

# Sun StorageTek ATCA 4Gb FC Dual Port HBA

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Installation Guide For HBA Models  
SG-XPCIE2FC-ATCA-Z, SG-PCIE2FC-ATCA-Z,  
SG-XPCIE2FC-ATCA-N, and SG-PCIE2FC-ATCA-N



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# Preface

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This installation guide describes how to install and remove Oracle's Sun StorageTek ATCA 4Gb FC dual port host bus adapter (HBA). It also explains how to verify the driver version and install any necessary patches.

This document is written for technicians, system administrators, application service providers (ASPs), and users who have advanced experience troubleshooting and replacing hardware.

This preface contains the following topics:

- "Accessing Oracle Documentation" on page v
- "Accessing Related Documentation" on page vi
- "Documentation, Support, and Training" on page vi
- "Documentation Comments" on page vi

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## Accessing Oracle Documentation

To view, print, or purchase a broad selection of Oracle documentation, including localized versions, go to:

<http://docs.sun.com>

To access HBA documentation, go to:

<http://docs.sun.com/app/docs/prod/storage.net?l=en>

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## Accessing Related Documentation

The document listed in this section is available at:

<http://docs.sun.com/source/819-0139/>

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Title	Part Number
<i>Solaris Fibre Channel and Storage Multipathing Administration Guide</i>	819-0139

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## Documentation, Support, and Training

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Sun Function	URL
Documentation	<a href="http://docs.sun.com">http://docs.sun.com</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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**Note** – Prior to contacting Oracle support, record the HBA serial number in a safe location.

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## Documentation Comments

We are interested in improving the product documentation and welcome your comments and suggestions. You can submit comments by clicking the Feedback{+} link at:

<http://docs.sun.com>

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

*Sun StorageTek ATCA 4Gb FC Dual Port HBA Installation Guide*, part number 820-2217-13

## HBA Overview

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This chapter provides a basic overview of Oracle’s Sun StorageTek ATCA 4Gb FC Dual Port host bus adapter (HBA), which uses Emulex technology. This chapter also describes the various operating systems, host platforms, storage, and infrastructure configurations that support the HBA.

This chapter contains the following topics:

- “Kit Contents” on page 1
- “HBA Features and Specifications” on page 1
- “Operating System Requirements” on page 3
- “System Interoperability” on page 3

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## Kit Contents

- Sun StorageTek ATCA 4Gb FC Dual Port HBA
- *Accessing Documentation* document (part number: 820-2299-10)

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## HBA Features and Specifications

The Sun StorageTek ATCA 4Gb FC Dual Port HBA (SG-XPCIE2FC-ATCA-Z, SG-PCIE2FC-ATCA-Z, SG-XPCIE2FC-ATCA-N, SG-PCIE2FC-ATCA-N) is a single-width, midsize, Advanced Mezzanine Card with a 4-lane PCI Express bus. The board supports two independent FC buses operating at 4.25 Gbits/sec. It is also backward compatible with 2.125-Gbit/sec and 1.0625-Gbit/sec devices. See [TABLE 1-1](#) for a list of the HBA features.

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

<b>Feature</b>	<b>Description</b>
AMC connector	B+
PCI signaling environment	PCI Express x4 (4 active lanes)
PCI transfer rate (maximum)	PCI Express Generation One (2.5 Gbits/sec) x4
Number of FC buses	Two
Number of devices supported	126 devices per FC loop; 510 devices in Fabric mode
FC bus type (external)	Fiber-optic media, short-wave, multi-mode fiber (400-M5- SN-S)
FC transfer rate	400 MBps per port maximum, half-duplex 800 MBps per port maximum, full-duplex
RAM	1.5 MB, parity protected, per port
BIOS ROM	One 4-MB flash ROM, field-programmable
NVRAM	One 2-KB EEPROM, field-programmable
External connectors	Two Small-Form Factor (SFF) multimode optic with LC-style connectors
Maximum FC cable length	1 Gbps: 500 meters using 50/125 $\mu\text{m}$ core fiber 300 meters using 62.5/125 $\mu\text{m}$ core fiber 2 Gbps: 300 meters using 50/125 $\mu\text{m}$ core fiber 150 meters using 62.5/125 $\mu\text{m}$ core fiber 4 Gbps: 150 meters using 50/125 $\mu\text{m}$ core fiber 70 meters using 62.5/125 $\mu\text{m}$ core fiber
LED indicators	Two LEDs per channel (yellow and green) on the front panel as status indicators. Three AMC LEDs: one blue LED for hot-swap, one red LED for out-of-service, and one green LED for in-service.
Form Factor	AdvancedMC, single wide



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# Operating System Requirements

The HBA requires the operating system (OS) levels, at minimum, listed in [TABLE 1-2](#).

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

Operating System	Supported Versions (minimum)
Solaris 10 OS for the x64 and x86 platform	Solaris 10 8/07 (s10u4), 11/06 (s10u3), 6/06 (s10u2), and 1/06 (s10u1) and latest patches* 119131 and 120223  Solaris 10 First Customer Shipment (FCS), packages <sup>†</sup> SUNWem1xs and SUNWem1xu and latest patches 119255, 119131, and 120223
Solaris 10 OS for the SPARC platform	Solaris 10 8/07 (s10u4), 11/06 (s10u3), 6/06 (s10u2), and 1/06 (s10u1) and latest patches 119130 and 120222  Solaris 10 FCS, packages SUNWem1xs and SUNWem1xu and latest patches 119254, 119130, and 120222
Linux OS	Wind River PNE 2.0 Carrier Grade Linux  Red Hat Enterprise Linux (RHEL) 5.2

\* Patches are available at <http://sunsolve.sun.com>.

† Packages are available at the Sun Download Center (SDLC) at <http://sun.com/download>.

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## System Interoperability

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

- “Host Platform Support” on page 4
- “Storage System Support” on page 4
- “Fibre Channel Switch Support” on page 4
- “Software Support” on page 5

# Host Platform Support

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

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

Platform	Supported OS
Netra™ ACTA 3060 and 3220 servers	Solaris, Linux*

\* See [TABLE 1-2](#) for specific OS versions.

The system must have an available AdvancedMC slot in which you can install the HBA.

## Storage System Support

The HBA supports the following storage systems:

- Sun StorageTek 2540 FC array
- Sun StorEdge 3510 and 3511 FC arrays (RAID configurations only)
- Sun StorageTek 6140 array

## Fibre Channel Switch Support

The HBA is supported with the following FC switches:

- 2 Gb QLogic SANbox 5200 switch
- 4 Gb QLogic SANbox 5600 and 5602 Stackable FC switches
- 2 Gb Brocade SilkWorm 3200 and 3800 switches
- 2 Gb Brocade SilkWorm 3250 and 3850 switches
- 2 Gb Brocade SilkWorm 3900 switch
- 2 Gb Brocade SilkWorm 12000 and 24000 Core Fabric switches
- 4 Gb Brocade SilkWorm 4100 switch
- 4 Gb Brocade SilkWorm 48000 and 200E
- 4 Gb Brocade 4900
- 4 Gb Brocade 5000
- 4 Gb Brocade 7500

- 10 Gb Brocade M6140 Director
- 10 Gb Brocade Mi10K Director
- 2 Gb McDATA Sphereon 4300 switch
- 2 Gb McDATA Sphereon 4500 switch
- 2 Gb McDATA Intrepid 6064 Director
- 4 Gb McDATA Sphereon 4400 and 4700 switches
- Cisco MDS 9120 Fabric switch
- Cisco MDS 9124 24-Port Multilayer Fabric switch
- Cisco MDS 9140 Fabric switch
- Cisco MDS 9216A Multilayer Fabric switch
- Cisco MDS 9216i Multilayer Fabric switch
- Cisco MDS 9509 Multilayer Director
- Cisco MDS 9513 Multilayer Director

## Software Support

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

**TABLE 1-4** Software Support

Software (Minimum Versions)	Supported OS
SunCluster 3.x	Solaris
VERITAS Software Foundation 5.0	Solaris
Sun StorEdge Enterprise Backup Software 6.0B/7.0/7.1	Solaris <b>Note</b> - Supported on the client only.
VERITAS Cluster Server 3.5/4.0	Solaris
VERITAS NetBackup 6.0	Solaris <b>Note</b> - Supported on the client only.



## Hardware Installation and Removal

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This chapter describes the tasks required 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 7
- “Installing the Hardware” on page 8
- “To Verify the Installation (Solaris OS)” on page 13
- “Removing the Hardware” on page 15

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### Observing ESD and Handling Precautions



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**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.

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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 Oracle 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.

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## Installing the Hardware

The hardware installation process involves the following general steps:

- “To Verify the PPS Shelf Manager Firmware Version” on page 8
- “To Install the HBA” on page 8
- “To Connect the Optical Cable” on page 10

The following sections describe these steps in more detail.

### ▼ To Verify the PPS Shelf Manager Firmware Version

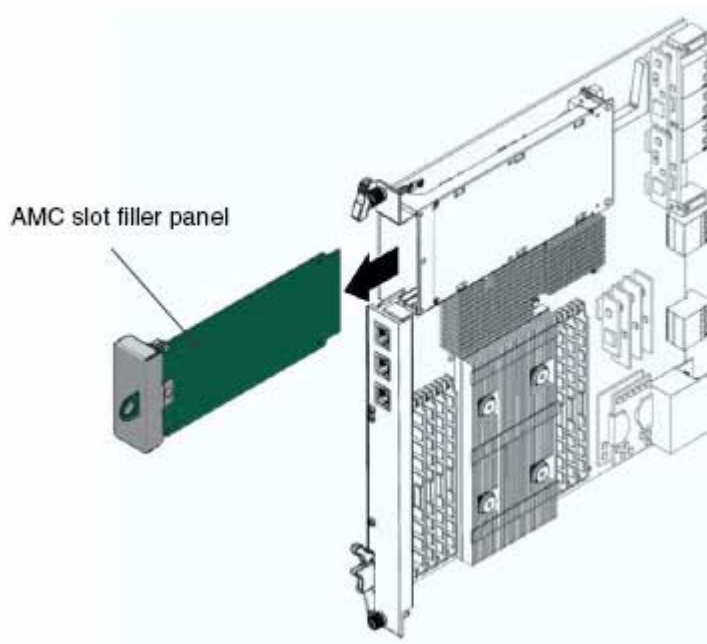
If you are using Oracle’s Sun Netra CT900 ATCA Blade Server or are using any Pigeon Point Systems (PPS) Shelf Manager, you must verify the PPS Shelf Manager firmware version prior to installing the HBA. The latest available version of the PPS Shelf Manager firmware is required to support the HBA.

1. **Access the *Pigeon Point Shelf Manager User’s Guide* at:**  
<http://www.pigeonpoint.com/library.html>
2. **Follow the instructions in the *Pigeon Point Shelf Manager User’s Guide* about how to verify the PPS Shelf Manager firmware that is currently installed.**
3. **Verify and, if necessary, install the latest available version of the PPS Shelf Manager firmware, as described in “Potential AMC I/O Card Corruption” on page 21.**

### ▼ To Install the HBA

1. **Attach an antistatic strap.**  
Refer to “Observing ESD and Handling Precautions” on page 7.
2. **Remove the AMC slot filler panel from the front panel of the Netra board (FIGURE 2-1).**

**FIGURE 2-1** Removing the AMC Slot Filler Panel



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**Note** – A module handle is at the bottom of the HBA. When you install the HBA, the position of the module handle (pulled out or pushed in) does not matter.

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3. Insert the HBA through the cutout and into the AMC slot ([FIGURE 2-2](#)).

**FIGURE 2-2** Inserting the HBA Into the AMC Connector



4. Carefully plug the HBA into the AMC connector ([FIGURE 2-2](#)).

Ensure that the HBA is seated correctly in the connector.



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**Caution** – Do not use excessive force when installing the HBA into the slot. You might damage the AMC connector on the Netra board, causing permanent damage to the HBA or board. If the HBA does not seat properly when you apply even pressure, remove the HBA and carefully reinstall it.

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5. If the module handle was pulled out when you inserted the HBA, push the handle all the way in.
6. If the server is powered on, the HS LED next to the module handle blinks two or three times.

When the HS LED goes dark, the HBA is installed.

## ▼ To Connect the Optical Cable

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**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).

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



**TABLE 2-1** Optical Cable Specifications

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

Follow these steps when connecting the optical cable:

1. **Connect the fiber-optic cable to an LC connector on the HBA as shown in [FIGURE 2-3](#).**

**FIGURE 2-3** Connecting the Optical Cables



2. **Connect the other end of the cable to the FC device.**

3. Observe the port LEDs status for the power-on self test (POST) results as shown in [TABLE 2-2](#).

[TABLE 2-2](#) summarizes port LED indicator combinations. Refer to [FIGURE 2-4](#) to determine the location of the LEDs. Each port has a corresponding set of LEDs that provide a visual indication of the operating state.

**TABLE 2-2** Port LED Indicator Status Definitions

Green LED	Yellow LED	State
On	1 fast blink	1-Gb link rate - Normal operating state, link up
On	2 fast blinks	2-Gb link rate - Normal operating state, link up
On	3 fast blinks	4-Gb link rate - Normal operating state, link up
Off	Off	One of the following: <ul style="list-style-type: none"> <li>• Wake-up failure (failed board)</li> <li>• Server not powered on</li> <li>• Server not providing power to the board</li> </ul>
Off	On	POST failure (failed board)
Off	Slow blink	Wake-up failure monitor
Off	Fast blink	Failure in POST
Off	Flashing	POST processing in progress
On	Off	Failure while functioning
On	On	Failure while functioning
Slow blink	Off	Normal - link down
Slow blink	On	Not defined
Slow blink	Slow blink	Off-line for download
Slow blink	Fast blink	Restricted off-line mode (waiting for restart)
Slow blink	Flashing	Restricted off-line mode, test active

FIGURE 2-4 LEDs



## ▼ To Verify the Installation (Solaris OS)

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

```
% cfgadm
```

Ap_Id	Type	Receptacle	Occupant	Condition
c3	fc	connected	configured	ok
c4	fc	connected	configured	ok
pcie5	fibre/hp	connected	configured	ok

If the HBA is properly installed and connected, you will see output similar to that shown in the example.

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

## ▼ To Verify Attached Storage (Solaris OS)

1. Use the `cfgadm -al` command to verify attached storage.

```
% cfgadm -al
```

Ap_Id	Type	Receptacle	Occupant	Condition
c3	fc-fabric	connected	configured	unknown
c3::200600a0b816005e	disk	connected	configured	unknown
c3::200700a0b816005e	disk	connected	configured	unknown
c4	fc	connected	unconfigured	unknown
pcie5	fibre/hp	connected	configured	ok

If the HBA is properly installed and storage is connected properly, you will see output similar to that shown in the example. In this example, one port of an HBA adapter is connected through a fabric switch to two ports of a disk array.

2. If an adapter is shown as unconfigured, use the `cfgadm -c` command to configure it.

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# 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 adapter removal instructions.

The hardware removal process involves following these general steps:

1. Preparing the HBA for hot-plug removal with one of the following:
  - The module handle
  - The Solaris OS
2. Removing the AMC module hardware

## ▼ To Prepare the HBA for Hot-Plug Removal Using the Module Handle

This feature is not supported at this time.

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

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

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

```
% cfgadm
```

Ap_Id	Type	Receptacle	Occupant	Condition
pcie5	fibre/hp	connected	configured	ok
pcie6	fibre/hp	connected	configured	ok

2. Use the `cfgadm -c unconfigure` command to unconfigure the attachment point ID (`Ap_Id`) for the HBA.

3. Use the `cfgadm -c disconnect` command to prepare the HBA for removal.

A flashing 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 Hardware

1. After the HS LED stops blinking and stays blue, pull the module lever out the rest of the way, and pull the HBA from the slot.

**FIGURE 2-5** Removing the HBA



## HBA Software Installation

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This chapter describes the Solaris driver software that is required to support the HBA. The chapter contains the following section:

- “Installing Software for the Solaris OS” on page 17
- “Installing Software for the Wind River Linux OS” on page 18
- “Installing Software for the Red Hat Enterprise Linux OS” on page 19

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### Installing Software for the Solaris OS

The HBA driver is included in the Solaris 10 6/06 (s10u2) release, at minimum. This Solaris 10 6/06 release, and later releases, require nothing from the user.

Solaris 10 1/06 (s10u1) is required to support the HBA on minimum supported versions of Solaris for x64/x86 systems. If you are using the Solaris 10 1/06 release, install patch 120222-21 or 120223-21 to install the HBA driver. Patches are available at <http://sunsolve.sun.com>.

#### ▼ To Install or Update the 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 typing the following at the command prompt.

```
# patchadd patch-name
```

# Solaris Diagnostic Support

Diagnostic support for the HBA is included in Oracle's SunVTS software beginning with version 6.3. SunVTS is included with the Solaris 10 11/06 (s10u3) release and is also available for download at:

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

The `emlxtest` utility, 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

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## Installing Software for the Wind River Linux OS

The HBA driver is included in the supported version of the Wind River Linux OS. However, you must use the Wind River development kit to create a version of Wind River Linux that supports your hardware environment, which includes this HBA.

### ▼ To Obtain the Wind River Development Kit

1. **Go to the customer support area of the Wind River website at:**  
<http://www.windriver.com/support/>
2. **Contact Wind River customer support to purchase a development kit that is specific to your hardware environment.**

The development kit enables you to create a version of Wind River Linux that supports your hardware environment.



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**Note** – When you contact Wind River customer support, be sure to specify all components in your hardware environment (including this HBA). This will ensure you receive all software that is required to run in the hardware environment.

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## Installing Software for the Red Hat Enterprise Linux OS

No updates are required to support the HBA on minimum supported versions of the Red Hat Enterprise Linux OS.

For diagnostic support, you might need to rebuild the Linux driver. Before rebuilding the driver for Linux, you must have the required Linux OS installed on the hard disk.

The driver and management utilities are available for download at the Emulex support site for Sun Microsystems.

### ▼ To Install the HBA Software for the Linux OS

1. Go to the Emulex support site for Oracle at:  
<http://www.emulex.com/downloads/sun.html>
2. Locate the Sun StorageTek section and click the model number for this HBA.
3. Locate the Linux Driver section and click the link to the driver for the appropriate version of Linux.
4. Click the driver kit Download icon to copy the driver to a local file system.
5. Click the applications kit Download icon to copy the management utilities to a local file system.
6. Click each of the manual icons to open the associated user manual.
7. Install the driver for Linux as described in the Emulex driver user manual.
8. Install the management utilities as described in the Emulex utilities user manual.



## Known Issues

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This chapter contains any known issues with the HBA. The chapter contains the following topic:

- “Potential AMC I/O Card Corruption” on page 21

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## Potential AMC I/O Card Corruption

**Issue:** If you are using Oracle’s Sun Netra CT900 ATCA Blade Server or are using any Pigeon Point Systems Shelf Manager, the Shelf Manager will corrupt any AMC I/O cards when the Shelf Manager firmware is not at the latest version. The Shelf Manager firmware must be the latest version available from Oracle’s Download Center (for an Oracle chassis) or from Pigeon Point Systems (for a non-Oracle chassis).

**Workaround:** To prevent corruption, DO NOT insert any AMC I/O cards into the chassis until you have upgraded the Shelf Manager firmware to the latest available version.

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**Note** – Only Oracle configurations, as described in “System Interoperability” on page 3, are supported. Use of this product in non-supported configurations is done at your own risk.

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To obtain the latest firmware, do either of the following:

- If you have an Oracle ATCA chassis, download the latest Shelf Manager firmware (R3HW1) from Oracle at:

<http://www.sun.com/download/products.xml?id=47269d8bb>

- **If you have a non-Oracle ATCA chassis, contact Pigeon Point Systems customer support for information about downloading the latest firmware version:**

<http://www.pigeonpoint.com/contact.html>

You can also contact Pigeon Point Systems customer support at:

[support@pigeonpoint.com](mailto:support@pigeonpoint.com)

## Declaration of Conformity, Safety, and Regulatory Statements

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This appendix provides Declaration of Conformity, safety, and regulatory statements for the HBA.

The appendix contains the following topics:

- [“Declaration of Conformity” on page 25](#)
- [“Safety Agency Compliance Statements” on page 27](#)
- [“Regulatory Compliance Statements” on page 41](#)



# Declaration of Conformity

To receive a copy of the latest Declaration of Conformity (DoC) for the product, either contact your local Oracle sales representative, or create an online request at:

[https://www2.sun.de/dct/forms/reg\\_us\\_1607\\_755\\_0.jsp](https://www2.sun.de/dct/forms/reg_us_1607_755_0.jsp)





# Safety Agency Compliance Statements

Read this section before beginning any procedure. The following text provides safety precautions to follow when installing an Oracle 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.
- This product is intended for restricted access whereby access is controlled through the use of a means of security (for example, key, lock, tool, badge access) and personnel authorized for access have been instructed on the reasons for the restrictions and any precautions that need to be taken.

## Symbols

The following symbols may appear in this book:



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

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

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

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



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**On** – Applies AC power to the system.

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**Off** – Removes AC power from the system.

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

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## 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



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**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.

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## SELV Compliance

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

## Power Cord Connection



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**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:



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**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:



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**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



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**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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## Energy Storage Module Caution



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**Caution** – There is a danger of shock or equipment damage if energy storage modules are mishandled or incorrectly replaced. When replacing the energy storage modules, use only replacement modules that have been provided by Sun Microsystems, following the instructions provided in the product service manual. Do not disassemble modules or attempt to recharge them outside of the system. Do not dispose of the modules; instead, return them to Sun Microsystems in accordance with Sun procedures for the product

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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 Instructions

The following or similar rack-mount instructions are included with the installation instructions:

- **Elevated Operating Ambient** – If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.
- **Reduced Air Flow** – Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** – Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** – Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits

might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- **Reliable Earthing** – Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).



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**Caution** – Slide/rail mounted equipment must not be used as a shelf or workspace.

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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.



**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

Veillez 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.

- Ce produit est destiné à être utilisé dans des zones à accès limité, dans lesquelles les accès sont contrôlés au moyen de systèmes de sécurité (par exemple, à clé, verrou, dispositif ou badge). Le personnel autorisé à accéder à ces zones doit avoir été préalablement informé des raisons justifiant la limitation des accès et de toutes les précautions à prendre.

## 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.

## 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.

## Avertissement - Module de stockage d'énergie



**Attention** – Si vous manipulez ou remplacez les modules de stockage d'énergie incorrectement, vous risquez de les

endommager ou de vous exposer à un choc électrique. Remplacez les modules de stockage d'énergie uniquement par les modules de remplacement que Sun Microsystems fournit, en veillant à respecter les instructions indiquées dans le manuel d'entretien du produit. Ne démontez pas les modules. N'essayez pas de les recharger hors du système. Ne jetez pas les modules, mais retournez-les à Sun Microsystems conformément aux procédures Sun relatives au produit.

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## 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.

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## Instructions de montage en rack

Les instructions de montage en rack suivantes ou similaires à celles-ci sont fournies avec les instructions d'installation :

- **Température ambiante de fonctionnement élevée** : en cas d'installation dans un châssis fermé ou contenant plusieurs appareils, la température ambiante de fonctionnement au niveau du rack peut être supérieure à la température ambiante de la pièce. En conséquence, il convient de veiller à installer le matériel dans un environnement compatible avec la température ambiante maximale (T<sub>ma</sub>), spécifiée par le fabricant.
- **Débit d'air réduit** : l'installation du matériel dans un rack doit être effectuée de façon à ne pas compromettre le débit d'air nécessaire pour un fonctionnement sûr de ce matériel.
- **Charge mécanique** : le montage de l'équipement en rack doit être réalisé de manière à éviter toute situation dangereuse résultant d'une charge déséquilibrée.
- **Surcharge de circuit** : il convient de prendre les précautions nécessaires pour la connexion du matériel au circuit d'alimentation et de réfléchir aux

conséquences d'une éventuelle surcharge des circuits sur la protection de surintensité et sur le câblage d'alimentation. En l'occurrence, les valeurs nominales de la plaque signalétique du matériel doivent être prises en compte.

- **Mise à la terre fiable** : une mise à la terre fiable du matériel monté en rack doit être assurée. Une attention toute particulière est requise pour les raccordements d'alimentation autres que ceux effectués directement sur le circuit principal (par exemple, en cas d'utilisation de blocs multiprises).



**Attention** – L'équipement monté sur glissière/rail ne doit servir ni d'étagère ni d'espace de travail.

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## 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.

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

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**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.

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**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

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## 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:




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**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.

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## Einhaltung sicherheitsbehördlicher Vorschriften

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

### Sicherheitsvorkehrungen

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

- Beachten Sie alle auf den Geräten angebrachten Warnhinweise und Anweisungen.

- Stellen Sie sicher, dass Spannung und Frequenz der Stromversorgung den Nennleistungen auf dem am Gerät angebrachten Etikett entsprechen.
- Führen Sie niemals Fremdobjekte in die Öffnungen am Gerät ein. Es können gefährliche Spannungen anliegen. Leitfähige Fremdobjekte können einen Kurzschluss verursachen, der einen Brand, Stromschlag oder Geräteschaden herbeiführen kann.
- Dieses Produkt unterliegt Zugangsbeschränkungen. Der Zugang wird mithilfe eines Sicherheitsmechanismus kontrolliert (z. B. einem Schlüssel, einer Sperre, einem Tool oder eines Werksausweises) und das autorisierte Zugangspersonal wurde über die Gründe für die Beschränkungen und die zu treffenden Sicherheitsmaßnahmen unterrichtet.

## Symbole

Die Symbole in diesem Handbuch haben folgende Bedeutung:




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

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

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

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




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**Ein** – Versorgt das System mit Wechselstrom.

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**Aus** – Unterbricht die Wechselstromzufuhr zum Gerät.

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

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## 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.

## 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.



## Sicherheitshinweise zum Energiespeichermodul

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**Achtung** – Bei unsachgemäßer Handhabung oder unsachgemäßem Austausch von Energiespeichermodulen besteht die Gefahr eines Stromschlags oder Geräteschadens. Verwenden Sie beim Austausch von Energiespeichermodulen nur Ersatzmodule, die von Sun Microsystems bereitgestellt wurden, und folgen Sie den im Service Manual zum Produkt enthaltenen Anweisungen. Versuchen Sie auf keinen Fall, Module auszubauen oder diese außerhalb des Systems wiederaufzuladen. Entsorgen Sie die Module bitte nicht. Geben Sie sie stattdessen an Sun Microsystems gemäß den Sun-Verfahren für das Produkt zurück.

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## 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.

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

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## Anweisungen zur Rack-Montage

Die folgenden oder ähnlichen Anweisungen zur Rack-Montage wurden in die Installationsanweisungen aufgenommen:

- **Erhöhte Betriebsumgebungstemperatur** - Wenn das Rack in einer geschlossenen Rack-Baugruppe oder in einer Multi-unit-Rack-Baugruppe installiert ist, kann die Betriebsumgebungstemperatur der Rack-Umgebung höher sein als die Umgebungstemperatur des Raumes. Deshalb sollte berücksichtigt werden, das Gerät in einer Umgebung zu installieren, die kompatibel zu der vom Hersteller angegebenen maximalen Umgebungstemperatur (T<sub>ma</sub>) ist.
- **Reduzierter Luftstrom** - Die Installation des Geräts in einem Rack sollte so erfolgen, dass die Luftstrommenge, die für den sicheren Betrieb des Geräts erforderlich ist, nicht beeinträchtigt wird.

- **Mechanische Belastung** - Die Montage des Geräts im Rack sollte so erfolgen, dass bei einer ungleichmäßigen mechanischen Belastung keine gefährliche Betriebsbedingung entstehen kann.
  - **Stromkreisüberlastung** - Der Anschluss des Geräts an den Speisestromkreis und die Wirkung, die ein Überlasten der Stromkreise auf das Überstromschutz-Gerät und die Speisestromkreisverkabelung haben kann, sollten sorgfältig geprüft und berücksichtigt werden. Beim Behandeln dieses Aspekts sollten besonders die Lastangaben auf dem Leistungsschild des Geräts sorgfältig geprüft werden.
  - **Zuverlässige Erdung** - Ausrüstung, die in Racks montiert ist, muss zuverlässig geerdet sein. Besonders müssen hierbei die Stromanschlussleitungen und weniger die direkten Verbindungen zum Abzweigstromkreis beachtet werden (z. B. durch die Verwendung von Adapterleisten).
- 



**Achtung** – Verwenden Sie Geräte in Steckplätzen bzw. auf Schienen nicht als Regal oder Arbeitsbereich.

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## Warnungen bezüglich in Racks eingebauter Systeme

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



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



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



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



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

## Hinweis zur Laser-Konformität

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

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

## CD- und DVD-Geräte

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



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

## Normativas de seguridad

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

## Medidas de seguridad

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

- Siga todos los avisos e instrucciones indicados en el equipo.
- Asegúrese de que el voltaje y frecuencia de la fuente de alimentación coincidan con el voltaje y frecuencia indicados en la etiqueta de clasificación eléctrica del equipo.
- No introduzca objetos de ningún tipo por las rejillas del equipo, ya que puede quedar expuesto a voltajes peligrosos. Los objetos conductores extraños pueden producir cortocircuitos y, en consecuencia, incendios, descargas eléctricas o daños en el equipo.
- Este producto se ha concebido para un acceso restringido y, por tanto, éste se controla mediante mecanismos de seguridad (p. ej., acceso con clave, bloqueo, herramienta y tarjeta de identificación). Las personas con acceso autorizado están al corriente de los motivos de esta restricción y de las precauciones que se deben tomar.

## 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.



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**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.

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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.

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## 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.

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## 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



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**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.

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**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.

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



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**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.

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



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**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.

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## Advertencia sobre las baterías



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**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.

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## Advertencia relativa al módulo de almacenamiento de energía



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**Precaución** – Existe un peligro de electrocuciones o daños en el equipo si se manipulan o sustituyen incorrectamente los módulos de almacenamiento de energía. Cuando cambie los módulos de almacenamiento de energía, utilice exclusivamente módulos de sustitución que hayan sido suministrados por Sun Microsystems, de conformidad con las instrucciones indicadas en el manual de

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servicio del producto. No desmonte módulos ni intente recargarlos fuera del sistema. No elimine los módulos. En su lugar, devuélvalos a Sun Microsystems de conformidad con los procedimientos de Sun para el producto.

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## 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.



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**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.

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## Instrucciones para el montaje en armario

Las siguientes instrucciones de montaje en armario u otras similares se incluyen en las instrucciones de instalación:

- **Temperatura de funcionamiento elevada** - si se instala en un armario cerrado o con más unidades, la temperatura ambiente de funcionamiento del entorno del armario puede ser superior a la de la habitación. Por tanto, el equipo debería instalarse en un entorno compatible con la temperatura ambiente máxima (T<sub>ma</sub>) especificada por el fabricante.
- **Flujo de aire reducido** - para instalar el equipo en un armario hay que asegurarse de que se mantendrá el flujo de aire necesario para el correcto funcionamiento del equipo.
- **Carga mecánica** - el montaje del equipo en el armario debería realizarse de modo que no se dé una situación de peligro debido a una carga mecánica irregular.
- **Sobrecarga del circuito** - debe prestarse atención a la conexión del equipo al circuito de alimentación y a las consecuencias que puede tener la sobrecarga de los circuitos en la protección de sobrecorriente y el cableado de alimentación. En caso de sobrecarga, es recomendable tener en cuenta la potencia del equipo que aparece en la placa de identificación.
- **Puesta a tierra fiable** - debería mantenerse una puesta a tierra fiable del equipo montado en un armario. Debería prestarse especial atención a las conexiones de suministro que no sean las directas al circuito derivado (p. ej., las regletas de distribución).



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**Precaución** – Los equipos instalados por deslizamiento o sobre raíles no deben utilizarse como estantería o espacio de trabajo.

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## Advertencia sobre el sistema en bastidor

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



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**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.

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

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**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.

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**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.

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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:



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

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## 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.

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## 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.

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## Nordic Power Distribution Cautions

### English



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**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.

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## Nordic Grounded Socket Cautions

### English



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

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## Norge



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

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## Sverige



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

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## Suomi



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

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# Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- 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。



## Korean MIC Class A Statement

A급 기기 (업무용 방송통신기기)	이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.
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