successfully
sc>
```

Password Restrictions

Passwords have the following restrictions:

- They must be between six and eight characters in length.
- They must contain at least two alphabetic characters (uppercase or lowercase letters) and at least one numeric or special character.
- They must differ from your login name and any reverse or circular shift of your login name. For comparison purposes, uppercase and lowercase letters are equivalent.
- They must differ from the old password by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

Note – These password restrictions do not apply to a user with u permission.

---

poweroff

Use the poweroff command to power off one of the two power supply units (PSU) to standby mode. If the PSU is already powered off, this command has no effect.

▼ To Use the poweroff Command

Note – You must have r level user permission to use this command. See "userperm" on page 49 for information on setting user permissions.

- **At the sc> prompt, type the following command:**

```
sc> poweroff PS0
Are you sure you want to power off FRU PS0 (y/n)?: y
PS0: Powered off.
sc>
```

`poweroff` Command Options

The `poweroff` command uses the following options. See "Entering Command Options" on page 13.

TABLE 3-3 `poweroff` Command Options

Option	Description
`-y`	Proceeds without prompting the following confirmation question: `Are you sure you want to power off FRU PS{0|1} (y/n)?`
`-f`	Forces the poweroff regardless of the presence/availability of the other PSU. (Without this option the command will refuse to poweroff the PSU if the other one is missing or failed.)
`-r`	This option is equivalent to the `removefru` command
`-F`	Forces the poweroff regardless of the state of the switch. (For example, without this option powering off would not be permitted while ALOM is logging to a PSU's FRUID.)
{frulist}	List FRUs to be powered off.

`poweron`

Use the `poweron` command to power on one of the two power supply units (PSUs).

▼ To Use the `poweron` Command

Note – You must have **r** level user permission to use this command. See "userperm" on page 49 for information on setting user permissions.

● **At the** `sc>` **prompt, type the following command:**

```
sc> poweron
```

● **To turn on power to a specific FRU (field-replaceable unit) in the switch, type the following command:**

```
sc> poweron frulist
```

Where *frulist* is the name of the FRU you want to power on.

For example, to turn power on to power supply 0, type:

```
sc> poweron PS0
PS0: Powered on.
sc>
```

poweron Command Option

The poweron command uses one parameter: *frulist*.

Specifying the *frulist* option powers on the specified PSU.

TABLE 3-4   poweron *frulist* Values

Value	Description
PS0	Powers on power supply 0 in the switch.
PS1	Powers on power supply 1 in the switch.

removefru

Use the removefru command to prepare a field-replaceable unit (FRU) for removal and to illuminate the corresponding OK-to-Remove LED on the switch.

Note – The software uses the same terms to refer to both FRUs and customer-replaceable units (CRUs). The power supply units (PSUs) are the only field or customer replaceable units.

▼ To Use the removefru Command

● **At the** sc> **prompt, type the following command:**

```
sc> removefru fru
```

where *fru* is the name of the FRU or CRU you want to prepare for removal.

For example, to prepare power supply 0 for removal, type:

```
sc> removefru PS0
Are you sure you want to remove PS0 (y/n)?: y
Mar 03 22:10:22: CRITICAL: PS0 removed - replace within 10 minutes
of removal
```

Caution – Removing one of the PSUs leaves the switch without a failover power supply. Be sure to replace the PSU as soon as possible to ensure failover capability.

`removefru` Command Option

The `removefru` command has one parameter: *fru*.

Specifying the *fru* parameter prepares the specified FRU for removal.

TABLE 3-5   `removefru` FRU Values

Value	Description
PS0	Prepares power supply 0 in the switch for removal.
PS1	Prepares power supply 1 in the switch for removal.

`resetsc`

Use the `resetsc` command to perform a hard reset of the switch. This terminates all current switch sessions.

▼ To Use the `resetsc` Command

Note – You must have `r` level user permission to use this command. See for information on setting user permissions.

1. **To perform a reset, type the following command:**

```
sc> resetsc option
```

where *options* are `-y` or `-F`, if desired.

The system responds with the following message:

```
Are you sure you want to reset the SC [y/n]?
```

2. **Type** y **to proceed, or** n **to exit without resetting the switch.**

resetsc Command Options

The resetsc command uses two options: -y or -F

If you use the -y option, the reset proceeds without first asking you to confirm the reset.

If you use the -F option, the reset command forces a reset. Forces the reset regardless of the state of the switch. (For example, without this option resetting the switch would not be permitted while ALOM is logging to a PSU's FRUID.)

setbp

Use the setbp command to set a Blueprint of the switch. The switch is shipped with Blueprint set to a managed single switch configuration using the IP address of the switch as basic for the subnet prefix. See Appendix D for more information about Blueprints.

▼ To Use the `setbp` Command

1. At the `sc>` prompt, type the following command:

```
sc> setbp option
```

CODE EXAMPLE 3-1 shows a sample of the `setbp` command for a 9-node configuration.

CODE EXAMPLE 3-1   Sample of the `setbp` Command for 9 Nodes

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 9
Which subnet number is this switch part of [value]: 1

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to
become active
```

CODE EXAMPLE 3-2 shows a sample of the `setbp` command for an 18-node configuration.

CODE EXAMPLE 3-2   Sample of the `setbp` Command for 18 Nodes

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 18
Which subnet number is this switch part of [value]: 1
Is this switch a top switch [y/n]: y

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to
become active
```

CODE EXAMPLE 3-3 shows a sample of the `setbp` command for a 9-node

configuration with IP-based subnet prefix.

CODE EXAMPLE 3-3 Sample of the `setbp` Command for 9 Nodes With IP Prefix

```
sc> setbp -i
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 9
Which IP address should be used as subnet number [a.b.c.d]:
129.159.145.11

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to
become active
```

setbp Command Options

The `setbp` command uses one command option, -i. This is used for cases where the subnet prefix is based upon an IP address. If no command option is specified, the user will set the subnet prefix value in the interactive mode.

TABLE 3-6 `setbp` Command Options

Option	Description
-i	IP address used as subnet prefix

setdate

Use the `setdate` command to set the current date and time to that of your local site.

```
sc> setdate
Usage: setdate [mmdd]HHMM[.SS] | mmddHHMM[cc]yy[.SS]
sc>
```

▼ To Use the setdate Command

● **At the** `sc>` **prompt, type the following command:**

```
sc> setdate mmddHHMMccyy.SS
```

This command accepts settings for the month, day, hour, minute, century, year, and second. If you omit the month, day, and year, ALOM applies the current values as defaults. You can also omit the century value and the value for seconds in the time.

Note – ALOM uses Coordinated Universal Time (UTC). ALOM does not accept time zone conversions or daylight time changes.

This example sets the time to August 30, 2005, at 11:28 (11:28 AM) (Coordinated Universal Time).

```
sc> setdate 083011282005
Tue Aug 30 11:28:03 UTC 2005
```

This example sets the time to August 30 at 11:28 (11:28 AM) of the current year (Coordinated Universal Time).

```
sc> setdate 08301128
Tue Aug 30 11:28:03 UTC 2005
```

This example sets the time to 11:28 (11:28 AM) of the current month, day, and year (Coordinated Universal Time).

```
sc> setdate 1128
Tue Aug 30 11:28:03 UTC 2005
```

setdate Command Options

The setdate command uses the following options.

TABLE 3-7   setdate Command Options

Option	Description
mm	Month
dd	Day
HH	Hour (24-hour system)
MM	Minutes

TABLE 3-7 `setdate` Command Options *(Continued)*

Option	Description
.SS	Seconds
cc	Century (first two digits of the year)
yy	Year (last two digits of the year)

setdefaults

Use the `setdefaults` command to set all configuration variables back to their factory default values.

▼ To Use the `setdefaults` Command

> **Note –** You must have a level user permission to use this command. See "userperm" on page 49 for information on setting user permissions. You must set the password to execute permission-level commands.

1. At the `sc>` prompt, type the following command:

```
sc> setdefaults
Are you sure you want to reset the SC configuration (y/n)? y
Note: Please reset your ALOM to make the new configuration active.
```

2. Type the `resetsc` command to reset ALOM:

```
sc> resetsc
```

This completes returning the variables back to the factory default values.

setdefaults Command Options

The `setdefaults` command uses the following option.

TABLE 3-8 `setdefaults` Command Options

Option	Description
-y	Proceeds without first asking the confirmation question: `Are you sure you want to reset the SC configuration?`

setlocator

Use the `setlocator` command to turn the switch's Locator LED on or off.

▼ To Use the `setlocator` Command

Note – You do not need user permissions to use this command.

● **At the `sc>` prompt, type the following command:**

```
sc> setlocator option
```

where *option* is either `on` or `off`.

For example:

```
sc> setlocator on
Mar 03 22:07:43: MINOR: SSC0: Locator LED state changed to FLASHING
```

To show the state of the Locator LED, use the `showlocator` command.

setlocator Command Options

The `setlocator` command has two options: `on` and `off`.

setupsc

Use the `setupsc` command to customize ALOM.

▼ To Use the `setupsc` Command

Note – You must have a level user permission to use this command. See for information on setting user permissions.

---

1. **At the** `sc>` **prompt, type the following command:**

```
sc> setupsc
```

The `setupsc` command is interactive. It prompts you to change the values of configuration variables, as in the following example:

```
sc> setupsc
Entering Interactive setup mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.
Do you want to configure the enabled interfaces [y]?
Should the SC network interface be enabled [y]?
Should the SC telnet interface be enabled for new connections [y]?
Do you want to configure the network interface [y]?
Enter the SC IP address [10.4.124.79]:
Enter the SC IP netmask [255.255.255.0]:
Enter the SC IP gateway [10.4.124.1]:
Do you want to configure the System Controller parameters [y]?
Do you want to enable CLI event reporting via the telnet interface
[y]?
Enter the level of events to be displayed over the CLI.
(0 = critical, 1 = major, 2 = minor) [2]:
Enter type of CLI prompt generation for SC and switch.
(0 = none, 1 = manual, 2 = auto) [0]:
Enter the prompt string [P1_L_79a>]:
Enter the CLI timeout (0, 60 - 9999 seconds) [0]:
Should the password entry echo *'s [y]?
```

2. **Answer the questions to customize ALOM.**

The command asks whether you want to enable each set of configuration variables.

- To enable a set of variables so that you can configure their settings, type y.
- To accept a default value shown in parentheses, press Return.
- To disable a set of variables and proceed to the next, type n.

For example:

```
Should the SC network interface be enabled [y]?
```

3. **To exit the command, do one of the following:**

- To exit and save the changes you made, type Ctrl-Z.
- To exit without saving any changes, type Ctrl-C.

showbp

Use the showbp command to get the running and stored Blueprint which is set to the switch (and the remote switch if using the -r option) See Appendix D for more information about Blueprints.

▼ To Use the showbp Command

At the sc> prompt, type the following command:

```
sc> showbp option
```

CODE EXAMPLE 3-3 shows a sample output for showbp command.

CODE EXAMPLE 3-4   Sample Output of the showbp Command

```
sc> showbp
Blueprint parameter              Running value
-------------------------------------------------------
Config (max number of hosts) :   9 (single switch)
Subnet number :                  1 (0x1)
Switch level :                   Bottom


Blueprint parameter              Stored value
-------------------------------------------------------
Config (max number of hosts) :   9 (single switch)
Subnet number :                  1 (0x1)
Switch level :                   Bottom
```

showbp Command Options

The showbp command has a single option, -r. This command prints the blueprint of the remote device.

TABLE 3-9   showbp Command Options

Option	Description
-r	Prints the blueprint of the remote device.

showdate

Use the `showdate` command to show the current ALOM date and time.

Note that the time shown is Coordinated Universal Time (UTC). Use the `setdate` command to synchronize the time with your site.

▼ To Use the `showdate` Command

Note – You do not need user permissions to use this command.

● **At the `sc>` prompt type the following command:**

```
sc> showdate
```

For example:

```
sc> showdate
Thu Mar 03 22:06:43 UTC 2005
```

To change the ALOM date and time, use the `setdate` command. See "setdate" on page 26.

showenvironment

Use the `showenvironment` command to display a snapshot of the switch's environmental status.

▼ To Use the `showenvironment` Command

Note – You do not need user permissions to use this command.

● **At the `sc>` prompt, type the following command:**

```
sc> showenvironment
```

The following example shows sample output when no options are specified.

CODE EXAMPLE 3-5   Sample Output of showenvironment Command

```
sc> showenvironment

=========== Environmental Status ============

System Temperatures (Celsius)   Current   Status
-------------------------------------------------------------------
SSC0       /TSensor/ambient      27         OK
SSC0       /TSensor/assp         35         OK
SSC0       /TSensor/air          37         OK
PS0        /TSensor/ambient      21         OK
PS0        /TSensor/Ext1         20         OK
PS0        /TSensor/Ext2         21         OK
PS1        /TSensor/ambient      24         OK
PS1        /TSensor/Ext1         24         OK
PS1        /TSensor/Ext2         29         OK

System Voltages (Volts)         Current   Status
-------------------------------------------------------------------
SSC0       /VSensor/12VInput     12.19      OK
SSC0       /VSensor/5V           5.03       OK
SSC0       /VSensor/stby/3V3     3.30       OK
SSC0       /VSensor/1V2          1.18       OK
SSC0       /VSensor/1V8          1.79       OK
SSC0       /VSensor/2V5          2.50       OK
SSC0       /VSensor/ref/2V5      2.50       OK
SSC0       /VSensor/sis/5V       5.06       OK
PS0        /VSensor/V1anode      12.48      OK
PS0        /VSensor/V1catode     12.30      OK
PS0        /VSensor/PS/main/3V3 3.32        OK
PS1        /VSensor/V1anode      12.42      OK
PS1        /VSensor/V1catode     12.30      OK
PS1        /VSensor/PS/main/3V3 3.32        OK

System Fans (RPM)               Current   Status
-------------------------------------------------------------------
PS0        /Tacho/Fan0           10714      OK
PS0        /Tacho/Fan1           9642       OK
PS1        /Tacho/Fan0           10714      OK
PS1        /Tacho/Fan1           10887      OK
```

The following example shows the environmental information you might see when when you use the -v option.

CODE EXAMPLE 3-6 Sample Output of `showenvironment` Command Using `-v` Option

```
sc> showenvironment -v

=========== Environmental Status ============

System Temperatures (Celsius)    Current    Status    Warning    Shutdown
                                                                 Lo/Hi
------------------------------------------------------------------------------
SSC0       /TSensor/ambient      27         OK        N/A        0/68
SSC0       /TSensor/assp         35         OK        N/A        0/99
SSC0       /TSensor/air          37         OK        N/A        0/68
PS0        /TSensor/ambient      21         OK        55         0/64
PS0        /TSensor/Ext1         20         OK        55         0/50
PS0        /TSensor/Ext2         20         OK        55         0/110
PS1        /TSensor/ambient      24         OK        55         0/64
PS1        /TSensor/Ext1         24         OK        55         0/50
PS1        /TSensor/Ext2         29         OK        55         0/110

System Voltages (Volts)          Current    Status    Warning    Shutdown
                                                      Lo/Hi      Lo/Hi
------------------------------------------------------------------------------
SSC0       /VSensor/12VInput     12.25      OK        N/A        09.31/13.75
SSC0       /VSensor/5V           5.03       OK        N/A        04.48/05.49
SSC0       /VSensor/stby/3V3     3.30       OK        N/A        02.96/03.62
SSC0       /VSensor/1V2          1.18       OK        N/A        01.08/01.31
SSC0       /VSensor/1V8          1.79       OK        N/A        01.62/01.97
SSC0       /VSensor/2V5          2.50       OK        N/A        02.24/02.74
SSC0       /VSensor/ref/2V5      2.50       OK        N/A        02.24/02.74
SSC0       /VSensor/sis/5V       5.04       OK        N/A        04.48/05.48
PS0        /VSensor/V1anode      12.48      OK        N/A        10.19/13.81
PS0        /VSensor/V1catode     12.24      OK        N/A        09.95/13.51
PS0        /VSensor/PS/main/3V3 3.32        OK        N/A        02.96/03.62
PS1        /VSensor/V1anode      12.48      OK        N/A        10.19/13.81
PS1        /VSensor/V1catode     12.36      OK        N/A        09.95/13.51
PS1        /VSensor/PS/main/3V3 3.32        OK        N/A        02.96/03.62

System Fans (RPM)                Current    Status    Warning
------------------------------------------------------------------------------
PS0        /Tacho/Fan0           10546      OK        5000
PS0        /Tacho/Fan1           9782       OK        5000
PS1        /Tacho/Fan0           10546      OK        5000
PS1        /Tacho/Fan1           10887      OK        5000
```

showfru

Use the `showfru` command to display the contents of all FRU PROMs (field-replaceable units with programmable read-only memory) in the switch.

▼ To Use the `showfru` Command

Note – You do not need user permission to use this command.

● **At the `sc>` prompt, type the following command:**

```
sc> showfru fru
```

The single parameter of the command is a FRU list, that is, any combination of PS0, PS1 and SSC0.

The following example shows sample output for the `showfru` command. This example displays information about power supply unit 0.

CODE EXAMPLE 3-7   Sample of the `showfru` Command

```
sc> showfru ps0
SEGMENT: SD
/ManR/UNIX_Timestamp32: Sat Jan 15 09:22:45 UTC 2005
/ManR/Fru_Description: POWER SUPPLY, A188
/ManR/Manufacture_Loc: BAO'AN,CHINA
/ManR/Sun_Part_No: 3001650
/ManR/Sun_Serial_No: 000013
/ManR/Vendor_Name: Astec Intl
/ManR/Initial_HW_Dash_Level: 02
/ManR/Initial_HW_Rev_Level: 01
/ManR/Fru_Shortname: A188 PSU
/SpecPartNo: 885-0250-02
/Configured_LevelR/Configured_Serial_No:
SEGMENT: FD
/InstallationR(2 iterations)
/InstallationR/UNIX_Timestamp32[0]: Sat Jan 01 00:00:12 UTC 2000
/InstallationR/Fru_Path[0]: SSC0/PS0
/InstallationR/Parent_Part_Number[0]: 5405185
/InstallationR/Parent_Serial_Number[0]: 000003
/InstallationR/Parent_Dash_Level[0]: 01
/InstallationR/System_Id[0]: 000003
/InstallationR/System_Tz[0]: 0
/InstallationR/Geo_North[0]: 0
```

```
/InstallationR/Geo_East[0]: 0
/InstallationR/Geo_Alt[0]: 0
/InstallationR/Geo_Location[0]:
/InstallationR/UNIX_Timestamp32[1]: Sat Jan 01 00:00:06 UTC 2000
/InstallationR/Fru_Path[1]: SSC0/PS0
/InstallationR/Parent_Part_Number[1]: 5406193
/InstallationR/Parent_Serial_Number[1]: NNS009
/InstallationR/Parent_Dash_Level[1]: 01
/InstallationR/System_Id[1]: NNS009
/InstallationR/System_Tz[1]: 0
/InstallationR/Geo_North[1]: 0
/InstallationR/Geo_East[1]: 0
/InstallationR/Geo_Alt[1]: 0
/InstallationR/Geo_Location[1]:
/Status_EventsR(4 iterations)
/Status_EventsR/UNIX_Timestamp32[0]: Sat Jan 01 01:43:01 UTC 2000
/Status_EventsR/Old_Status[0]: 0x0
/Status_EventsR/New_Status[0]: 0x0
/Status_EventsR/Initiator[0]: SCAPP
/Status_EventsR/Component[0]: 0x0
/Status_EventsR/Event_Code[0]:
/Status_EventsR/Message[0]: PS0: V1 anode voltage fault recovered.
/Status_EventsR/UNIX_Timestamp32[1]: Sat Jan 01 01:43:01 UTC 2000
/Status_EventsR/Old_Status[1]: 0x0
/Status_EventsR/New_Status[1]: 0x0
/Status_EventsR/Initiator[1]: SCAPP
/Status_EventsR/Component[1]: 0x0
/Status_EventsR/Event_Code[1]:
/Status_EventsR/Message[1]: PS0: DC output fault recovered.
/Status_EventsR/UNIX_Timestamp32[2]: Mon Feb 14 21:50:27 UTC 2005
/Status_EventsR/Old_Status[2]: 0x0
/Status_EventsR/New_Status[2]: 0x0
/Status_EventsR/Initiator[2]: SCAPP
/Status_EventsR/Component[2]: 0x0
/Status_EventsR/Event_Code[2]:
/Status_EventsR/Message[2]: PS0: V1 anode voltage fault recovered.
/Status_EventsR/UNIX_Timestamp32[3]: Mon Feb 14 21:50:27 UTC 2005
/Status_EventsR/Old_Status[3]: 0x0
/Status_EventsR/New_Status[3]: 0x0
/Status_EventsR/Initiator[3]: SCAPP
/Status_EventsR/Component[3]: 0x0
/Status_EventsR/Event_Code[3]:
/Status_EventsR/Message[3]: PS0: DC output fault recovered.
/Soft_ErrorsR(0 iterations)
SEGMENT: PE
SEGMENT: PS
/Power_SummaryR/UNIX_Timestamp32: Thu Mar 03 20:40:35 UTC 2005
```

```
/Power_SummaryR/Total_Time_On: 29992
/Power_SummaryR/Total_Power_Ons: 38
/Power_SummaryR/Total_Power_Offs: 0
SEGMENT: TH
/Temperature_HistoryR/UNIX_Timestamp32: Thu Mar 03 21:40:45 UTC
2005
/Temperature_HistoryR/Sensor: 0x0
/Temperature_HistoryR/Lowest: 19
/Temperature_HistoryR/Highest: 24
/Temperature_HistoryR/Latest: 20
/Temperature_HistoryR/Histogram(10 iterations)
/Temperature_HistoryR/Histogram[0]: 0
/Temperature_HistoryR/Histogram[1]: 524
/Temperature_HistoryR/Histogram[2]: 0
/Temperature_HistoryR/Histogram[3]: 0
/Temperature_HistoryR/Histogram[4]: 0
/Temperature_HistoryR/Histogram[5]: 0
/Temperature_HistoryR/Histogram[6]: 0
/Temperature_HistoryR/Histogram[7]: 0
/Temperature_HistoryR/Histogram[8]: 0
/Temperature_HistoryR/Histogram[9]: 0
SEGMENT: ST
/Status_CurrentR/UNIX_Timestamp32: Mon Feb 14 21:50:27 UTC 2005
/Status_CurrentR/Status: 0x0
```

showib

Use the `showib` command to display InfiniBand switch status. Two sections of information are displayed. The first section contains the InfiniBand topology information, that is, which host channel adapter (HCA) is connected to the various switch ports. The second section contains information related to the local switch ports.

In a multi-switch topology, only the switch controlling the IB setup will display the first section

▼ To Use the `showib` Command

● **At the `sc>` prompt, type the following command:**

```
sc> showib option
```

The command returns output similar to the following:

CODE EXAMPLE 3-8   Sample Output for `showib` Command

```
sc> showib

Local switch GUID is 0x0003ba0000b0b875

Topology and connection information:

Device PortGUID           LID   IBport/Conn#   Device PortGUID           LID
IBport/Conn#
---------------------------------------------------------------------------
HCA    0x0002c90108cd70f1 0x0002 1 / 1      <-> Switch 0x0003ba0000b0b875 0x0001
4 / 1
HCA    0x0002c901097687a1 0x0003 1 / 1      <-> Switch 0x0003ba0000b0b875 0x0001
6 / 3
HCA    0x0002c901097687a2 0x0004 2 / 2      <-> Switch 0x0003ba0000b0b875 0x0001
8 / 7
HCA    0x0002c90108cd9a12 0x0005 2 / 2      <-> Switch 0x0003ba0000b0b875 0x0001
1 / 5
HCA    0x0002c90108cd9a11 0x0006 1 / 1      <-> Switch 0x0003ba0000b0b875 0x0001
2 / 6


Information for each local switch port:

Switch connector 0:
        PortPhysicalState            = Polling
        LinkWidthActive              = 12X
        PortXmitPkts                 = 0x0000000000000000
        PortRcvPkts                  = 0x0000000000000000
Switch connector 1:
        PortPhysicalState            = LinkUp
        LinkWidthActive              = 4X
        PortXmitPkts                 = 0x0000000000000717
        PortRcvPkts                  = 0x0000000000000718
Switch connector 2:
        PortPhysicalState            = Polling
        LinkWidthActive              = 12X
        PortXmitPkts                 = 0x0000000000000000
        PortRcvPkts                  = 0x0000000000000000
```

CODE EXAMPLE 3-8   Sample Output for `showib` Command

```
Switch connector 3:
        PortPhysicalState          = LinkUp
        LinkWidthActive            = 4X
        PortXmitPkts               = 0x0000000000000717
        PortRcvPkts                = 0x0000000000000718
Switch connector 4:
        PortPhysicalState          = Polling
        LinkWidthActive            = unknown
        PortXmitPkts               = 0x0000000000000000
        PortRcvPkts                = 0x0000000000000000
Switch connector 5:
        PortPhysicalState          = LinkUp
        LinkWidthActive            = 4X
        PortXmitPkts               = 0x0000000000000714
        PortRcvPkts                = 0x0000000000000714
Switch connector 6:
        PortPhysicalState          = LinkUp
        LinkWidthActive            = 4X
        PortXmitPkts               = 0x0000000000000715
        PortRcvPkts                = 0x0000000000000715
Switch connector 7:
        PortPhysicalState          = LinkUp
        LinkWidthActive            = 4X
        PortXmitPkts               = 0x0000000000000716
        PortRcvPkts                = 0x0000000000000717
Switch connector 8:
        PortPhysicalState          = Polling
        LinkWidthActive            = unknown
        PortXmitPkts               = 0x0000000000000000
        PortRcvPkts                = 0x0000000000000000
```

`showib` Command Options

The `showib` command uses a single option, -v. This verbose option shows the error counters of the switch ports in addition to the information shown in .

TABLE 3-10   `showib` Command Options

Option	Description
-v	Shows the error counters of the switch ports in as well as the information shown by the command without the option.

showlocator

Use the `showlocator` command to view the state of the switch's Locator LED (on or off).

▼ To Use the `showlocator` Command

Note – You do not need user permissions to use this command.

● **At the** `sc>` **prompt, type the following command:**

```
sc> showlocator
```

- If the Locator LED is on, ALOM returns the following result:

```
sc> showlocator
showlocator: Locator indicator is ON (flashing)
```

- If the Locator LED is off, ALOM returns the following result:

```
sc> showlocator
showlocator: Locator indicator is OFF
```

To change the state of the Locator LED, use the `setlocator` command.

showlogs

Use the `showlogs` command to display the history of all events logged in the ALOM event buffer. These events include switch reset events and all ALOM commands that change the state of the system (such as `reset`, `poweroff`, and `poweron`).

Each event recorded in the log has the following format:

`date: severity: FRU:` *message*

Where `date` signifies the time at which the event occurred, as recorded by ALOM, `severity` is the seriousness of the event, FRU says where the event occurred (on PS0, PS1 or SSC0), and *message* is a short description of the event.

If you use the showlogs command without any option, ALOM displays the last 20 lines of the event log.

▼ To Use the showlogs Command

Note – You do not need user permissions to use this command.

- **At the** sc> **prompt, type the following command:**

```
sc> showlogs option(s)
```

where *option(s)* is the desired option(s), if any.

The following example shows an event log entry:

```
NOV 15 11:12:25: MAJOR: PS1: Fan0 fan speed fault.
```

Note – Timestamps shown in the ALOM event log reflect UTC (Coordinated Universal Time).

This example shows the output of the showlogs command for PS0 and PS1.

CODE EXAMPLE 3-9   Sample of showlogs Command

```
sc> showlogs PS0 PS1
------------------------------------------------------------------
PS0
------------------------------------------------------------------
Jan 01 00:00:04: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:04: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:04: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
```

CODE EXAMPLE 3-9   Sample of `showlogs` Command

```
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:10: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:04: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
Jan 01 00:00:05: MINOR: PS0: Environmental monitoring enabled.
-----------------------------------------------------------------
PS1
-----------------------------------------------------------------
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:12: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: PS1: Environmental monitoring enabled.
Jan 01 00:00:07: MINOR: PS1: Environmental monitoring enabled.
Jan 04 16:32:18: MAJOR: PS1: Fan0 fan speed fault.
Jan 04 16:32:19: MAJOR: PS1: Fan1 fan speed fault.
Jan 04 16:32:34: MAJOR: PS1: V1 catode voltage fault.
Jan 04 16:32:35: MAJOR: PS1: Fan0 fan speed fault recovered.
Jan 04 16:32:35: MAJOR: PS1: Fan1 fan speed fault recovered.
Jan 04 16:32:36: CRITICAL: PS1: DC output fault recovered.
sc>
```

CODE EXAMPLE 3-10   Sample of showlogs command for SSC0

```
sc> showlogs SSC0
Jan 01 00:00:14: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:14: MINOR: SSC0: Locator LED state changed to OFF.
Jan 01 00:00:31: MAJOR: Factory commands Enabled
Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
```

CODE EXAMPLE 3-10   Sample of showlogs command for SSC0

```
Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 01 00:01:58: MAJOR: Factory commands Enabled
Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 04 16:32:22: MINOR: SSC0: Service Required LED state changed
to ON.
Jan 04 16:32:39: MINOR: SSC0: Service Required LED state changed
to OFF.
Nov 30 11:28:42: MINOR: SSC0: Locator LED state changed to
FLASHING.
Nov 30 11:28:54: MINOR: SSC0: Locator LED state changed to OFF.
sc>
```

showlogs Command Options

The showlogs command uses six options. You can use the -g option in combination with the -b, -e, or -v options. If you do not specify the -g option, the screen output does not pause.

TABLE 3-11   showlogs Command Options

Option	Description
-v	Displays the entire contents of the buffer file and the contents of NVRAM (the persistent event log).
-b *lines*	Displays the events from the beginning of the buffer, where *lines* is the number of lines that you specify. For example, the following command displays the first 100 lines in the buffer: showlogs -b 100
-e *lines*	Displays the events from the end of the buffer file, where *lines* is the number of lines that you specify. If new data appears in the log while you are executing this command, the new data is appended to the screen output. For example: showlogs -e 10

TABLE 3-11 `showlogs` Command Options

Option	Description
–g lines	Controls the number of lines displayed on the screen at a given time, where lines is the number of lines that you specify. After each pause, ALOM shows the following message: `- -pause-- Press 'q' to quit, any other key to continue.`
-t	Displays boot and loopback test errors log (available only for SSC0).
frulist	Displays logs for the FRUs you list.

showplatform

Use the `showplatform` command to display information about the switch's platform ID and status.

▼ To Use the `showplatform` Command

Note – You do not need user permissions to use this command.

● **At the** `sc>` **prompt, type** `showplatform`**.**

The switch returns information similar to the following:

```
sc> showplatform
FRU         Status          Type
--------    -------------   --------------------
SSC0        OK              Sun IB Switch 9P
PS0         OK              POWER SUPPLY, A188
PS1         OK              POWER SUPPLY, A188
```

Using the -v option returns information similar to the following:

```
sc> showplatform -v
FRU       Status          Type                  Part No.   Serial No.
--------  -------------   --------------------  --------   --------
--
SSC0      OK              Sun IB Switch 9P      5957467    000011
PS0       OK              POWER SUPPLY, A188    3001650    000031
PS1       OK              POWER SUPPLY, A188    3001650    000044

Domain    Status              MAC Address        Hostname
--------  ------------------  -----------------  ---------------
SSC0/SC   OS Running (Active)  00:03:ba:7a:a1:76
sc>
```

showplatform Command Options

The showplatform command uses three options.

TABLE 3-12   showplatform Command Options

Option	Description
–v	Displays the part and serial numbers as well as status and type.
frulist	Displays information for the given FRUs.

showsc

Use the showsc command to display information about the software configuration and firmware version.

▼ To Use the showsc Command

Note – You do not need user permissions to use this command.

● **Do one of the following:**

■ To display the switch configuration information, type the following command at the `sc>` prompt:

```
sc> showsc
Sun Advanced Lights Out Manager for Sun IB Switch 9P
Copyright 2003-2005 Sun Microsystems, Inc. All Rights Reserved.
ALOM-B 1.2

Release: 0.3.19, Created: 2005.02.24.09.27 (astec_debug) for Astec PSU

Parameter                              Running Value      Stored Value
-----------------------------------------------------------------------------
Bootable Image :                       0.3.19 (Feb 24 05)
Current Running Image :                0.3.19 (Feb 24 05)
SC IP address:                         10.4.124.79        10.4.124.79
SC IP netmask address:                 255.255.255.0      255.255.255.0
SC IP gateway address:                 10.4.124.1         10.4.124.1
SC Network interface is:               Enabled            Enabled
SC Telnet interface is:                Enabled            Enabled
The CLI prompt generation is set as:   none               none
The CLI prompt is set as:              P1_L_79a>          P1_L_79a>
Event Reporting via telnet interface:  Enabled            Enabled
The CLI event level is set as:         MINOR              MINOR
The CLI timeout (seconds) is set at:   0                  0
Mask password with *'s:                Enabled            Enabled
sc>
```

showusers

Use the `showusers` command to display the list of users currently logged-in to ALOM. The list includes details such as the type of connection, the duration of each user's session, and the IP address of the client (if the user is using a network connection).

▼ To Use the `showusers` Command

Note – You do not need user permissions to use this command.

● **At the `sc>` prompt, type the following command:**

```
sc> showusers
```

The system displays user information similar to the following example:

```
sc> showusers
username          connection  login time        IP address
--------          ----------  ----------        ----------
admin             net-1       Mar 03 16:42 UTC  129.149.2.17
admin             net-2        Mar 03 22:04 UTC  129.150.25.245
```

Note – The switch allows a maximum of four Telnet sessions and one serial session for all users, at any time.

useradd

Use the useradd command to add a user account.

▼ To Use the useradd Command

Note – You must have u level user permission to use this command. See "userperm" on page 49 for information on setting user permissions.

● **At the sc> prompt, type the following command:**

```
sc> useradd username
```

where *username* is the name of the user whose account you want to add to ALOM.

username has the following restrictions:

- Valid characters include alphabetic (letter) and numeric characters, period (.), underscore (_), and hyphen (-).
- Maximum length is 16 characters, at least one of which must be a lowercase alphabetic character.
- The first character must be alphabetic.

You can add a maximum of 50 unique user accounts to ALOM.

To assign a password to a user name, use the userpassword command. See "userpassword" on page 48.

To set permission levels for a user name, use the userperm command. See "userperm" on page 49.

userdel

Use the `userdel` command to delete a user account. Once the account is deleted, the deleted user's configuration information can never be recovered.

If the user name you specify is not on the list of users, the system returns an error message. Likewise, if there is only one user on the list, you cannot delete that user account.

Note – You cannot delete the default `admin` user account.

▼ To Use the `userdel` Command

Note – You must have `u` level user permission to use this command. See for information on setting user permissions.

● **At the `sc>` prompt, type the following command:**

```
sc> userdel username
```

where *username* is the name of the user account you want to delete.

userpassword

Use the `userpassword` command to change the password for the specified user account. This command is for administrators who must change user passwords, but who might not know what the user account passwords are. If you are trying to change the password on your own account, use the `password` command. See .

▼ To Use the `userpassword` Command

Note – You must have `u` level user permission to use this command. See for information on setting user permissions.

● **At the `sc>` prompt, type the following command:**

```
sc> userpassword username
```

where *username* is the name of the user account for which you want to change the password.

When you use this command, ALOM does not prompt you for the existing password.

For example:

```
sc> userpassword msmith
New password:
Re-enter new password:
sc>
```

Password Restrictions

Passwords have the following restrictions:

■ They must contain between six and eight characters.

■ They must contain at least two alphabetic characters (uppercase or lowercase letters) and at least one numeric or special character.

■ They must differ from the user's login name, and any reverse or circular shift of the user's login name. For comparison purposes, uppercase and lowercase letters are equivalent.

■ They must differ from the old password by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

Note – These password restrictions do not apply to a user with u permission.

---

userperm

Use the userperm command to set or change permission levels for a specified user account. By default, the initial setup procedure creates the admin account. This account cannot be deleted, nor can you change the user permissions for the account.

Permission Levels

All users can read ALOM information, but authorization is required to perform ALOM functions or change settings. There are four permission levels that increase a user's authorization. You can specify zero through four permission levels.

TABLE 3-13 `userperm` Permission Levels

Permission Level	Description
a	Administrative. This user is authorized to change the state of ALOM configuration variables and perform flashupdate command.
u	User administration. This user is authorized to add users and delete users, change user permissions, and change the authorization level of other users. See "useradd" on page 47 and "userdel" on page 48.
c	Console permission. (Not used, preserved for compatibility.)
r	Reset/power permission. This user is authorized to reset the switch, and power the FRUs on and off. See "poweron" on page 21, and "poweroff" on page 20.

If you do not assign a permission level to the specified user (that is, you assign zero permission levels), then that user has read-only permission. This is the default level for a new ALOM user account.

Note – The default user permission for the account that you use when you start ALOM for the first time is read only. After you set a password for the default `admin` account, the permissions change to `cuar` (full authorization).

To view a user's permission levels, use the `usershow` command. See "usershow" on page 51.

▼ To Use the `userperm` Command

Note – You must have **u** level user permission to use this command

---

● **At the** `sc>` **prompt, type the following command:**

```
sc> userperm username permission(s)
```

where *username* is the name of the user to whom you want to assign permissions, and *permission(s)* is the permission(s) you want to assign to that user.

For example, to assign c and r user permissions to user msmith, type the following at the ALOM command prompt:

```
sc> userperm msmith cr
```

To see a user's permission levels, use the usershow command.

A user with read-only permission can use only the following commands:

- help
- password
- showdate
- showenvironment
- showlogs
- showsc
- logout
- showlocator
- setlocator
- showfru
- showib
- showplatform
- showusers

A user who has read-only permissions would appear similar to the user mike in the following example:

```
sc> usershow mike
username          permissions  password?
--------          -----------  ---------
mike              ----         Assigned
```

usershow

Use the usershow command to display a specified user's ALOM account, along with each user's permissions and whether a password has been assigned. See "userperm" on page 49 and "userpassword" on page 48.

If you do not enter a username, usershow displays all of the user accounts.

▼ To Use the usershow Command

Note – You must have u level user permission to use this command. See "userperm" on page 49 for information on setting user permissions.

● **At the** sc> **prompt, type the following command:**

```
sc> usershow username
```

where *username* is the name of the specified user, Mike is the specified user in the following example.

For example:

```
sc> usershow mike
username        permissions  password?
--------        -----------  ---------
mike            auc-         Assigned
```

Troubleshooting

This chapter consists of tables of the most common issues you might experience with error messages you see and troubleshooting suggestions. It contains the following sections:

If you are having problems connecting to the network, check your cabling to ensure that the switch is properly connected to the management port as well as the InfiniBand ports and connectors. Then refer to "Diagnosing Switch Indicators" on page 53 to verify that the corresponding port on the switch is functioning properly.

Diagnosing Switch Indicators

If you have connected a device to a port on the switch, but the Link LED is off, then check the following items:

- Ensure that the cable is plugged into both the switch and corresponding device.

- Verify that the proper cable type is used and its length does not exceed specified limits.

- Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.

Verify that all system components have been properly installed. If any network cabling appears to be malfunctioning, test it in an alternate environment where you are sure that all the other components are functioning properly.

Diagnosing Port Connections

If a port does not work, check the following:

- Ensure that the cable connections are secure and the cables are connected to the correct ports at both ends of the link.
- Ensure that the LED lights are green. (If LED lights are amber, a fault has occurred and the port requires attention.)

Using System Logs

The Sun IB switch logs information about important system events to both internal non-volatile event logs and Solaris host-based system logs (using `syslog` mechanism). The internal non-volatile event log is used only by ALOM. You can view its contents by using the ALOM `showlogs` command.

The Solaris host based system log is used by both InfiniBand management software and ALOM. System logs can be accessed through usual Solaris `syslog` means.

Using ALOM Event Logs

The contents of the switch's non-volatile event log can be seen using the ALOM `showlogs` command.

If a fault occurs, ensure that the problem you encountered is actually caused by the switch. If the problem appears to be caused by the switch, then follow these next steps.

1. **Use the** `showlogs` **command with the appropriate option.**

   CODE EXAMPLE A-1 Sample Output of `showlogs` Command

   ```
   sc> showlogs -t SSC0
   Jan 01 00:00:14: MINOR: SSC0: Service Required LED state changed
   to OFF.
   Jan 01 00:00:14: MINOR: SSC0: Locator LED state changed to OFF.
   Jan 01 00:00:31: MAJOR: Factory commands Enabled
   Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
   Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
   ```

```
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 01 00:01:58: MAJOR: Factory commands Enabled
Jan 01 00:00:03: MINOR: SSC0: Environmental monitoring enabled.
Jan 01 00:00:06: MINOR: SSC0: Active LED state changed to ON.
Jan 01 00:00:06: MINOR: SSC0: Service Required LED state changed
to OFF.
Jan 01 00:00:06: MINOR: SSC0: Locator LED state changed to OFF.
Jan 04 16:32:22: MINOR: SSC0: Service Required LED state changed
to ON.
Jan 04 16:32:39: MINOR: SSC0: Service Required LED state changed
to OFF.
Nov 30 11:28:42: MINOR: SSC0: Locator LED state changed to
FLASHING.
Nov 30 11:28:54: MINOR: SSC0: Locator LED state changed to OFF.
----------------------------------------------------------------
--------------
Boot and loopback log
----------------------------------------------------------------
--------------
JAN 01 00:00:03: MAJOR: SSC0: Port 0: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 1: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 2: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 3: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 4: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 5: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 6: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 7: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 8: SC loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 0: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 1: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 2: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 3: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 4: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 5: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 6: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 7: Internal loopback test failed
JAN 01 00:00:03: MAJOR: SSC0: Port 8: Internal loopback test failed
sc>
```

2. **Repeat the sequence of commands or other actions that led to the error.**

3. **Make a list of the commands or circumstances that led to the fault.**

4. **Make a list of any error messages displayed.**

5. **Contact customer service.**

System Log Messages

If the `SUNWsibs9p` package is installed and set up for the switch, event messages from the switch will occur on the host (See "System Log Proxy" on page 9). Some messages are informational, others represent errors. The messages can be divided into two categories: messages from the switch platform itself (TABLE A-1 and TABLE A-2) and messages from the InfiniBand management software (TABLE A-3).

TABLE A-1   System Log Error Messages from the Platform

Message	Description	Solution
`Platform top_LBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform smaif_LBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform xm9_LBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform olcnumber_LBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform olcnumber_MBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform olc4_xm9_smaif_MBIST_PLL FAILED`	A major fault of the InfiniBand switch chip occurred during boot test.	Try rebooting. If the same error message reappears, contact service.
`Platform NULL memory error struct pointer`	Memory allocation fault during init.	Try rebooting.
`Platform single-bit corrected error at xx on yy`	Memory fault corrected	Try rebooting. If the same error message reappears, contact service.
`Platform single-bit uncorrectable error at xx on yy`	Memory fault	Try rebooting. If the same error message reappears, contact service.
`Platform multi-bit uncorrectable error at xx on yy`	Memory fault	Try rebooting. If the same error message reappears, contact service.
`Platform AMD1026 init FAILED`	Hardware fault during boot.	Try rebooting. If the same error message reappears, contact service.

Message	Description	Solution
Platform PCA9554@40 init FAILED	Hardware fault during boot	Try rebooting. If the same error message reappears, contact service.
Platform PCA9554@42 init FAILED	Hardware fault during boot	Try rebooting. If the same error message reappears, contact service.
Platform PCA9554 init on Mezzanine FAILED	Hardware fault during boot.	Try rebooting. If the same error message reappears, contact service.
Platform PSU*number* init failed	Hardware fault during boot	Try rebooting. If the same error message reappears, replace the PSU.
Platform Ibdevice init failed	Software fault during boot	Try rebooting.
ASSP init failed	Hardware fault during boot	Try rebooting. If the same error message reappears, contact service.
Platform External loopback mode on port number FAILED, not Link up or 12X.	Loopback test failed during boot	The port *number* might be bad. Try rebooting. If the same error message reappears, avoid using that port.
Platform External loopback mode on port number FAILED, sent *xx* received *yy*	Loopback test failed during boot	The port *number* might be bad. Try rebooting. If the same error message reappears, avoid using that port.
Platform External loopback mode on port number FAILED, not Link up or 12X.	Loopback test failed during boot	The port *number* might be bad. Try rebooting. If the same error message reappears, avoid using that port.
Platform External loopback mode on port number FAILED, sent *xx* received *yy*	Loopback test failed during boot	The port *number* might be bad. Try rebooting. If the same error message reappears, avoid using that port.

TABLE A-2 shows informational messages from the platform.

TABLE A-2 System Log Informational Messages from the Platform

Message	Description
Platform Sun IB Switch 9 port platform init started	The init of the platform has started.
Platform Last reset was done by WDOG	The switch was rebooted by the watchdog due to a hang of the system.

The InfiniBand (IB) management software is responsible for setting up and controlling all the IB devices that are connected together. The events reported by this software can therefore be for some other device than the switch where the software is running. In InfiniBand a port on a IB device (switch or channel adapter card) is uniquely identified by a value called `PortGUID`. This value is often displayed in the IB related `syslog` messages. This value is also used by the `showib` command when listing the connections in the IB topology.

Many of the messages also contain IB-specific parameters. Refer to the *InfiniBand Specification*, Volume 1 for an exact explanation. All the IB related `syslog` messages contain a prefix of the type `IBSRM event` event_*number.* This part of the message is omitted from TABLE A-3 to make it more readable.

For more information about the *InfiniBand Specification* go to:

http://www.infinibandta.org

You must register before you can download specifications.

TABLE A-3   Syslog Messages

Message	Severity	Description
`IBSRM_EVENT_PORT_UNKNOWN_MKEY at port with GUID = ` *port-GUID*	Warning	The IB management software is unable to control (set up and initialize) the port identified by *port-GUID* due to an unknown key setting. If this device is expected to be connected to the switch, set up the identified device with MKEY set to 0 and reboot that device. If it is an unexpected connection, remove the cable.
`IBSRM_EVENT_PORT_GID_ONLINE, port with GUID = ` *port-GUID*	Information	The IB port identified by *port-GUID* has become operational. This is an expected event for all IB ports connected to the IB subnet. This port should now be visible in the topology list displayed by the `showib` CLI.
`IBSRM_EVENT_PORT_GID_OFFLINE, port with GUID = ` *port-GUID*	Information	The IB port identified by *port-GUID* is no longer operational (it cannot participate in any data transfers). The usual cause of this event is that the cable is unplugged. It can also happen if the cable is not properly connected or if the cable or connector is bad.

Message	Severity	Description
IBSRM_EVENT_PORT_STATE_CHANGED, port with GUID = *port-GUID*, ib port = *IB-port-number*, connector = *connector-number*, new_state = *new-state-value*, old_state = *old- state-value*	Information	The IB port identified by *port-GUID*, *port-number* and *connector-number* has changed the IB port state from *old-state-value* to *new-state-value*. The state values can be decoded as follows: 1 = Down 2 = Initialize 3 = Armed 4 = Active This message is often seen together with the _ONLINE and _OFFLINE messages.
IBSRM_EVENT_PORT_BAD_DIAG_CODE, port_GUID = *port-GUID*, diag_code = *diag-code-value*	Error	The IB port identified by *port-GUID* has reported a bad diagnostic code *diag code value*. The port will not be become operational. Reboot the device to see if it recovers.
IBSRM_EVENT_PORT_LINK_INTEG_REACH ED, port_GUID = *port-GUID*	Error	This is an error event causing the IB port identified by *port-GUID* to have poor performance. Check that the cables are properly inserted. If cables are properly inserted, try rebooting the device.
IBSRM_EVENT_PORT_EXCESS_BUFF_OVER RUN, port_GUID = *port-GUID*	Error	This is an error event causing the IB port identified by *port-GUID* to have poor performance. Check that the cables are properly inserted. If it does not help, try rebooting the device.
IBSRM_EVENT_PORT_FLOW_CNTL_TIMER_ EXPD, port_GUID = *port-GUID*	Error	This is an error event causing the IB port identified by *port-GUID* to have poor performance. Check that the cables are properly inserted. If cables are properly inserted, try rebooting the device.
IBSRM_EVENT_PORT_CAP_MASK_CHANGED , port_GUID = *port-GUID*, cap_mask = *capability-mask*	Information	The IB port identified by *port-GUID* has had a change in IB capabilities. The new port capabilities are identified by the value of the *capability mask*.
IBSRM_EVENT_PORT_SYS_IMG_GUID_CHA NGED, port_GUID = *port-GUID*, sys_im_GUID = *system-image-GUID*	Information	The system image GUID of IB port identified by *port-GUID* has changed to *system-image-GUID*

TABLE A-3 Syslog Messages *(Continued)*

Message	Severity	Description
IBSRM_EVENT_PORT_BAD_MKEY, src GUID = *source-port-GUID*, dest GUID = *destination-port-GUID*, attr_ID = *attribute-ID*, method = *method*	Warning	The IB port *destination-port-GUID* has received a package from *source-port-GUID* that has a bad MKey value. *attribute-ID* and *method* describe the type of packet received. The packet has been dropped. Check to ensure that no unexpected IB devices are connected to this IB network.
IBSRM_EVENT_PORT_BAD_PKEY, src GUID = *source-port-GUID*, dest GUID = *destination-port-GUID*, PKey = *PKey-value*, src qp = *source-QP-number*, dest qp = *destination-QP-number*	Warning	The IB port *destination-port-GUID* has received a package from *source-port-GUID* that has a bad partition key *PKey-value*. The packet will be dropped. *source-QP-number* and *destination-QP-number* further describe this packet. The packet has been dropped. Check to ensure that no unexpected IB devices are connected to this IB network.
IBSRM_EVENT_PORT_BAD_QKEY, src GUID = *source-port-GUID*, dest GUID = *destination-port-GUID*, qkey = *QKey-value*, src qp = *source-QP-number*, dest qp = *destination-QP-number*	Warning	The IB port *destination-port-GUID* has received a package from *source-port-GUID* that has a bad QKey value *QKey-value*.The packet will be dropped. *source-QP-number* and *destination-QP-number* further describe this packet. The packet has been dropped. Check to ensure that no unexpected IB devices are connected to this IB network.
IBSRM_EVENT_PORT_PKEY_TABLE_FULL, port_GUID = *port-GUID*, PKey = *PKey-value*	Warning	The PKey *PKey-value* could not be written into the PKey table of the IB port identified by *port-GUID* because the table was already full. The port will not be able to participate in transmissions involving this PKey. This should not happen unless there are many simultaneously running IB services in the IB subnet.
IBSRM_EVENT_NODE_DISC_FAILED, port_GUID =*port-GUID*	Warning	Even after several attempts, one or more devices attached to the node identified by *port-GUID* could not be discovered. The device is not able to participate in any data transfers. Check cabling and connections. If cabling seems to be OK reboot the device.

Message	Severity	Description
IBSRM_EVENT_NODE_PROG_FAILED, port_GUID =*port-GUID*, IB port number port/connector number *connector*	Warning	Even after several attempts, the node/port *port-GUID* could not be programmed (setup for proper IB usage). Check cabling and connections. If cabling seems to be OK reboot the device.
IBSRM_EVENT_PORT_NO_MORE_LIDS, port_GUID = *port-GUID*	Error	The port identified by *port-GUID* could not be owned/managed because the management software ran out of LIDs it is allowed to use. This should not happen unless the switch is part of an extremely large IB network, which is not supported.
IBSRM_EVENT_TOO_SMALL_LFT, switch GUID *switch-GUID,* max lids supported *max-supported-lids,* max lid in use *max-lid*	Error	The switch identified by *switch-GUID* cannot be programmed with wanted LID value *max-lid* because this LID is beyond the size of the switch forward table *max-supported-lids*. Any packets addressed for *max-lid* will fail to transfer through the indicated IB switch.This should not happen unless the switch is part of an extremely large IB network, which is not supported.
IBSRM_EVENT_PORT_DUPLICATE_GUID, duplicate GUID = *GUID-value*, original peer switch GUID *switch-GUID-1*, duplicate peer switch GUID *switch-GUID-2,* original peer IB port *port1*, duplicate peer IB port *port2*	Error	Duplicate ports in the IB topology have the same GUID value *GUID-value*. One instance is connected to *switch-GUID-1 port1* while the other is connected to *switch-GUID-2 port2*. The IB subnet will most likely perform badly since unique GUID values are central for correct IB management. The only way to correct this is to exchange one of the indicated devices with another one having a proper GUID.
IBSRM_EVENT_MCG_CREATED, mclid = *mc-lid-value*	Information	The multicast group identified by multicast lid *mc-LID-value* has been created.
IBSRM_EVENT_MCG_DELETED, mclid = *mc-lid-value*	Information	The multicast group identified by multicast lid *mc-LID-value* has been deleted.
IBSRM_EVENT_SM_BECAME_MASTER, sm_GUID = *GUID-value*	Information	The master SM in the IB subnet is running behind the port identified by *GUID-value*.

TABLE A-3   Syslog Messages *(Continued)*

Message	Severity	Description
IBSRM_EVENT_MISC_EMPTY_SUBNET, local GUID *GUID-value*	Information	The IB subnet that the local switch *GUID-value* is part of is currently empty. (No hosts are connected or yet done booting.)
IBSRM_EVENT_MISC_BAILOUT, reason = *reason*, file *source-file*, line *source-line*	Error	The IB management software running on the switch is bailing out. The bailout point in the source is identified by *source-file* and *source-line*. The *reason* for the bailout is indicated by *reason*, 1 is lack of memory, 2 is package transfer errors, 3 is other. The IB switch will try to automatically restart the IB management software when this event occurs. If the event recurs after the restart, contact service.
IBSRM will not write to journal	Information	This message is expected on each IB management (re)start on the switch and does not indicate any error. It is simply an indication that the switch does not support stable storage to save IB management policy and configuration information.
IBSRM_EVENT_MISC_PORT_ADD_DDP_FAILED, port_GUID = *port-GUID*	Warning	An attempt to auto-add the port *port-GUID* to the default data partition (DDP) failed. This will cause failures in data transfers to and from this port, which uses the default data partition.
IBSRM_EVENT_MISC_PORT_ADD_DDP_DONE, port_GUID = *port-GUID*	Information	The port *port-GUID* has been auto-added to the default data partition. This port had previously failed to be added to the DDP because of a full PKey table. However, the removal of the port from some other partition has freed up an entry in the PKey table which allowed the auto-add to the DDP.

Troubleshooting ALOM Problems

TABLE A-4 provides a list of common ALOM difficulties and their solutions.

TABLE A-4   ALOM Diagnostics

Problem	Description

Can't connect to ALOM using the `telnet` command	ALOM supports a total of four concurrent Telnet sessions and a single serial session. If that limit is reached, further attempts to start a Telnet session will fail with an error message about exceeded maximum number of login sessions. Example:
	`$ telnet ib_switch19`
	`Trying 129.148.49.120...`
	`Connected to 129.148.49.120`
	`Escape character is '^]'.`
	`Maximum login sessions (5) exceeded please retry later.`
	`Connection closed by foreign host.`
	
	If that is the case, terminate one or more of the four active telnet sessions and retry. (The `showusers` command will show where and by whom the active sessions are being run.)
	
	If `telnet` fails but there is no error message about exceeded maximum number of login sessions, perform the following steps:
	• Log in to ALOM through the serial management port and use the `showsc` command to check the current IP settings.
	• Log in to a host on the network and use the `ping` command to see whether ALOM can be reached on the IP address displayed by the `showsc` command in the previous step.
	• Check that the Ethernet cable is attached.

No alerts received from ALOM	Check the CLI event level setting using `showsc` command (since it also applies for `syslog`) to make sure that you are receiving the proper levels of events. Also ensure that the Ethernet cable is properly attached and the switch can be reached using `ping` and `telnet`.
You can perform some ALOM functions, but not others	Specific user permissions are required to perform functions. Check your permission level.

ALOM Shell Error Messages

This section contains information about certain types of error messages you might see when using the ALOM command shell:

- "Usage Errors" on page 65
- "Additional Important Messages" on page 68
- "General Errors" on page 69
- "FRU Errors" on page 71

These messages appear in response to a command you typed at the `sc>` prompt.

Usage Errors

TABLE A-5 describes usage error messages that are displayed when you typed the command using improper command syntax. Refer to the description of the command for the correct syntax.

TABLE A-5   Usage Error Messages

Error Message	Command/Description
`Error: Invalid command option. Type help to list commands.`	Help.
`Error: Invalid command options Usage:` *usage string*	You typed the shell command correctly, but used an incorrect option for that command. *usage string* describes the proper syntax for command options. Check the command options and retype the command.
`Error: Invalid configuration parameter.`	You specified a nonexistent configuration variable when using the `showsc` command. Check the configuration variables and their values in your configuration table, and retype the command.
`Error: Invalid image. Please check file integrity and specified path.`	An error occurred when you tried to execute the `flashupdate` command. Make sure that the path you specified is correct for the firmware image you want to download. If the path is correct, contact the administrator for the server where the image is located.

CLI Messages

TABLE A-6 describes the possible CLI messages.

TABLE A-6   CLI Messages

Message	Description
Error: Maximum number of users already configured	Once the maximum number of users is configured, no more can be added.
Error: Invalid IP address	Invalid IP address given.
fru: Already ready to remove.	removefru attempted on a FRU that is already ready to remove.
fru: Cannot make ready to remove.	removefru failed (reason is given in the preceding line).
Error: addition of user *username* failed	The *username* was not added.
Error: Too many command line arguments (31 max.)	Malformed command.
Cannot open the tftp connection	TFTP server given in flashupdate command, for example, does not respond.
Error: User username already exists	Each *username* must be unique.
Usage: *command usage*	Command attempted used with wrong or insufficient parameters.
Error: Invalid password entered.	Password string is invalid (for reason given in lines that follow, for example 'too short' and others.).
Error: permissions not set for user %s	The user does not have sufficient permissions for the attempted operation.
Error: admin user's permissions are fixed as aucr	admin user permissions are fixed to all and cannot be revoked.
Error: Invalid user permissions.	The user does not have sufficient permissions for the attempted operation.
Error: did not set password for user %s	Selected password may not meet system requirements.
Error: Inconsistent passwords entered.	Inconsistent new password entered (has to be entered twice).
Error: wrong password entered.	Wrong current password is provided in an attempt to change password using password command.
Error: *username* is in use. Cannot remove it.	The user does not have sufficient permissions for the attempted operation.
Error: delete of user *username* failed	The user does not have sufficient permissions for the attempted operation.

Message	Description
`Initial state for user admin has no permissions: enter 'password' to set password and enable full permissions.`	The default user `admin` has no permissions right after the switch is shipped. A password has to be assigned to it.
`Error: User name specified is too long`	
`Error: Invalid username string`	
`Deleted user %s successfully.`	
`Image too large for flash location`	Corrupted flash image.
`Flash segment out of range`	Corrupted flash image.
`SRecord address out of range`	Corrupted flash image.
fru`: Operation invalid`	Operation is not supported on this FRU.
fru`: Waiting for FRU to be configured. Press control-C to abort operation.`	Power operation attempted while the FRU is being brought up. Either wait for a while or stop the operation using Ctrl-C.
`Unknown Flash Image`	Corrupted flash image.
`flashupdate of %s failed`	Flashupdate failed for reason mentioned in the line preceding this message.
`Error: Invalid FRU name` *string* `- type showplatform for list of FRUs.`	Wrong FRU given as parameter.
`Error: Invalid command options`	Non-existent command option entered.
`Error: Invalid command` *string* `- type help for a list of commands.`	Wrong command name given.
`Do not issue a resetsc, setfailover, or power cycle to this system. You MUST first successfully complete a flashupdate of the SC bootrom before doing so, otherwise this system will require a hardware level flash.`	Flashupdate of `bootrom` or the whole flash failed. The switch must not be reset, because it will not be able to boot. Flashupdate has to be repeated until `bootrom` is successfully programmed.
`flashupdate: Checksum failed`	Wrong image file checksum.
`Bad SRecord`	Image file provided to flashupdate command is not a valid S-record image.
`%s: Cannot power on.`	Power on failed for reason given in preceding lines.
`Password must differ from old one by at least 3 characters.`	Wrong password given using `password` command by user without `u` permission.
`Password too short (Must be at least 6 characters).`	Wrong password given using `password` command by user without `u` permission.

TABLE A-6 CLI Messages *(Continued)*

Message	Description
Password cannot match username.	Wrong password given using password command by user without u permission.
%s: Already powered on.	Power on attempted on a FRU that is already powered on.
%s: Cannot power off.	Power off failed for reason given in preceding lines.
%s: Already powered off.	Power off attempted on a FRU that is already powered off.
Password unchanged from old one.	Wrong password given using password command by user without u permission.
Password must have at least 2 alphabetic characters and 1 numeric character.	Wrong password given using password command by user without u permission.
fru: Not present.	Operation attempted on a FRU that is not present.
Error: Invalid command option - type help to list commands	Help sought on non-existent command.
Password cannot match reversed username.	Wrong password given using password command by user without u permission.
First character must be an alphabetic character.	Wrong password given using password command by user without u permission.
Password cannot be a circular shift of username.	Wrong password given using password command by user without u permission.

Additional Important Messages

TABLE A-7 describes additional important messages or prompts for confirmation.

TABLE A-7 Additional Important Messages

Message	Description
Are you sure you want to reset the SC configuration (y/n)?	setdefaults confirmation
%s: flashupdate complete.	flashupdate succeeded. The system must now be reset using the resetsc command
Are you sure you want to remove all permissions for user %s (y/n) ?	Cautionary prompt to ensure you are not removing all permissions accidently.
The system must be reset (using resetsc) for the new image to be loaded	

Message	Description
`Are you sure you want to power off FRU %s (y/n)?:`	`poweroff` confirmation.
`Event log is empty.`	No messages are in the event log.
`Are you sure you want to remove %s (y/n)?:`	`removefru` confirmation.
`Are you sure you want to restore the SC to factory defaults? All dynamic FRUID and NVRAM container data will be regenerated (y/n)?`	Restore factory defaults confirmation.
`Use of factory-mode is strictly reserved for SUN Service Personnel. Unauthorized use may invalidate your service warranty. Do you wish to continue [n]?`	Comment: A command reserved for Sun service personnel attempted. User must answer 'n', that is, not continue.
`Warning: Are you sure you want to flashupdate the SSC0/SC flash image (y/n)?`	`flashupdate` confirmation.
`Are you sure you want to reset the SC? All user sessions will be lost (y/n)?`	`resetsc` confirmation.

General Errors

lists general errors that ALOM reports.

TABLE A-8   General Error Messages

Error Message	Command/Description
`Error adding user` *username*	An error occurred during execution of the `useradd` command. This message is followed by a more detailed message that explains the nature of the error.
`Error: Cannot delete admin user`	You tried to delete the `admin` user account from ALOM. ALOM does not enable you to delete this account.
`Error changing password for` *username*	An error occurred during execution of the `userpassword` command. This message is followed by a more detailed message that explains the nature of the error.

TABLE A-8 General Error Messages *(Continued)*

Error Message	Command/Description
`Error: Inconsistent passwords entered.`	During execution of the `userpassword` command, you typed the password differently the second time than you did the first time you were prompted. Execute the command again.

`Error: invalid password entered.`
`Password must be 6-8 characters, differ`
`from the previous by at least 3`
`characters and contain at least two`
`alphabetic characters and at least one`
`numeric or special character.`
	You entered an invalid password. Refer to the password restrictions and then enter the password again.

`Error: invalid username string. Please`
`re-enter username or type 'usershow' to`
`see a list of existing users.`
	You tried to specify an ALOM user account that is not on the list of user accounts. To see a list of valid user accounts, use the `usershow` command.

`Error displaying user username`	An error occurred during execution of the `usershow` command. This message is followed by a more detailed message that explains the nature of the error.
`Error: Invalid IP address for gateway` `address and IP netmask.`	Check that the addresses are correct, and then run `setupsc` again.
`Error: Invalid IP gateway for IP address` `and IP netmask.`	Check that the addresses are correct, and then run `setupsc`.
`Error setting permission for username`	An error occurred during execution of the `userperm` command. This message is followed by a more detailed message that explains the nature of the error.

`Error: Invalid username string. Please`
`re-enter a username of no more than 16`
`bytes consisting of characters from the`
`set of alphabetic characters, numeric`
`characters, period (.), underscore (_),`
`and hyphen (-). The first character`
`should be alphabetic and the field`
`should contain at least one lower case`
`alphabetic character.`
	You entered an invalid username. Review the proper syntax for user names and try again.

`Failed to get password for username`	During execution of the `userpassword` command, an SEEPROM error occurred. Try executing the command again.
`Invalid login`	Login attempt failed. This message appears at the login prompt.
`Invalid password`	You entered an invalid password with the `userpassword` command.
`Invalid permission: permission`	You entered an invalid user permission.

TABLE A-8 General Error Messages *(Continued)*

Error Message	Command/Description
`Passwords don't match`	The two entries for a new password did not match. Enter the password again.
`Permission denied`	You attempted to execute a shell command for which you do not have the proper user permission level.
`Sorry, wrong password`	You entered an incorrect password. Enter the password again.
`Error: User `*username*` already exists.`	The user you are trying to add already has an ALOM account on this switch.

FRU Errors

TABLE A-9 lists the error messages that appear when ALOM detects problems with field-replaceable units (FRUs) or customer-replaceable units (CRUs).

Note – The software refers to both FRUs and CRUs as FRUs, as in `removefru` or `showfru`.

TABLE A-9 FRU Error Messages

Error Message	Command/Description
`Error: `*fru-name*` is currently powered off.`	*fru-name* is the name of the FRU to which you tried to send a command. The FRU is currently powered off. You must turn it back on before it accepts commands.
`Error: `*fru-name*` is currently powered on.`	*fru-name* is the name of the FRU to which you tried to send a `poweron` command. The FRU is already powered on.
`Error: `*fru-name*` is currently prepared for removal.`	*fru-name* is the name of the FRU to which you tried to send a `removefru` command. The FRU is already powered off and ready for removal.
`Error: Invalid FRU name.`	You entered a FRU command without specifying an option, or you specified an invalid FRU name with the command. Check that you have a valid FRU name and retype the command.

Specifications

This appendix provides the technical specifications for the Sun IB switch. It contains the following sections:

Interface Signals

TABLE B-1 lists the RJ-45-to-DB-25 RS-232 pinouts.

TABLE B-1   Pin Descriptions for the RJ-45-to-DB-25 Serial Converter Cable

RJ-45 Pin	Signal	DB-25 RS-232 Pin	Signal
1	RTS	5	CTS
2	DTR	6	DSR
3	TXD	3	RXD
4	GND	7	GND
5	GND	7	GND
6	RXD	2	TXD
7	NC	20	DTR
8	CTS	4	RTS

Note – Use only these pinouts with a DB-25 adapter.

Switch Architecture

TABLE B-2   Switch Architecture

Component	Description
Ports	9 12x/4x IB compliant CU ports
Distance	10m with 24 AWG
Performance	540Gbps bidirectional bandwidth 86nsec port-to-port latency 92% switching efficiency
System controllers	ALOM 1.2
Management ports	10/100 Ethernet port (RJ-45) Serial port (RJ-45)

System Management

TABLE B-3   System Management

Feature	Description
Operating system	VxWorks
Remote management	In-band and out-of-band (10/100 Ethernet and serial)
Protocols	CLI through Telnet, RS-232
System controllers	ALOM 1.2

High Availability

TABLE B-4   High Availability

Component	Description
PSU and cooling	Redundant hot-swap PSU and fan modules
Chassis power	Dual AC inlets
ECC protected memory	Yes

LED Descriptions

TABLE B-5 LED Descriptions

Location	Description
Front panel	White (Locate)
	Green (Operational)
	Amber (Status/Fault)
Rear panel	White (Locate)
	Green (Operational)
	Amber (Fault)
PSU and fan module	Green (AC/DC ok)
	Amber (Fault)
	Blue (Ready-to-remove)
IB ports	Green (Operational/Link activity)
	Amber (Attention/Locate)

Power Requirements

TABLE B-6 Power Requirements

Specification	Measurement
Operating voltage	90-264 VAC
Frequency range	47-63 Hz
Maximum power consumption	60 Watts

Environmental Specifications

TABLE B-7   Environmental Specifications

Specification	Measurement
Operating temperature	+5˚ to -40˚
Humidity	10% to 90%
Cooling: static pressure	Front to back

Updating the Firmware

From time to time, the firmware for the Sun IB switch might need to be updated.

This appendix provides instructions for setting up a TFTP server and using the flashupdate command to update the firmware. It contains the following sections:

- ■ *"Setting Up a TFTP Server" on page 79*
- ■ *"Installing Firmware Images From the TFTP Server" on page 81*

Setting Up a TFTP Server

The instructions in this section assume that you are setting up a TFTP server on a Solaris system.

▼ To Set Up a TFTP Server

1. **On the system that you intend to set up as the TFTP server, log in as superuser.**

2. **Use a text editor to uncomment or add the following line, if it is missing, to the** /etc/inetd.conf **file:**

```
tftp dgram udp6 wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot
```

3. **On the same system create a TFTP home directory by typing the following at the Solaris prompt:**

```
# mkdir /tftpboot
# chown root /tftpboot
# chmod 755 /tftpboot
# cd /tftpboot
# ln -s . tftpboot
```

4. **Restart** `inetd` **by typing:**

```
# pkill -HUP inetd
```

5. **Verify that TFTP is working.**

   To do this, use TFTP to get a file from the `/tftpboot` directory:

   a. **On the system that you are using as the TFTP server, copy any file (for example, the Solaris** `/etc/release` **file) to the** `/tftpboot` **directory.**

   Type the following command at the Solaris superuser prompt:

```
# cp /etc/release /tftpboot/filename
```

   Where *filename* is the file you intend to make available on the TFTP server.

   b. **Make the file you have just copied read-only:**

```
# chmod 444 /tftpboot/filename
```

   Where *filename* is the file you intend to make available on the TFTP server.

   c. **Change directory to a temporary directory:**

```
# cd /tmp
```

   d. **Use TFTP to get the file from the** `tftpboot` **directory:**

```
# tftp localhost
tftp> get filename
Received xxx bytes in x.x seconds
tftp>
```

Note – Note that TFTP is not the same as FTP. It does not display the same error messages as FTP, and you cannot use the `cd` or `ls` commands (or indeed most other commands) that FTP allows you to use.

Installing Firmware Images From the TFTP Server

The procedures for upgrading firmware on the switch involve using TFTP.

When you have downloaded the firmware, you need to install it into the correct directory on the TFTP server. This makes the firmware available to the system controller's `flashupdate` command.

● **To install the firmware onto the TFTP server, type the following at the root prompt:**

```
# cd /tftp-root-dir
# cp ibswitch-sc.flash /tftp-root-dir
# chmod 444 /tftp-root-dir/ibswitch-sc.flash
```

Where *tftp-root-dir* is the TFTP root directory on the TFTP server. On Solaris systems this directory is typically called `/tftpboot`. On Linux systems it is called `/tftp`.

Note – The filename `ibswitch-sc.flash` is an example only.

▼ To Upgrade the Switch Firmware

1. Check the current version of the firmware:

```
sc> showsc
Sun Advanced Lights Out Manager for Sun IB Switch 9P
Copyright 2003-2005 Sun Microsystems, Inc. All Rights Reserved.
ALOM-B 1.2

Release: 0.3.19, Created: 2005.02.24.09.27 (astec_debug) for Astec PSU

Parameter                              Running Value     Stored Value
---------------------------------------------------------------------------
Bootable Image :                       0.3.19 (Feb 24 05)
Current Running Image :                0.3.19 (Feb 24 05)
SC IP address:                         10.4.124.79       10.4.124.79
SC IP netmask address:                 255.255.255.0     255.255.255.0
SC IP gateway address:                 10.4.124.1        10.4.124.1
SC Network interface is:               Enabled           Enabled
SC Telnet interface is:                Enabled           Enabled
The CLI prompt generation is set as:   none              none
The CLI prompt is set as:              P1_L_79a>         P1_L_79a>
Event Reporting via telnet interface:  Enabled           Enabled
The CLI event level is set as:         MINOR             MINOR
The CLI timeout (seconds) is set at:   0                 0
Mask password with *'s:                Enabled           Enabled
sc>
```

The current version of the firmware appears in the line labeled "Current Running Image".

2. **Update the firmware:**

```
sc> flashupdate -s ipaddress -f /tftpboot/ibswitch-sc.flash
Warning: Are you sure you want to flashupdate the SSC0/SC flash
image (y/n)? y
SSC0/SC: Preparing to flashupdate.
flashupdate: verifying image, please wait
flashupdate: erasing segment 0 programming address ffb80000
flashupdate: erasing segment 1 programming address ffb8fff0
flashupdate: erasing segment 2 programming address ffb9fff5
flashupdate: erasing segment 3 programming address ffbafffa
flashupdate: erasing segment 4 programming address ffbbfffff
flashupdate: erasing segment 5 programming address ffbcffef
flashupdate: erasing segment 6 programming address ffbdfff4
flashupdate: erasing segment 7 programming address ffbefff9
flashupdate: erasing segment 8 programming address ffbffffe
flashupdate: erasing segment 9 programming address ffc0ffee
...
flashupdate: erasing segment 16 programming address ffcdfff0
SSC0/SC: flashupdate complete.
```

Where *ipaddress* specifies the IP address of the computer on which the new firmware is stored (in other words, of the TFTP server).

3. **Reset the system to load the new image:**

```
sc> resetsc
```

Blueprints

This appendix describes how to set up a blueprint for your switch topology. It contains the following sections:

The Blueprint Concept

A blueprint describes how the InfiniBand (IB) management software running on the switch should set up the IB network. In addition, it also defines the maximum number of nodes in the topology.

In the initial release of the Sun IB switch 9p product, only a single predefined configuration was supported (that is, a single switch with up to 9 ports connected to host channel adapters). The reason for this was to allow the switch to be used in Sun Cluster configurations where this kind of connectivity is sufficient (that is, up to 9 hosts), and where the system administrators are not expected to have any knowledge about InfiniBand.

With a single predefined configuration, the switch could be used as a *black-box* with no need to configure IB specific parameters. However, to support redundant switch configurations (that is, dual, independent InfiniBand subnets), each subnet must have a unique subnet ID. Hence, despite the black-box approach, each switch would need to present a subnet ID that is different than the one used by the other switch in a redundant configuration.

Each switch is uniquely identified by its serial number. Hence, the switch serial number could have been used to present a unique subnet ID (that is, the *IB subnet prefix*). However, since a change of IB subnet prefix currently requires a manual re-configuration of the hosts attached to this subnet, this was not a desirable solution.

Instead the IP address assigned to the Ethernet port of the switch is used as a basis for unique IB subnet IDs. This approach has the nice properties that unique values are assigned to include the switches in the site-specific management network. Additionally, if a switch is replaced, the new switch will typically be assigned the same IP address as the former switch, since it is taking over the "personality" of the former switch. However, if for some reason the IP address is changed on a switch in an operational system or a switch is replaced without updating the IP address on the new switch, then the Solaris hosts attached to this switch will no longer be able to communicate until a re-configuration has been performed.

Note – These aspects were *not* explained in the documentation for the first release of the Sun IB switch 9p product.

The second release of the switch firmware includes three important changes:

■ The firmware defines a default IP address for the Ethernet port, which implies that the switch can become operational without any configuration steps after power-on.

■ The firmware supports more than a single predefined configuration, but the configuration used in the initial firmware version is still the default.

■ The firmware supports cascaded switch configurations.

A predefined configuration is referred to as a *blueprint*. Hence, new commands have been introduced in order to define which blueprint is to be used as well as which role this switch is to have in configurations that involve more than a single switch instance in each InfiniBand subnet.

The same *black-box* model for single switch configurations are supported as in the initial release. The default configuration is the one outlined previously.

Note – If the default IB configuration (blueprint) is used, and the default IP address for the Ethernet port is not updated, then two switches will present the same IB subnet ID. To avoid this problem, the default IP address can *not* be used on both switches, independently of whether the Ethernet port is in use on any of the switches.

Setting Up a Blueprint

The currently supported blueprints have the following options: *9 node*, *12 node*, *18 node*, *none*, or *unmanaged*. Use the `setbp` command to set up the blueprint of the switch (see "setbp" on page 24) Each of these blueprints is described in the following sections.

One parameter that is part of almost all of the blueprints is the IB subnet ID that must be used for the IB subnet. This parameter must follow two rules:

- All switches that are connected together (that is, are part of the same IB topology) must be set up with identical subnet ID value.

- An IB subnet must use a unique subnet ID. That is, if there is more than one IB subnet, each subnet must use different subnet ID values.

In topologies that consist of more than one switch, all switches must be set up with the same blueprint. In addition, a maximum of three connections can be setup between each pair of switches.

Note – A warning message will be issued if these guidelines are not followed.

9-Node Blueprint

A 9-node blueprint is a single switch topology with IB management software active on the switch. This represents the default blueprint. It is the blueprint used if the `setbp` command hasn't been performed on the switch.

CODE EXAMPLE D-1   Setting Up a 9-node Blueprint

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 9
Which IB subnet ID is this switch part of [value]: 123

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

12-Node Blueprint

A 12-node blueprint is a dual switch topology with IB management software active on both switches. One switch acts as the master management node, the other as standby. Standard IB mechanisms determine which switch is selected as master.

In this configuration each switch connects to maximum of six Host Channel Adapters (HCAs). The remaining three ports can be used to connect the two switches.

CODE EXAMPLE D-2   Setting Up a 12-Node Blueprint

```
sc> setbp

Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 12
Which IB subnet ID is this switch part of [value]: 36

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

18-Node Blueprint

An 18-node blueprint is a topology that consists of four switches all with active IB management software.

One switch acts as the master management node, the three others as standby.

In this topology three switches connect to a maximum of six HCAs while the three remaining ports can be connected to the fourth switch. The fourth switch can then only connect to the other switches through three connections to each.

The switch that only connects to other switches is denoted as the *top switch* and will always be the master management node. The other switches are denoted *bottom switch*. These terms are used when the blueprint settings are displayed through the `showbp` command.

CODE EXAMPLE D-3   Setting Up an 18-Node Blueprint on the Top Switch

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 18
Which IB subnet ID is this switch part of [value]: 15
Is this switch a top switch [y/n]: y

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

CODE EXAMPLE D-4   Setting Up an 18-Node Blueprint on the Bottom Switches

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 18
Which IB subnet ID is this switch part of [value]: 15
Is this switch a top switch [y/n]: n

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

none Blueprint

The `none` blueprint does not have any topology size parameter. This blueprint can only be used temporarily before configuring for the proper topology. When the `none` blueprint is active, the management software will find out what the topology looks

like but the endnodes will be setup so that they cannot communicate. Use the `showib` command to display the topology. The output can be used to determine which blueprint (9, 12, or 18 node) fits the actual topology.

CODE EXAMPLE D-5   Setting Up none Blueprint

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: y
What is max number of hosts in the configuration [0/9/12/18]: 0
Which IB subnet ID is this switch part of [value]: 44

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

unmanaged Blueprint

The unmanaged blueprint turns off the IB management software on the switch. Use this blueprint if the switch is used in configurations other than those covered by the previous blueprints.

CODE EXAMPLE 0-1   Setting Up an unmanaged Blueprint

```
sc> setbp
Entering Interactive mode.
Use Ctrl-z to exit & save. Use Ctrl-c to abort.

Should this switch run IB management software [y/n]: n

The new blueprint setting is saved
The system must be reset (using resetsc) for the new setting to become active
sc>
```

Changing Configurations

You can change from one configuration (blueprint) to another without re-configuring the hosts by ensuring that the IB subnet prefix is maintained when changing from one configuration to another. However, changing the blueprint on a switch cannot be done without re-booting the switch. Hence, the hosts connected to the rebooting switch will loose access to the subnet during this transition period.

In cascaded configurations, one switch can be replaced (or removed or powered down) without impacting the other switches in the configuration or the hosts that are connected to those switches. To construct cascaded configurations, switches can be configured and connected in any order as long as they are configured with consistent blueprint type, subnet prefix and switch role.

However, merging two operational configurations cannot be performed without performing a manual re-configuration of all the hosts in one of the original configurations. Hence, if two switches are both configured as part of a 12-node blueprint with the same subnet IDs, but are not connected to each others before they are booted and configured, then they can not be interconnected at a later time without having to perform a re-configuration of (some of) the connected hosts.

In order to avoid such problems, it is recommended to always connect and configure all switches that are supposed to be part of a subnet before connecting (or booting) any associated host. - In the case of replacing a switch in an operational configuration, the implication is that the new switch should be connected to the existing switch(es) before it is allowed to become operational (with connected, operational hosts).

If a subnet has been made operational with all associated switches present, then it is possible to disconnect and then re-connect the switches without having to re-configure anything. Also, it is possible to change connection of a host from one switch port to another port on another switch without having to perform any re-configuration.

Connecting switches with conflicting configurations will not impact existing operational connectivity for the switch, but no communication will be possible between the switches where the blueprint configurations does not match.

If for some reason it is decided to reduce the number of nodes in a configuration (e.g. split a 12-node configuration into two disjoint parts), then this can be done without changing the blueprint setting on any of the switches. However, if changing the blueprint is required in order to allow more hosts to be connected to a single switch, then this may imply that the hosts that are currently attached to the switch have to be re-configured.

Similarly, if an operational host is disconnected from one subnet and then connected to another subnet, then it will have to be re-configured to become operational on the new subnet.

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