Sun™ Secure Application Switch—Getting Started Guide

Sun Microsystems, Inc.
www.sun.com

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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.

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.

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。

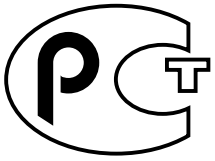
この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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。

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.

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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.

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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.

Contents

Preface

The Sun Secure Application Switch is an intelligent application switch that provides advanced Layer 3 to Layer 7 (L3 to L7) load balancing and advanced Secure Sockets Layer (SSL) acceleration with reencryption. The switch provides these services on a flexible, virtualized basis, within the convenience of a single enclosure, and with industry-leading speed, security, and availability.

The Sun Secure Application Switch includes the N1000 Series and the N2000 Series. The N1000 Series includes two models: the N1400 switch and the N1216 switch. Similarly, the N2000 Series includes the N2040 switch and the N2120 switch. The *Sun Secure Application Switch – Getting Started Guide* supports both the N1000 and N2000 Series of switches. When it is necessary to differentiate between the switches in this manual, the model numbers are used.

This manual is intended for new users who will unpack, connect, start up, and perform basic tasks using the Sun Secure Application Switch.

How This Document Is Organized

This manual includes the following topics:

- Chapter 1 provides an overview and lists the features of the Sun Secure Application Switch product family.
- Chapter 2 details how to unpack, set up, start, and configure the switch.
- Appendix A includes hardware and software reference information, such as hardware component and software interface descriptions.
- Appendix B includes technical specifications and console and network port pinout diagrams.

Product Web Page

You can access product information, updated documentation, and other relevant information about the Sun Secure Application Switch at:

`http://www.sun.com/products/networking/switches/`

Typographical Conventions

This manual uses the following typographical conventions.

TABLE P-1 Typographical Conventions

Convention	Function	Example
Ctrl+*x*	Indicates a Control key combination	Press Ctrl+C
[*key name*]	Identifies the name of a key to press	Type **xyz**, then press [Enter]
brackets [ ]	Indicates an optional argument	`show telnetd sessions [clientIp` *`ipaddress`*`]`
quotes “”	Encloses a field value that contains spaces	`host h1 description “finance server”`
braces { }	Indicates a required argument with a choice of values; choose one	`ckm import paste pairHalf {privateKey | certificate}`
	Encloses a field value that contains quotations	`objectRule rule1 predicate {URI_QUERY matches “information*”}`
vertical bar |	Separates parameter values, means “or”	`format {pem | der | iis4 | pkcs12 | sun}`
Monospaced regular	Screen output, argument keywords, and defined argument values	`switchServices telnetd adminState enabled`
Monospaced italic	Variable; generic text for which you supply a value	`ntpserver id` *`number`*
Monospaced **bold**	User input	`sun>` **`show vSwitch`**

CLI Commands

Command-line interface (CLI) commands are not case sensitive. For example, SWITCHSERVICES is the same as switchServices. However, the text strings that you enter for argument values *are* case sensitive. For example, ENGR and engr represent two different values.

Related Documentation

The Sun Secure Application Switch documentation listed here is available online at:

`http://www.sun.com/products/networking/switches/`

TABLE P-2 Related Documentation for Switches Equipped with Version 4.x Software

Title	Part Number	Format	Location*
Sun Secure Application Switch – Getting Started Guide (This document)	819-3042	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Configuration and Implementation Guide	819-7595	PDF	Online
Sun Secure Application Switch – Command Reference	819-7594	HTML	Online
Sun Secure Application Switch - Online Help for V4.0	819-7596	HTML	Within the application
Sun Secure Application Switch – Release Notes for V4.0	817-7244	Printed PDF	Ship Kit Online

* You can also order at no cost a Documentation CD (part number X3797A) that includes these documents, as well as updated MIBs. Go to http://www.sun.com/products/networking/switches for information.

TABLE P-3 Related Documentation for Switches Equipped with Version 3.x Software

Title	Part Number	Format	Location*
Sun Secure Application Switch – Getting Started Guide (This document)	819-3042	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Configuration and Implementation Guide	819-3045	PDF	Online
Sun Secure Application Switch – Command Reference	819-3047	HTML	Online
Sun Secure Application Switch – Online Help for v3.0	819-3048	HTML	Within the application
Sun Secure Application Switch – Release Notes for v3.1	819-6643	Printed PDF	Ship Kit Online

* You can also order at no cost a Documentation CD (part number X3796A) that includes these documents, as well as updated MIBs. Go to http://www.sun.com/products/networking/switches for information.

How to Obtain Updates From Sun

You can obtain updates and patches from your Sun authorized sales representative, service provider, or by downloading them from the SunSolve Online[SM] Web site at the following URL:

`http://sunsolve.sun.com/`

For patch instructions, see the README file that accompanies each patch.

For downloads of released software, visit the Sun Download Center at the following URL:

`http://www.sun.com/downloads`

Third-Party Web sites

Sun is not responsible for the availability of third-party Web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

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 Secure Application Switch – Getting Started Guide, part number 819-3042

CHAPTER 1

Sun Secure Application Switch – Overview and Features

This chapter provides an overview of the Sun Secure Application Switch, illustrations of each of the switch models, and a listing of the features of each model.

For a more detailed description of each hardware component, see Appendix A “Hardware and Software Reference” on page 17.

This chapter includes the following topics:

Sun Secure Application Switch Overview

The Sun Secure Application Switch system is a gigabit-scaled application switch that enables enterprises and service providers to deploy network load balancing and security services for multiple virtual switches in a single system within a network data center. The Sun Secure Application Switch provides high-speed Transaction Control Protocol (TCP) and Secure Sockets Layer (SSL) termination in the hardware, keeping the backend Web servers available to perform other network and application switching tasks.

The Sun Secure Application Switch consists of two hardware platforms (Sun N1000 Series and Sun N2000 Series):

- Sun N1000 Series switch provides two models (N1400 and N1216)
- Sun N2000 Series switch provides two models (N2120 and N2040)

Both the N1000 Series and the N2000 Series are rackmountable and operate on standard AC voltages (115 or 230 VAC).

Sun Secure Application Switch Chassis Views

FIGURE 1-1 through FIGURE 1-4 show front and rear views of each model.

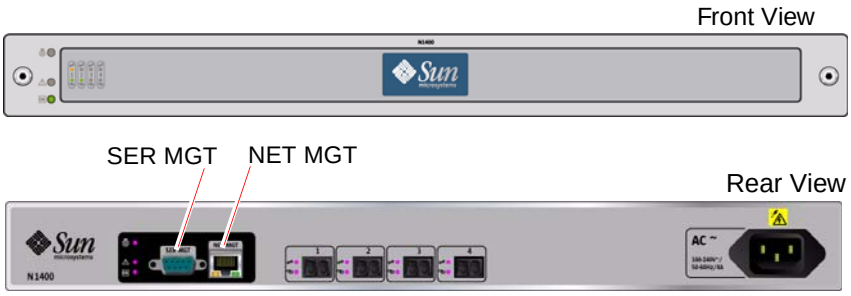


FIGURE 1-1 Sun N1400 Chassis

FIGURE 1-2 Sun N1216 Chassis

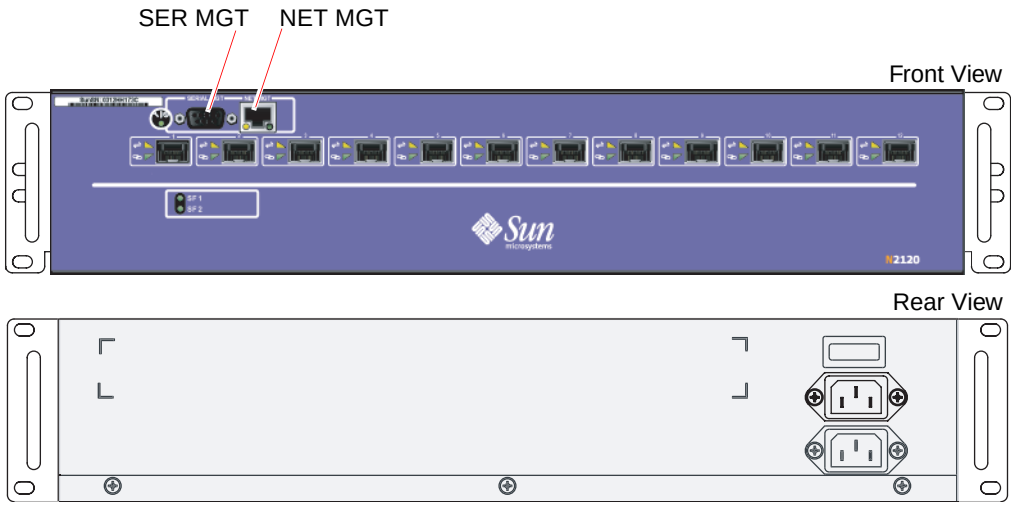


FIGURE 1-3 Sun N2120 Chassis

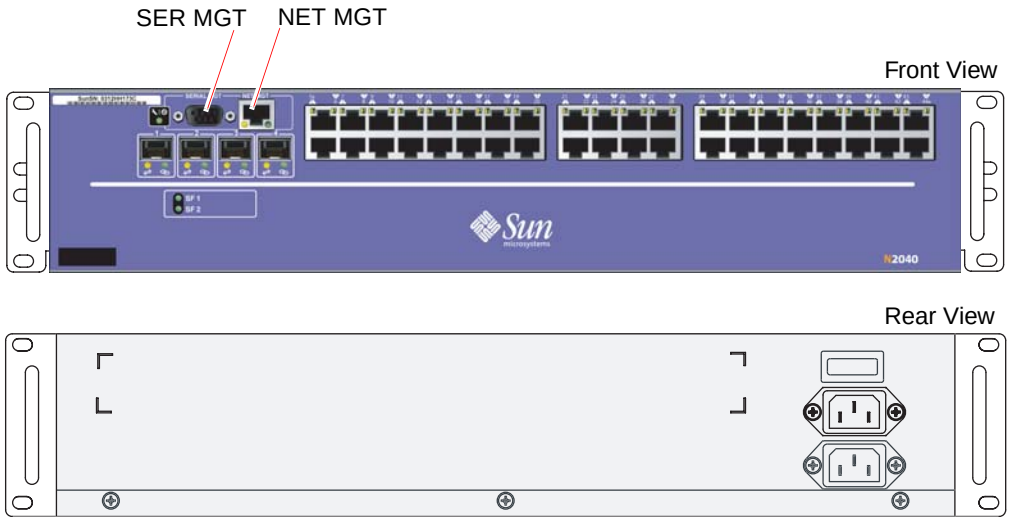


FIGURE 1-4 Sun N2040 Chassis

Sun Secure Application Switch Features

TABLE 1-1 Features of the Sun Secure Application Switch N1000 Models

Feature	Sun Model N1400	Sun Model N1216
Power configuration (See "System Power Supply" on page 19 for more information.)	One 400 W power supply	One 400 W power supply
External network connections (See "External Network and Management Connections" on page 17 for more information.)	Four pluggable Gigabit Ethernet ports	• Two pluggable Gigabit Ethernet ports • Sixteen Ethernet 10/100 Mbps ports
Management options (See "Console and Ethernet Management Ports" on page 18 and "System Management" on page 21 for more information.) **Note:** The two models provide access to the same management tools.	1. Command-line interface via one of the following: • Direct console connection through the serial management port • Telnet or Secure Shell (SSH) access through the network management port 2. Web interface from a Web browser through the network management port 3. Simple Network Management Protocol (SNMP) through the network management port	1. Command-line interface via one of the following: • Direct console connection through the serial management port • Telnet or Secure Shell (SSH) access through the network management port 2. Web interface from a Web browser through the network management port 3. Simple Network Management Protocol (SNMP) through the network management port
Indicator LEDs (See "Status Indicator LEDs" on page 19 for more information.)	• System LEDs • Gigabit Ethernet port LEDs	• System LED • Ethernet port LEDs • Gigabit Ethernet port LEDs • Function card LEDs

TABLE 1-2 Features of the Sun Secure Application Switch N2000 Models

Feature	Sun Model N2120	Sun Model N2040
Power configuration (See "System Power Supply" on page 19 for more information.)	Two 600 W power supplies for power redundancy	Two 600 W power supplies for power redundancy
External network connections (See "External Network and Management Connections" on page 17 for more information.)	Twelve pluggable Gigabit Ethernet ports	• Four pluggable Gigabit Ethernet ports • Forty Ethernet 10/100 Mbps ports
Management options (See "Console and Ethernet Management Ports" on page 18 and "System Management" on page 21 for more information.) **Note:** The two models provide access to the same management tools.	1. Command-line interface via one of the following: • Direct console connection through the serial management port • Telnet or Secure Shell (SSH) access through the network management port 2. Web interface from a Web browser through the network management port 3. Simple Network Management Protocol (SNMP) through the network management port	1. Command-line interface via one of the following: • Direct console connection through the serial management port • Telnet or Secure Shell (SSH) access through the network management port 2. Web interface from a Web browser through the network management port 3. Simple Network Management Protocol (SNMP) through the network management port
Indicator LEDs (See "Status Indicator LEDs" on page 19 for more information.)	• System LED • Gigabit Ethernet port LEDs • Function card LEDs	• System LED • Ethernet port LEDs • Gigabit Ethernet port LEDs • Function card LEDs

CHAPTER 2

Sun Secure Application Switch – Installation and Startup

This chapter describes the switch installation tasks and the setup script, which enables you to create a basic configuration so that you can start the switch and verify that the switch is operating normally.

The following is a listing of the installation and startup topics included in this chapter.

Unpacking the Switch

Each switch chassis is shipped with the following items:

- *Sun Secure Application Switch – Getting Started Guide* (this document)
- *Sun Secure Application Switch – Release Notes*
- AC power cords (The N1000 Series switch is shipped with one power cord. The N2000 Series switch is shipped with two power cords.)

- DB-9 to DB-9 serial crossover cable
- Four rubber feet
- Rackmounting kit that contains:
  - Two front brackets
  - Two rear brackets
  - Two short rear slides
  - Two long rear slides
  - Mounting screws

Carefully remove the switch chassis and all other items from the shipping container and inspect each item for damage. If any item is missing or damaged, contact Sun Microsystems.

Installation Site Requirements

Before installing the switch, ensure that the installation site meets the physical and environmental requirements for the switch. See “Technical Specifications” on page 23 for the physical and environmental specifications of the N1000 Series and N2000 Series.

How to Install the Switch in a Rack or on a Flat Surface

To install the N1000 switch in a rack:

- **Follow the procedure described in the service label on the top of the chassis.**

To install the N2000 switch in a rack:

- **Follow the procedure documented in the** *Sun N2000 Series – Hardware Installation and Startup Guide***.**

To install the switch on a table or flat surface:

1. **Attach the four adhesive-backed rubber feet to the bottom of the chassis.**
2. **Place the switch on a table or flat surface near an AC power outlet.**

How to Connect a PC or Terminal to the Console Port

Attaching a terminal, terminal server, or PC to the console port (SER MGT) enables you to initiate a command-line interface (CLI) session so that you can initially configure the switch. See the illustrations in Chapter 1 for the location of the SER MGT port on each model.

To connect a PC to the switch console port, use the supplied DB-9 to DB-9 serial crossover cable.

To connect a terminal or terminal server to the switch console port, you might need a DB-9 to DB-25 adapter cable (not supplied).

Note – The PC or terminal must support VT-100 terminal emulation.

For console port pinout information, see “Console Port and Network Management Port Pin Assignments” on page 25.

Perform the following steps to connect the PC or terminal to the switch.

1. **Select the appropriate cable (DB-9 to DB-9 or DB-9 to DB-25) depending on the type of connector used on the PC or terminal to be connected.**
2. **Connect the DB-9 receptacle end of the cable to the console port labeled SER MGT and tighten the thumbscrews.**
3. **Connect the other end of the cable to the terminal or PC.**
4. **Turn on the terminal or PC.**
5. **Using the terminal emulation program, configure the video terminal or PC with the following settings:**
   - Baud rate: 9600
   - Terminal type: VT-100
   - Stop bits: 1
   - Data bits: 8
   - Parity: none
   - Flow control: none

What's Next

You can perform one or more of the following tasks depending on your network and switch management requirements:

- If you need remote management access, connect to the network management port. See "How to Connect to the Network Management Port" on page 10.
- If you need to connect to external networks, connect the Ethernet and Gigabit Ethernet ports to the appropriate external networks. See "Network Cable Connections" on page 11.
- If you do not need remote access or connection to external networks, start the switch. See "How to Start the Switch" on page 12.

How to Connect to the Network Management Port

The network management port is on the rear of the chassis for the N1000 and is on the front of the chassis for the N2000. The port is labeled NET MGT. See the illustrations in Chapter 1 for the location of the NET MGT port on each model. The NET MGT port provides access to:

- CLI over a Telnet or SSH connection
- Browser-based Web interface
- SNMP services

Through the NET MGT port, the network administrator can remotely configure and manage the switch.

To connect an Ethernet hub or switch to the network management port, you need the following cables:

- For connection to an Ethernet hub or switch, an RJ-45 to RJ-45 straight-through cable (100 ohm, Category 5 or 5E, maximum length 328 feet / 100 meters)
- For a direct connection to a PC or laptop computer, an Ethernet crossover cable or a crossover adapter

For network management port pinout information, see Appendix A, "Hardware and Software Reference" on page 17.

Perform the following steps to connect the device to the NET MGT port.

1. **Select the appropriate cable (straight-through cable or crossover cable) depending on the type of device to be connected.**

2. **Connect the receptacle end of the cable to the NET MGT port Ethernet connector.**
3. **Connect the other end of the cable to the device (Ethernet hub or switch, or PC or laptop computer).**

What's Next

You can perform either of the following tasks:

- If you need to connect to external networks, connect the Ethernet and Gigabit Ethernet ports to the appropriate external networks. See "Network Cable Connections" on page 11.
- If you do not need remote access or connection to external networks, start the switch. See "How to Start the Switch" on page 12.

Network Cable Connections

The models of the Sun Secure Application Switch provide the following network ports:

- N1400 system includes 4 Gigabit Ethernet ports.
- N1216 system includes 2 Gigabit Ethernet ports and 16 Ethernet 10/100 Mbps ports.
- N2120 system includes 12 Gigabit Ethernet ports.
- N2040 system includes 40 10/100-Mbps Ethernet ports and 4 Gigabit Ethernet ports.

To connect the 10/100-Mbps Ethernet ports to the external data network, you need the following components:

- An RJ-45 to RJ-45 straight-through cable (100 ohm, Category 5 or 5E, with a maximum length of 328 feet/100 meters).
- One or more of the following links to the external networks:
  - Connection to upstream and downstream Layer 2 switches
  - Direct connection to a Web server
  - Connection to network firewalls

To connect the Gigabit Ethernet fiber-optic or copper I/O ports to the external data network, you need the following components:

- A fiber-optic or copper transceiver
- Multimode (short wavelength) fiber-optic cable using LC or MT-RJ style SFF or SFP or GBIC cable pluggable connectors

---

Note – For the most up-to-date listing of transceivers supported with the product, refer to the *Sun Secure Application Switch – Release Notes* for the version of software being used on the Sun Secure Application Switch.

- One or more of the following links to the external network:
  - Connection to upstream and downstream Layer 2 switches
  - Direct connection to a Web server
  - Connection to network firewalls

How to Start the Switch

To start the switch for the first time, perform the following tasks:

- Apply power to the switch. (See “Applying Power” on page 12.)
- Check the LEDs to ensure proper cabling and normal operation. (See “Checking the LEDs” on page 13.)
- Establish a CLI session from the console device. (See “Establishing a CLI Session” on page 13.)
- Run the setup script. Respond to the prompts to create a basic configuration for the switch. (See “Running the Setup Script” on page 14.)

Applying Power

The N1000 Series switch is equipped with one power connector for which one power cord is supplied. To apply power to the N1000 switch:

1. **Connect the receptacle end of the supplied AC power cord to the power connector on the rear panel of the switch.**
2. **Connect the power cord plug to a compatible AC power source.**

The N2000 Series switch is equipped with two power connectors for which two power cords are supplied. For power supply redundancy, connect a supplied power cord to each of the rear panel power connectors. To apply power to the N2000 switch:

1. **Connect the receptacle ends of the supplied AC power cords to the power connectors on the rear panel of the switch.**
2. **Connect the power cords to a compatible AC power source.**
3. **Turn on the power ON/OFF switch.**

Checking the LEDs

After you apply power to the switch, check the LEDs to verify that the ports are active and the system is operating normally.

1. **To view the LEDs directly, inspect the switch's front and back panels.**
2. **To view the status of the LEDs from the CLI, type the following command:**

```
sun(switchServices chassis)> show leds
```

See Appendix A, "Hardware and Software Reference" on page 17 for listings and descriptions of the LEDs. For information about viewing LED status from the CLI, review the *Sun Secure Application Switch – Command Reference* for the version of software being used on the Sun Secure Application Switch.

Establishing a CLI Session

When you log in to the switch the first time, you must use the console connection to access the CLI. All remote services such as Telnet and HTTP are disabled by default.

- **When you first connect to the system, respond to the prompts by typing a** `username` **and** `password`**.**

  Use the preconfigured `admin` user name. When prompted for the password, type any text.

```
username: admin
password:
```

Note – When you run the setup script, you will be prompted to change the values for the admin user entry. By default, the admin user account does not include an assigned password. For security purposes, it is a good idea to change the admin user settings so that an assigned password is required to log in.

Running the Setup Script

When you first power on the system or when the system does not find an existing configuration file, you are prompted to run the setup script. The setup script enables you to enter configuration information.

1. **Respond to the following prompt:**

```
Would you like to run the initial setup script: [Yes]?
```

2. **To run the setup script, press the Return key to accept the default,** `Yes`**.**

Note – You can also run the setup script at any time by typing **`setup`** from the CLI.

---

3. **The setup script then prompts you to provide the privateKeySalt (passphrase), which initializes the encryption scheme for certificates and keys, as follows:**

```
The Sun Application Switch stores certificate and key information, a
    unique passphrase is required to help encrypt this data.  Would
    you like to enter a passphrase: [No]? y
Enter passphrase: []? keysalt
```

To provide the privateKeySalt, respond by typing `y` and then type the passphrase (privateKeySalt) when prompted.

The setup script then guides you through five areas of basic configuration as outlined in TABLE 2-1.

TABLE 2-1 Overview of the Setup Script

Functional Area	How the Script Helps You
Time/NTP Setup	Helps you to set up date/time and timezone information. If you want to use external systems to synchronize time, the script helps you configure the Network Time Protocol (NTP).
Network Management Port Setup	Helps you to set up basic connectivity for network management port (NET MGT) access, which enables users or applications to manage the system remotely. Prompts you to enter information such as IP address and IP address mask.

TABLE 2-1 Overview of the Setup Script *(Continued)*

Functional Area	How the Script Helps You
Management Protocol Setup	Lets you choose the types of access (CLI, Web browser, SNMP user) and protocols you will use to configure the script. Prompts you through the setup of the following protocols: • Hypertext Transfer Protocol (HTTP) • Hypertext Transfer Protocol Secure (HTTPS) • Simple Network Management Protocol (SNMP) • Secure Shell (SSH) • Telnet • Trivial File Transfer Protocol (TFTP) All these management protocols are disabled by default.
User Administration Setup	Prompts you to change the admin user settings so that an assigned password is required to log in. Lets you choose whether to use TACACS+ servers, RADIUS servers, or local accounts for user authentication.
Syslog/Trapd Setup	Helps you to configure syslog server and trap server destinations, and to define users to send traps.

Saving the Setup Configuration

After you complete the setup script, you are prompted to save the configuration to the flash file system as follows:

```
Would you like to save your configuration to the flash filesystem.
    Note: if you do not save the configuration all changes will be
    lost at the next reboot: [Yes]?

Configuration was saved
```

- **To save your setup script choices and ensure that the system will use your choices when you reboot, respond to the setup script prompt by pressing the Return key. This accepts the default,** `Yes`**, and saves your configuration.**

Note – If you later make configuration changes from the CLI, type the `saveCfg` command to save your changes.

How to View the Configuration Settings

You can view the switch configuration at any time.

- **To view the configuration settings that you entered from the setup script, type the following command:**

```
sun(config)# show runningConfig
```

How to Return to the Default Switch Configuration

To return to the default configuration, you must first remove the current configuration.

Note – Once you remove the configuration, you must have access to the console management (SER MGT) port to create a new configuration.

---

1. **Type the following commands to remove the current configuration:**

```
sun> enable
sun# switchServices software removeCfg
```

The system returns the following warning:

```
This will permanently remove the configuration database files from
the flash file system. Reboot the switch before executing the saveCfg
command to use the factory default configuration.
```

2. **Respond** `y` **to the prompt to remove the current configuration file:**

```
Do you wish to continue? (y or n): y
```

3. **Type the** `reset` **command to reboot the system:**

```
sun# switchServices reset
```

You can then run the setup script again.

APPENDIX **A**

Hardware and Software Reference

This appendix includes hardware and software reference information that can help you install your Sun Secure Application Switch.

The following reference topics are included in this appendix:

External Network and Management Connections

The Sun Secure Application Switch includes external network ports and switch management ports. The following sections describe the cables and connectors required for each type of port. For information about connecting the ports to networks and management tools, see Chapter 2, "Sun Secure Application Switch – Installation and Startup" on page 7.

External Network Ports

The following listing describes the cable and connector requirements of the external network ports. For information about the number and type of external network ports available on each model, see TABLE 1-1, "Features of the Sun Secure Application Switch N1000 Models" on page 5.

- Ethernet 10/100BASE-T ports require standard unshielded twisted-pair/shielded twisted-pair (UTP/STP) network cable, Category 5 or 5E, with RJ-45 8-pin modular connectors.
- Gigabit Ethernet ports require small form factor (SFF) pluggable LC or MT-RJ fiber-optic connectors on multimode fiber-optic cable or SFP or GBIC cable pluggable connectors.

Console and Ethernet Management Ports

Each model contains the following ports that provide access to multiple management tools. (See "System Management" on page 21 for a description of the management tools.)

- A single RS-232 DB-9 serial port for console connection
- A single RJ-45 10/100-Mbps port for network management

For initial setup, the RS-232 DB-9 console port provides a direct connection to the command-line interface (CLI). The console port requires a standard EIA-232 (RS-232) data terminal equipment (DTE) crossover serial cable with a DB-9 connector.

The 10/100-Mbps network management port enables network access to the browser-based Web interface, command-line interface (CLI), or SNMP interface. The management port requires a standard UTP/STP network cable, Category 5 or 5E, with an RJ-45 8-pin modular connector.

Internal Hardware Components

The following sections describe the internal hardware components of the Sun Secure Application Switch. For information about the number and types of components on each model, see TABLE 1-1, "Features of the Sun Secure Application Switch N1000 Models" on page 5.

System Fan Module

The Sun Secure Application Switch requires a normal operating environment for computing equipment. The N1000 Series system contains 10 fan modules and the N2000 Series system contains 7 fan modules to ensure adequate airflow. When you look at the network port panel of the Sun Secure Application Switch, the fans are on the left side and intake vents are on the right. The fans exhaust to the left. Allow at least 3 inches (7.5 cm) of unobstructed space on both sides. The chassis requires no

air space above or below. If you install the system within an enclosed equipment rack, ensure that there is adequate airflow. See “Technical Specifications” on page 23 for the environmental requirements of the Sun Secure Application Switch.

System Power Supply

The Sun Secure Application Switch includes one 400W power supply for the N1000 Series and two 600W power supplies for the N2000 Series. To protect the equipment, use a conditioned power source or uninterruptible power supply (UPS). The power source must provide a reliable Earth ground, and the following features:

- Voltage: 115 or 230 VAC (90–135 or 180–265 VAC), 60 Hz (47–63 Hz); automatic selection
- Current: 4A @ 115 VAC, 2A @ 230 VAC

The power supply connector uses a standard 3-prong keyed IEC receptacle. The power cord is supplied with an IEC connector on one end, NEMA 5-15 plug (U.S. domestic) on the other end.

Status Indicator LEDs

The Sun Secure Application Switch is equipped with indicator LEDs that you can use to monitor switch activity and performance. The LEDs indicate general system status and network activity and alert you to system problems. The following sections describe the status indicator LEDs of the Sun Secure Application Switch.

N1000 Series Indicator LEDs

A group of three LEDs are located on the front and back panel to provide system status. These LEDs are on both sides because the system can be mounted facing front or back in a rack. TABLE A-1 lists and describes the N1000 Series system status LEDs.

TABLE A-1 N1000 Series System Status LEDs

Name	State	Description
Locator	White	When lit, identifies a particular switch among many.
Service Required	Amber	If lit, there is a problem with the switch.
System Activity	Green	If lit, the system is powered up and running.

Two LEDs located beside each Gigabit Ethernet port on the rear panel indicate Link/Activity status. Each pair of Gigabit Ethernet LEDs are duplicated on the front panel. TABLE A-2 lists and describes the N1000 Series Gigabit Ethernet Port LEDs.

TABLE A-2 N1000 Series Gigabit Ethernet Port LEDs

Name	State	Description
Activity	Yellow	When blinking, there is transmit (TX) or receive (RX) activity on the line.
	Off	No packet traffic is present on the line.
Link	Green	Gigabit Ethernet link is active.
	Off	Carrier is not detected; no traffic possible.

N2000 Series Indicator LEDs

TABLE A-3 lists and describes the LEDs that are available on the N2000 Series systems.

TABLE A-3 N2000 Series System LEDs

Name	State	Description
System		
	Green	Normal operation, system OK.
	Yellow	System startup or system fault.
Ethernet Ports		
Activity (A)	Yellow	When blinking, there is transmit (TX) or receive (RX) activity on the line.
	Off	No packet traffic is present on the line.
Link (L)	Green	Gigabit Ethernet link is active.
	Off	Carrier is not detected; no traffic possible.
Function card	Blinking Green	System function card is booting up.
SF1	Green	System function card is working normally.
SF2	Off	System function card is not present or there is an error.

System Software and Storage

The system software is loaded on the Sun Secure Application Switch internal flash disk when shipped from Sun. When released by Sun, software upgrades are available from either the Sun Secure Application Switch product Web page at:

`http://www.sun.com/products/networking/switches/`

or from the SunSolve Online Web page at:

`http://sunsolve.sun.com/`

For information about upgrading the Sun Secure Application Switch operating system software, refer to the *Sun Secure Application Switch – Release Notes* for the version of software being used on the Sun Secure Application Switch.

System Management

Administrators can use multiple management tools to support the Sun Secure Application Switch in a network. These tools include:

- Command-line interface
- Web interface
- SNMP applications

Command-line Interface

The command-line interface (CLI) uses an industry-standard design that enables you to configure and manage the Sun Secure Application Switch by typing keyboard commands. You access the CLI over a direct console connection to the RS-232 port on the front of the system, or over a Telnet or SSH connection. A connection to the CLI is indicated by the `sun>` prompt on your screen.

The CLI uses a hierarchical design that enables you to move deeper into the command hierarchy as you build the configuration. The CLI uses the command prompt to display your current location within the hierarchy. Simple commands enable you to navigate to the appropriate context. For information about the CLI and the Sun Secure Application Switch commands, refer to the *Sun Secure Application Switch – Command Reference* for the version of software you will be using on the switch.

Web Interface

The Sun Application Switch Manager Web interface is a graphical user interface (GUI) that enables you to configure and manage the Sun Secure Application Switch using a browser. The Web interface supports all management capabilities provided by the CLI. Instead of entering information on a command line, you navigate menus and supply information in data entry fields. For more information about the Web interface, refer to the *Sun Secure Application Switch – Online Help* for the version of software being used on the Sun Secure Application Switch.

SNMP

The Simple Network Management Protocol (SNMP) enables you to communicate with the SNMP agent on the Sun Secure Application Switch system from a remote management station. This enables you to retrieve information about managed objects on the system as well as change configuration settings.

The Sun Secure Application Switch supports the following SNMP versions:

- SNMPv1
- SNMPv2c
- SNMPv3

The Sun Secure Application Switch supports the standard SNMP commands: GET, GETNEXT, GETBULK, SET. It does not, however, support any of the INFORM commands.

New Sun Secure Application Switch Features

For the latest listing of the Sun Secure Application Switch features and functions, refer to the *Sun Secure Application Switch – Release Notes* for the version of software being used on the Sun Secure Application Switch.

APPENDIX **B**

Specifications

This appendix includes the technical specifications and pinout assignments for your Sun Secure Application Switch.

The following topics are included in this appendix:

Technical Specifications

To help you ensure that the site meets the physical and environmental requirements of the switch, TABLE B-1 lists the technical specifications of the N1000 Series switch

TABLE B-1 N1000 Series Technical Specifications

Description	Specification
N1000 Series chassis (1 RU enclosure)	Height: 1.75 in. (4.45 cm) N1400 Depth: 23 in (58.42 cm) N1216 Depth: 26 in (66 cm) Width: 17.4 in. (44.19 cm) N1400 Weight: 16 lb (7.26 kg) N1216 Weight: 20 lb (9.1 kg)
Power supply (1)	115 or 230 VAC
Input AC current	4A at 115 VAC; 2A at 230 VAC
Frequency	47 to 63 Hz

TABLE B-1 N1000 Series Technical Specifications *(Continued)*

Description	Specification
Chassis positioning and mounting	Flat surface, tabletop, or compatible rack For rack installations: 19-in. (48.26-cm) NEMA / EIA-compatible rack; 4-post recommended; see service label on top of chassis for rackmounting instructions
Airflow	Position rack for adequate system cooling at the installation site. Air flows right to left when the switch is installed with the network ports in the front. Air flows left to right when the switch is installed with the network ports in the rear. Be sure there is no obstruction at air intake and exit vents with a minimum side clearance of 3 in. (7.62 cm).
Operating temperature	32° to 104° F (0° to 40° C)
Storage temperature	-22° to 176° F (-30° to 80° C)
Operating relative humidity (nominal, short-term, and storage)	0 to 95% non-condensing
Maximum heat dissipation	1000 BTU / hr
Network management port	Single 10 / 100-Mbps Ethernet port with RJ-45 receptacle; requires a standard UTP / STP network cable, Category 5 or 5E, with an RJ-45 8-pin modular connector
Gigabit Ethernet ports	N1400: 4 Gigabit Ethernet ports on front panel N1216: 2 Gigabit Ethernet ports and 16 Ethernet 10 / 100 Mbps ports
Console port	Male DB-9 receptacle, DTE interface; requires EIA-232 (RS-232) straight-through serial cable with a DB-9 connector
Fan module	10 fans enclosed in a single module

Caution – Do not insert an RJ-11 telephone connector into the Ethernet network management port or any Ethernet port on the system. Damage to the port may occur.

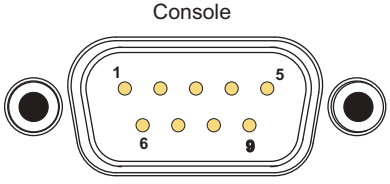
Caution – When handling Class 1 laser devices and cables, do not look directly into the connector or laser light source, as this could cause serious eye injury or blindness.

Console Port and Network Management Port Pin Assignments

This section gives you reference information about the console and network management ports and pin assignments. This information applies to both the N1000 Series and the N2000 Series.

Console Port Pin Assignments

The console port provides a serial RS-232 connection with a DTE interface using a male DB-9 connector. The following figure illustrates the console port and associated pin information.

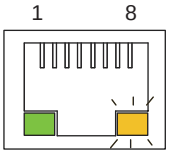


Pin	Signal Name
1	DCD (data carrier detect)
2	RXD (receive data)
3	TXD (transmit data)
4	DTR (data terminal ready)
5	GND (signal ground)
6	DSR (data set ready)
7	RTS (request to send)
8	CTS (clear to send)
9	RI (ring indicator)

Network Management Port Pin Assignments

The network management (NET MGT) port provides an RJ-45 connection to either an Ethernet hub, or a PC or laptop computer. This connection enables you to access the CLI or Web interface to configure and manage the switch.

The following figure illustrates the network management port and associated pin information



10/100 MGMT
RJ-45 receptacle

Pin	Signal Name	Associated Wire
1	TX+	White with orange
2	TX-	Orange
3	RX+	White with green
4		Blue
5		White with blue
6	RX-	Green
7		White with brown
8		Brown

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