



# Sun StorageTek™ Dual 4 Gb FC Dual GbE HBA Installation Guide

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For HBA Model SG-XPCIE2FCGBE-Q-Z

Sun Microsystems, Inc.  
[www.sun.com](http://www.sun.com)

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Adobe PostScript

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# Declaration of Conformity

Compliance Model Number: CU0610401  
Product Family Name: Sun StorageTek™ Dual 4Gb FC Dual GbE HBA (SG-XPICIE2FCGBE-Q-Z)

## 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.

### Canadian

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

### European Union

This equipment complies with the following requirements of the EMC Directive 2004/108/EEC:

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

|  |   |
|--|---|
| EN 55022:2006                                    | Class A   |
| EN 61000-3-2:2000+A2:2005                        | Pass  |
| EN 61000-3-3:1995 +A1:2001                       | Pass  |
| EN 55024:1998 +A1:2001 +A2:2003 Required Limits: |   |
| IEC61000-4-2                                     | 4 kV (Direct), 8 kV (Air)   |
| IEC61000-4-3                                     | 3 V/m   |
| IEC61000-4-4                                     | 1 kV AC Power Lines, 0.5 kV Signal and DC Power Lines                               |
| IEC61000-4-5                                     | 1 kV AC Line-Line and Outdoor Signal Lines, 2 kV AC Line-Gnd, 0.5 kV DC Power Lines |
| IEC61000-4-6                                     | 3 V   |
| IEC61000-4-8                                     | 1 A/m   |
| IEC61000-4-11                                    | Pass  |

**Safety:** This equipment complies with the following requirements of the Low Voltage Directive 2006/95/EEC:

EC Type Examination Certificates:

EN 60950-1:2001, 1st Edition  
IEC 60950-1:2001, 1st Edition  
Evaluated to all CB Countries  
UL 60950-1:2003, CSA C22.2 No. 60950-03

File: E177137

**Supplementary Information:** This product was tested and complies with all the requirements for the CE Mark. This equipment complies with the Restriction of Hazardous Substances (RoHS) directive 2002/95/EC.

/S/

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DATE





# 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.

- **Product:** Sun StorageTek Dual 4 Gb FC Dual GbE HBA

In compliance with the requirements defined in ISO 7779, the workplace-dependent noise level of this product is less than 70 db (A).

In compliance with the requirements defined in ISO 7779, the workplace-dependent noise level of this product is XX 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.

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**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.

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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。

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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.

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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.

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## 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.

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## 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.



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

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## Rack System Warning

The following warnings apply to Racks and Rack Mounted systems.



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**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.

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

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

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**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.

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## 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.



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

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## 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.



**Arrêt** – 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

**Produit** : Sun StorageTek Dual 4 Gb FC Dual GbE HBA

Conformément à la norme ISO 7779, le niveau sonore de ce produit sur le lieu de travail est inférieur à 70 db(A).

Conformément à la norme ISO 7779, le niveau sonore de ce produit sur le lieu de travail est de XX 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 Fremdoobjekte in die Öffnungen am Gerät ein. Es können gefährliche Spannungen anliegen. Leitfähige Fremdoobjekte 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

**Produkt:** Sun StorageTek Dual 4 Gb FC Dual GbE HBA

Gemäß den Vorgaben in der Norm ISO 7779 beträgt der Geräuschpegel dieses Geräts in Abhängigkeit vom Arbeitsplatz unter 70 db(A).

Gemäß den Vorgaben in der Norm ISO 7779 beträgt der Geräuschpegel dieses Geräts in Abhängigkeit vom Arbeitsplatz XX 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 ange-

schlossen 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 ausgetauscht 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 Laserlaitte  
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.





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**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:



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**Encendido** – Suministra alimentación de CA al sistema.

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**Apagado** – Corta la alimentación de CA del sistema.

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**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



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**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

**Producto:** Sun StorageTek Dual 4 Gb FC Dual GbE HBA

En conformidad con la norma ISO 7779, el nivel de emisión de ruido de este producto en el puesto de trabajo es inferior a los 70 db(A).

En conformidad con la norma ISO 7779, el nivel de emisión de ruido de este producto en el puesto de trabajo es de XX 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.



**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.

## 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.



**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.

## 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.

## 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 Laserlaitte  
Klasse 1 Laser Apparat  
Laser Klasse 1

## Advertencia sobre el sistema en bastidor

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

## 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



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

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### Sverige



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

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### Danmark



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**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



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

---

## Nordic Power Distribution Cautions

### English



---

**Caution** – This product is also designed for an IT power distribution system with phase-to-phase voltage of 230V.

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### Danmark



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**Advarsel!** – Dette produkt er også beregnet til et IT-strømfordelingssystem med en fase-til-fase spænding på 230 V.

---

## Nordic Grounded Socket Cautions

### English



---

**Caution** – The appliance must be connected to a grounded socket.

---

### Norge



---

**Advarsel** – Apparatet må tilkoples jordet stikkontakt.

---

### Sverige



---

**Varning** – Apparaten skall anslutas till jordat uttag.

---

### Suomi



---

**Varoitus** – Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.

---



# 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。



## 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.

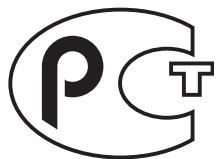
以下声明适用于运往中国且其认证标志上注有 "Class A" 字样的产品。

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



# Preface

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This installation guide describes how to install and remove the Sun StorageTek™ Dual 4 Gigabit (Gb) Fibre Channel (FC) Dual Gigabit Ethernet (GbE) host bus adapter (HBA). This guide also explains how to verify the driver version and install any necessary patches. The document is written for technicians, system administrators, application service providers (ASPs), and users who have advanced experience troubleshooting and replacing hardware.

You can order additional HBAs through Sun Microsystems using the following Sun Marketing part number: 371-4017-01.

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## Before You Read This Book

Before you install and use the HBA as described in this document, read and understand the following documents.

- *SunVTS 6.X Users Guide*
- *SunVTS 6.X Reference Manual*

You can find these documents by performing a search at <http://docs.sun.com>.

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## How This Document Is Organized

[Chapter 1](#) provides an overview of the product and lists the various operating systems, host platforms, switches, and storage systems, that support the HBA.

[Chapter 2](#) describes how to install and remove the HBA.

Chapter 3 describes how to install any software and utilities that are required by the HBA.

Chapter 4 contains known issues with this release of the HBA.

---

## Using UNIX Commands

This document might not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at

<http://docs.sun.com>

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## Shell Prompts

| Shell                                 | Prompt               |
|---------------------------------------|----------------------|
| C shell                               | <i>machine-name%</i> |
| C shell superuser                     | <i>machine-name#</i> |
| Bourne shell and Korn shell           | \$                   |
| Bourne shell and Korn shell superuser | #                    |



---

# Typographic Conventions

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

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**Note** – Characters display differently depending on browser settings. If characters do not display correctly, change the character encoding in your browser to Unicode UTF-8.

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# Documentation, Support, and Training

| Sun Function  | URL   |
|---------------|---|
| Documentation | <a href="http://www.sun.com/documentation/">http://www.sun.com/documentation/</a> |
| Support       | <a href="http://www.sun.com/support/">http://www.sun.com/support/</a>             |
| Training      | <a href="http://www.sun.com/training/">http://www.sun.com/training/</a>           |

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## Third-Party Web Sites

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## 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 StorageTek Dual 4 Gb FC Dual GbE HBA Installation Guide*, part number 820-3783-11

# HBA Overview

---

This chapter provides a basic overview of the Sun StorageTek Dual 4 Gb FC Dual GbE host bus adapter (HBA), which uses QLogic technology. This chapter also describes the various operating systems, host platforms, storage, and infrastructure configurations that support the HBA and lists the HBA environmental requirements. This chapter contains the following topics:

- [“Kit Contents” on page 1](#)
- [“HBA Features and Specifications” on page 1](#)
- [“Operating System and Technology Requirements” on page 3](#)
- [“System Interoperability” on page 4](#)
- [“Environmental Requirements” on page 7](#)

---

## Kit Contents

- Sun StorageTek Dual 4 Gb FC Dual GbE HBA
- *Accessing Documentation* document (part number: 820-2299-xx)

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## HBA Features and Specifications

The Sun StorageTek Dual 4 Gb FC Dual GbE HBA (SG-XPCIE2FCGBE-Q-Z) consists of a single-wide, ExpressModule™ bus expansion board. The board interfaces an eight-lane PCI-Express bus, with four lanes supporting two Fibre Channel (FC) optical media ports and four lanes supporting two UTP (copper) Gigabit Ethernet ports. The two FC ports operate at 4 Gbit/sec and feature 4/2/1 autonegotiation.

The HBA is also backwards compatible with FC ports that operate at 2-Gbit/s and 1-Gbit/s. The Gigabit Ethernet ports can be configured to operate in 10, 100, or 1000 Mbit/sec Ethernet networks.

**TABLE 1-1** HBA Features and Specifications

| Feature                      | Description   |
|------------------------------|---|
| PCI connector                | x8  |
| PCI signaling environment    | PCI Express x8 (8 active lanes)   |
| PCI lane usage               | FC x4 lanes<br>GbE x4 lanes   |
| PCI transfer rate (maximum)  | PCI Express Generation One (Gen 1)(2.5 Gbps) x8   |
| Number of FC ports           | Two   |
| FC bus type (external)       | Fiber-optic media, short-wave, multimode fiber (400-M5- SN-S)   |
| FC transfer rate             | 400 MBps per port maximum, half-duplex<br>800 MBps per port maximum, full-duplex  |
| FC topologies                | FC-SW switched fabric (N-Port), FC-AL arbitrated loop (NL-Port), and point-to-point (N-Port)  |
| RAM (FC)                     | 1 MB, parity protected, per port  |
| BIOS ROM (FC)                | One 1-MB flash ROM, field-programmable  |
| NVRAM (FC)                   | One 2-KB EEPROM, field-programmable   |
| External FC connectors       | Two Small-Form Factor (SFF) multimode optic with LC-style connectors  |
| Maximum FC cable length      | 1 Gbps: 500 meters using 50/125 $\mu$ m core fiber<br>300 meters using 62.5/125 $\mu$ m core fiber<br>2 Gbps: 300 meters using 50/125 $\mu$ m core fiber<br>150 meters using 62.5/125 $\mu$ m core fiber<br>4 Gbps: 150 meters using 50/125 $\mu$ m core fiber<br>70 meters using 62.5/125 $\mu$ m core fiber |
| Number of Ethernet ports     | Two   |
| GbE Ethernet interface type  | IEEE 802.3 compliant, copper, UTP RJ-45s  |
| Ethernet transfer rate       | 10/100/1000 Mbit/sec  |
| External Ethernet connectors | Two RJ-45 connectors  |
| Frame size                   | At least 8 KB   |

**TABLE 1-1** HBA Features and Specifications *(Continued)*

| <b>Feature <i>(Continued)</i></b> | <b>Description <i>(Continued)</i></b>   |
|-----------------------------------|---|
| Host CPU offload                  | TCP/IP checksum calculation   |
| LED indicators                    | Three LEDs per FC channel (yellow, green, amber) on front panel as status indicators<br>Two LEDs per Ethernet channel (green/orange, yellow) in the Ethernet port as status indicators<br>Power LED, Attention LED, and a button on front panel to support hot-swap functionality |
| Form Factor                       | PCI ExpressModule, single-wide  |

## Operating System and Technology Requirements

The HBA requires the operating system (OS) and technology versions listed in [TABLE 1-2](#).

**TABLE 1-2** Supported Operating System/Technology Versions

| <b>Operating System/Technology</b>                              | <b>Supported Versions</b>   |
|---|---|
| Solaris 10 OS for the x64 and x86 (32-bit and 64-bit) platforms | <ul style="list-style-type: none"> <li>• Solaris 10 8/07 (s10u4)</li> <li>• Solaris 10 5/08 (s10u5)</li> </ul>  |
| Solaris 10 OS for the SPARC® (64-bit) platform                  | <ul style="list-style-type: none"> <li>• Solaris 10 8/07 (s10u4)</li> <li>• Solaris 10 5/08 (s10u5)</li> </ul>  |
| Linux OS  | <ul style="list-style-type: none"> <li>• Red Hat Enterprise Linux 4 (32-bit and 64-bit), U5</li> <li>• Red Hat Enterprise Linux 5 (32-bit and 64-bit), U1</li> <li>• SUSE Linux Enterprise Server 9 (32-bit and 64-bit), SP4</li> <li>• SUSE Linux Enterprise Server 10 (32-bit and 64-bit), SP1</li> </ul> |
| Microsoft Windows OS Enterprise and Standard Editions           | <ul style="list-style-type: none"> <li>• Windows Server 2003 SP1 32-bit, x64</li> <li>• Windows Server 2003 SP2 32-bit, x64</li> <li>• Windows Server 2003 SP1/R2 32-bit, x64</li> <li>• Windows Server 2003 SP2/R2 32-bit, x64</li> </ul>  |
| VMware technology   | <ul style="list-style-type: none"> <li>• ESX Server 3.0.2</li> <li>• ESX Server 3.5</li> </ul>  |

---

# System Interoperability

This section provides information about selected platforms, storage systems, switches, and software that are compatible with the heterogeneous FC and Ethernet network design of the HBA. This section contains the following topics:

- [“Host Platform Support” on page 4](#)
- [“Storage Support” on page 5](#)
- [“Switch Support” on page 6](#)
- [“Software Support” on page 7](#)

## Host Platform Support

The HBA is supported by the platforms and operating systems listed in [TABLE 1-3](#).

**TABLE 1-3** Platform and Operating System Support

| Platform               | Supported OS/Technology         |
|------------------------|---------------------------------|
| <b>SPARC Servers</b>   |                                 |
| Sun Blade™ T6300       | Solaris                         |
| Sun Blade T6320        | Solaris                         |
| <b>Sun x64 Servers</b> |                                 |
| Sun Blade X6220        | Solaris, Linux, Windows, VMware |
| Sun Blade X6450        | Solaris, Linux, Windows, VMware |
| Sun Blade X6250        | Solaris, Linux, Windows, VMware |
| Sun Blade X8400        | Solaris, Linux, Windows, VMware |
| Sun Blade X8420        | Solaris, Linux, Windows, VMware |
| Sun Blade X8440        | Solaris, Linux, Windows, VMware |

# Storage Support

This section lists the arrays, storage systems, chassis, and tape storage devices supported by the HBA. This section provides the following topics:

- [“Array Support” on page 5](#)
- [“Tape Storage Support” on page 5](#)

## Array Support

The HBA supports the following arrays:

- Sun StorageTek 2540
- Sun StorageTek 3510
- Sun StorageTek 3511
- Sun StorageTek 6120
- Sun StorageTek 6130
- Sun StorageTek 6140
- Sun StorageTek 6540

## Tape Storage Support

The HBA supports the following tape storage devices:

- Sun StorageTek SL24 tape autoloader
- Sun StorageTek SL48 tape library
- Sun StorageTek SL500 modular library
- Sun StorageTek SDLT600 and DLT-S4 tape drives
- Sun StorageTek L1400 tape library
- Sun StorageTek LTO-2, LTO-3, and LTO-4 tape drives
- Sun StorageTek SL8500 modular library
- Sun StorageTek Virtual Tape Library (VTL): VTL Value and VTL Plus
- Sun StorageTek T10000A and T10000B tape drives
- Sun StorageTek T9840A, T9840B, T9840C, and T9840D tape drives
- Sun StorageTek T9940B tape drive

# Switch Support

The HBA is supported by the following Fibre Channel switches:

- Brocade DCX backbone switch
- Brocade 48000 director
- Brocade Mi10K director
- Brocade M6140 director
- Brocade 200E switch
- Brocade 300 switch
- Brocade 4900 switch
- Brocade 5000 switch
- Brocade 5100 switch
- Brocade 5300 switch
- Cisco MDS 9124 24-port multilayer fabric switch
- Cisco MDS 9134 multilayer fabric switch
- Cisco MDS 9140 fabric switch
- Cisco MDS 9216A multilayer fabric switch
- Cisco MDS 9216i multilayer fabric switch
- Cisco MDS 9222i multiservice modular switch
- Cisco MDS 9509 multilayer director
- Cisco MDS 9513 multilayer director
- QLogic SANbox 9000 stackable chassis FC switch series
- QLogic SANbox 5600 switch
- QLogic SANbox 5602 switch

The HBA is supported with all 1-Gb Ethernet switches.



# Software Support

The HBA supports the software applications listed in [TABLE 1-4](#).

**TABLE 1-4** Supported Software Applications

| Software (minimum version)                   | Supported OS                |
|--|-----------------------------|
| Sun Cluster 3.x                              | Solaris                     |
| VERITAS Software Foundation 5.0              | Solaris                     |
| Sun StorEdge™ Enterprise Backup Software 7.2 | Solaris, Linux, and Windows |
| VERITAS NetBackup 5.1                        | Solaris                     |
| Sun StorageTek Availability Suite 3.0        | Solaris                     |
| Sun StorageTek Utilization Suite 3.0         | Solaris                     |
| Sun StorageTek Performance Suite 3.0         | Solaris                     |



# Environmental Requirements

The HBA environmental requirements are listed in [TABLE 1-5](#).

**TABLE 1-5** HBA Environmental Requirements

| Specification | Operating                                       | Non-Operating                            |
|---------------|---|--|
| Temperature   | 0° to 40°C, noncondensing                       | -40°C to 70°C, noncondensing             |
| Humidity      | 10% to 90% RH, noncondensing, 27°C max wet bulb | 93% RH, noncondensing, 38°C max wet bulb |
| Altitude      | 3000m   | 12,000m                                  |
| Vibration     | 0.20G in all axes, 5-500 Hz sine                | 1.0G in all axes, 5-500 Hz sine          |
| Shock         | Operating: 5G, 11 ms half-sine                  | 30G 11 ms half-sine                      |



## Hardware Installation and Removal

---

This chapter describes how to install and remove the HBA. Refer to your system installation or service manual for detailed instructions.

This chapter contains the following topics:

- [“Observing ESD and Handling Precautions” on page 9](#)
- [“Installing the Hardware” on page 10](#)
- [“LED Descriptions and Status” on page 13](#)
- [“Configuring the HBA For Hot-Plug Operation” on page 16](#)
- [“Testing the Installation” on page 17](#)
- [“Removing the Hardware” on page 18](#)

---

## Observing ESD and Handling Precautions



---

**Caution** – Damage to the HBA can occur as the result of careless handling or electrostatic discharge (ESD). Always handle the HBA with care to avoid damage to electrostatic sensitive components.

---

To minimize the possibility of ESD-related damage, use both a workstation antistatic mat and an ESD wrist strap. You can get an ESD wrist strap from any reputable electronics store or from Sun as part number #250-1007. Observe the following precautions to avoid ESD-related problems:

- Leave the HBA in its antistatic bag until you are ready to install it in the system.

- Always use a properly fitted and grounded wrist strap or other suitable ESD protection when handling the HBA and observe proper ESD grounding techniques.
  - Hold the HBA by the edge of the PCB, not the connectors.
  - Place the HBA on a properly grounded antistatic work surface pad when it is out of its protective antistatic bag.
- 

## Installing the Hardware

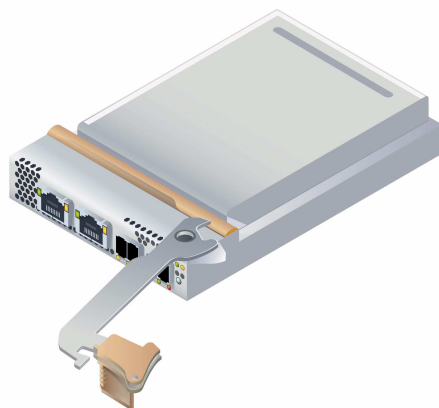
Follow the procedures in this section to install the hardware:

- [“To Install the HBA” on page 10](#)
- [“To Connect the HBA” on page 11](#)
- [“To Power On the HBA” on page 12](#)

### ▼ To Install the HBA

1. **Attach an ESD wrist strap** (see [“Observing ESD and Handling Precautions” on page 9](#)).
2. **Refer to your system installation or service manual to determine an appropriate ExpressModule slot in which to install the HBA.**
3. **Press down the plastic tab to release the ExpressModule latch and pull the lever out until it is nearly perpendicular with the ExpressModule front panel.**

**FIGURE 2-1** Releasing the HBA Latch



4. Insert the HBA into its slot, being careful that the tooth on the bottom of the lever does not come in contact with the chassis sheet metal during insertion.
5. When the HBA is inserted nearly all the way into its slot, push the lever back into its fully closed position, allowing the lever tooth to insert the HBA fully into place.

## ▼ To Connect the HBA

**Note** – The HBA does not allow normal data transmission on an optical link unless it is connected to another similar or compatible Fibre Channel (FC) product (that is, multimode to multimode).

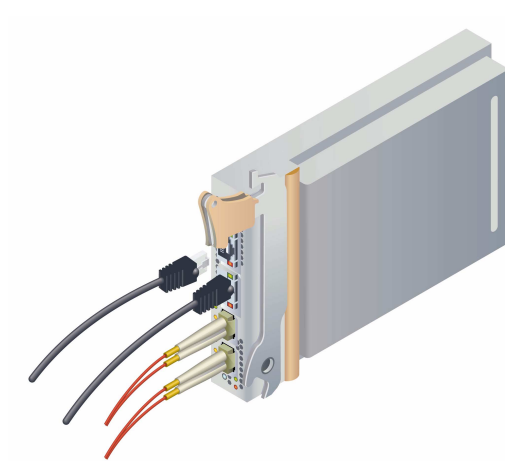
1. Use multimode fiber-optic cable, intended for short-wave lasers, that adheres to the specifications in [TABLE 2-1](#).

**TABLE 2-1** Optical Cable Specifications

| Fiber-Optic Cable                     | Maximum Length   | Minimum Length | Connector |
|---------------------------------------|--|----------------|-----------|
| 62.5/125 $\mu\text{m}$<br>(multimode) | 300 meters at 1.0625 Gbps<br>150 meters at 2.125 Gbps<br>70 meters at 4.25 Gbps  | 2 meters       | LC        |
| 50/125 $\mu\text{m}$<br>(multimode)   | 500 meters at 1.0625 Gbps<br>300 meters at 2.125 Gbps<br>150 meters at 4.25 Gbps | 2 meters       | LC        |

2. Connect the fiber-optic cable to an LC connector on the HBA.
3. Connect the other end of the fiber-optic cable to the Fibre Channel device.
4. Connect the Ethernet cable to the Ethernet connector on the HBA.
5. Connect the other end of the Ethernet cable to the Ethernet Device.

**FIGURE 2-2** Attaching the Optical Cables



## ▼ To Power On the HBA

After installing the hardware and connecting the cables, you can power on the HBA.

1. Verify that the HBA is securely installed in the system.
2. Verify that the correct optical and Ethernet cables are attached.
3. Refer to your system installation or service manual to determine how to power up the system blade.
4. Watch the Light-Emitting Diodes (LEDs) status for the Power-on Self Test (POST) results as shown in [TABLE 2-2](#), [TABLE 2-3](#), and [TABLE 2-4](#).

---

# LED Descriptions and Status

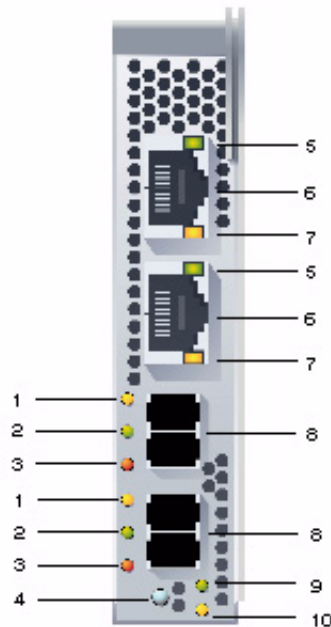
This section contains the following topics:

- “LED and Switch Locations” on page 13
- “Fibre Channel LED Indicator Status” on page 15
- “Ethernet LED Indicator Status” on page 15
- “Power and Attention Switch LED Scheme” on page 16

## LED and Switch Locations

See [FIGURE 2-3](#) to determine the LED locations.

Each port has a corresponding set of LEDs that provide a visual indication of the operating state.



**FIGURE 2-3** LED Locations

**Figure Legend**

---

|          |  |           |  |
|----------|--|-----------|--|
| <b>1</b> | Yellow LED (Fibre Channel)                       | <b>7</b>  | Yellow LED (Ethernet)                                |
| <b>2</b> | Green LED (Fibre Channel)                        | <b>8</b>  | Fibre channel ports (FC port 1 on top, port 2 below) |
| <b>3</b> | Amber LED (Fibre Channel)                        | <b>9</b>  | Power LED  |
| <b>4</b> | Attention button                                 | <b>10</b> | Attention LED  |
| <b>5</b> | Green/Orange LED (Ethernet)                      |           |  |
| <b>6</b> | Ethernet ports (GbE port 2 on top, port 1 below) |           |  |

---



# Fibre Channel LED Indicator Status

TABLE 2-2 summarizes the Fibre Channel LED indicator combinations (LEDs 1, 2, and 3 in FIGURE 2-3 ).

TABLE 2-2 Fibre Channel LED Indicator Status Definitions

| Yellow LED (4 Gbps)                                | Green LED (2 Gbps) | Amber LED (1 Gbps) | Activity                           |
|--|--------------------|--------------------|------------------------------------|
| Off  | Off                | Off                | Power off                          |
| On   | On                 | On                 | Power on                           |
| Blinking   | Blinking           | Blinking           | Power on (firmware initialization) |
| Yellow, Green, and Amber LEDs blinking alternately |                    |                    | Firmware error                     |
| Off  | Off                | On/blinking        | Online, 1 Gbps link I/O activity   |
| Off  | On/blinking        | Off                | Online, 2 Gbps link I/O activity   |
| On/blinking  | Off                | Off                | Online, 4 Gbps link I/O activity   |
| Blinking   | Off                | Blinking           | Beacon                             |

# Ethernet LED Indicator Status

TABLE 2-3 summarizes the Ethernet LED indicator combinations (LEDs 5 and 7 in FIGURE 2-3).

TABLE 2-3 Ethernet LED Indicator Status Definitions

| Top LED (Link/Speed) |            | Bottom LED (Link/Activity) |                        |          |
|----------------------|------------|----------------------------|------------------------|----------|
| Green LED            | Orange LED | Yellow LED                 | Hardware State         | Speed    |
| Off                  | Off        | Off                        | Power on, link is down | All      |
| Off                  | Off        | On                         | Power on, link is up   | 10 Mbit  |
| Off                  | On         | On                         |                        | 100 Mbit |
| On                   | Off        | On                         |                        | GbE      |
| Off                  | Off        | Blinking                   | Network activity       | 10 Mbit  |
| Off                  | On         | Blinking                   |                        | 100 Mbit |
| On                   | Off        | Blinking                   |                        | GbE      |

# Power and Attention Switch LED Scheme

TABLE 2-4 summarizes the power and attention switch LED combination (LEDs 9 and 10 in FIGURE 2-3).

**TABLE 2-4** Power and Attention Switch LED Scheme

| Switch LED              | Activity   |
|-------------------------|--|
| <b>Green Power</b>      |  |
| Off                     | Power Off<br>Insertion or removal of the HBA is permitted.                                     |
| On                      | Power<br>Insertion or removal of the HBA is not permitted.                                     |
| Blinking                | Hot-plug operation is in progress and insertion or removal of the HBA is <i>not</i> permitted. |
| <b>Yellow Attention</b> |  |
| Off                     | Normal operation   |
| On                      | Operational problem at this slot   |
| Blinking                | Slot is being identified at the user's request   |

## Configuring the HBA For Hot-Plug Operation

1. **Locate the green Power indicator near the bottom of the HBA front panel (FIGURE 2-3).**

See “Power and Attention Switch LED Scheme” on page 16 to determine its status.

2. **If the green Power indicator is not illuminated, briefly press the Attention button near the bottom of the HBA front panel.**

The green power LED will blink for approximately five seconds and then remain on, indicating that the HBA has been properly configured.

3. **To cancel the operation, press the button again before it stops blinking.**

---

# Testing the Installation

This section contains the following topics:

- “To Test the Installation for the Solaris OS” on page 17
- “To Test the Installation for the Windows OS” on page 17
- “To Test the Installation for the VMware Technology” on page 18

## ▼ To Test the Installation for the Solaris OS

1. Use the `cfgadm` command to verify proper ExpressModule installation.

```
# cfgadm
```

If the HBA is properly installed and connected, you will see output similar to the following.

| Ap_Id          | Type | Receptacle | Occupant   | Condition |
|----------------|------|------------|------------|-----------|
| c3             | fc   | connected  | configured | ok        |
| c4             | fc   | connected  | configured | ok        |
| pcie5ethern/hp |      | connected  | configured | ok        |

2. If the HBA is shown as unconfigured or disconnected, use the `cfgadm -c configure` command to configure the HBA.

---

**Note** – Diagnostic support for the HBA is included in the SunVTS™ software. The SunVTS software is included with the Solaris 10 s10u4 OS and is also available for download at: <http://www.sun.com/oem/products/vts>

---

## ▼ To Test the Installation for the Windows OS

If the HBA has been installed correctly, the Windows OS detects the device and displays the Found New Hardware window. The Found New Hardware wizard will launch.

---

**Note** – Leave the Found New Hardware wizard window open, and then load the Fibre Channel and Ethernet drivers, as described in [“Installing Software for the Windows OS” on page 29](#).

---

## ▼ To Test the Installation for the VMware Technology

If the HBA has been installed correctly, you will see the following line in the `/var/log/vmkernel` file:

```
VMKernel qla2300_707.o loaded successfully
```

---

## Removing the Hardware

The following instructions describe the tasks required to remove the HBA. Refer to your system installation or service manual for detailed HBA removal instructions.

The following steps summarize the hardware removal process:

1. Either halt the operating system and remove power from the server blade, or prepare the HBA for hot-plug removal with one of the following:
  - The HBA Attention button
  - The Solaris OS
2. Remove the HBA hardware.

## ▼ To Prepare the HBA for Removal Using the HBA Attention Button

1. **Press and release the Attention button near the bottom of the HBA front panel (FIGURE 2-3).**

The Attention LED near the button will blink for approximately five seconds, indicating that the HBA is being prepared for removal.

2. **If you want to stop the operation, press the button again before the LED stops blinking.**

3. When the LED stops blinking and goes dark, you can remove the HBA.

## ▼ To Prepare the HBA for Hot-Plug Removal (Using the Solaris OS)

If you want to remove the HBA without first halting the operating system and removing power from the associated server blade, you can prepare it for removal as follows:

1. Use the `cfgadm` command to identify the HBA to be removed.

| Ap_IdType     | Receptacle | Occupant   | Condition |
|---------------|------------|------------|-----------|
| pcie5ether/hp | connected  | configured | ok        |
| pcie6ether/hp | connected  | configured | ok        |

2. Use the `ifconfig` command to identify the Ethernet ports on the HBA to be disconnected.

|  |
|--|
| e1000g5: flags=201000803<UP,BROADCAST,MULTICAST,IPv4,CoS> mtu 1500 index 6<br>inet 200.17.188.224 netmask ffffffff broadcast 200.17.188.255<br>ether 0:c0:dd:9:a9:7b |
|--|

3. Use the `unplumb` command to disconnect the Ethernet ports on the HBA.
4. Use the `cfgadm -c unconfigure` command to unconfigure the attachment point ID (Ap\_Id) for the HBA.
5. Use the `cfgadm -c disconnect` command to prepare the HBA for removal.

A blinking Power indicator LED indicates that the HBA is being prepared for removal. A dark Power indicator LED indicates that the HBA is ready to be removed.

## ▼ To Remove the HBA

- Use an ESD strap, depress the ExpressModule latch to disengage the HBA, and then pull forward and down to dislodge it. You can now remove the HBA.



## Software Installation

---

After you have completed the hardware installation and powered on the computer, follow the instructions in this chapter for your operating system to install the HBA driver and any other utilities required for the installation.

This chapter contains the following topics:

- [“Installing Software for the Solaris OS” on page 21](#)
- [“Installing Software for the Red Hat/SUSE Linux OS” on page 23](#)
- [“Installing Software for the VMware Technology” on page 28](#)
- [“Installing Software for the Windows OS” on page 29](#)
- [“Installing a CLI for Updating the BIOS and FCode” on page 32](#)

---

## Installing Software for the Solaris OS

This section contains the following topics:

- [“Installing the Fibre Channel Driver” on page 21](#)
- [“Installing the Ethernet Driver” on page 22](#)
- [“Diagnostic Support for the Solaris OS” on page 22](#)

## Installing the Fibre Channel Driver

The `qlc` HBA driver for the Solaris OS is included with the Solaris 10 8/07 (s10u4) OS release; no further action is required. The latest version of the `qlc` driver is included with the following Solaris patches:

- 125165 (for the x64/x86 platform)
- 125166 (for the SPARC platform)

You can download these patches from the SunSolve website at:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>

## ▼ To Install or Update the qlc HBA Driver From a Patch

1. Log in as the root user.
2. Navigate to the directory that contains the patch.
3. Add the latest patch by using the `patchadd` command.

```
# patchadd patch-number
```

## Installing the Ethernet Driver

Check the SunSolve web site to ensure that you have the latest patch clusters and security patches for the ethernet driver. You can download the latest patch clusters and security patches at:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>

## Diagnostic Support for the Solaris OS

Diagnostic support for the HBA is included in the SunVTS software beginning with version 6.3. The SunVTS software is included with the Solaris 10 8/07 (s10u4) OS. The SunVTS software is also available for download at:

<http://www.sun.com/oem/products/vts>

The `qlctest` utility, which is provided as part of the SunVTS software, supports the following functions:

- Connectivity verification
- Firmware version and checksum testing
- Self-testing
- Loopback tests
  - External
  - Internal, single-bit
  - Internal, 10-bit
- Mailbox



---

# Installing Software for the Red Hat/SUSE Linux OS

This section describes how to download and install the fibre channel and ethernet drivers required by the HBA. It also describes how to install diagnostic support software for the HBA. This section contains the following topics:

- “Downloading the Red Hat/SUSE Linux Drivers” on page 23
- “Installing the Red Hat/SUSE Linux Drivers” on page 24
- “Diagnostic Support for the Red Hat/SUSE OS” on page 28

## Downloading the Red Hat/SUSE Linux Drivers

This section describes how to download the fibre channel and ethernet driver for the HBA. This section contains the following topics:

- “To Download the Fibre Channel Driver” on page 23
- “To Download the Ethernet Driver” on page 24

### ▼ To Download the Fibre Channel Driver

1. Go to the QLogic support site for Sun Microsystems at:  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. Locate the table containing the SG-XPCIE2FCGBE-Q-Z model.
3. At the bottom of the table, in the Software for row, click Linux.
4. In the Red Hat or SUSE Linux table, find the appropriate driver (the file name is in the format `qla2x00-vx.yy.zz-dist.tgz`).
5. In the Download column of that row, click Download.
6. Save the file to a directory on the hard disk of the computer.

---

**Note** – Because the driver distribution file is now larger than 1.44 Mb, it cannot fit on a 1.44 Mb floppy disk; therefore, you must use a USB driver or local hard disk to download the file.

---

## ▼ To Download the Ethernet Driver

1. Go to the QLogic support site for Sun Microsystems at:  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. Locate and click the link for the Ethernet drivers.
3. Find and select the Go to Download Center link.
4. Type **82571EB** in the search window and select search.
5. Locate and select Intel 82571EB Gigabit Ethernet Controller.
6. Using the drop-down menu, either select the individual OS or All Operating Systems, then click Go!.  
Individual software downloads are now available.
7. Download and save the driver on the hard disk of the computer.

## Installing the Red Hat/SUSE Linux Drivers

After you download the drivers, as described in “[Downloading the Red Hat/SUSE Linux Drivers](#)” on page 23, you can install the drivers by following the steps in this section:

1. “[To Build the Fibre Channel Driver](#)” on page 24
2. “[To Load the Newly Built Fibre Channel Driver](#)” on page 25
3. “[To Build and Load the Ethernet HBA Driver](#)” on page 27

## ▼ To Build the Fibre Channel Driver

The driver installation makes extensive use of the `build.sh` script, which is located in driver source (`extras/build.sh`).

From the source code, you can build a `qla2xxx.ko` module and a `qla2xxx_conf.ko` module for the host. You can then choose to load the driver manually or automatically, as described in “[To Load the Newly Built Fibre Channel Driver](#)” on page 25.

1. In the directory that contains the source driver file, `qla2xxx-x.yy.zz-dist.tgz`, use the commands shown in the following example.

```
# tar -xvzf *.tgz
# cd qllogic
# ./drvsetup (this extracts the source files directory into the
current directory)
# cd qla2xxx-x.yy.zz (x.yy indicates the driver version; zz indicates the
file extension, which is typically .ko for kernel modules
(binaries)).
```

2. Build and install the driver modules from the source code by executing the `build.sh` script.

```
# ./extras/build.sh install
```

This build script does the following:

- Builds the driver `.ko` files.
- Copies the `.ko` files to the appropriate directory:  
`/lib/modules/2.6.../kernel/drivers/scsi/qla2xxx`
- Adds the appropriate directive in the `modprobe.conf.local` to remove the `qla2xxx_conf` module when unloading the `qla2xxx` module.
- Updates the newly built `qla2xxx_conf.ko` module with any previously saved data in `/etc/qla2xxx.conf`.

3. Choose how you want to load the driver, as described in [“To Load the Newly Built Fibre Channel Driver”](#) on page 25.

## ▼ To Load the Newly Built Fibre Channel Driver

After you build the fibre channel driver, as described in [“To Build the Fibre Channel Driver”](#) on page 24, you can choose to manually or automatically load the driver. This section contains the following topics:

- [“To Manually Load the Fibre Channel Driver”](#) on page 25
- [“To Automatically Load the Fibre Channel Driver”](#) on page 26

## ▼ To Manually Load the Fibre Channel Driver

After building the fibre channel driver, you can choose to manually load the driver. If you want to automatically load the driver, skip to [“To Automatically Load the Fibre Channel Driver”](#) on page 26.

1. Build the driver binary, as described in [“To Build the Fibre Channel Driver” on page 24](#).
2. Manually load the driver by using the `modprobe -v` command.

```
# modprobe -v qla2xxx
```

3. Now that the fibre channel driver is manually loaded, you can build and load the ethernet driver, as described in [“To Build and Load the Ethernet HBA Driver” on page 27](#).
4. If you want to manually unload the driver, use the `modprobe -r` command.

```
# modprobe -r qla2xxx
# modprobe -r qla2xxx_conf (SANsurfer use only)
```

## ▼ To Automatically Load the Fibre Channel Driver

After building the fibre channel driver, you can choose to automatically load the driver. If you want to manually load the fibre channel driver, see [“To Manually Load the Fibre Channel Driver” on page 25](#).

1. Build the driver binary, as described in [“To Build the Fibre Channel Driver” on page 24](#).
2. Install the driver module (\*.ko) files to the appropriate kernel module directory.

```
# ./extras/build.sh install
```

3. For Red Hat Linux users, edit the `/etc/modprobe.conf` file and add the following entries, if they are not present:
  - `alias scsi_hostadapter1 qla2xxx_conf` (for use only with SANsurfer)
  - `alias scsi_hostadapter2 qla2xxx`
4. For SUSE Linux users, edit the `/etc/sysconfig/kernel` file and modify the `INITRD_MODULES` directive as shown in the following example.

In this example, note that you must add the first module, `qla2xxx_conf` (for SANsurfer), followed by the `qla2xxx` module. The `qla2xxx_conf` module is for use only with SANsurfer while the `qla2xxx` module is a common module.

```
...
INITRD_MODULES=".... qla2xxx_conf qla2xxx"
...
```

5. Change to the `/boot` directory.
6. Back up the current RAMDISK image.

```
# cp -f initrd-2.6.kernel-version.img initrd-2.6.kernel-version.img.bak
```

7. Build the RAMDISK image with the `mkinitrd -f` command.

```
Red Hat: # mkinitrd -f initrd-2.6.kernel-version.img kernel-version
SUSE: # /sbin/mk_initrd
```

8. Reboot the system to load the RAMDISK image with the driver.
9. You can now build and load the ethernet driver, as described in [“To Build and Load the Ethernet HBA Driver”](#) on page 27.

## ▼ To Build and Load the Ethernet HBA Driver

1. Build the Ethernet HBA driver.

```
Red Hat: # rpmbuild --rebuild sun-pci-e-dual-gigabit-kernel-6.1.5.src.rpm
```

2. Change to the `rpm` directory.

```
Red Hat: # cd /usr/src/redhat/RPMS/arch
```

3. Install the Ethernet `rpms`, using the same command for both Red Hat and SUSE OSes.

```
# rpm -ivh sun-pci-e-dual-gigabit-kernel-6.1.5.rpm
```

4. Use the `depmod` command to register the HBA.

```
# depmod
```

5. Manually load the `e1000` driver for all instances.

```
# modprobe e1000
```

# Diagnostic Support for the Red Hat/SUSE OS

Diagnostic support for the HBA is available through the SANsurfer PRO graphical user interface (GUI) utility or the SANsurfer command-line interface (CLI) utility. These utilities support the following functions:

- Connectivity verification
- BIOS, FCode, EFI, and firmware version information
- Link status, including topology, data rate, and statistics
- Vital product data (VPD) information
- Attached devices list
- Option ROM, NVRAM update utilities
- Loopback test
- Read/Write Buffer test

## ▼ To Install Diagnostic Support for the Red Hat/SUSE Linux OS

1. Go to the QLogic support site for Sun Microsystems at:  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. Locate the table containing the SG-XPCIE2FCGBE-Q-Z model.
3. At the bottom of the table, click Windows.
4. Locate the SANsurfer CLI (command-line interface) or SANsurfer PRO (GUI) diagnostic utility.
5. Click Download to copy diagnostic archive to a local file system.
6. Click Readme link for additional information.

---

## Installing Software for the VMware Technology

The HBA drivers included on the VMware distribution are sufficient for supporting the HBA. No further action is required.

To verify that the drivers loaded successfully, look for the following lines in the `/var/log/vmkernel` file:

```
VMKernel qla2300_707.o loaded successfully
e1000.o loaded successfully
```

The first line indicates that the fibre channel driver loaded successfully. The second line indicates that the ethernet driver loaded successfully.

---

## Installing Software for the Windows OS

This section describes how to download and install the fibre channel and ethernet drivers required by the HBA. It also describes how to install diagnostic support software for the HBA. This section contains the following topics:

- “To Download the Fibre Channel Driver” on page 29
- “To Install the Fibre Channel Driver” on page 30
- “To Download and Install the Ethernet Driver” on page 30
- “Diagnostic Support for the Windows OS” on page 31

### ▼ To Download the Fibre Channel Driver

1. Go to the QLogic support site for Sun Microsystems at:  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. Locate the table containing the SG-XPCIE2FCGBE-Q-Z model.
3. At the bottom of the table, in the Software for row, click Windows.
4. In the table for your Windows operating system, find the appropriate driver.
5. In the Download column of that row, click Download.
6. Save the file to a directory on the hard disk of the computer.
7. Unzip (extract) the driver files to a location on the hard disk of the computer.

## ▼ To Install the Fibre Channel Driver

After installing the HBA and restarting the computer, the Windows OS detects the newly installed device and displays the Found New Hardware with Fibre Channel Controller message. The Found New Hardware wizard launches.

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**Note** – This procedure requires a system configured with the latest Service Pack and Windows Update.

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1. On the first screen of the Found New Hardware wizard, click **Search for a suitable driver for my device (recommended)**, and then click **Next**.
2. Browse to the location on the where you downloaded the Fibre Channel driver, then click **Next**.  
Windows displays a message, letting you know it found a driver for this device.
3. On the **Completing the Found New Hardware Wizard** window, click **Finish**.
4. If the system displays the following message, click **Yes** to restart the computer:

System Settings Change. Windows has finished installing a new device. The software that supports your device requires that you restart your computer. You must restart your computer before the new settings will take effect. Do you want to restart your computer now?

## ▼ To Download and Install the Ethernet Driver

1. Go to the QLogic support site for Sun Microsystems at:  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. Locate and click the link for the Ethernet drivers.
3. Find and select the **Go to Download Center** link.
4. Type **82571EB** in the search window and select **search**.
5. Locate and select **Intel 82571EB Gigabit Ethernet Controller**.
6. Using the drop-down menu, select either the **individual OS** or **All Operating Systems**, then click **Go!**.  
Individual software downloads will now be available.
7. Download and save the driver on the hard disk of the computer.



8. **Navigate to the location on the hard disk where you downloaded the driver, and run the driver file.**

The driver file is a self-extracting archive. When you run the file, the files are extracted to a temporary directory and the installation wizard is run to install the driver. After the driver is installed, the temporary files are removed.

## Diagnostic Support for the Windows OS

Diagnostic support for the HBA is available through the SANsurfer PRO GUI utility or the SANsurfer CLI utility. These utilities support the following functions:

- Connectivity verification
- BIOS, FCode, EFI, and firmware version information
- Link status, including topology, data rate, and statistics
- Vital Product Data (VPD) information
- Attached devices list
- Option ROM, NVRAM update utilities
- Loopback test
- Read/Write Buffer test

### ▼ To Install Diagnostic Support for the Windows OS

1. **Go to the QLogic support site for Sun Microsystems at:**  
[http://support.qlogic.com/support/defaultsun\\_page.asp](http://support.qlogic.com/support/defaultsun_page.asp)
2. **Locate the table containing the SG-XPCIE2FCGBE-Q-Z model.**
3. **At the bottom of the table, click Windows.**
4. **Locate the SANsurfer CLI or SANsurfer PRO (GUI) diagnostic utility.**
5. **Click Download to copy the diagnostic archive to a local file system.**
6. **Click Readme for additional information.**

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# Installing a CLI for Updating the BIOS and FCode

If you need to update the fibre channel BIOS and FCode, you can do so by using the SANsurfer command-line interface (CLI).

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**Note** – The SANsurfer CLI is supported by all supported operating system and technology versions except for VMware ESX Server 3.0.2. To use the CLI with the VMware technology, upgrade to ESX Server 3.5.

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If you have not done so already, you can download the SANsurfer CLI package from the QLogic support site for Sun Microsystems at:

[http://support.qlogic.com/support/default\\_sun\\_page.asp](http://support.qlogic.com/support/default_sun_page.asp)

Follow the installation instructions in the README.TXT file. Installation instructions are also available in the QLogic document, *SANsurfer FC HBA CLI User's Guide* (SN0054614-00), which can be found on the QLogic web site, [www.qlogic.com](http://www.qlogic.com).

For instructions on how to update the BIOS and FCode, see the *SANsurfer FC HBA CLI User's Guide* at the QLogic web site.

## Known Issues

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This chapter provides supplementary and workaround information about the HBA. The chapter contains the following topics:

- [“Server Compatibility Issues” on page 33](#)
- [“qlc Driver Issues” on page 34](#)
- [“Red Hat Linux Enterprise Issues” on page 35](#)

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## Server Compatibility Issues

This section contains the following topics:

- [“Cannot Set the HBA to a Configured State on a Sun Blade X6250 Server \(6674189\)” on page 33](#)
- [“The HBA is Not Detected on a Sun Blade T6320 Server \( 6682447\)” on page 34](#)

### *Cannot Set the HBA to a Configured State on a Sun Blade X6250 Server (6674189)*

If you set the HBA to a disconnected state on a Sun Blade X6250 server, and you then set it back to a configured state, the HBA remains in a disconnected state.

**Workaround** – Perform one of the following to return the HBA to a configured state:

- Reboot the Sun Blade X6250 server.
- Remove and then reinsert the HBA.

## *The HBA is Not Detected on a Sun Blade T6320 Server ( 6682447)*

After rebooting a Sun Blade T6320 server, the server might not detect the HBA.

**Workaround** – Reboot the server again.

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## qlc Driver Issues

This section contains the following topics:

- [“The fcinfo Command Displays Inconsistent Information About the HBA \(6683551\)” on page 34](#)
- [“No Support For N-Port, Point-to-Point Topology \(6547693\)” on page 34](#)

### *The fcinfo Command Displays Inconsistent Information About the HBA (6683551)*

Upon running the `fcinfo` command, some, but not all, HBA information is displayed.

**Workaround** – Update the `qlc` driver to version 20080402-2.28 or later. The latest version of the `qlc` driver is included in the following Solaris patches:

- 125165 (for the x64/x86 platform)
- 125166 (for the SPARC platform)

You can download these patches from the SunSolve website at:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patchpage>

### *No Support For N-Port, Point-to-Point Topology (6547693)*

The `qlc` driver does not provide support for the N-Port, point-to-point topology.

**Workaround** – Use the Sun StorageTek T10000A or T10000B tape drive in a switch configuration. This enables usage of the N-Port, point-to-point topology.

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# Red Hat Linux Enterprise Issues

This section contains the following topic:

- [“Error Messages Are Displayed in System Log Files When Running the RHEL 5 OS” on page 35](#)

## *Error Messages Are Displayed in System Log Files When Running the RHEL 5 OS*

When running the RHEL 5 operating system with the `ql2xextended_error_logging` module parameter enabled, you might see softlock detected messages (`soft lockup on CPU#0!`) in the system log files.

**Workaround** – None. You can ignore these messages as they do not indicate operational failures.

