



Sun StorageTek™ Enterprise PCI-X 4 Gb FC Single and Dual Port Host Bus Adapters Installation Guide

Sun Microsystems, Inc.
www.sun.com

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Adobe PostScript

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Declaration of Conformity

Compliance Model Number: FC2410401
Product Family Name: Sun StorEdge 4GB FC Single and Dual Enterprise PCI-X HBA
(SG-(X)PCI1FC-QF4, SG-(X)PCI2FC-QF4)

EMC

USA - FCC Class A

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

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

European Union

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

As Telecommunication Network Equipment (TNE) in both Telecom Centers and Other Than Telecom Centers per (as applicable):

EN 300 386 V1.3.2 (2003-05) Required Limits:

EN 55022:1994 +A1:1995 +A2:1997	Class A
EN 61000-3-2:2000	Pass
EN 61000-3-3:1995 +A1:2000	Pass
IEC 61000-4-2	6 kV (Direct), 8 kV (Air)
IEC 61000-4-3	3 V/m 80-1000MHz, 10 V/m 800-960 MHz and 1400-2000 MHz
IEC 61000-4-4	1 kV AC and DC Power Lines, 0.5 kV Signal Lines,
IEC 61000-4-5	2 kV AC Line-Gnd, 1 kV AC Line-Line and Outdoor Signal Lines, 0.5 kV Indoor Signal Lines > 10m.
IEC 61000-4-6	3 V
IEC 61000-4-11	Pass

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

EN 55022:1994 +A1:1995 +A2:1997	Class A
EN 61000-3-2:2000	Pass
EN 61000-3-3:1995 +A1:2000	Pass

EN 55024:1998 +A1: 2001 +A2:2003 Required Limits:

IEC 61000-4-2	4 kV (Direct), 8 kV (Air)
IEC 61000-4-3	3 V/m
IEC 61000-4-4	1 kV AC Power Lines, 0.5 kV Signal and DC Power Lines
IEC 61000-4-5	1 kV AC Line-Line and Outdoor Signal Lines, 2 kV AC Line-Gnd, 0.5 kV DC Power Lines
IEC 61000-4-6	3 V
IEC 61000-4-8	1 A/m
IEC 61000-4-11	Pass

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

EC Type Examination Certificates:

EN 60950-1:2001, First Edition, +A11	TÜV Rheinland Certificate No. R 72052601
IEC 60950-1:2001, 1st Edition	CB Scheme Certificate No.
Evaluated to all CB Countries	
UL 60950:2000, CSA C22.2 No. 60950-00	File: E177137

Supplementary Information:

This equipment was tested and complies with all the requirements for the CE Mark.

This equipment complies with the Restriction of Hazardous Substances (RoHS) Directive 2009/95/EC.

_____/S/_____
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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 Laserlaitte
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.



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

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.



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

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.

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 Laserlaitte
Klasse 1 Laser Apparat
Laser Klasse 1

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.



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

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 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.



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.

Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

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

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

FCC Class A Notice

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

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

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

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

FCC Class B Notice

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

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

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

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

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

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

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

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

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

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

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


VCCI 基準について

クラス A VCCI 基準について

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

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

クラス B VCCI 基準について

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

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 B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをしてください。

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。



T33012

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.

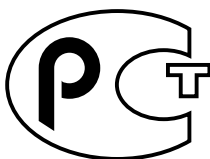
以下声明适用于运往中国且其认证标志上注有 "Class A" 字样的产品。

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

This guide describes how to install the Sun StorageTek™ Enterprise PCI-X 4 Gb Fibre Channel (FC) Single and Dual Port Host Bus Adapter (HBA). It also explains how to update the driver.

How This Book Is Organized

The single chapter describes how to install the HBA and update the driver.

Appendix A provides the safety, regulatory, and compliance information for the product.

Using UNIX Commands

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

- Software documentation that you received with your system
- Solaris™ Operating System documentation, available at:

<http://docs.sun.com>

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

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.

Related Documentation

The following table lists the documentation for this product. The online documentation is available at:

<http://docs.sun.com/app/docs/prod/4gb.pcix.hba?l=en#hic>

Application	Title	Part Number
Latest information	<i>Sun StorageTek Enterprise PCI-X 4 Gb FC Single and Dual Port HBA Release Notes</i>	819-3900-xx

Documentation, Support, and Training

Sun Function	URL
Documentation	http://www.sun.com/documentation/
Support	http://www.sun.com/support/
Training	http://www.sun.com/training/

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 StorageTek™ Enterprise PCI-X 4 Gb FC Single and Dual Port Host Bus Adapters
Installation Guide* , part number 819-3899-11

Installing, Connecting, and Testing the Host Bus Adapter

This guide describes how to install and configure your new Sun StorageTek™ Enterprise PCI-X 4 Gb Fibre Channel (FC) Single and Dual Port Host Bus Adapter (HBA). The HBA is also referred to as SG-XPCI1FC-QF4 (single port) or SG-XPCI2FC-QF4 (dual port).

This guide contains the following topics:

- [“System Requirements” on page 2](#)
- [“Installing the HBA” on page 2](#)
- [“Installing the HBA Driver With the Solaris 10 OS” on page 16](#)
- [“Installing the HBA Driver With the Red Hat and SuSE OSs” on page 18](#)
- [“Installing the HBA Driver With the Red Hat Enterprise Linux, and SuSE Linux Enterprise Server OSs” on page 19](#)
- [“Installing the HBA Driver With the Windows 2000 or Windows Server 2003 OS” on page 21](#)



Caution – Be sure to keep the Sun StorageTek Enterprise PCI-X 4 Gb FC Single and Dual Port HBA in the antistatic bag until installation. The HBA contains parts that can be damaged by electrostatic discharge (ESD). Before handling the HBA, use standard methods to discharge static electricity. Place the HBA on the bag when examining it. Retain the bag for future use.

System Requirements

Your system must have the following functions to support the Sun StorageTek Enterprise PCI-X 4 Gb FC Single and Dual Port HBA:

- PCI 64-bit slot
- PCI-X 64-bit slot

Note – This product is not compatible with 5.0V PCI slot.

Installing the HBA

To install the HBA in your system, follow the steps described in these sections:

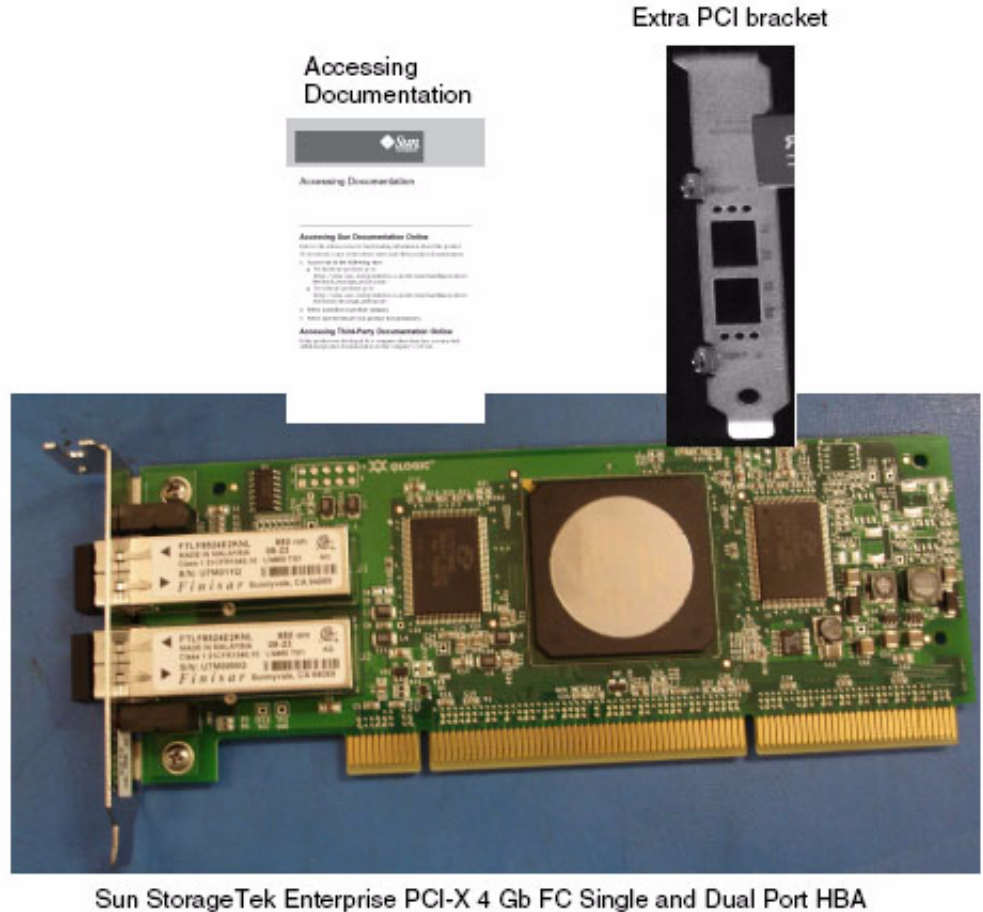
- [“To Verify the Package Contents” on page 2](#)
- [“To Install the HBA Hardware” on page 3](#)
- [“To Attach the Optical Cable” on page 5](#)
- [“To Apply Power” on page 7](#)
- [“To Verify Proper Installation in SPARC Platforms” on page 7](#)
- [“To Verify Attached Storage to the Installed HBA” on page 11](#)
- [“To Verify Proper Installation in x64 Based System” on page 12](#)

▼ To Verify the Package Contents

Verify that the HBA is shipped with the following items (see [FIGURE 1](#)):

- HBA
- Extra PCI bracket
- *Accessing Documentation*, 819-1209-xx

FIGURE 1 HBA Package Contents



▼ To Install the HBA Hardware

To install the HBA, you need to open the system and identify an empty PCI or PCI-X slot. Do not put it in 5.0V PCI slot. If necessary, consult your system manual for instructions to remove the system cover.



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, Sun strongly recommends using 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 or mounting bracket, not the connectors.
- Place the HBA on a properly grounded antistatic work surface pad when it is out of its protective antistatic bag.

1. Record IEEE and serial numbers.

Each HBA is shipped with a unique 64-bit identifier called the *IEEE address*. The Fibre Channel industry uses a World Wide Name (WWN) derived from the IEEE address. This number is needed for FC connectivity.

Because the SG-XPCI2FC-QF4 HBA has two ports, it has two IEEE addresses. The IEEE address is used for configuring your system. The serial number is used for communicating with Sun. All numbers are clearly marked on the board. Record these numbers before installation.

2. Shut down, power off, and unplug the system.

3. Remove the system case.

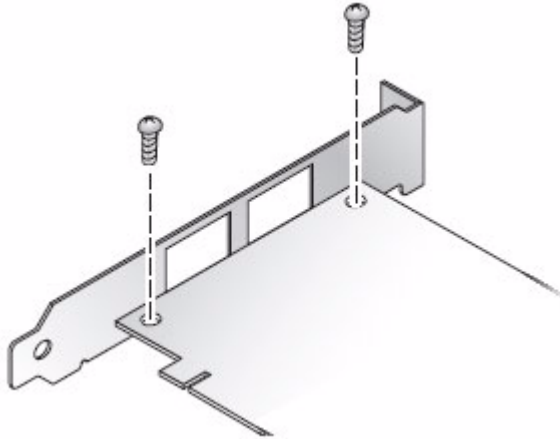
4. Remove the blank panel from an empty PCI or PCI-X slot.

5. If needed, replace the low profile PCI bracket with the standard mounting bracket by performing the following steps:

Note – The HBA is shipped with a low-profile PCI bracket installed. This bracket is approximately 3.11 in. (7.9 cm) long. A standard mounting bracket, which is approximately 4.75 in. (12.6 cm), is provided with each X-option order.

- a. Remove the mounting bracket screws from the HBA (see [FIGURE 2](#)).

FIGURE 2 Removing the Bracket Screws



- b. Remove the bracket and store it for future use.
- c. Align the new mounting bracket tabs with the holes in the HBA.

Note – Be careful not to push the bracket past the transceiver housing’s grounding tabs. Ensure that the LEDs are properly aligned with the holes in the bracket.

- d. Replace the screws that attach the HBA to the bracket.
6. Insert the HBA into the empty PCI or PCI-X slot. Press firmly until the adapter is seated.
 7. Secure the HBA’s mounting bracket to the case with the panel screw or clip.
 8. Replace the system case and tighten the case screws.

The HBA is now installed in the system and is ready for the optical cable attachment.

▼ To Attach the Optical Cable

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

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

TABLE 1 Optical Cable Specifications

Fiber-Optic Cable	Maximum Length	Minimum Length	Connector
62.5/125 μm (multimode)	300 meters at 1.0625 Gbit/sec 150 meters at 2.125 Gbit/sec 70 meters at 4.25 Gbit/sec	2 meters	LC
50/125 μm (multimode)	500 meters at 1.0625 Gbit/sec 300 meters at 2.125 Gbit/sec 150 meters at 4.25 Gbit/sec	2 meters	LC

[TABLE 2](#) summarizes the Power-On Self-Test (POST) conditions and results.

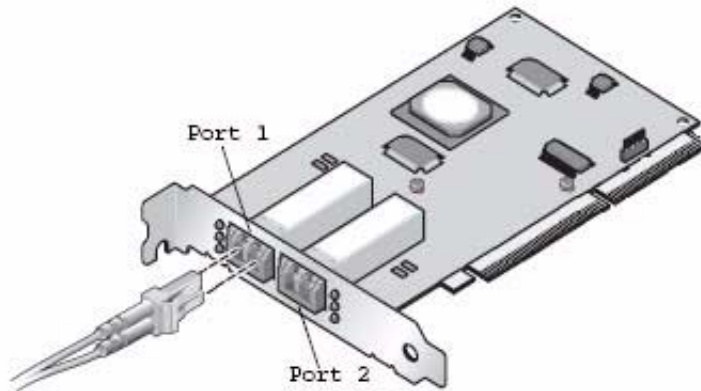
TABLE 2 POST Conditions and Results

States	Yellow LED (4 Gb)	Green LED (2 Gb)	Amber LED (1 Gb)	Comments
Power off	OFF	OFF	OFF	Card does not have power
Power on (before firmware initialization)	ON	ON	ON	On continuously
Power on (after firmware initialization)	Flash	Flash	Flash	Flashing at the same time
Firmware fault	Flash in sequence	Flash in sequence	Flash in sequence	Flashing in sequence of Yellow LED=> Green LED=> Amber LED then back to Yellow LED
1 Gbit/sec Link Up/Active	OFF	OFF	ON/Flash	On for link up Flash if I/O activity
2 Gbit/sec Link Up/Active	OFF	ON/Flash	OFF	On for link up Flash if I/O activity
4 Gbit/sec Link Up/Active	ON/Flash	OFF	OFF	On for link up Flash if I/O activity
Beacon	Flash	OFF	Flash	All flashing at the same time like a heart beat

Follow these steps when attaching the optical cable:

1. **Connect the fiber-optic cable to an LC connector on the HBA (see [FIGURE 3](#)).**

FIGURE 3 Attaching the Optical Cable



2. **Connect the other end of the cable to the Fibre Channel device.**

After the optical cable is connected to the HBA, you are ready to apply power to the system.

▼ To Apply Power

1. **Verify that the HBA is securely installed in the system.**
2. **Verify that the correct optical cable is attached.**
3. **Plug in and power on the system.**
4. **Observe light-emitting diodes (LEDs) for POST results.**

LEDs can be seen through openings in the HBA's mounting bracket. Each port has a corresponding set of LEDs.

▼ To Verify Proper Installation in SPARC Platforms

1. **Issue the `show-devs` command at the `ok` prompt to list the installed devices.**

The HBA can be identified in the output containing the `SUNW,q1c@n` and `SUNW,q1c@n,1` node names, where *n* is usually a single-digit number from 1 to 9.

In this example, there is one Dual Channel SG-XPCI2FC-QF4 adapter installed:

```
{1} ok show-devs
/pci@7c0
/pci@780
/cpu@17
/cpu@16
/cpu@15
/cpu@14
/cpu@13
/cpu@12
/cpu@11
/cpu@10
/cpu@f
/cpu@e
/cpu@d
/cpu@c
/cpu@b
/cpu@a
/cpu@9
/cpu@8
/cpu@7
/cpu@6
/cpu@5
/cpu@4
/cpu@3
/cpu@2
/cpu@1
/cpu@0/virtual-devices@100
/virtual-memory
/memory@m0,800000
/aliases
/options
/openprom
/chosen
/packages
/pci@7c0/pci@0
/pci@7c0/pci@0/pci@9
/pci@7c0/pci@0/pci@8
/pci@7c0/pci@0/pci@2
/pci@7c0/pci@0/pci@1
/pci@7c0/pci@0/pci@2/network@0,1
/pci@7c0/pci@0/pci@2/network@0
/pci@7c0/pci@0/pci@1/pci@0,2
/pci@7c0/pci@0/pci@1/pci@0
/pci@7c0/pci@0/pci@1/pci@0,2/LSILogic,sas@2
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1,1---> Dual port HBA port 2
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1,1---> Dual port HBA port 1
```

```

/pci@7c0/pci@0/pci@1/pci@0,2/LSILogic,sas@2/disk
/pci@7c0/pci@0/pci@1/pci@0,2/LSILogic,sas@2/tape
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1,1/fp@0,0
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1,1/fp@0,0/disk
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1/fp@0,0
/pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1/fp@0,0/disk
/pci@7c0/pci@0/pci@1/pci@0/ide@8
/pci@7c0/pci@0/pci@1/pci@0/usb@6
/pci@7c0/pci@0/pci@1/pci@0/usb@5
/pci@7c0/pci@0/pci@1/pci@0/isa@2
/pci@7c0/pci@0/pci@1/pci@0/ide@8/cdrom
/pci@7c0/pci@0/pci@1/pci@0/ide@8/disk
/pci@7c0/pci@0/pci@1/pci@0/usb@6/hub@1
/pci@7c0/pci@0/pci@1/pci@0/isa@2/serial@0,3f8
/pci@780/pci@0
/pci@780/pci@0/pci@9
/pci@780/pci@0/pci@8
/pci@780/pci@0/pci@2
/pci@780/pci@0/pci@1
/pci@780/pci@0/pci@8/SUNW,qlc@0,1
/pci@780/pci@0/pci@8/SUNW,qlc@0
/pci@780/pci@0/pci@8/SUNW,qlc@0,1/fp@0,0
/pci@780/pci@0/pci@8/SUNW,qlc@0,1/fp@0,0/disk
/pci@780/pci@0/pci@8/SUNW,qlc@0/fp@0,0
/pci@780/pci@0/pci@8/SUNW,qlc@0/fp@0,0/disk
/pci@780/pci@0/pci@1/network@0,1
/pci@780/pci@0/pci@1/network@0
/virtual-devices@100/led@d
/virtual-devices@100/explorer@c
/virtual-devices@100/sunmc@b
/virtual-devices@100/sunvts@a
/virtual-devices@100/fma@9
/virtual-devices@100/echo@8
/virtual-devices@100/loop@7
/virtual-devices@100/loop@6
/virtual-devices@100/ncp@4
/virtual-devices@100/rtc@3
/virtual-devices@100/nvram@3
/virtual-devices@100/console@1
/openprom/client-services
/packages/SUNW,asr
/packages/obp-tftp
/packages/kbd-translator
/packages/dropins
/packages/terminal-emulator
/packages/disk-label
/packages/deblocker
/packages/SUNW,builtin-drivers
{0} ok

```

2. To positively identify the port as a Sun StorageTek 4 Gb FC port, cd to the `SUNW,qlc@n` entries and then issue the `.properties` command as shown in the example that follows.

```
{0} ok cd /pci@7c0/pci@0/pci@1/pci@0,2/SUNW,qlc@1
{0} ok .properties
assigned-addresses      81060810 00000000 00001000 00000000 00000100
                        82060814 00000000 03000000 00000000 00002000
                        82060830 00000000 03040000 00000000 00040000
version                 QLA2462 Host Adapter Driver(SPARC): 1.11 10/03/05
manufacturer            QLGC
model                   QLA2462
name                    SUNW,qlc
port-wwn                21 00 00 e0 8b 00 8a 12
node-wwn                20 00 00 e0 8b 00 8a 12
reg                     00060800 00000000 00000000 00000000 00000000
                        01060810 00000000 00000000 00000000 00000100
                        03060814 00000000 00000000 00000000 00001000
compatible              pci1077,141.1077.141.2
                        pci1077,141.1077.141
                        pci1077,141
                        pci1077,2422.2
                        pci1077,2422
                        pciclass,c0400
                        pciclass,0400
short-version           1.11 10/03/05
#size-cells              00000000
#address-cells           00000002
device_type              scsi-fcp
fcode-rom-offset         0000aa00
66mhz-capable            00000001
devsel-speed             00000001
class-code               000c0400
interrupts               00000001
latency-timer            00000040
cache-line-size          00000010
max-latency              00000000
min-grant                 00000040
subsystem-id             00000141
subsystem-vendor-id      00001077
revision-id              00000002
device-id                00002422
vendor-id                00001077
{0} ok
```

▼ To Verify Attached Storage to the Installed HBA

If online storage is connected to the HBA, use the `apply show-children` command to list the attached storage.

In the example that follows, a storage JBOD has 12 targets attached to one port of the dual-ported HBA.

```
0} ok apply show-children /pci@7c0/pci@0/pci@0,2/SUNW,q1c@1
QLogic QLA2462 Host Adapter Driver(SPARC): 1.11 10/03/05
Firmware version 4.00.12
***** Local Loop Devices *****
Adapter loopId - 0
Loop ID 12 Port WWN 21000004cf545de3
Lun 0 DISK SEAGATE ST314680FSUN146G0407

Loop ID 13 Port WWN 2100000c5007d0fe
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 15 Port WWN 500000e01015a131
Lun 0 DISK FUJITSU MAP3735F SUN72G 1601

Loop ID 10 Port WWN 2100000c5007cafc
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 18 Port WWN 2100000c50089c3d
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 19 Port WWN 2100000c5007c9bd
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 1b Port WWN 500000e010159f41
Lun 0 DISK FUJITSU MAP3735F SUN72G 1601

Loop ID 16 Port WWN 2100000c50089dfb
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 1a Port WWN 2100000c5008ba0f
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 17 Port WWN 2100000c5008697c
Lun 0 DISK SEAGATE ST373307FSUN72G 0407

Loop ID 1c Port WWN 215000c0ff00225b
Lun 0 SUN StorEdge 3510F D1046

Loop ID 11 Port WWN 2100000c5007c888
Lun 0 DISK SEAGATE ST373307FSUN72G 0407
```

```
Loop ID    14    Port WWN 2100000c5007d519
  Lun      0    DISK  SEAGATE ST373307FSUN72G 0407

{0} ok

{3} ok
```

Note – You may need to use the `reset-all` command before using `apply show-children`.

▼ To Verify Proper Installation in x64 Based System

1. During system power on initiation the following system booting BIOS initialization screen is displayed:

```
QLogic Corporation
QLA2462 PCI Fibre Channel ROM BIOS version 1.04
Copyright (c) QLogic Corporation 1993-2005. All rights reserved.
www.qlogic.com

Press <Ctrl-Q> for Fast!UTIL
BIOS for Adapter 0 is disabled
BIOS for Adapter 1 is disabled
ROM BIOS NOT INSTALLED
```

2. Immediately press Control-Q.

The following QLogic Fast!UTIL menu is displayed.

```
QLogic Corporation
QLA2462 PCI Fibre Channel ROM BIOS version 1.04
Copyright (c) QLogic Corporation 1993-2005. All rights reserved.
www.qlogic.com

Press <Ctrl-Q> for Fast!UTIL
BIOS for Adapter 0 is disabled

BIOS for Adapter 1 is disabled

ROM BIOS NOT INSTALLED

<CTRL-Q> Detected, Initialization in progress, Please wait...
```

Then the following QLogic Fast!UTIL menu is displayed.

QLogic Fast!UTIL						
Select Host Adapter						

Adapter Type	I/O Address	Slot	Bus	Device	Function	
QLA2462	9400	01	02	01	1	
QLA2462	9800	01	02	01	0	

3. Use the Arrow key to move the Highlight to the HBA port which has devices connected and press Enter.

The following QLogic Fast!UTIL menu is displayed.

QLogic Fast!UTIL						
Selected Adapter						
Adapter Type	I/O Address	Slot	Bus	Device	Function	
QLA2462	9400	01	02	01	1	
Fast!UTIL Options						
Configuration Settings						
Scan Fibre Deivces						
Fibre Disk Utility						
Loopback Data Test						
Select Host Adapter						
Exit Fast!UTIL						

4. Use Arrow key to move the Highlight to “Scan Fibre Devices” and press Enter.

In the example that follows, a storage JBOD has 6 targets attached to one port of the dual-ported HBA.

The following QLogic Fast!UTIL menu is displayed.

QLogic Fast!UTIL						
Scan Fibre Channel Loop						
ID	Vendor	Product	Rev	Port Name	Port ID	
0	SEAGATE	ST336752FSUN36G	0205	21000004CF64C8E0	0000CC	
1	SEAGATE	ST336752FSUN36G	0205	21000004CF6493D0	0000CB	
2	SEAGATE	ST336752FSUN36G	0205	21000004CF6428C4	0000CA	
3	SEAGATE	ST336752FSUN36G	0205	21000004CF64C5B2	0000C9	
4	SEAGATE	ST336752FSUN36G	0205	21000004CF6096F0	0000C7	
5	SEAGATE	ST336752FSUN36G	0205	21000004CF648010	0000C6	
6	SUN	StorEdge 3510F	D1046	215000C0FF00225B	0000CD	
7	No device present					
8	No device present					
9	No device present					
10	No device present					
11	No device present					
12	No device present					
13	No device present					
14	No device present					
15	No device present					

5. To exit the QLogic Fast!UTIL, press the Escape key and move the Highlight to "Exit Fast!UTIL" and press Enter.

The following QLogic Fast!UTIL menu is displayed.

QLogic Fast!UTIL						
Selected Adapter						

Adapter Type	I/O Address	Slot	Bus	Device	Function	
QLA2462	9400	01	02	01	1	

Fast!UTIL Options						
Configuration Settings						
Scan Fibre Deivces						
Fibre Disk Utility						
Loopback Data Test						
Select Host Adapter						
Exit Fast!UTIL						

The following QLogic Fast!UTIL menu is displayed.

QLogic Fast!UTIL	
Exit Fast!UTIL	

Reboot System	
Return to Fast!UTIL	

Installing the HBA Driver With the Solaris 10 OS

After you have completed the hardware installation and powered on the system, follow the instructions in this section to install the HBA driver with the Solaris 10 Operating System (OS) (SPARC or x64 Platform Edition).

To Download the Solaris Patch Cluster

1. Go to the SunSolve site at:

<http://sunsolve.sun.com>

2. Click on Patch Portal under Recommended and Security Patches.
3. Click on Recommended Patch Clusters under Recommended Solaris Patch Clusters, J2SE and Java Enterprise System Clusters.
4. Select and download one of the following:
 - Solaris 10 (89.5M)
 - Solaris 10 X86 (75.7M)

Install this patch cluster before installing qlc driver patch.

▼ To Download HBA Driver Patches

The following qlc driver patches are needed to support the HBA:

Operating System	Patch Number	Location	Patch Name
Solaris 10 SPARC	119130-13 or higher	SunSolve Online at: http://sunsolve.sun.com	qlc driver
Solaris 10 X86	119131-13 or higher	SunSolve Online at: http://sunsolve.sun.com	qlc driver



Caution – Before installing this patch, you should ensure that all other recommended Sun patches are installed.

▼ To Install the Patch

- Use the `patchadd` command.

Diagnostic Support

The following SunVTS patches are needed to perform the diagnostic test for the HBA:

Operating System	Patch Number	Location	Patch Description
Solaris 10 SPARC	120965-01 or higher	SunSolve Online at: http://sunsolve.sun.com	qlctest update for SunVTS 6.0
Solaris 10 X86	120966-01 or higher	SunSolve Online at: http://sunsolve.sun.com	qlctest update for SunVTS 6.0

Diagnostic support for the HBA is available with SunVTS 6.0 with these patches.

Installing the HBA Driver With the Red Hat and SuSE OSs

After you have completed the hardware installation and powered on the system, follow the instructions in this section to install the HBA driver with the Red Hat and SuSE HBA driver and utilities.

▼ To Install the HBA Driver

1. Go to the following:

http://www.qlogic.com/support/sun_page.html

The download page for SG-XPCI1FC-QF4 and SG-XPCI2FC-QF4 will be displayed under Sun Recommended Enterprise 4 Gb Fibre Channel HBA Software.

2. Locate the Drivers for Linux section, and click the link in the Download column for the Linux driver.
3. Download the driver and utility program to a local drive.
4. Click the Driver Download button. After the driver is downloaded, click the utility program Download button.

5. **Open the ReadMe and Release notes by clicking the link to it, locate and follow the instructions for installing the driver and utilities. To verify the installation, follow the instructions provided in the description section of the ReadMe file.**

To verify the installation, follow the instructions provided in the description section of the *QLogic User's Guide*.

Red Hat and SuSE OS Diagnostic Support

Diagnostic support is provided by the QLogic SANsurfer Pro or command line interface (CLI) utility. It supports the following functions:

- List adapters
- Adapter information
- Firmware maintenance
- Diagnostic test adapters

Details are provided in the description section of the ReadMe file.

Installing the HBA Driver With the Red Hat Enterprise Linux, and SuSE Linux Enterprise Server OSs

This section describes installing the HBA driver with the following OSs:

- Red Hat Enterprise Linux (RHEL) 3 and 4
- SuSE Linux Enterprise Server (SLES) 8 and 9

These operating systems are supported on the Sun StorageTek Enterprise 4 Gb Fibre Channel Single and Dual Port HBA. Before installing the drivers for Linux, you must have the relevant Linux OS installed on your hard disk. The driver source is available for download as a `.tgz` package at the QLogic web page dedicated to Sun products. Instructions to install the drivers, and to create a bootable device connected to this HBA, are also provided in the README file associated with the driver at the QLogic download page.

▼ To Download and Install the Red Hat and SuSE HBA Driver and Utility

The driver source is applicable to both IA32 and AMD64 hardware architectures. Follow the instructions in this section to download and install the Red Hat and SuSE OS HBA driver and utility.

1. **Go to the QLogic download site for Sun Microsystems at:**
http://www.qlogic.com/support/sun_page.html
2. **Scroll down and locate the table titled Sun Recommended Enterprise 4 Gb Fibre Channel HBA software.**
3. **Scroll through this table and locate the following in the Name column:**
Red Hat Enterprise Linux 4 Driver and SLES 9 (Kernel 2.6) Source Tarball or Red Hat Enterprise Linux 3 Driver and SLES 8 (Kernel 2.4) Source Tarball.
4. **Click Download in the right column.**
5. **Click the README and locate the installation steps for using the .tgz source package.**
6. **Follow the instructions and download the driver source by clicking the associated Download button.**

To Run a Diagnostic Check on the HBA

Diagnostics for the Sun StorageTek 4 Gb FC Enterprise PCI or PCI-X Single and Dual Channel HBA are provided in the SANsurfer Pro and SANsurfer CLI for Linux utility. These diagnostics are available for download at the QLogic web page dedicated for Sun products.

Follow these instructions to run a quick diagnostic check on the HBA:

1. **Go to the QLogic download site for Sun Microsystems at:**
http://www.qlogic.com/support/sun_page.html
2. **Scroll down and locate the table titled Sun Recommended Enterprise 4 Gb Fibre Channel HBA software.**
3. **Scroll through this table and locate the following in the Name column:**
SANsurfer Pro for Red Hat Enterprise Linux 3 (Kernel 2.4) and 4 (kernel 2.6) AMD64 platforms

4. Click Download in the right column.
5. Click the README for the download and install instructions.

Installing the HBA Driver With the Windows 2000 or Windows Server 2003 OS

The instructions in this section describe how to install an HBA driver for a Sun StorageTek 4 Gb FC Enterprise PCI or PCI-X Single or Dual Channel HBA connected to an external (non-boot) Fibre Channel device. Before you start this process, ensure that the operating system is installed and that your system is configured with the latest Service Pack and Windows Update.

Note – The driver is only installed once, even if you have multiple Sun StorageTek HBAs installed.

▼ To Install the HBA Driver

1. Power down your system.
2. Install the Sun StorageTek Enterprise 4Gb FC PCI-X Single or Dual Channel HBA into a PCI or PCI-X slot. See “Installing the HBA” on page 2 for more information.
3. Power up the system and allow Windows OS to boot.
4. When the Found New Hardware wizard appears, click Cancel.
5. Go to the QLogic download site for Sun Microsystems at:
http://www.qlogic.com/support/sun_page.html
6. Scroll down and locate the table titled Sun Recommended Enterprise 4 Gb Fibre Channel HBA software.
7. Scroll through this table and locate the following in the Name column:
Windows Server 2003 x64 Edition STOR Miniport Microsoft Certified Driver Package
8. Click Download in the right column.

9. **Save the q23wx64Storv91016.exe file to a directory of your choice.**
Following the ReadMe file to install the Driver.
10. **Reboot your system.**
11. **Click Next to return to the SANsurfer HBA Install Wizard window (main).**

▼ To Install the SANsurfer Pro and CLI for Windows

The QLogic SANsurfer Pro and CLI provides configuration management utilities and diagnostics for the Sun StorageTek Enterprise 4Gb FC PCI-X Single and Dual Channel HBA. Follow these instructions to install the SANsurfer Pro and CLI for Windows:

1. **Go to the QLogic download site for Sun Microsystems at:**
http://www.qlogic.com/support/sun_page.html
2. **Scroll down and locate the table titled Sun Recommended Enterprise 4 Gb Fibre Channel HBA software.**
3. **Scroll through this table and locate the following in the Name column:**
SANsurfer Pro for Windows 2000 and Windows Server 2003
4. **Click Download in the right column.**