

Intel® Server Compute Blade SBXD62: Hardware Maintenance Manual and Troubleshooting Guide

**A Guide for Technically Qualified Assemblers of Intel® Identified Subassemblies/
Products**

Intel Order Number D50277-001

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Intel® server boards contain a number of high-density VLSI and power delivery components that need adequate airflow for cooling. Intel's own chassis are designed and tested to meet the intended thermal requirements of these components when the fully integrated system is used together. It is the responsibility of the system integrator that chooses not to use Intel developed server building blocks to consult vendor datasheets and operating parameters to determine the amount of airflow required for their specific application and environmental conditions. Intel Corporation can not be held responsible if components fail or the server board does not operate correctly when used outside any of their published operating or non-operating limits.

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Safety Information

Important Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See also Intel® Server Boards and Server Chassis Safety Information on the *Intel® Server Compute Blade SBXD62 Resource CD* and/or at <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warnung und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und Servergehäusen auf der *Intel® Server Compute Blade SBXD62 Resource CD* oder unter <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Consignes de sécurité

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez Intel Server Boards and Server Chassis Safety Information sur le *Intel® Server Compute Blade SBXD62 Resource CD* ou bien rendez-vous sur le site <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea Intel Server Boards and Server Chassis Safety Information en el *Intel® Server Compute Blade SBXD62 Resource CD* y/o en <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>.

重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。和/或 <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm> 上的 *Intel Server Boards and Server Chassis Safety Information* (《Intel 服务器主板与服务器机箱安全信息》)。

Warnings

These warnings and cautions apply whenever you remove the blade server enclosure cover to access components inside the system. Only a technically qualified person should maintain or configure the blade system.

Heed safety instructions: Before working with your server product, whether you are using this guide or any other resource as a reference, pay close attention to the safety instructions. You must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL listing and other regulatory approvals of the product and will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.

System power on/off: The power button DOES NOT turn off the system AC power. To remove power from the blade system, you must unplug the AC power cord from the wall outlet or the chassis. Make sure the AC power cord is unplugged before you open the chassis, add, or remove any components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the blade system and disconnect the power cord, telecommunications systems, networks, and modems attached to the blade system before opening it. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures in this document only at an ESD workstation. If one is not available, provide some ESD protection by wearing an anti-static wrist strap attached to chassis ground (any unpainted metal surface) on your blade system when handling parts.

ESD and handling electronic devices: Always handle electronic devices carefully. They can be extremely sensitive to ESD. Do not touch the connector contacts.

Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that you can grip with your fingertips or with a pair of fine needle nosed pliers. If your jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool you use to remove a jumper, or you may bend or break the pins on the board.

Reinstalling enclosure cover: To protect internal components and for proper cooling and airflow, the blade server cannot be inserted into the SBCE unit with the blade enclosure cover removed. Operating it without the enclosure cover in place can damage system parts.

1 Introducing the Intel® Server Compute Blade SBXD62

The Intel® Server Compute Blade SBXD62 is an high-efficiency blade server ideally suited for installation environments that require superior microprocessor power density performance, efficient memory management, flexibility, and reliable data storage.

This Hardware Maintenance Manual and Troubleshooting Guide provides information about:

- Setting up the blade server
- Starting and configuring the blade server
- Installing hardware options
- Performing basic troubleshooting of the blade server

Record information about your Intel® Server Compute Blade SBXD62 in the following table.

Note: *The model number and serial number are on the ID label that is behind the control panel door on the front of the blade server, and on a label on the right side of the blade server that is visible when the blade server is not in the Intel® Blade Server Chassis SBCE.*

Product name	Intel® Server Compute Blade SBXD62
Product code	
Model number	
Serial number	

Note: *The illustrations in this document might differ slightly from your hardware.*

Notices and Statements in this Document

The following notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Intel® Server Compute Blade SBXD62 Specifications

The following table provides a summary of the features and specifications of the Intel® Server Compute Blade SBXD62.

Note: *Power, cooling, removable-media drives, external ports, and advanced system management are provided by the Intel® Blade Server Chassis SBCE.*

Note: *The operating system in the blade server must provide USB support for the blade server to recognize and use the keyboard, mouse, CD-ROM drive, and diskette drive. The Intel® Blade Server Chassis SBCE uses USB for internal communications with these devices.*

<p>Microprocessor:</p> <p>Supports up to two Intel® Xeon dual-core microprocessors</p> <p>Use the Configuration/Setup Utility program to determine the type and speed of the microprocessors in your blade server.</p> <p>Memory:</p> <ul style="list-style-type: none"> • Dual channel 400 MHz (DDR2) with 4 dual inline memory module (DIMM) slots • Type: 2-way interleaved, DDR2, PC3200, ECC SDRAM registered x4 (Chipkill™) DIMMs only • Supports 512 GB, 1 GB, 2GB and 4 GB DIMMs (as of the date of this publication) for up to 16 GB of total memory. <p>Drives: Support for two internal small-form-factor SAS (Serial Attached SCSI) drives</p>	<p>Integrated functions:</p> <ul style="list-style-type: none"> • Dual-channel Gigabit Ethernet controller • Expansion card interface • ATI* Radeon 7000M video controller • LSI* 1064 Serial Attached SCSI (SAS) controller • Light Path Diagnostics* • Local service processor (BMC) • RS-485 interface for communication with the management module • Automatic server restart (ASR) • Serial over LAN (SOL) • Intelligent Platform Management Interface (IPMI) • 4 USB buses for communication with keyboard, mouse, and removable media drives <p>Predictive Failure Analysis* (PFA) alerts:</p> <ul style="list-style-type: none"> • Microprocessor • Memory 	<p>Electrical Input: 12 V dc</p> <p>Environment:</p> <ul style="list-style-type: none"> • Air temperature: <ul style="list-style-type: none"> – Blade server on: 10° to 35°C (50° to 95°F). Altitude: 0 to 914 m (2998.69 ft) – Blade server on: 10° to 32°C (50° to 95°F). Altitude: 914 m to 2134 m (2998.69 ft to 7000 ft) – Blade server off: -40° to 60°C (-40° to 140°F) • Humidity: <ul style="list-style-type: none"> – Blade server on: 8% to 80% – Blade server off: 5% to 80% <p>Size:</p> <ul style="list-style-type: none"> • Height: 24.5 cm (9.7 inches) • Depth: 44.6 cm (17.6 inches) • Width: 2.9 cm (1.14 inches) • Maximum weight: 5.4 kg (12 lb)
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Related Publications

In addition to this *Hardware Maintenance Manual and Troubleshooting Guide*, the following documentation is provided in Portable Document Format (PDF) on the Resource CD that came with your blade server.

- *Intel® Server Compute Blade SBXD62 Installation and User's Guide*

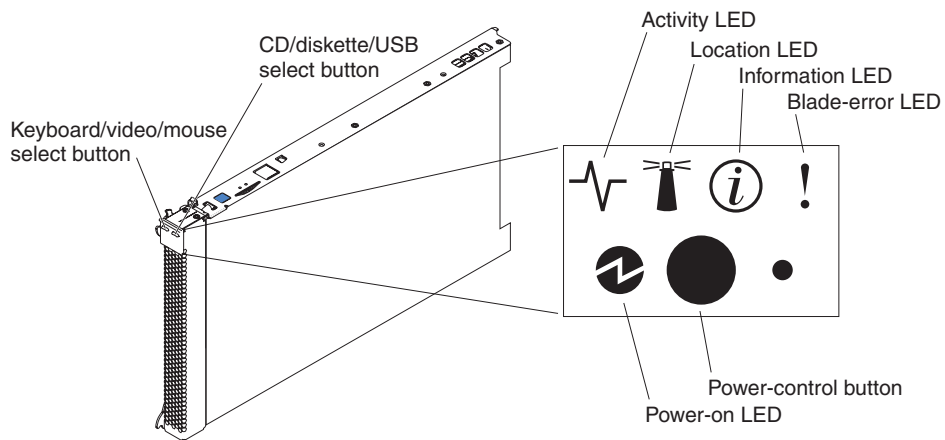
This document contains instructions for setting up and configuring the blade server and basic instructions for installing some options. It also contains general information about the blade server.

2 Using the Control Panel, Jumpers, Switches and Indicators

Understanding the Control Panel and LEDs

This section describes the blade server control panel buttons and LEDs.

The control panel door is shown in the closed (normal) position in the following illustration. To access the power-control button, you must open the control panel door.



Keyboard/video/mouse (KVM) select button: Press this button to associate the shared Intel® Blade Server Chassis SBCE keyboard port, video port, and mouse port with the blade server. The LED on this button flashes while the request is being processed then is lit when the ownership of the keyboard, video, and mouse has been transferred to the blade server. It can take approximately 20 seconds to switch the keyboard, video, and mouse control to the blade server.

You can also press keyboard keys in the following sequence to switch keyboard, video, and mouse control between blade servers:

NumLock NumLock *blade_server_number* Enter

Where *blade_server_number* is the two-digit number for the blade bay in which the blade server is installed.

Although the keyboard that is attached to the Intel® Blade Server Chassis SBCE might be a PS/2-style keyboard, internal communication with it is through the USB. The operating system in the blade server must provide USB support for the blade server to recognize and use the keyboard and mouse. When you are not running an operating system that has USB device drivers, such as in the following situations, the keyboard responds very slowly:

- Running the blade server integrated diagnostics

- Running a BIOS update diskette on a blade server
- Updating the diagnostics on a blade server
- Running the Broadcom* firmware CD for a blade server

If there is no response when you press the keyboard/video/mouse select button, you can use the management-module Web interface to determine whether local control has been disabled on the blade server.

If you install a supported Microsoft Windows* operating system on the blade server while it is not the current owner of the keyboard, video, and mouse, a delay of up to 1 minute occurs the first time you switch the keyboard, video, and mouse to the blade server. During this one-time-only delay, the blade server device manager enumerates the keyboard, video, and mouse and loads the device drivers. All subsequent switching takes place in the normal keyboard/video/mouse switching time frame (up to 20 seconds).

Media Tray select button: Press this button to associate the shared SBCE removable-media drives and front panel USB ports with the blade server. The LED on the button flashes while the request is being processed then is lit when the ownership of the removable-media drives and front panel USB ports has been transferred to the blade server. It can take approximately 20 seconds for the operating system in the blade server to recognize the removable-media drives and USB ports.

The operating system in the blade server must provide USB support for the blade server to recognize and use the removable-media drives and USB ports. The SBCE unit uses USB for internal communication with these devices. If there is no response when you press the Media Tray select button, you can use the management-module Web interface to determine whether local control has been disabled on the blade server.

Activity LED: When this green LED is lit, it indicates that there is activity on the hard disk drive or network.

Location LED: When this blue LED is lit, it has been turned on by the system administrator to aid in visually locating the blade server. The location LED on the SBCE unit will be lit also. The location LED can be turned off through the management-module Web interface.

Information LED: When this amber LED is lit, it indicates that information about a system error for the blade server has been placed in the Management Module Event Log. The information LED can be turned off through the management-module Web interface.

Blade-error LED: When this amber LED is lit, it indicates that a system error has occurred in the blade server. The blade-error LED will turn off only after the error is corrected.

Power-control button: This button is behind the control panel door. Press this button to turn on or turn off the blade server.

The power-control button has effect only if local power control is enabled for the blade server. Local power control is enabled and disabled through the management-module Web interface.

Power-on LED: This green LED indicates the power status of the blade server in the following manner:

- Flashing rapidly: The service processor (BMC) on the blade server is initializing with the management module.
- Flashing slowly: The blade server has power but is not turned on.
- Lit continuously: The blade server has power and is turned on.

Turning on the Blade Server

After you connect the blade server to power through the Intel® Blade Server Chassis SBCE, the blade server can start by:

- Pressing the power-control button on the front of the blade server to start the blade server.

Notes:

- 1. Wait until the power-on LED on the blade server flashes slowly before pressing the blade server power-control button. During this time, the management module is initializing; therefore, the power-control button on the blade server does not respond.*
- 2. While the blade server is powering-up, the power-on LED on the front of the server is lit.*
- 3. If a power failure occurs, the chassis and then the blade server can start automatically when power is restored (if the blade server is configured through the management module to do so).*
- 4. You can turn on the blade server remotely by means of the management module.*
- 5. If the operating system supports the Wake on LAN* feature and the blade server power-on LED is flashing slowly, the Wake on LAN feature can turn on the blade server, if the Wake on LAN feature has not been disabled through the management module.*

Turning off the Blade Server

When you turn off the blade server, it is still connected to power through the chassis. The blade server can respond to requests from the service processor, such as a remote request to turn on the blade server. To remove all power from the blade server, you must remove it from the SBCE unit.

Shut down the operating system before you turn off the blade server. See the operating-system documentation for information about shutting down the operating system.

The blade server can be turned off in any of the following ways:

- You can press the power-control button on the blade server. This also starts an orderly shutdown of the operating system, if this feature is supported by the operating system.

After turning off the blade server, wait at least 5 seconds before you press the power-control button to turn on the blade server again.

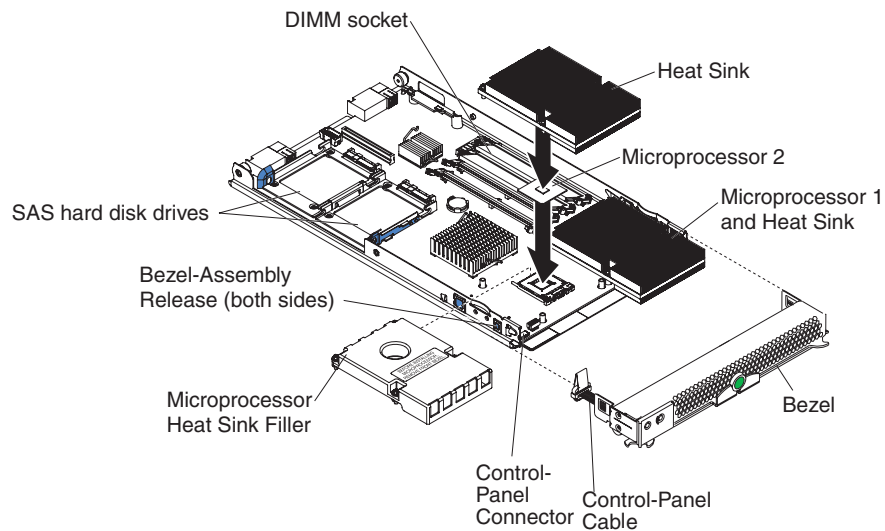
- If the operating system stops functioning, you can press and hold the power-control button for more than 4 seconds to turn off the blade server.
- The management module can turn off the blade server.

System Board Layouts

The following illustrations show the connectors, LEDs, switches, and jumpers on the system board. The illustrations in this document might differ slightly from your hardware.

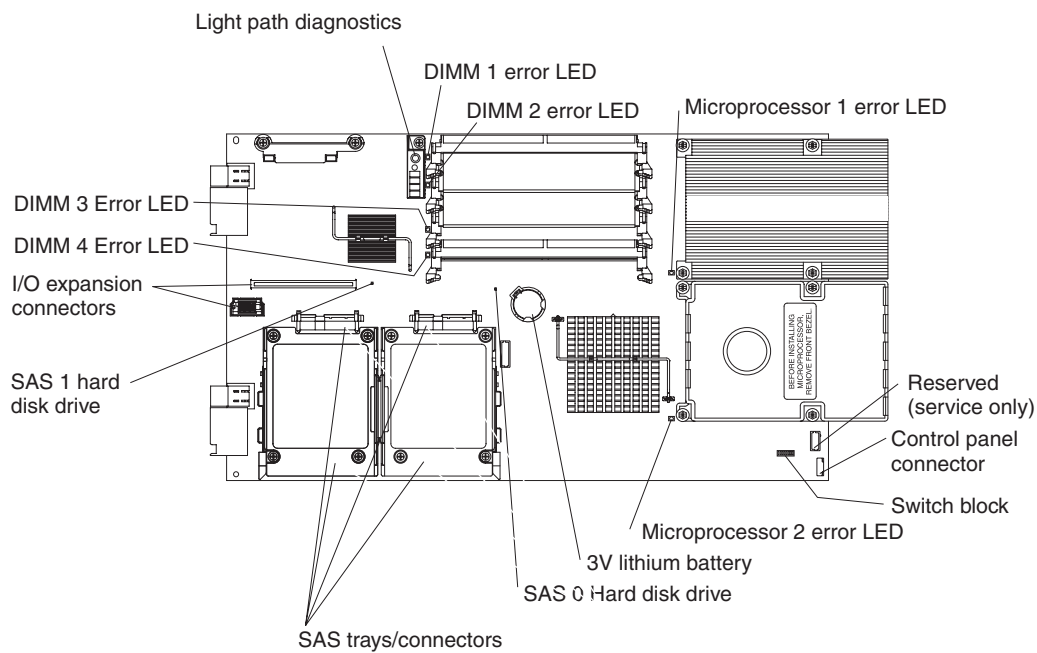
System Board Connectors

The following illustration shows the connectors on the system board.



System Board Switches

The following illustration shows the location of the switch block (SW2) on the system board.

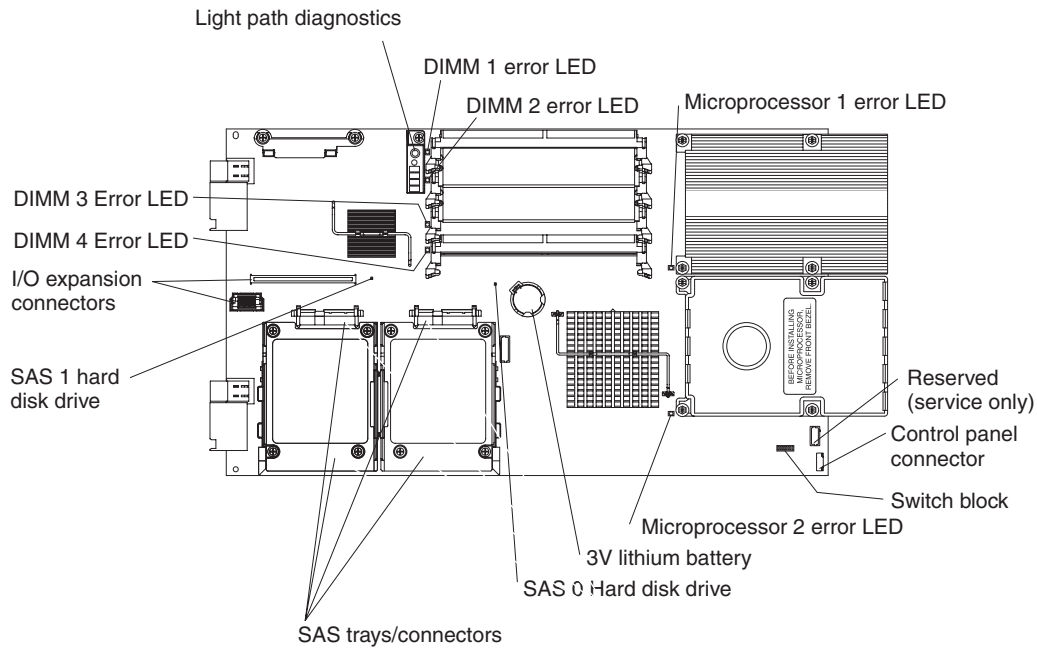


The following table defines the function of each switch in the switch block (SW2).

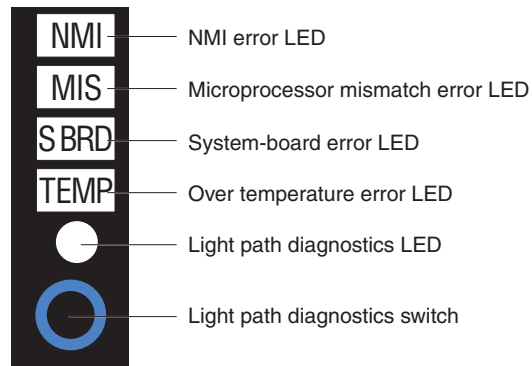
Switch	Function
SW2-1	BIOS backup
SW2-2	Wake On LAN
SW2-3	Reserved
SW2-4	Power On Override
SW2-5	Reserved
SW2-6	Clear CMOS
SW2-7	Reserved
SW2-8	Bypass Power On Password

System Board LEDs

The following illustration shows the LEDs on the system board. You have to remove the blade server from the SBCE unit, open the cover, and press the light path diagnostics switch to light any error LEDs that were turned on during processing.



The following illustration shows the light path diagnostics panel on the system board.



3 Removing and Replacing Blade Server Components

Installation Guidelines

Before you install options, read the following information:

- Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and the guidelines in “[Handling Static-sensitive Devices](#)” on page 12. This information will help you work safely.
- Observe good housekeeping in the area where you are working. Place removed covers and other parts in a safe place.
- Back up all important data before you make changes to disk drives.
- Before you remove a hot-swap blade server from the SBCE unit, you must shut down the operating system and turn off the blade server. You do not have to shut down the SBCE unit itself.
- Blue on a component indicates touch points, where you can grip the component to remove it from or install it in the blade server, open or close a latch, and so on.
- Green on a component indicates that the component can be hot-swapped. See the instructions for removing or installing a specific hot-swap component for any additional procedures that you might have to perform before you remove or install the component.
- For a list of supported options for the blade server, see <http://support.intel.com/support>.

System Reliability Guidelines

To help ensure proper cooling and system reliability, observe the following guidelines:

- Make sure that microprocessor socket 2 always contains either a microprocessor heat sink filler or a microprocessor and heat sink. If the blade server has only one microprocessor, it must be installed in the microprocessor socket 1.
- To maintain proper system cooling, do not operate the SBCE unit without a blade server or blade filler installed in each blade bay. See the documentation for your SBCE unit for additional information.

Handling Static-sensitive Devices

Important: *Static electricity can damage the blade server and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.*

To reduce the possibility of damage from electrostatic discharge, observe the following precautions:

- Use an electrostatic discharge (ESD) wrist strap, especially when you will be handling modules, options, and blade servers. To work properly, the wrist strap must have a good contact at both ends (touching your skin at one end and firmly connected to the ESD connector on the front or back of the SBCE unit).
- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed circuitry.
- Do not leave the device where others can handle and damage it.
- While the device is still in its static-protective package, touch it to an unpainted metal part of the SBCE unit or any unpainted metal surface on any other grounded rack component in the rack you are installing the device in for at least 2 seconds. This drains static electricity from the package and from your body.
- Remove the device from its package and install it directly into the blade server without setting down the device. If it is necessary to set down the device, put it back into its static-protective package. Do not place the device on the blade server cover or on a metal surface.
- Take additional care when handling devices during cold weather. Heating reduces indoor humidity and increases static electricity.

Returning a Device or Component

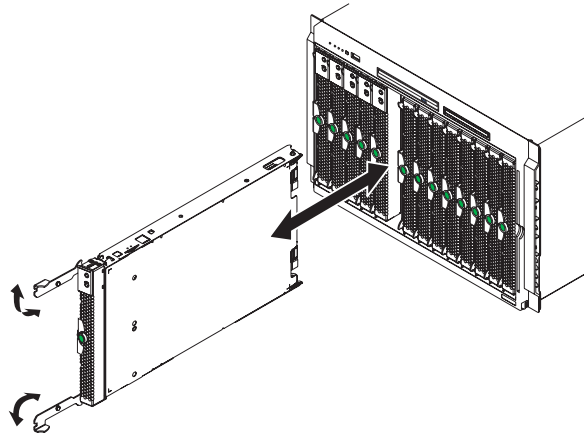
If you are instructed to return a device or component, follow all packaging instructions, and use any packaging materials for shipping that are supplied to you.

Removing and Installing the Blade server in a SBCE unit

Important:

- *To maintain proper system cooling, do not operate the SBCE unit without a blade server or blade filler installed in each blade bay.*
- *Note the bay number. Reinstalling a blade server into a different bay than the one from which it was removed could have unintended consequences. Some configuration information and update options are established according to bay number; if you reinstall the blade server into a different bay, you might need to reconfigure the blade server.*

To remove the blade server from a SBCE unit, complete the following steps.



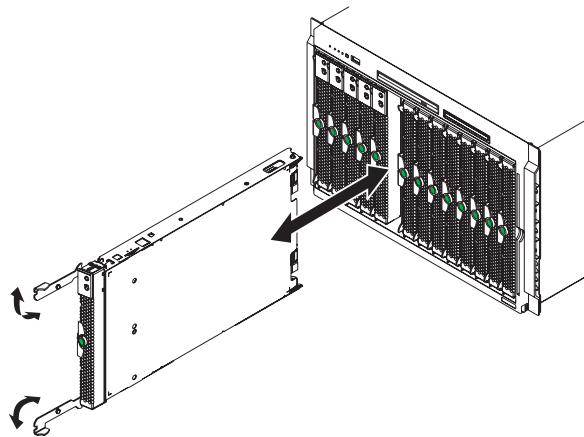
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1. If the blade server is operating, shut down the operating system; then, press the power-control button (behind the blade server control panel door) to turn off the blade server (see [“Turning off the Blade Server”](#) on page 7 for more information).

Important: Wait at least 30 seconds, until the hard disk drives stop spinning, before proceeding to the next step.

2. Open the two release handles as shown in the illustration. The blade server moves out of the bay approximately 0.6 cm (0.25 inch).
3. Pull the blade server out of the bay. Spring-loaded doors further back in the bay move into place to cover the bay temporarily.
4. Place either a blade filler or another blade server in the bay within 1 minute. The recessed spring-loaded doors will move out of the way as you insert the blade server or blade filler.

To install a blade server in a SBCE unit, complete the following steps.



AF000440

Caution: *Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.*

1. Read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) and [“Installation Guidelines” on page 11](#) through [“Handling Static-sensitive Devices” on page 12](#).
2. If you have not done so already, install any options that you want, such as SAS drives or memory, in the blade server.
3. Make sure that the release handles on the blade server are in the open position (perpendicular to the blade server).
4. If you installed a blade filler or another blade server in the bay from which you removed the blade server, remove it from the bay.

Important: *You must install the blade server in the same blade bay from which you removed it. Some blade server configuration information and update options are established according to bay number. Reinstalling a blade server into a different blade bay from the one from which it was removed could have unintended consequences, and you might have to reconfigure the blade server.*

5. Slide the blade server into the blade bay from which you removed it until it stops. The spring-loaded doors farther back in the bay that cover the bay opening move out of the way as you insert the blade server.

When installing any blade server or option in blade bays 7 through 14, power modules must be present in all four power-module bays.

6. Push the release handles on the front of the blade server closed.
7. Turn on the blade server (see [“Turning on the Blade Server” on page 7](#) for instructions).
8. Make sure that the power-on LED on the blade server control panel is lit continuously, indicating that the blade server is receiving power and is turned on.
9. (Optional) Write identifying information on one of the user labels that come with the blade servers and place the label on the SBCE unit bezel.

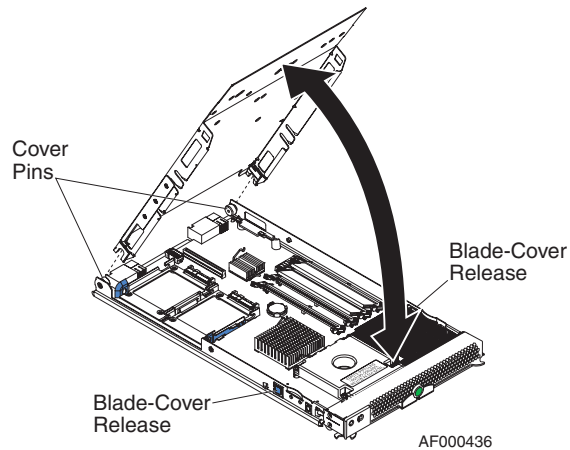
Important: *Do not place the label on the blade server or in any way block the ventilation holes on the blade server (see the *Installation and User’s Guide* for your SBCE unit for information about the label placement).*

10. If you have other blade servers to install, do so now.

If you have changed the configuration of the blade server, or this is a different blade server than the one you removed, you must configure the blade server with the Configuration/Setup Utility and you might have to install the blade server operating system. Detailed information about these tasks is available in the *Installation and User’s Guide*.

Operating the Blade Server Cover

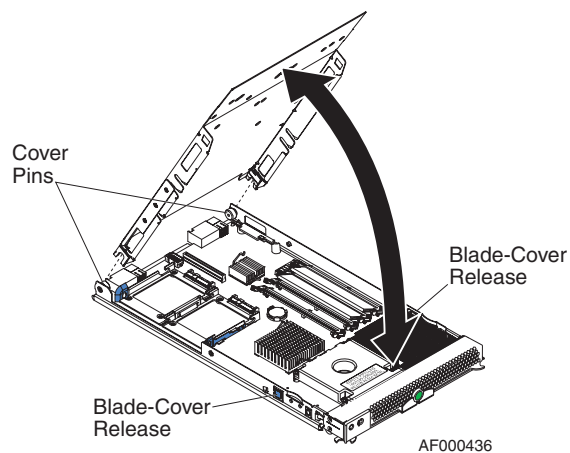
To open the blade server cover, complete the following steps.



1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.
2. If the blade server is installed in a SBCE unit, remove it (see [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12 for instructions).
3. Carefully lay the blade server down on a flat, non-conductive surface, with the cover side up.
4. Press the blade-cover release on each side of the blade server and lift the cover open.
5. Lay the cover flat, or lift it from the blade server and store it for future use.

To close the blade server cover, complete the following steps.

Caution: Hazardous energy is present when the blade server is connected to the power source. Always replace the blade cover before installing the blade server.

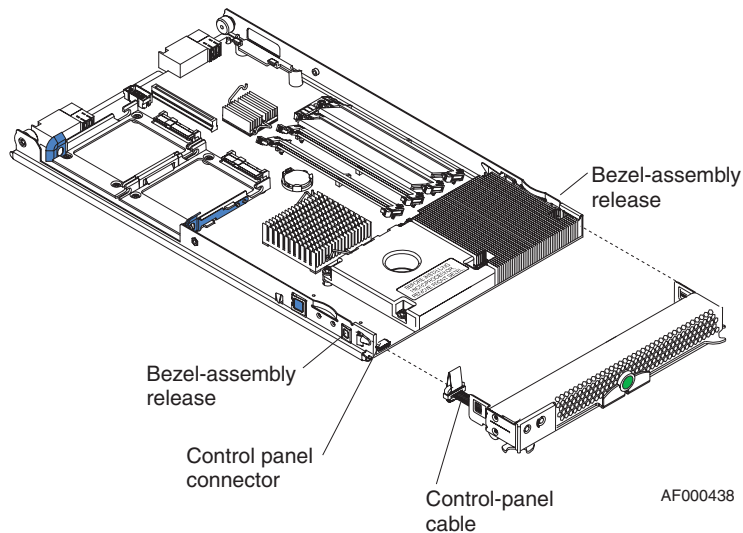


Important: The blade server cannot be inserted into the SBCE unit until the cover is installed and closed. Do not attempt to override this protection.

1. Read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) and [“Installation Guidelines” on page 11](#).
2. If you removed the blade server bezel assembly, replace it now (see [“Removing and Replacing the Bezel Assembly” on page 16](#) for instructions).
3. Lower the cover so that the slots at the rear slide down onto the pins at the rear of the blade server. Before closing the cover, check that all components are installed and seated correctly and that you have not left loose tools or parts inside the blade server.
4. Pivot the cover to the closed position until it clicks into place.
5. Install the blade server into the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) for instructions.

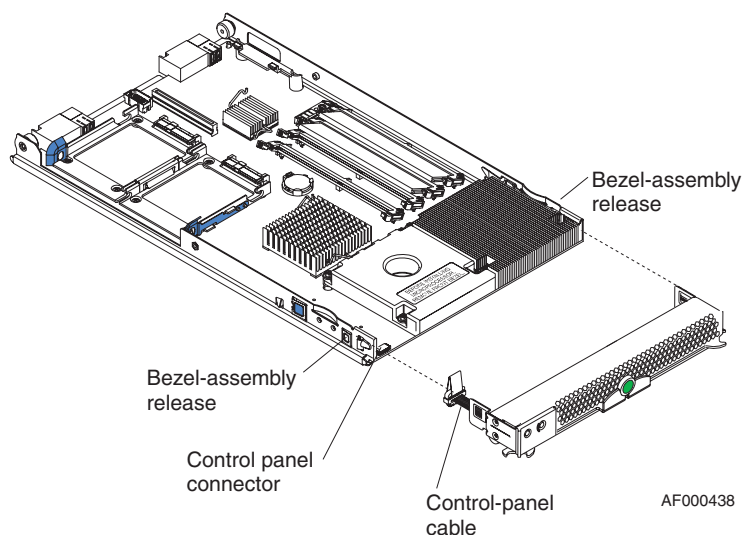
Removing and Replacing the Bezel Assembly

To remove the bezel assembly, complete the following steps.



1. Read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) and [“Installation Guidelines” on page 11](#).
2. Open the blade server cover (see [“Operating the Blade Server Cover” on page 15](#) for instructions).
3. Press the bezel-assembly release on each side of the blade server and pull the bezel assembly away from the blade server approximately 1.2 cm (0.5 inch).
4. Disconnect the control-panel cable from the control-panel connector.
5. Pull the bezel assembly away from the blade server.
6. Store the bezel assembly in a safe place.

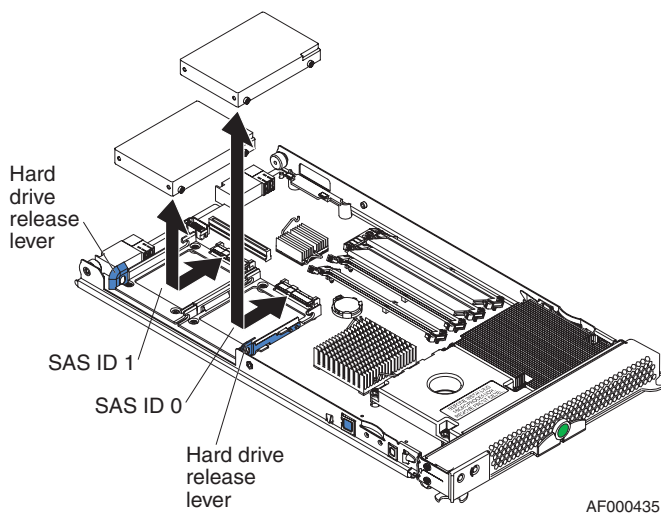
To install the bezel assembly, complete the following steps.



1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.
2. Connect the control-panel cable to the control-panel connector on the system board.
3. Carefully slide the bezel assembly onto the blade server until it clicks into place.

SAS Hard Disk Drive

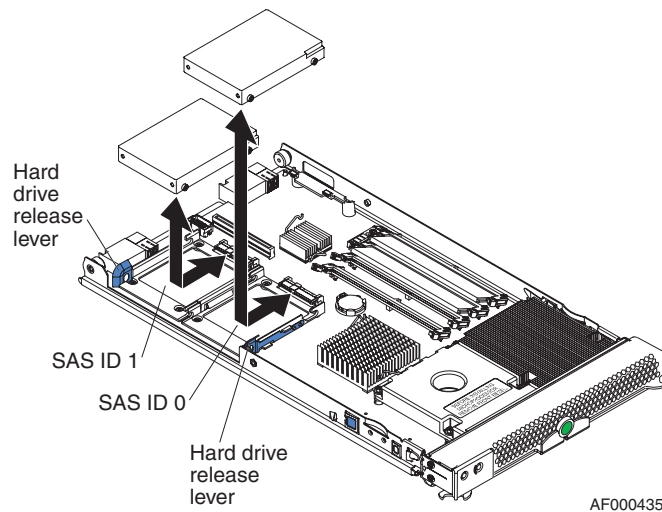
To remove a SAS hard disk drive, complete the following steps:



1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.

2. Shut down the operating system, turn off the blade server, and remove the blade server from the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) for instructions.
3. Carefully lay the blade server on a flat, non-conductive surface.
4. Remove the blade server cover (see [“Operating the Blade Server Cover” on page 15](#) for instructions).
5. Locate the hard disk drive to be removed (SAS ID 0 or SAS ID 1).
6. While pulling the blue release lever at the front of the hard disk drive tray, slide the drive out of the SCSI connector and disengage it from the drive tray.

To install a replacement SAS hard disk drive, complete the following steps.



1. Identify the location (SAS ID 0 or SAS ID 1) in which the hard disk drive will be installed.

Important: Do not press on the top of the drive. Pressing the top could damage the drive.

2. Place the drive into the hard disk drive tray and push it toward the rear of the drive, into the connector until the drive moves past the lever at the front of the tray.
3. Install the blade server cover (see [“Operating the Blade Server Cover” on page 15](#) for instructions).
4. Install the blade server into the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) for instructions.

Memory Modules

This section provides information about the types of memory the blade server supports, and describes how to install memory modules.

Memory Considerations

The following notes describe the types of DIMMs that the blade server supports and other information that you must consider when installing DIMMs:

Notes:

1. *The system board contains four DIMM connectors and supports two-way memory interleaving.*
2. *The DIMM options that are available for the blade server are 512 MB, 1 GB, 2 GB, and 4 GB. The blade server supports a minimum of 512 MB and a maximum of 16 GB of system memory.*
3. *The blade server comes with two DIMMs, in the DIMM 1 (J113) and DIMM 2 (J111) memory connectors.*

When you install additional DIMMs, be sure to install them as a pair, in DIMM connectors 3 (J112) and 4 (J110).

The following table describes the order in which DIMMs must be installed.

Table 1. DIMM installation order

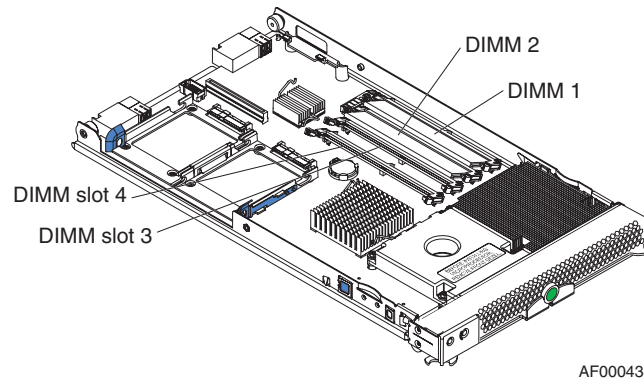
Pair	DIMM connectors
First	1 (J113) and 2 (J111)
Second	3 (J112) and 4 (J110)

4. When you install memory, you must install a pair of matched DIMMs.
5. Both DIMMs in a pair must be the same size, speed, type, and technology. You can mix compatible DIMMs from various manufacturers.
6. The second pair does not have to be DIMMs of the same size, speed, type, and technology as the first pair.
7. Install only 1.8 V, 240-pin, double-data-rate 2 (DDR2), PC3200, registered synchronous dynamic random-access memory (SDRAM) with error correcting code (ECC) DIMMs. For a current list of supported options for the blade server, see the *Intel® Server Compute Blade SBXD62 Memory List Test Report*.
8. Installing or removing DIMMs changes the configuration information for the blade server. Therefore, after installing or removing a DIMM, you must change and save the new configuration information by using the Configuration/Setup Utility program. When you restart the blade server, the system displays a message indicating that the memory configuration has changed. Start the Configuration/Setup Utility program

and select **Save Settings** (see [“Using the Configuration/Setup Utility Program”](#) on page 32).

Installing Memory Modules

The following image shows the location of the DIMM sockets on the system board.



Before you begin, read the documentation that comes with the option.

Complete the following steps to install a DIMM:

1. Review [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.
2. Shut down the operating system, turn off the blade server, and remove the blade server from the SBCE unit (see [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12).
3. Carefully lay the blade server on a flat, static-protective surface.
4. Open the blade server cover (see [“Operating the Blade Server Cover”](#) on page 15).
5. Locate the DIMM connectors on the system board. Determine the connectors into which you will install the DIMMs.
6. Touch the static-protective package that contains the DIMM option to any *unpainted* metal surface on the SBCE unit or any *unpainted* surface on any other grounded rack component for at least two seconds. Then, remove the DIMM from the package.
7. To install the DIMMs, repeat the following steps for each DIMM that you install:
 - a. Move the DIMM retaining clips on the side of the DIMM socket to the open position by pressing the retaining clips away from the center of the DIMM socket.

Important: To avoid breaking the retaining clips or damaging the DIMM connectors, handle the clips gently.

- b. Turn the DIMM so that the DIMM keys align correctly with the connector on the system board.
- c. Insert the DIMM by pressing the DIMM along the guides into the connector. Make sure that the retaining clips snap into the closed positions.

Important: *If there is a gap between the DIMM and the retaining clips, the DIMM has not been properly installed. In this case, open the retaining clips and remove the DIMM; then, reinsert the DIMM.*

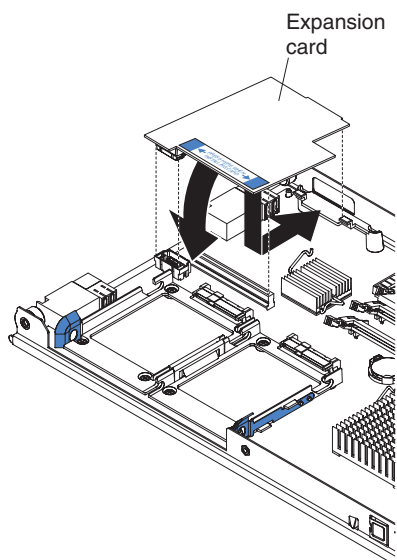
4. Close the blade server cover, see [“Operating the Blade Server Cover”](#) on page 15.
5. Reinstall the blade server in to the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12 for instructions.

I/O Expansion Card

The following sections describe how to remove and replace I/O expansion cards in the blade server.

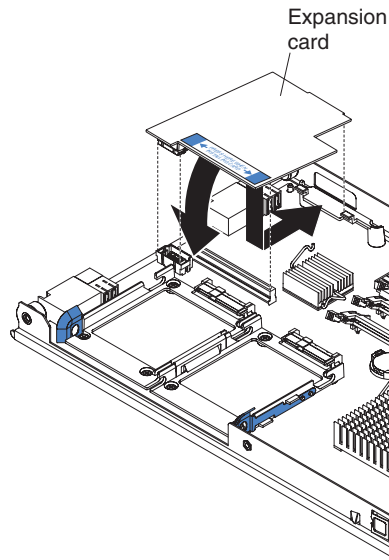
To remove an expansion card, complete the following steps:

1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.
2. Shut down the operating system, turn off the blade server, and remove the blade server from the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12 for instructions.
3. Carefully lay the blade server on a flat, non-conductive surface.
4. Open the cover (see [“Operating the Blade Server Cover”](#) on page 15 for instructions).
5. Gently pivot the wide end of the card out of the expansion card connectors; then, slide the notched end of the card out of the raised hook on the tray and lift the card out of the blade server.



To install an expansion card, complete the following steps:

1. Install the expansion card, as shown in the following illustration.



- a. Orient the expansion card.
 - b. Slide the notch in the narrow end of the card into the raised hook on the tray; then, gently pivot the card into the expansion card connectors.
3. Install the blade server cover. See for [“Operating the Blade Server Cover” on page 15](#) instructions.
 4. Install the blade server into the SBCE unit. See for [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) instructions.

Battery

The following notes describe information that you must consider when replacing the battery in the server.

- When replacing the battery, you must replace it with a lithium battery of the same type from the same manufacturer.
- After you replace the battery, you must reconfigure the server and reset the system date and time.
- To avoid possible danger, read and follow the following safety statement.

Caution: *If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.*

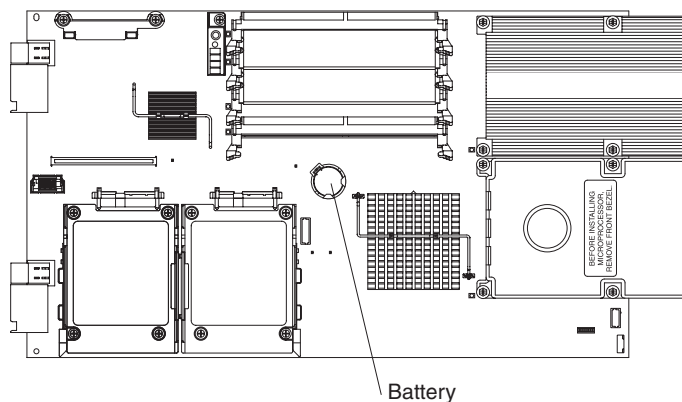
Do not:

- Throw or immerse into water
- Heat to more than 100°C (212°F)
- Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

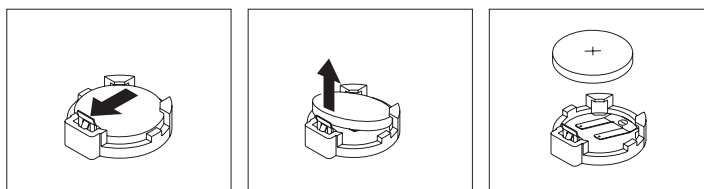
To remove the battery, complete the following steps:

1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 and [“Installation Guidelines”](#) on page 11.
2. Turn off the blade server and remove it from the SBCE unit (see [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12 for instructions).
3. Open the blade server cover (see [“Operating the Blade Server Cover”](#) on page 15 for instructions).
4. Locate the battery on the system board.



5. Remove the battery:

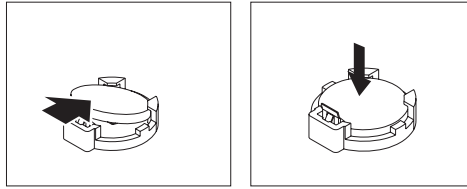
- a. Use one fingernail to press the top of the battery clip away from the battery. The battery pops up when released.



- a. Use your thumb and index finger to lift the battery from the socket.

To install the replacement battery, complete the following steps:

1. Follow any special handling and installation instructions that come with the battery.
2. Insert the replacement battery:
 - a. Tilt the battery so that you can insert it into the socket on the side opposite the battery clip.



- b. Press the battery down into the socket until it clicks into place. Make sure that the battery clip holds the battery securely.
3. Install the blade server cover (see [“Operating the Blade Server Cover”](#) on page 15 for instructions).
4. Install the blade server into the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12 for instructions.
5. Turn on the blade server and run the Configuration/Setup Utility program. Set configuration parameters as needed (see [“Using the Configuration/Setup Utility Program”](#) on page 32 for information).

Removing and Replacing FRUs

FRUs must be installed only by trained service technicians.

The illustrations in this document might differ slightly from your hardware.

Microprocessor

Read the following important guidelines before removing a microprocessor that is not faulty (for example, when replacing the system board assembly).

Note: *Do not use a thermal grease syringe with this FRU.*

If you are not replacing a defective heat sink or microprocessor, the grease on the heat sink and microprocessor will remain effective if you perform the following steps:

1. Carefully handle the heat sink and microprocessor when removing or installing these components. Do not touch the grease or otherwise allow it to become contaminated.
2. For dual-microprocessor systems, since the microprocessor and the heat sink are a matched set, first transfer the heat sink and microprocessor from one socket to the new system board; then, transfer the other heat sink and microprocessor. (This will ensure that the grease remains evenly distributed between each heat sink and microprocessor.)

The following sections contain the instructions for removing and replacing a microprocessor.

Notes:

- *The heat sink FRU is packaged with the thermal grease applied to the underside. This thermal grease is not available as a separate FRU. The heat sink must be replaced when new grease is required, such as when a defective microprocessor is replaced or if the grease is contaminated.*
- *If you need to install a new heat sink for any reason, first remove the thermal grease from the microprocessor with an alcohol pad before attaching the new heat sink.*
- *The microprocessor FRU for this system board includes a heat sink.*
- *A heat sink FRU can be ordered separately if the grease becomes contaminated.*

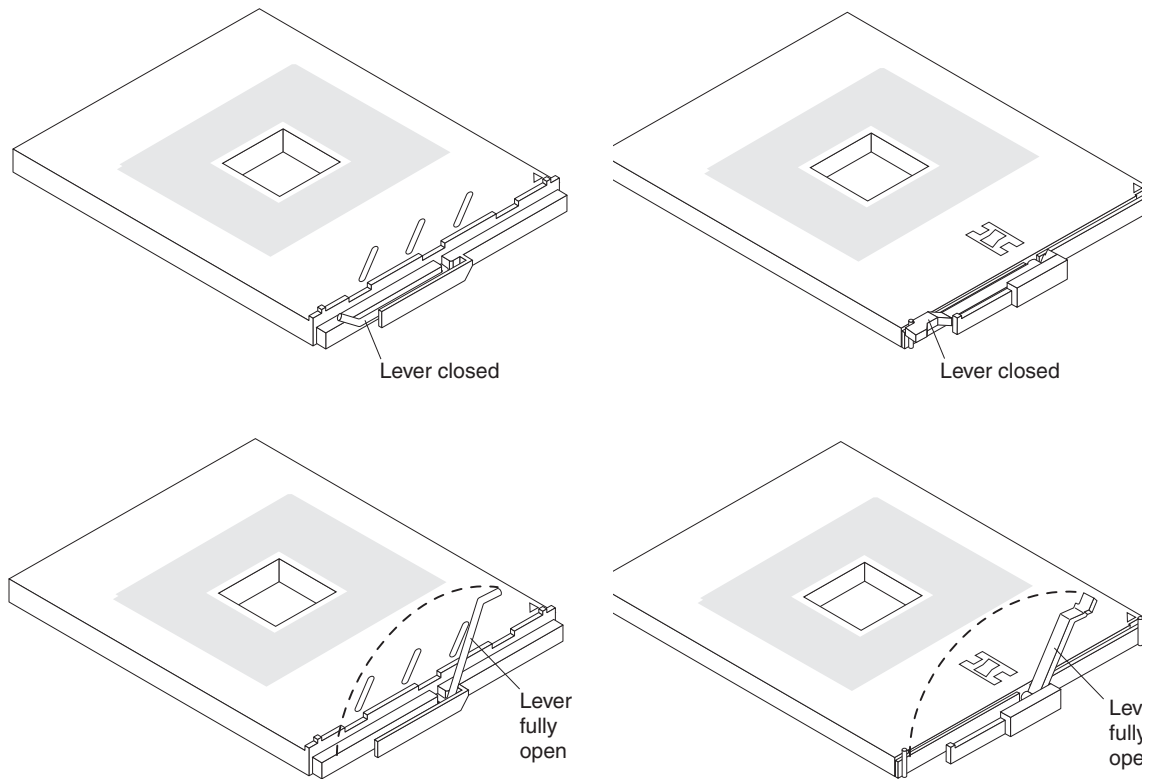
To remove a microprocessor, complete the following steps:

1. Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99 the [“Installation Guidelines”](#) on page 11 and [“Handling Static-sensitive Devices”](#) on page 12.
2. Shut down the operating system, turn off the blade server, and remove the blade server from the SBCE unit (see [“Removing and Installing the Blade server in a SBCE unit”](#) on page 12).
3. Carefully lay the blade server on a flat, non-conductive surface.
4. Open the blade server cover (see [“Operating the Blade Server Cover”](#) on page 15 for instructions).
5. Remove the bezel assembly (see [“Removing and Replacing the Bezel Assembly”](#) on page 16 for instructions).
6. Identify the microprocessor to be removed.

If you are replacing a failed microprocessor, verify that you have selected the correct microprocessor for replacement (see [“Light Path Diagnostics*”](#) on page 68).

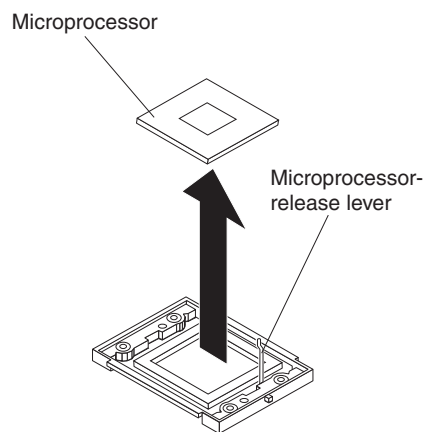
7. Remove the heat sink:
 - a. Loosen two captive screws on one side of the heat sink fully; then, loosen the other two captive screws.

Loosening the screws on one side fully before loosening the other screws will help to break the thermal bond that adheres the heat sink to the microprocessor.
 - b. Gently pull the heat sink off of the microprocessor.
3. Rotate the locking lever on the microprocessor socket from its closed and locked position until it stops or clicks in the fully open position (approximately 135° angle).



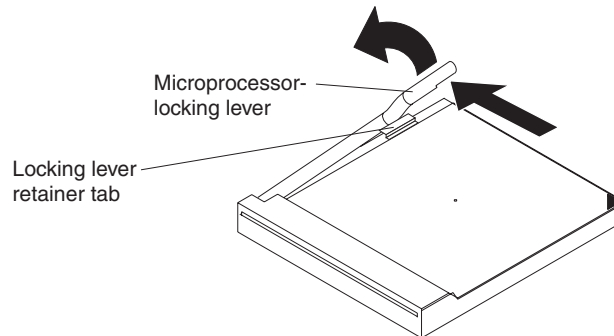
Important: You must ensure that the locking lever on the microprocessor socket is in the fully open position before you remove the microprocessor from or insert the microprocessor into the socket. Failure to do so might result in permanent damage to the microprocessor, microprocessor socket, and system board.

4. Pull the microprocessor out of the socket.



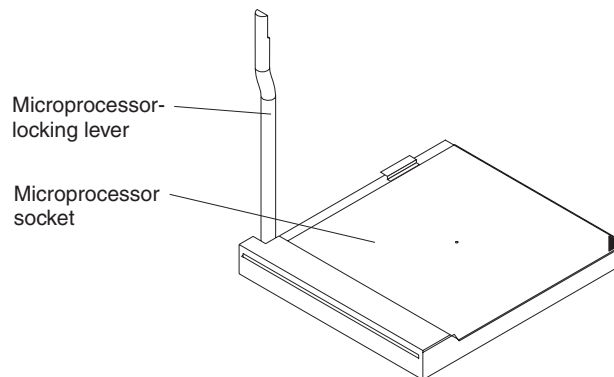
To install a replacement microprocessor, complete the following steps

1. If the microprocessor locking lever is closed, release it by moving it away from the microprocessor socket and around the locking lever retainer tab; then, rotate it upward to the fully open position.



Important:

- Do not use any tools or sharp objects to lift the locking lever on the microprocessor socket. Doing so might result in permanent damage to the system board.
- You must ensure that the locking lever on the microprocessor socket is in the fully open position before you install the microprocessor into the microprocessor socket. Failure to do so might result in permanent damage to the microprocessor, microprocessor socket, and system board.

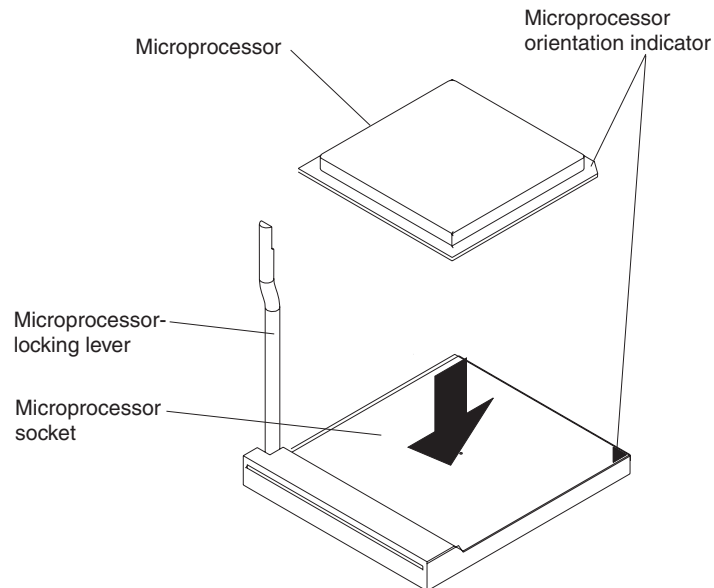


- Avoid touching the components and gold pins on the microprocessor. Make sure that the microprocessor is completely and correctly seated in the socket. Incomplete insertion might cause damage to the system board or to the microprocessor.
2. Touch the static-protective package that contains the replacement microprocessor to any *unpainted* metal surface on the blade server or any *unpainted* metal surface on any other grounded rack component in the rack you are installing the microprocessor in for at least 2 seconds; then, remove the microprocessor from the package.

Important: Do not use excessive force when pressing the microprocessor into the socket.

3. Center the microprocessor over the microprocessor socket. Align the triangle on the corner of the microprocessor with the triangle on the corner of the socket and make

sure that the pin patterns of the microprocessor and microprocessor socket match; then, carefully press the microprocessor into the socket.



Important: Make sure that the microprocessor is oriented and aligned correctly in the socket before you try to close the lever.

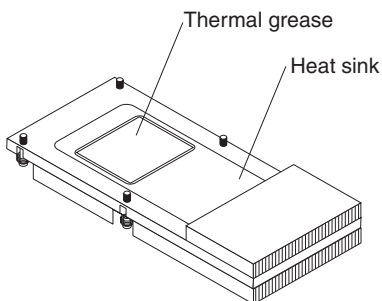
4. Carefully close the lever to secure the microprocessor in the socket.

A new microprocessor comes in a kit with a heat sink.

5. Install a heat sink on the microprocessor.

Important:

- Do not set down the heat sink after you remove the plastic cover.
- Do not touch the thermal grease on the bottom of the heat sink. Touching the thermal grease will contaminate it. If the thermal grease on the microprocessor or heat sink becomes contaminated, contact your service technician.



- a. Remove the plastic protective cover from the thermal material on the bottom of the heat sink.

- b. Make sure that the thermal material is still on the bottom of the heat sink; then, align and place the heat sink on top of the microprocessor in the retention bracket, grease side down. Press firmly on the heat sink.
- c. Align the four captive screws on the heat sink with the holes on the heat-sink retention module.
- d. Press firmly on the captive screws and tighten them, alternating between screws until they are tight. Do not overtighten the screws by using excessive force. If you are using a torque wrench, tighten the screws to 1.00 to 1.26 Newton-meters (Nm) (8.85 to 11.15 inch-pounds).

Important: *If you need to remove the heat sink after installing it, note that the thermal material might have formed a strong bond between the heat sink and the microprocessor. Do not force the heat sink and microprocessor apart; doing so can damage the microprocessor pins. Loosening the captive screws on one side of the heat sink fully before loosening the captive screws on the other side helps break the bond between the components without damaging them.*

5. Install the bezel assembly (see [“Removing and Replacing the Bezel Assembly” on page 16](#) for instructions).
6. Install the blade server cover (see [“Operating the Blade Server Cover” on page 15](#) for instructions).
7. Install the blade server into the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) for instructions.

System Board Assembly

This section describes how to replace the system board assembly. When replacing the system board, you will replace the system board and blade base as one assembly. After replacement, you must either update the system with the latest firmware or restore the pre-existing firmware that the customer provides on a diskette or CD image.

See [“System Board Layouts” on page 8](#) for more information on the locations of the connectors, jumpers and LEDs on the system board.

To remove the system board assembly, complete the following steps:

1. Read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) the [“Installation Guidelines” on page 11](#) and [“Handling Static-sensitive Devices” on page 12](#).
2. Shut down the operating system and turn off the blade server (see [“Turning off the Blade Server” on page 7](#)).
3. Remove the blade server from the SBCE unit (see [“Removing and Installing the Blade server in a SBCE unit” on page 12](#)).
4. Remove the blade server cover (see [“Operating the Blade Server Cover” on page 15](#)).
5. Remove the blade server bezel assembly (see [“Removing and Replacing the Bezel Assembly” on page 16](#)).

6. Remove any of the installed components listed below from the system board assembly; then, place them on a non-conductive surface or install them on the new system board assembly.
 - I/O expansion card. See [“I/O Expansion Card” on page 21](#).
 - Hard disk drives. See [“SAS Hard Disk Drive” on page 17](#).
 - Microprocessors and heat sinks. See [“Microprocessor” on page 24](#).
 - DIMMs. See [“Installing Memory Modules” on page 20](#).
 - Battery. See [“Battery” on page 22](#).

To replace the system board assembly, complete the following steps:

1. Install any of the components listed below that were removed from the old system board assembly on to the new system board assembly.
 - I/O expansion card. See [“I/O Expansion Card” on page 21](#).
 - Hard disk drives. See [“SAS Hard Disk Drive” on page 17](#).
 - Microprocessors and heat sinks. See [“Microprocessor” on page 24](#).
 - DIMMs. See [“Installing Memory Modules” on page 20](#).
 - Battery. See [“Battery” on page 22](#).
2. Install the bezel assembly (see [“Removing and Replacing the Bezel Assembly” on page 16](#) for instructions).
3. Install the blade server cover (see [“Operating the Blade Server Cover” on page 15](#) for instructions).
4. Install the blade server into the SBCE unit. See [“Removing and Installing the Blade server in a SBCE unit” on page 12](#) for instructions.

4 Configuration Information and Instructions

This chapter provides information about updating the firmware and using the configuration utilities.

Updating the Firmware

Intel will periodically make firmware updates available for the blade server. Use the following table to determine the methods you can use to install these firmware updates.

Important: *To avoid problems and to maintain proper system performance, always ensure that the blade server BIOS, service processor, and diagnostic firmware levels are consistent for all blade servers within the SBCE unit.*

Firmware	Update diskette	Management-module Web interface	Switch-module Web interface	Switch-module Telnet interface
BIOS code	Yes	No	No	No
Diagnostic code	Yes	No	No	No
Service processor code	Yes	Yes	No	No

At some time, you might have to flash the service processor to apply the latest firmware. Download the latest firmware for the service processor from the Intel Support Web site at <http://support.intel.com/support/>. Use the management-module Web interface to flash the service processor. The Web interface is described in the *Installation and User's Guide* for your management-module.

More information about updating the service processor is available in the *Intel® Server Compute Blade SBXD62 Installation and User's Guide*.

Configuring the Blade Server

The following configuration programs come with the blade server:

- Configuration/Setup Utility program
The Configuration/Setup Utility program is part of the basic input/output system (BIOS) code in the blade server. Use it to change system settings, such as interrupt requests (IRQ), date and time, and passwords. See [“Using the Configuration/Setup Utility Program” on page 32](#) for more information.
- LSI* Logic Configuration Utility program
The LSI Logic Configuration Utility program is part of the BIOS code in the blade server. Use it to set the device scan order and to set the SAS controller IDs. For more information about this function, see the *Installation and User’s Guide*.

Using the Configuration/Setup Utility Program

This section provides the instructions to start the Configuration/Setup Utility program and descriptions of the menu choices. Use the Configuration/Setup Utility program to:

- View configuration information
- View and change assignments for devices and I/O ports
- Set the date and time
- Set and change passwords
- Set the startup characteristics of the server and the order of startup devices
- Set and change settings for advanced hardware features
- View and clear error logs
- Change interrupt request (IRQ) settings
- Enable USB legacy keyboard and mouse support
- Resolve configuration conflicts

Starting the Configuration/Setup Utility Program

Complete the following steps to start the Configuration/Setup Utility program:

1. Turn on the blade server.
2. When the Configuration/Setup utility message opens, press F1.
3. Follow the instructions on the screen.

Configuration/Setup Utility Menu Choices

The following choices are on the Configuration/Setup Utility main menu. Depending on the version of the BIOS code in the blade server, some menu choices might differ slightly from these descriptions.

- System Summary
- System Information
 - Product Data
- Devices and I/O Ports
- Date and Time
- System Security
- Start Options
- Advanced Setup
 - Memory Settings
 - CPU Options
 - PCI Bus Control
 - Baseboard Management Controller (BMC) Settings
- Error Logs
 - Select **POST Error Log** to view the three most recent error codes and messages that the system generated during POST.
- Save Settings
- Restore Settings
- Load Default Settings
- Exit Setup

Using Passwords

From the **System Security** choice, you can set, change, and delete a power-on password.

If you set a power-on password, you must type the power-on password to complete the system startup, and to have access to the full Configuration/Setup Utility menu.

You can use any combination of up to seven characters (A–Z, a–z, and 0–9) for the password. Keep a record of the password in a secure place.

If you forget the power-on password, you can regain access to the blade server through one of the following methods:

- Remove the blade server battery and then reinstall it (see [“Battery” on page 22](#)).
- Change the position of the power-on password override switch (switch 8 on switch block SW2 on the system board) to bypass the power-on password check the next time the blade server is turned on. You can then start the Configuration/Setup Utility program and change the power-on password. You do not need to move the switch back to the previous position after the password is overridden. See [“System Board Switches” on page 9](#) for the location of switch block SW2.

Shut down the operating system, turn off the blade server, and remove the blade server from the SBCE unit to access the switches.

Configuring the Gigabit Ethernet Controllers

Two Ethernet controllers are integrated on the blade server system board. Each controller provides a 1-Gbps full-duplex interface for connecting to one of the Ethernet-compatible switch modules in I/O module bays 1 and 2, which enables simultaneous transmission and reception of data on the Ethernet local area network (LAN). Each Ethernet controller on the system board is routed to a different switch module in I/O module bay 1 or bay 2. The routing from Ethernet controller to I/O module bay will vary based on blade server type and the operating system that is installed.

You do not have to set any jumpers or configure the controllers for the blade server operating system. However, you must install a device driver to enable the blade server operating system to address the Ethernet controllers. For device drivers and information about configuring the Ethernet controllers, see the *Broadcom NetXtreme Gigabit Ethernet Software CD* that comes with the blade server. For updated information about configuring the controllers, go to <http://support.intel.com/support/>.

The Ethernet controllers support failover, which provides automatic redundancy for the Ethernet controllers. Without failover, you can have only one Ethernet controller from each server attached to each virtual LAN or subnet. With failover, you can configure more than one Ethernet controller from each server to attach to the same virtual LAN or subnet. Either one of the integrated Ethernet controllers can be configured as the primary Ethernet controller. If you have configured the controllers for failover and the primary link fails, the secondary controller takes over. When the primary link is restored, the Ethernet traffic switches back to the primary Ethernet controller. (See your operating system device driver documentation for information about configuring for failover.)

Important: To support failover on the blade server Ethernet controllers, the Ethernet switch modules in the SBCE unit must have identical configurations.

Blade Server Ethernet Controller Enumeration

The enumeration of the Ethernet controllers in a blade server is operating-system dependent. You can verify the Ethernet controller designations a blade server uses through the operating-system settings.

The routing of an Ethernet controller to a particular I/O-module bay depends on the type of blade server. You can verify which Ethernet controller is routed to which I/O-module bay by using the following test:

1. Install only one Ethernet switch module or pass-thru module in I/O-module bay 1.
2. Make sure that the ports on the switch module or pass-thru module are enabled (**I/O Module Tasks** → **Management** → **Advanced Management** in the management module Web-based user interface).
3. Enable only one of the Ethernet controllers on the blade server. Note the designation the blade server operating system has for the controller.
4. Ping an external computer on the network connected to the switch module. If you can ping the external computer, the Ethernet controller that you enabled is associated with

the switch module in I/O-module bay 1. The other Ethernet controller in the blade server is associated with the switch module in I/O-module bay 2.

If you have installed an expansion card on a blade server, communications from the option are routed to I/O-module bays 3 and 4, if these bays are supported by your SBCE unit. You can verify which controller on the card is routed to which I/O-module bay by performing the same test and using a controller on the expansion card and a compatible switch module or pass-thru module in I/O-module bay 3 or 4.

Configuring a SAS RAID

Configuring a SAS RAID only applies to a blade server that has two SAS hard disk drives installed.

You can configure a SAS redundant array of independent disks (RAID) array for your blade server. Two SAS hard disk drives in the blade server can be used to implement and manage a RAID level-1 (mirror) array under operating systems that are listed on the *Intel® Server Compute Blade SBXD62 Tested Hardware and Operating System List* at <http://support.intel.com/support>. For information about this function, see the *Installation and User's Guide*.

Important: *You must create the RAID array before you install the operating system on the blade server.*

5 Diagnostics

This chapter describes the diagnostic tools that are available to help you solve problems that might occur in the server.

Diagnostic Tools

The following tools are available to help you diagnose and solve hardware-related problems:

- **POST beep codes, error messages, and error logs**
The power-on self-test (POST) generates beep codes and messages to indicate successful test completion or the detection of a problem. See [“POST” on page 37](#) for more information.
- **Troubleshooting tables**
These tables list problem symptoms and actions to correct the problems. See [“Troubleshooting Tables” on page 55](#) for more information.
- **Light path diagnostics**
Use the light path diagnostics to diagnose system errors quickly. See [“Light Path Diagnostics*” on page 68](#) for more information.
- **Diagnostic programs, messages, and error codes**
The diagnostic programs are the primary method of testing the major components of the blade server. These programs are stored in read-only memory (ROM) on the blade server. See [“Diagnostic Programs, Messages, and Error Codes” on page 72](#) for more information.

POST

When you turn on the blade server, it performs a series of tests to check the operation of the blade server components and some optional devices in the blade server. This series of tests is called the power-on self-test, or POST.

If a power-on password is set, you must type the password and press Enter, when prompted, for POST to run.

If POST is completed without detecting any problems, a single beep sounds, and the blade server startup is completed.

If POST detects a problem, more than one beep might sound, or an error message is displayed. See [“Beep Code Descriptions” on page 38](#) and [“POST Error Codes” on page 47](#) for more information.

POST Beep Codes

A beep code is a combination of short or long beeps or a series of short beeps that are separated by pauses. For example, a “1-2-3” beep code is one short beep, a pause, two short beeps, a pause, and three short beeps. A beep code other than one beep indicates that POST has detected a problem. To determine the meaning of a beep code, see “[Beep Code Descriptions](#)” on page 38. If no beep code sounds, see “[No-beep Symptoms](#)” on page 44.

Beep Code Descriptions

The following table describes the beep codes and suggested actions to correct the detected problems.

A single problem might cause more than one error message. When this occurs, correct the cause of the first error message. The other error messages usually will not occur the next time POST runs.

Important: *If there are multiple error codes or light path diagnostics LEDs that indicate a microprocessor error, the error might be in a microprocessor or in a microprocessor socket. See [Appendix , “Microprocessor Problems”](#) on page 61 for information about diagnosing microprocessor problems.*

Beep code	Description	Action
1-1-2	Microprocessor register test failed	<ol style="list-style-type: none">1. Reseat the following components:<ol style="list-style-type: none">a. (Trained service technician only) Microprocessor 2b. (Trained service technician only) Microprocessor 13. Replace the following components one at a time, in the order shown, restarting the server each time.<ol style="list-style-type: none">a. (Trained service technician only) Microprocessor 2b. (Trained service technician only) Microprocessor 1c. (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Beep code	Description	Action
1-1-3	CMOS write/read test failed.	<ol style="list-style-type: none"> Reseat the battery Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
1-1-4	BIOS ROM checksum failed.	<ol style="list-style-type: none"> Flash the BIOS. Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly
1-2-1	Programmable interval timer failed.	(Trained service technician only) Replace the system board assembly.
1-2-2	DMA initialization failed.	(Trained service technician only) Replace the system board assembly.
1-2-3	DMA page register write/read failed.	(Trained service technician only) Replace the system board assembly.
1-2-4	RAM refresh verification failed.	<ol style="list-style-type: none"> Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly
1-3-1	First 64K RAM test failed.	<ol style="list-style-type: none"> Reseat the DIMMs. <ol style="list-style-type: none"> Replace the following components one at a time, in the order shown, restarting the server each time. DIMMs (Trained service technician only) System board assembly
1-3-2	First 64K RAM parity test failed.	<ol style="list-style-type: none"> Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Beep code	Description	Action
2-1-1	Secondary DMA register failed.	(Trained service technician only) Replace the system board assembly.
2-1-2	Primary DMA register failed.	(Trained service technician only) Replace the system board assembly.
2-1-3	Primary interrupt mask register failed.	(Trained service technician only) Replace the system board assembly.
2-1-4	Secondary interrupt mask register failed.	(Trained service technician only) Replace the system board assembly.
2-2-1	Interrupt vector loading failed.	(Trained service technician only) Replace the system board assembly.
2-2-2	Keyboard controller failed.	<ol style="list-style-type: none"> Reseat the keyboard. Check the management module functionality (refer to the documentation for your SBCE unit). Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Keyboard (Trained service technician only) System board assembly
2-2-3	CMOS power failure and checksum checks failed.	<ol style="list-style-type: none"> Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
2-2-4	CMOS configuration information validation failed.	<ol style="list-style-type: none"> Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
2-3-1	Screen initialization failed.	(Trained service technician only) Replace the system board assembly.
2-3-2	Screen memory failed.	(Trained service technician only) Replace the system board assembly.
2-3-3	Screen retrace failed.	(Trained service technician only) Replace the system board assembly.
2-3-4	Search for video ROM failed.	(Trained service technician only) Replace the system board assembly.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Beep code	Description	Action
2-4-1	Video failed; screen believed operable.	(Trained service technician only) Replace the system board assembly.
2-4-4	Unsupported memory configuration.	<ol style="list-style-type: none"> Correct based on the actions for 289 POST Error Code if displayed (see "POST Error Codes" on page 47 for more information on the 289 error). Check the DIMM error LEDs on the blade server. Replace the non-compatible or failing DIMMs in the blade server.
3-1-1	Timer tick interrupt failed.	(Trained service technician only) Replace the system board assembly.
3-1-2	Interval timer channel 2 failed.	(Trained service technician only) Replace the system board assembly.
3-1-3	RAM test failed above address 0FFFFh.	<ol style="list-style-type: none"> Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly
3-1-4	Time-of-day clock failed.	<ol style="list-style-type: none"> Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
3-2-1	Serial port failed.	(Trained service technician only) Replace the system board assembly.
3-2-2	Parallel port failed	(Trained service technician only) Replace the system board assembly.
3-2-3	Math coprocessor test failed	<ol style="list-style-type: none"> (Trained service technician only) Reseat the microprocessor. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Beep code	Description	Action
3-2-4	Failure comparing CMOS memory size against actual	<ol style="list-style-type: none"> Reseat the following components: <ol style="list-style-type: none"> DIMMs Battery Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs Battery (Trained service technician only) System board assembly
3-3-1	Memory size mismatch occurred.	<ol style="list-style-type: none"> Verify that both DIMMs in the bank are of the same size, speed, type and technology. Reseat the following components: <ol style="list-style-type: none"> DIMMs Battery Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs Battery (Trained service technician only) System board assembly
3-3-2	Critical SMBUS error occurred.	<ol style="list-style-type: none"> Power down the blade server and reseat it in the SBCE unit. Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Beep code	Description	Action
3-3-3	<p>No operational memory in system.</p> <p>In some memory configurations, the 3-3-3 beep code might sound during POST followed by a blank display screen. If this occurs and the Boot Fail Count feature in the Start Options of the Configuration/Setup Utility is set to Enabled (its default setting), you must restart the server three times to force the system BIOS code to reset the memory connector or bank of connectors from Disabled to Enabled.</p>	<p>IMPORTANT: In some memory configurations, the 3-3-3 beep code might sound during POST followed by a blank display screen. If this occurs and the Boot Fail Count feature in the Start Options of the Configuration/Setup Utility program is set to Enabled (its default setting), you must restart the blade server three times to force the system BIOS to reset the CMOS values to the default configuration (memory connector or bank of connectors enabled).</p> <ol style="list-style-type: none"> 1. Install or reseat DIMMS and restart the server. 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. DIMMs b. (Trained service technician only) System board assembly
Two short beeps	Information only, configuration has changed.	<ol style="list-style-type: none"> 1. Run diagnostics. 2. Run the Configuration/Setup Utility program.
Three short beeps	Memory error.	<ol style="list-style-type: none"> 1. Reseat the DIMMs. 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. DIMMs b. (Trained service technician only) System board assembly
One continuous beep	Microprocessor error.	<ol style="list-style-type: none"> 1. Reseat the following components: <ol style="list-style-type: none"> a. (Trained service technician only) Microprocessor 1 b. (Trained service technician only) Microprocessor 2 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. (Trained service technician only) Microprocessor 1 b. (Trained service technician only) Microprocessor 2 c. (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Beep code	Description	Action
Repeating short beeps	Keyboard error.	<ol style="list-style-type: none"> Reseat the keyboard. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Keyboard (Trained service technician only) System board assembly

No-beep Symptoms

The following table describes situations in which no beep code sounds when POST is completed.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
No-beep symptom	Action
No beep and the system operates correctly	(Trained service technician only) Replace the system board assembly.
No beep and no video (System error LED is OFF)	See “Solving Undetermined Problems” on page 80.
No beep and no video (System Attention LED is ON)	See “Light Path Diagnostics*” on page 68.

Error Logs

```
BMC System Event Log
-----
Get Next Entry
Get Previous Entry
Clear BMC SEL

Entry Number=      00005 / 00011
Record ID=         0005
Record Type=       02
Timestamp=         2005/01/25 16:15:17
Entry Details:    Generator ID= 0020
                  Sensor Type= 04
                  Assertion Event
                  Fan
                  Threshold
                  Lower Non-critical - going high

                  Sensor Number= 40
                  Event Direction/Type= 01
```

The BMC log contains all system status messages from the blade server service processor. The management-module event log in your SBCE unit contains messages that were generated on each blade server during POST and status messages from the SBCE service processor. (See the documentation for your management module for more information.)

The following illustration shows an example of a BMC log entry.

```
BMC System Event Log
-----
Get Next Entry
Get Previous Entry
Clear BMC SEL

Entry Number=      00005 / 00011
Record ID=         0005
Record Type=       02
Timestamp=         2005/01/25 16:15:17
Entry Details:    Generator ID= 0020
                  Sensor Type= 04
                  Assertion Event
                  Fan
                  Threshold
```

```
Lower Non-critical - going high
Sensor Number= 40
Event Direction/Type= 01
Event Data= 52 00 1A
```

Important:

- *A single problem might cause several error messages. When this occurs, work to correct the cause of the first error message. After you correct the cause of the first error message, the other error messages usually will not occur the next time you run the test.*
- *The management-module event log in your SBCE unit lists messages according to the position of the blade server in the blade bays. If a blade server is moved from one bay to another, the management-module event log will report messages for that blade server using the new bay number; messages for that blade server that were generated prior to the move will still be listed using the previous bay number.*

The BMC log is limited in size. When the log is full, new entries will not overwrite existing entries; therefore, you must periodically clear the BMC log through the Configuration/Setup Utility program (the menu choices are described in the *Installation and User's Guide*). When you are troubleshooting an error, be sure to clear the BMC log so that you can find current errors more easily.

Entries that are written to the BMC log during the early phase of POST show an incorrect date and time as the default time stamp; however, the date and time are corrected as POST continues.

Each BMC log entry appears on its own page. To display all the data for an entry, use the Up Arrow (↑) and Down Arrow (↓) keys or the Page Up and Page Down keys. To move from one entry to the next, select **Get Next Entry** or **Get Previous Entry**.

The BMC log indicates an assertion event when an event has occurred. It indicates a deassertion event when the event is no longer occurring.

Some of the error codes and messages in the BMC log are abbreviated.

You can view the contents of the BMC log from the Configuration/Setup Utility program and from the diagnostic programs.

When troubleshooting PCI-X slots, note that the error logs report the PCI-X buses numerically. The numerical assignments vary depending on the configuration. You can check the assignments by running the Configuration/Setup Utility program (see the *Installation and User's Guide* for more information).

Viewing the BMC Log from the Configuration/Setup Utility Program

For complete information about using the Configuration/Setup Utility program, see the *Installation and User's Guide*.

To view the BMC log, complete the following steps:

1. Turn on the server.

2. When the prompt `Press F1 for Configuration/Setup` appears, press F1. If you have set a power-on password, you must type the password and press Enter to start the Configuration/Setup Utility program.
3. Select **Advanced Settings**, select **Baseboard Management Controller (BMC) settings**, and then select **BMC System Event Log**.

Viewing the BMC Log from the Diagnostic Programs

The BMC log contains the same information whether it is viewed from the Configuration/Setup Utility program or from the diagnostic programs.

For information about using the diagnostic programs, see [“Running the Diagnostic Programs” on page 73](#).

To view the BMC log, complete the following steps:

1. If the blade server is running, turn off the blade server.
2. Turn on the blade server.
3. When the prompt `F2 for Diagnostics` appears, press F2.
4. From the top of the screen, select **Hardware Info**.
5. From the list, select **BMC Log**.

For complete information about using the Configuration/Setup Utility program, see the *Installation and User's Guide*.

POST Error Codes

The following table describes the POST error codes and suggested actions to correct the detected problems.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician.

Error code	Description	Action
062	Three consecutive startup failures	<ol style="list-style-type: none"> 1. Run the Configuration/Setup Utility program, select Load Default Settings, make sure that the date and time are correct, and save the settings. 2. Reseat the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. (Trained service technician only) Battery b. (Trained service technician only) Microprocessor 1 c. (Trained service technician only) Microprocessor 2 4. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Battery b. (Trained service technician only) Microprocessor 1 c. (Trained service technician only) Microprocessor 2 d. (Trained service technician only) System board assembly
101, 102, 106	System and processor error	<ol style="list-style-type: none"> 1. Reseat the Microprocessor and then restart the server. 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. (Trained service technician only) Microprocessor 1 b. (Trained service technician only) Microprocessor 2 c. (Trained service technician only) System board assembly
151	Real time clock error	<ol style="list-style-type: none"> 1. Run the Configuration/Setup Utility program. 2. Reseat the battery. 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Battery b. (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Error code	Description	Action
161	Real-time clock battery error	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program. Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
162	Invalid configuration information or CMOS RAM checksum failure.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, select Load Default Settings, and save the settings. Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
163	Time of day not set.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, select Load Default Settings, make sure that the date and time are correct, and save the settings. Reseat the battery. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Battery (Trained service technician only) System board assembly
164	Memory configuration changed.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, verify the memory configuration is correct and save the settings. Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly
175	Bad EEPROM CRC #1	(Trained service technician only) Replace the system board assembly.
177	Bad checksum	(Trained service technician only) Replace the system board assembly.
178	EEPROM not functional	(Trained service technician only) Replace the system board assembly.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Error code	Description	Action
184	Power-on password damaged.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, select Load Default Settings, and save the settings. (Trained service technician only) Replace the system board assembly.
185	Corrupted boot sequence	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, select Load Default Settings, and save the settings. (Trained service technician only) Replace the system board assembly.
186	Security hardware control logic error	(Trained service technician only) Replace the system board assembly.
187	VPD Serial Number not set	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program, select Load Default Settings, and save the settings. (Trained service technician only) Replace the system board assembly.
188	Bad EEPROM CRC #2	(Trained service technician only) Replace the system board assembly.
189	An attempt was made to access the server with invalid passwords.	Restart the server, run the Configuration/Setup Utility program and change the power-on password.
201	Memory test error.	<ol style="list-style-type: none"> Update BIOS code and rerun diagnostics. Reseat the DIMMs. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) System board assembly
229	Cache error.	<ol style="list-style-type: none"> Reseat the following components: <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 1 (Trained service technician only) Microprocessor 2 Replace the components listed in step <xref>1 one at a time, in the order shown, restarting the server each time.

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician.

Error code	Description	Action
301	Keyboard or keyboard controller error.	<ol style="list-style-type: none"> 1. If you have installed a USB keyboard, run the Configuration/Setup Utility program and enable keyboard-less operation to prevent the POST error message 301 from being displayed during startup. 2. Reseat the keyboard. 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Keyboard b. (Trained service technician only) System board assembly
303	Keyboard controller error.	(Trained service technician only) Replace the system board assembly.
602	Invalid diskette boot record.	<ol style="list-style-type: none"> 1. Remove and reinsert the diskette, and restart the server; or restart the server using another bootable diskette. 2. Reseat the following components: <ol style="list-style-type: none"> a. Diskette drive b. Diskette drive cable 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Diskette drive b. Diskette drive cable c. (Trained service technician only) System board assembly
604	Diskette drive error.	<ol style="list-style-type: none"> 1. Run the Configuration/Setup Utility program. 2. Reseat the following components: <ol style="list-style-type: none"> a. Diskette drive b. Diskette drive cable 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Diskette drive b. Diskette drive cable c. (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Error code	Description	Action
662	Diskette drive configuration error.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program. Reseat the following components: <ol style="list-style-type: none"> Diskette drive Diskette drive cable Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Diskette drive Diskette drive cable (Trained service technician only) System board assembly
1200	Processor machine check.	<ol style="list-style-type: none"> Reseat the following components: <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 1 (Trained service technician only) Microprocessor 2 Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 1 (Trained service technician only) Microprocessor 2 (Trained service technician only) System board assembly
18xx	Unavailable PCI hardware interrupt.	<ol style="list-style-type: none"> Run the Configuration/Setup Utility program and adjust the adapter settings. Remove each adapter one at a time, restarting the server each time, until the problem is isolated.
1962	A drive does not contain a valid boot sector.	<ol style="list-style-type: none"> Make sure that a bootable operating system is installed. Run the Fixed Disk diagnostic test. Reseat the hard disk drive. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Hard disk drive (Trained service technician only) System board assembly

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician.

Error code	Description	Action
2462	Video configuration error.	<ol style="list-style-type: none"> 1. Verify that the keyboard/video/mouse select button LED on the front of the blade server is on, indicating that the blade server is connected to the shared SBCE monitor. 2. Verify that a working monitor is connected correctly to the SBCE unit. 3. (Trained service technician only) Replace the system board assembly.
5962	IDE CD or DVD drive configuration error.	<ol style="list-style-type: none"> 1. Run the Configuration/Setup Utility program, select Load Default Settings, and save the settings. 2. Reseat the following components: <ol style="list-style-type: none"> a. CD or DVD drive b. Battery 3. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. CD or DVD drive b. Battery c. (Trained service technician only) System board assembly
8603	Pointing-device error.	<ol style="list-style-type: none"> 1. Reseat the pointing device. 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Pointing device b. (Trained service technician only) System board assembly
19990301	Hard disk sector error.	<ol style="list-style-type: none"> 1. Reseat the hard disk drive. 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> a. Hard disk drive b. (Trained service technician only) System board assembly

Checkout Procedure

The checkout procedure is the sequence of tasks that you should follow to diagnose a problem in the blade server.

About the Checkout Procedure

Before performing the checkout procedure for diagnosing hardware problems, review the following information:

- Read the safety information that begins on page [Appendix D, “Safety Information”](#) on page 99
- The diagnostic programs provide the primary methods of testing the major components of the blade server. If you are not sure whether a problem is caused by the hardware or by the software, you can use the diagnostic programs to confirm that the hardware is working correctly.
- When you run the diagnostic programs, a single problem might cause more than one error message. When this happens, correct the cause of the first error message. The other error messages usually will not occur the next time you run the diagnostic programs.

Important: *If there are multiple error codes or light path diagnostics LEDs that indicate a microprocessor error, the error might be in a microprocessor or in a microprocessor socket. See “[Microprocessor Problems](#)” on page 61 for information about diagnosing microprocessor problems.*

- If the server is halted and a POST error code is displayed, see “[Error Logs](#)” on page 45. If the server is halted and no error message is displayed, see “[Troubleshooting Tables](#)” on page 55 and “[Solving Undetermined Problems](#)” on page 80.
- For intermittent problems, check the error log; see “[Error Logs](#)” on page 45 and “[Diagnostic Programs, Messages, and Error Codes](#)” on page 72.
- If the blade server front panel shows no LEDs, verify the blade server status and errors in the SBCE Web interface; also see “[Solving Undetermined Problems](#)” on page 80.
- If device errors occur, see “[Troubleshooting Tables](#)” on page 55.

Performing the Checkout Procedure

To perform the checkout procedure, complete the following steps:

1. If the blade server is running, turn off the blade server.
2. Turn on the blade server. Make sure that the server has control of the video (the keyboard/video/mouse button is lit). If the server does not start, see “[Troubleshooting Tables](#)” on page 55.

3. Record any POST beep codes that are heard or POST error messages that are displayed on the monitor. If an error is displayed, look up the first error in the [“POST Error Codes” on page 47](#).
4. Check the control panel blade-error LED; if it is lit, check the light path diagnostics LEDs (see [“Light Path Diagnostics*” on page 68](#)).
5. Check for the following results:
 - Successful completion of POST, indicated by a single beep
 - Successful completion of startup, indicated by a readable display of the operating-system desktop
6. Did a single beep sound and are there readable instructions on the main menu?
 - **No:** Find the failure symptom in [“Troubleshooting Tables” on page 55](#); if necessary, see [“Solving Undetermined Problems” on page 80](#).
 - **Yes:** Run the diagnostic programs (see [“Running the Diagnostic Programs” on page 73](#)).
 - ^ If you receive an error, see [“Diagnostic Error Codes” on page 74](#).
 - ^ If the diagnostic programs were completed successfully and you still suspect a problem, see [“Solving Undetermined Problems” on page 80](#).

Troubleshooting Tables

Use the troubleshooting tables to find solutions to problems that have identifiable symptoms.

If you cannot find the problem in these tables, see [“Running the Diagnostic Programs” on page 73](#) for information about testing the server.

If you have just added new software or a new optional device and the server is not working, complete the following steps before using the troubleshooting tables:

1. Remove the software or device that you just added.
2. Run the diagnostic tests to determine whether the server is running correctly.
3. Reinstall the new software or new device.

CD or DVD Drive Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The CD or DVD drive is not recognized.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> All cables and jumpers are installed correctly. The correct device driver is installed for the CD or DVD drive. Reseat the CD or DVD drive. Replace the CD or DVD drive.
A CD or DVD is not working correctly.	<ol style="list-style-type: none"> Clean the CD or DVD. Reseat the CD or DVD drive. Replace the CD or DVD drive.
The CD or DVD drive tray is not working.	<p>The blade server must have ownership of the CD or DVD drive.</p> <ol style="list-style-type: none"> Insert the end of a straightened paper clip into the manual tray-release opening. Reseat the CD or DVD drive. Replace the CD or DVD drive.
The CD or DVD drive is detected as /dev/sr0 by SUSE Linux. (If the SUSE Linux operating system is installed remotely onto a blade server that is not the current owner of the media tray [CD or DVD drive, diskette drive, and USB port], SUSE Linux detects the CD or DVD drive as /dev/sr0 instead of /dev/cdrom.)	<p>Establish a link between /dev/sr0 and /dev/cdrom as follows:</p> <ol style="list-style-type: none"> Enter the following command: <pre>rm /dev/cdrom; ln -s /dev/sr0 /dev/cdrom</pre> Insert the following line in the /etc/fstab file: <pre>/dev/cdrom /media/cdrom auto ro,noauto,user,exec 0 0</pre>

- Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved.
- If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician.

Symptom	Action
<p>The CD or DVD drive is not recognized after being switched back to the blade server running Windows 2000 Advanced Server with SP3 applied. (When the CD or DVD drive owned by blade server x is switched to another blade server, then is switched back to blade server x, the operating system in blade server x no longer recognizes the CD or DVD drive. This happens when you have not safely stopped the drives before switching ownership of the media tray [CD or DVD drive, diskette drive, and USB port].)</p>	<p>Because the SBCE unit uses a USB bus to communicate with the media tray devices, switching ownership of the media tray to another blade server is the same as unplugging a USB device. Before switching ownership of the CD or DVD drive (media tray) to another blade server, safely stop the media tray devices on the blade server that currently owns the media tray, as follows:</p> <ol style="list-style-type: none"> 1. Double-click the Unplug/Eject Hardware icon in the Windows taskbar at the bottom right of the screen. 2. Select USB Floppy and click Stop. 3. Select USB Mass Storage Device and click Stop. 4. Click Close. <p>You can now safely switch ownership of the media tray to another blade server.</p>

Diskette Drive Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
Diskette drive activity LED stays on, or the system bypasses the diskette drive.	<ol style="list-style-type: none"> If there is a diskette in the drive, verify that: <ul style="list-style-type: none"> The diskette is inserted correctly in the drive. The diskette is good and not damaged. (Try another diskette if you have one.) The drive light comes on (one-second flash) when the diskette is inserted. The diskette contains the necessary files to start the computer. The diskette drive is enabled in the Configuration/Setup utility program. The software program is working properly. The cable is installed correctly (in the proper orientation). To prevent diskette drive read/write errors, be sure the distance between monitors and diskette drives is at least 76 mm (3 in.). Reseat the following components: <ol style="list-style-type: none"> Diskette drive cable Diskette drive Media tray Replace the components listed in step 3 one at a time, in the order shown, restarting the blade server each time.

General Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
A cover lock is broken, an LED is not working, or a similar problem has occurred.	If the part is a CRU, replace it. If the part is a FRU, the part must be replaced by a trained service technician.

Hard Disk Drive Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
Not all drives are recognized by the Fixed Disk diagnostic test.	Remove the drive indicated on the diagnostic test; then, run the Fixed Disk diagnostic test again. If the remaining drives are recognized, replace the drive that you removed with a new one.
The server stops responding during the Fixed Disk diagnostic test.	Remove the hard disk drive that was being tested when the server stopped responding, and run the diagnostic test again. If the Fixed Disk diagnostic test runs successfully, replace the drive that you removed with a new one.
A hard disk drive passes the Fixed Disk diagnostics test but the problem remains.	Run the SCSI Fixed Disk diagnostic test.

Intermittent Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
A problem occurs only occasionally and is difficult to diagnose.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> When the blade server is turned on, air is flowing from the rear of the blade server at the blower grill. If there is no airflow, the blower is not working. This causes the blade server to overheat and shut down. Ensure that the SCSI bus and devices are configured correctly. Check the BMC log (see "Error Logs" on page 45).

Keyboard, Mouse, or Pointing-device Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
One or more keys on the keyboard do not work.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> The keyboard cable is securely connected to the SBCE management module. Both the blade server and the monitor are turned on. Replace the keyboard. Replace the management module on the SBCE unit; see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit.
The mouse or pointing device does not work.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> The keyboard/video/mouse select button LED on the front of the blade server is lit, indicating that the blade server is connected to the shared SBCE monitor. The mouse or pointing-device cable is securely connected to the SBCE management module, and that the keyboard and mouse cables are not reversed. The mouse works correctly with other blade servers. The mouse device drivers are installed correctly. Both the blade server and the monitor are turned on. The mouse is recognized as a USB device, not PS/2, by the blade server. Although the mouse is a PS/2-style device, communication with the mouse is through an internal USB bus in the SBCE unit. Some operating systems permit you to select the type of mouse during installation of the operating system. Select USB. Replace the mouse or pointing device. Replace the management module on the SBCE unit; see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit.
Mouse function lost during Red Hat* installation.	<p>If, while installing Red Hat* Enterprise Linux 2.1 to a blade server, you or someone else selects a different blade server as owner of the keyboard, video, and monitor (KVM), you might lose mouse function for the installation process.</p> <p>Do not switch KVM owners until the installation process begins to install the packages (after the “About to Install” window).</p>

Memory Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The amount of system memory displayed is less than the amount of physical memory installed.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> The memory modules are seated properly. You have installed the correct type of memory. If you changed the memory, you updated the memory configuration with the Configuration/Setup Utility program. All banks of memory on the DIMMs are enabled. The blade server might have automatically disabled a DIMM bank when it detected a problem or a DIMM bank could have been manually disabled. Check BMC log for error message 289: <ul style="list-style-type: none"> If the DIMM was disabled by a system-management interrupt (SMI), replace the DIMM. If the DIMM was disabled by the user or by POST: <ol style="list-style-type: none"> Start the Configuration/Setup Utility program. Enable the DIMM. Save the configuration and restart the computer. Reseat the DIMM. Replace the DIMM. (Trained service technician only) Replace the system board assembly.

Microprocessor Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The server emits a continuous beep during POST, indicating that the startup (boot) microprocessor is not working correctly.	<ol style="list-style-type: none"> (Trained service technician only) Reseat microprocessor 1. (Trained service technician only) Replace microprocessor 1.

Monitor or Video Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The screen is blank.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> The keyboard/video/mouse select button LED on the front of the blade server is lit, indicating that the blade server is connected to the shared SBCE monitor. You can test the monitor functionality by enabling the keyboard/video/mouse select button on another blade server. The system power cord is plugged into the SBCE power module and a working electrical outlet. The monitor cables are connected properly. The monitor is turned on and the Brightness and Contrast controls are adjusted correctly. Damaged BIOS code is not affecting the video; see "Recovering from a BIOS Update Failure" on page 78. <p>IMPORTANT: In some memory configurations, the 3-3-3 beep code might sound during POST followed by a blank display screen. If this occurs and the Boot Fail Count feature in the Start Options of the Configuration/Setup Utility program is set to Enabled (its default setting), you must restart the blade server three times to force the system BIOS to reset the CMOS values to the default configuration (memory connector or bank of connectors enabled).</p> If you have verified these items and the screen remains blank, replace: <ol style="list-style-type: none"> Monitor Management module on the SBCE unit (see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit). (Trained service technician only) Replace the system board assembly.
Only the cursor appears.	Make sure that the keyboard, video and mouse on the SBCE unit have not been switched to another blade server. If the problem remains, see "Solving Undetermined Problems" on page 80.
The monitor goes blank when you direct it to a working blade server, or goes blank when you start some application programs in the blade servers.	<p>Make sure that the monitor cable is connected to the video port on the SBCE management module. If you suspect a problem with the monitor, see the information that comes with the monitor for adjusting and testing instructions.</p> <p>If you still cannot find the problem, try using the monitor with another blade server. If the problem remains, see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> SBCE unit.</p>

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The screen is wavy, unreadable, rolling, distorted, or has screen jitter.	<ol style="list-style-type: none"> If the monitor self-tests show the monitor is working properly, consider the location of the monitor. Magnetic fields around other devices (such as transformers, appliances, fluorescent lights, and other monitors) can cause screen jitter or wavy, unreadable, rolling, or distorted screen images. If this happens, turn off the monitor. (Moving a color monitor while it is turned on might cause screen discoloration.) Then move the device and the monitor at least 305 mm (12 in.) apart. Turn on the monitor. <p>NOTE: To prevent diskette drive read/write errors, be sure the distance between monitors and diskette drives is at least 76 mm (3 in.).</p> <ol style="list-style-type: none"> Replace the monitor. Replace the management module on the SBCE unit (see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> SBCE unit). (Trained service technician only) Replace the system board assembly.
Wrong characters appear on the screen.	<ol style="list-style-type: none"> If the wrong language is displayed, update the firmware or operating system with the correct language in the blade server that has ownership of the monitor. Replace the monitor. (Trained service technician only) Replace the system board assembly.

Network Connection Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
One or more blade servers are unable to communicate with the network.	<p>Make sure that:</p> <ul style="list-style-type: none"> The switch modules for the network interface being used are installed in the correct SBCE bays and are configured and operating correctly. See the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit for details. The settings in the switch module are appropriate for the blade server (settings in the switch module are blade-specific). <p>If the problem remains, see "Solving Undetermined Problems" on page 80.</p>

Optional-device Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
An optional device that was just installed does not work.	<ol style="list-style-type: none"> Make sure that: <ul style="list-style-type: none"> You followed the installation instructions that came with the option. The option is installed correctly. You have not loosened any other installed devices or cables. You updated the configuration information in the Configuration/Setup Utility program. Whenever memory or any other device is changed, you must update the configuration. If the option comes with its own test instructions, use those instructions to test the option. Reseat the device that you just installed. Replace the device that you just installed.

Power Error Messages

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Message	Action
System Power Good fault	<ol style="list-style-type: none"> Check the SBCE unit power. (See the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> SBCE unit for details.) Reseat the blade server. Replace the blade server.
VRM Power Good fault	<ol style="list-style-type: none"> Check the SBCE unit power. (See the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit for details.) Reseat the blade server. Replace the blade server.
System over recommended voltage for +12v.	<ol style="list-style-type: none"> Check the SBCE unit power. (See the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit for details.) Reseat the blade server. Replace the blade server.
System over recommended voltage for +1.25v.	<ol style="list-style-type: none"> Reseat the blade server. Replace the blade server.

<ul style="list-style-type: none"> • Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. • If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Message	Action
System over recommended voltage for +1.5v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System over recommended voltage for +2.5v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System over recommended voltage for +3.3v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System over recommended 5V fault.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
VRM voltage over recommended tolerance.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System under recommended voltage for +12v.	<ol style="list-style-type: none"> 1. Check the SBCE unit power. (See the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit for details.) 2. Reseat the blade server. 3. Replace the blade server.
System under recommended voltage for +1.25v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System under recommended voltage for +1.5v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System under recommended voltage for +2.5v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System under recommended voltage for +3.3v.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.
System under recommended 5V fault.	<ol style="list-style-type: none"> 1. Reseat the blade server. 2. Replace the blade server.

Power Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
Power switch does not work and reset button, if supported, does work.	<ol style="list-style-type: none"> Reseat the control-panel connector. Replace the bezel assembly. (Trained service technician only) Replace the system board assembly.
The blade server does not turn on.	<ol style="list-style-type: none"> Make sure that: <ol style="list-style-type: none"> The power LED on the front of the SBCE unit is on. The LEDs on all the SBCE power modules are on. If the blade server is in blade bay 7 through 14 in the SBCE unit, power modules must be present in all four power-module bays. The power-on LED on the blade server control panel is blinking slowly. <ul style="list-style-type: none"> If the power LED is flashing rapidly and continues to do so, the blade server is not communicating with the management module; reseat the blade server and go to step 7. If the power LED is off, the blade bay is not receiving power, the blade server is defective, or the LED information panel is loose or defective. Local power control for the blade server is enabled (use the SBCE management module Web interface to verify), or the blade server was instructed through the management module (Web interface) to start. If you just installed a device in the blade server, remove it, and restart the blade server. If the blade server now starts, you might have installed more devices than the power to that blade bay supports. Try another blade server in the blade bay; if it works, replace the faulty blade server. See "Solving Undetermined Problems" on page 80.
<p>The blade server does not start and the following conditions are present:</p> <ul style="list-style-type: none"> The amber system-error LED on the SBCE unit system LED panel is lit. The amber blade error LED on the blade server control panel is lit. The management-module event log contains the message Processor speed mismatch. 	<p>Make sure that microprocessors 1 and 2 are identical (number of cores, cache size and type, clock speed, internal and external clock frequencies).</p> <p>(Trained service technician only) If microprocessors are not identical, remove the microprocessor with the incorrect specifications and replace with a microprocessor that has the correct specifications.</p>

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The blade server turns off for no apparent reason	<ol style="list-style-type: none"> Make sure that each blade bay has a blade server, expansion unit, or filler blade correctly installed. If these components are missing or incorrectly installed, an over-temperature condition might result in shutdown. (Trained service technician only) If the microprocessor error LED is lit, replace the microprocessor.
The blade server does not turn off.	<ol style="list-style-type: none"> Verify whether you are using an ACPI or non-ACPI operating system. If you are using a non-ACPI operating system: <ol style="list-style-type: none"> Press Ctrl+Alt+Delete. Turn off the system by holding the power-control button for 4 seconds. If the blade server fails during POST and the power-control button does not work, remove the blade server from the bay and reseal it. If the problem remains or if you are using an ACPI-aware operating system: <ol style="list-style-type: none"> Check the power management policies in the operating system for the blade server. Suspect the system board.

Service Processor Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 	
Symptom	Action
The management module reports a general monitor failure.	Disconnect the SBCE unit from all electrical sources, wait for 30 seconds, reconnect the SBCE unit to the electrical sources, and restart the server. If the problem remains, see "Solving Undetermined Problems" on page 80, and the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit.

Software Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
You suspect a software problem.	<ol style="list-style-type: none"> To determine whether the problem is caused by the software, make sure that: <ul style="list-style-type: none"> The server has the minimum memory that is needed to use the software. For memory requirements, see the information that comes with the software. If you have just installed an adapter or memory, the server might have a memory-address conflict. The software is designed to operate on the server. Other software works on the server. The software works on another server. If you received any error messages when using the software, see the information that comes with the software for a description of the messages and suggested solutions to the problem. Contact your place of purchase of the software.

Universal Serial Bus (USB) Port Problems

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 	
Symptom	Action
A USB device does not work.	<p>Make sure that:</p> <ul style="list-style-type: none"> The correct USB device driver is installed. The operating system supports USB devices.

Light Path Diagnostics*

Light path diagnostics is a system of LEDs on the control panel and on various internal components of the blade server. When an error occurs, LEDs can be lit throughout the blade server to help identify the source of the error.

After you remove the blade server, you can press and hold the light path diagnostics switch for a maximum of 25 seconds to light the LEDs and locate the failing component. The following components have this feature:

- Hard disk drives
- Light path diagnostics panel
- Microprocessors
- Memory modules (DIMMs)

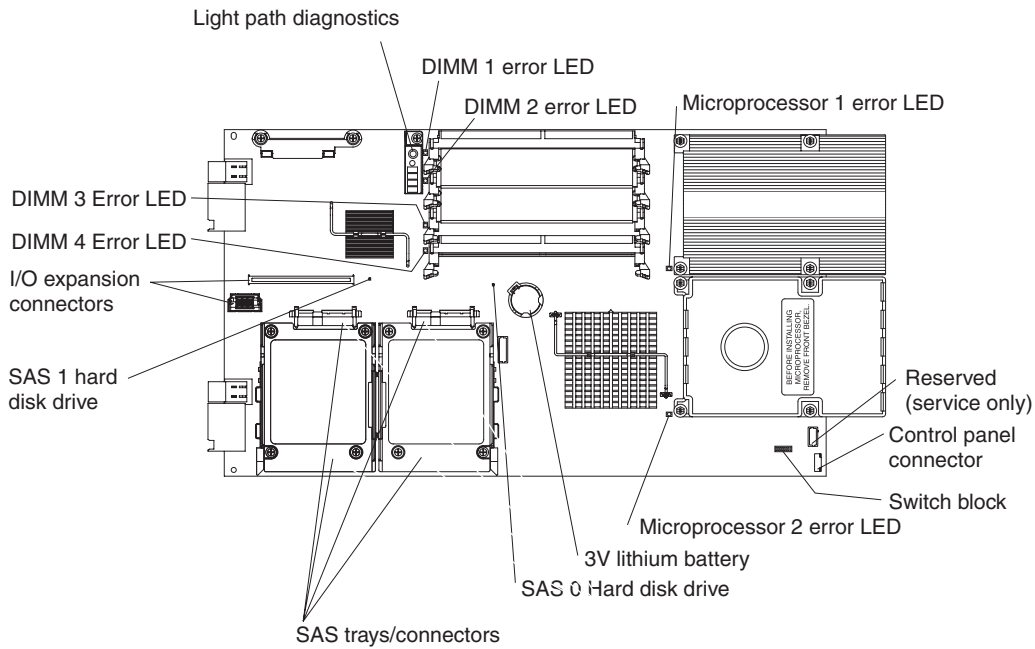
Viewing the Light Path Diagnostics LEDs

Before working inside the server to view light path diagnostics LEDs, read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) and [“Handling Static-sensitive Devices” on page 12](#).

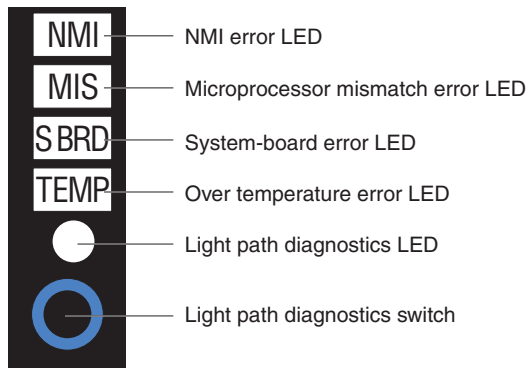
If an error occurs, view the light path diagnostics LEDs in the following order:

1. Look at the control panel on the front of the server (see [“Understanding the Control Panel and LEDs” on page 5](#)).
 - If the information LED is lit, it indicates that information about a suboptimal condition in the server is available in the BMC log or in the management-module event log.
 - If the blade-error LED is lit, it indicates that an error has occurred; go to the next step.
2. To view the light path diagnostics panel and LEDs, complete the following steps:
 - a. Remove the blade server from the SBCE unit.
 - b. Place the blade server on a flat, static-protective surface.
 - c. Remove the cover from the blade server.
 - d. Press and hold the light path diagnostics switch to light the LEDs of the failing components in the blade server. The LEDs will remain lit for as long as you press the switch, to a maximum of 25 seconds.

The following illustration shows the locations of the system board error LEDs.



The following illustration shows LEDs on the light path diagnostics panel on the system board.



Note which LEDs are lit on the system board and the light path diagnostics panel when you press the light path diagnostic switch. Using this information and the information in [“Light Path Diagnostics*”](#) on page 68 can often provide enough information to diagnose the error.

Light Path Diagnostics LEDs

The following table describes the LEDs on the light path diagnostics panel and on the system board, and suggested actions to correct the detected problems.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Lit Light Path Diagnostics LED	Description	Action
None	An error has occurred and cannot be isolated, or the service processor has failed.	<ol style="list-style-type: none"> Verify that the light path diagnostic LED is lit to ensure there is enough power in the blade server to light the rest of the LEDs. An error has occurred that is not represented by a light path diagnostics LED. Check the BMC log for more information about the error.
DIMM x error	A memory error occurred.	<ol style="list-style-type: none"> Make sure that the DIMM indicated by the lit LED is supported. Reseat the DIMM indicated by the lit LED. Replace the DIMM indicated by the lit LED. <p>Multiple DIMM LEDs do not necessarily indicate multiple DIMM failures. If more than one DIMM LED is lit, reseat or replace one DIMM at a time until the error goes away. Refer to the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit for further isolation.</p>
Microprocessor x error	The microprocessor has failed.	<ol style="list-style-type: none"> Make sure that the microprocessor indicated by the lit LED is installed correctly. (See "Microprocessor" on page 24 for installation instructions.) (Trained service technician only) Replace the microprocessor indicated by the lit LED.
MIS (Microprocessor mismatch)	The microprocessors do not match.	Make sure that microprocessors 1 and 2 are identical (number of cores, cache size and type, clock speed, internal and external clock frequencies); also, see " Troubleshooting Tables " on page 55 .
NMI (NMI error)	The system board has failed.	<ol style="list-style-type: none"> Replace the blade server cover, reinsert the blade server in the SBCE unit, and then restart the blade server. Check the BMC log for information about the error. <p>(Trained service technician only) If the problem remains, replace the system board assembly.</p>

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Lit Light Path Diagnostics LED	Description	Action
S BRD (System board error)	The system board has failed	<ol style="list-style-type: none"> Replace the blade server cover, reinsert the blade server in the SBCE unit, and then restart the server. (Trained service technician only) Replace the system board assembly.
TEMP (Over temperature error)	The system temperature has exceeded a threshold level.	<ol style="list-style-type: none"> Check to see if a blower on the SBCE unit has failed. If it has, replace the blower (see the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit type for more information). Make sure that the room temperature is not too high. (See “Intel® Server Compute Blade SBXD62 Specifications” on page 2 for temperature information.)

Diagnostic Programs, Messages, and Error Codes

The diagnostic programs are the primary method of testing the major components of the server. As you run the diagnostic programs, text messages and error codes are displayed on the screen and are saved in the test log. A diagnostic text message or error code indicates that a problem has been detected; to determine what action you should take as a result of a message or error code, see the table in “[Diagnostic Error Codes](#)” on page 74.

Running the Diagnostic Programs

To run the diagnostic programs, complete the following steps:

1. If the blade server is running, turn off the blade server.
2. Turn on the blade server.
3. When the prompt `F2 for Diagnostics` appears, press `F2`.
4. From the top of the screen, select either **Extended** or **Basic**.
5. From the pulldown menu, select the test that you want to run, and follow the instructions on the screen.

For help with the diagnostic programs, press `F1`. You also can press `F1` from within a help screen to obtain online documentation from which you can select different categories. To exit from the help information, press `Esc`.

To determine what action you should take as a result of a diagnostic text message or error code, see the table in [“Diagnostic Error Codes” on page 74](#).

If the diagnostic programs do not detect any hardware errors but the problem remains during normal server operations, a software error might be the cause. If you suspect a software problem, see the information that comes with your software.

A single problem might cause more than one error message. When this happens, correct the cause of the first error message. The other error messages usually will not occur the next time you run the diagnostic programs.

If the blade server stops during testing and you cannot continue, restart the blade server and try running the diagnostic programs again. If the problem remains, replace the component that was being tested when the blade server stopped.

The diagnostic programs assume that a keyboard and mouse are attached to the SBCE unit and that the blade server controls them. If you run the diagnostic programs with either no mouse or a mouse attached to the SBCE unit that is not controlled by the blade server, you cannot use the **Next Cat** and **Prev Cat** buttons to select categories. All other mouse-selectable functions are available through function keys.

To view server configuration information (such as system configuration, memory contents, interrupt request (IRQ) use, direct memory access (DMA) use, device drivers, and so on), select **Hardware Info** from the top of the screen.

Diagnostic Text Messages

Diagnostic text messages are displayed while the tests are running. A diagnostic text message contains one of the following results:

Passed: The test was completed without any errors.

Failed: The test detected an error.

User Aborted: You stopped the test before it was completed.

Not Applicable: You attempted to test a device that is not present in the server.

Aborted: The test could not proceed because of the server configuration.

Warning: The test could not be run. There was no failure of the hardware that was being tested, but there might be a hardware failure elsewhere, or another problem prevented the test from running; for example, there might be a configuration problem, or the hardware might be missing or is not being recognized.

The result is followed by an error code or other additional information about the error.

Viewing the Test Log

To view the test log when the tests are completed, select **Utility** from the top of the screen and then select **View Test Log**. The test-log data is maintained only while you are running the diagnostic programs. When you exit from the diagnostic programs, the test log is cleared.

To save the test log to a file on a diskette or to the hard disk, select **Save Log** on the diagnostic programs screen and specify a location and name for the saved log file.

To save the test log to a diskette, you must use a diskette that you have formatted yourself; this function does not work with preformatted diskettes. If the diskette has sufficient space for the test log, the diskette can contain other data.

Diagnostic Error Codes

The following table describes the error codes that the diagnostic programs might generate and suggested actions to correct the detected problems.

If the diagnostic programs generate error codes that are not listed in the table, make sure that the latest level of the BIOS code is installed.

In the error codes, *x* can be any numeral or letter. However, if the three-digit number in the central position of the code is 000, 195, or 197, *do not* replace a CRU or FRU. These numbers appearing in the central position of the code have the following meanings:

000	The blade server passed the test. Do not replace a CRU or FRU.
195	The Esc key was pressed to end the test. Do not replace a CRU or FRU.
197	This is a warning error, but it does not indicate a hardware failure; do not replace a CRU or FRU. Take the action that is indicated in the Action column, but <i>do not replace a CRU or a FRU</i> . See the description for Warning in the section “Diagnostic Text Messages” on page 73 for more information.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Error code	Description	Action
001-250-000	Failed processor board ECC.	<ol style="list-style-type: none"> Reseat the following components: <ol style="list-style-type: none"> DIMMs (Trained service technician only) Microprocessor 1 (Trained service technician only) Microprocessor 2 Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMMs (Trained service technician only) Microprocessor (Trained service technician only) Microprocessor 2 (Trained service technician only) System board assembly
001-292-000	Core system: failed/CMOS checksum failed.	Load the BIOS default settings using the Configuration/Setup Utility program and run the test again (see " Configuration/Setup Utility Menu Choices " on page 32).
001-xxx-000	Failed core tests.	(Trained service technician only) Replace the system board assembly.
001-xxx-001	Failed core tests.	(Trained service technician only) Replace the system board assembly.
005-xxx-000	Failed video test.	(Trained service technician only) Replace the system board assembly.
030-xxx-000	Failed internal SCSI interface test.	(Trained service technician only) Replace the system board assembly.
035-xxx-099	No adapters were found.	Reseat the adapter (if installed).
075-xxx-000	Failed power supply test.	Replace the power supply (refer to the <i>Hardware Maintenance Manual and Troubleshooting Guide</i> for your SBCE unit).
089-xxx-001	Failed microprocessor test.	<ol style="list-style-type: none"> Reseat microprocessor 1. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 1 (Trained service technician only) System board assembly

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Error code	Description	Action
089-xxx-002	Failed optional microprocessor test.	<ol style="list-style-type: none"> Reseat microprocessor 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 2 (Trained service technician only) System board assembly
165-060-000	Service Processor: ASM may be busy	<ol style="list-style-type: none"> Rerun the diagnostic test. Fix other error conditions that may be keeping ASM busy. Refer to the error log and diagnostic panel. Power down blade server and reseat it in the SBCE unit. (Trained service technician only) Replace the system board assembly.
165-198-000	Service Processor: Aborted	<ol style="list-style-type: none"> Rerun the diagnostic test. Fix other error conditions that may be keeping ASM busy. Refer to the error log and diagnostic panel. Power down blade server and reseat it in the SBCE unit. (Trained service technician only) Replace the system board assembly.
165-201-000	Service Processor: Failed	<ol style="list-style-type: none"> Power down blade server and reseat it in the SBCE unit. (Trained service technician only) Replace the system board assembly.
165-330-000	Service Processor: Failed	Update to the latest ROM diagnostic level and retry.
165-342-000	Service Processor: Failed	<ol style="list-style-type: none"> Ensure latest firmware levels for ASM and BIOS are installed. Power down blade server and reseat it in the SBCE unit. (Trained service technician only) Replace the system board assembly.
166-406-001	BMC indicates failure in I2C bus test.	<ol style="list-style-type: none"> Remove the blade server from the SBCE unit, wait 30 seconds, reseat it in the SBCE unit and run the test again. Update the BMC firmware (see “Updating the Firmware” on page 31). (Trained service technician only) Replace the system board assembly.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by "(Trained service technician only)," that step must be performed only by a trained service technician. 		
Error code	Description	Action
166-407-001	System Management: Failed. BMC indicates failure in I2C bus test.	<ol style="list-style-type: none"> Remove the blade server from the SBCE unit, wait 30 seconds, reseal it in the SBCE unit and run the test again. Update the BMC firmware (see "Updating the Firmware" on page 31). (Trained service technician only) Replace the system board assembly.
166-nnn-001	System Management: Failed. BMC indicates failure in self test. nnn = 300 to 320.	<ol style="list-style-type: none"> Remove the blade server from the SBCE unit, wait 30 seconds, reseal it in the SBCE unit and run the test again. Update the BMC firmware (see "Updating the Firmware" on page 31). (Trained service technician only) Replace the system board assembly.
166-nnn-001	System Management: Failed. BMC indicates failure in self test. nnn = 400 to 420, excluding 406 and 407.	<ol style="list-style-type: none"> Remove the blade server from the SBCE unit, wait 30 seconds, reseal it in the SBCE unit and run the test again. Update the BMC firmware (see "Updating the Firmware" on page 31). (Trained service technician only) Replace the system board assembly.
180-xxx-000	Diagnostics LED failure.	Run the LED test in the diagnostics program.
180-xxx-001	Failed front LED panel test.	<ol style="list-style-type: none"> Reseat the control-panel connector. Replace the bezel assembly. (Trained service technician only) Replace the system board assembly.
180-xxx-002	Failed diagnostics LED panel test.	(Trained service technician only) Replace the system board assembly.
180-xxx-003	Failed system board LED test.	(Trained service technician only) Replace the system board assembly.
201-xxx-0nn	Failed memory test. nn = DIMM slot number, 01 to 04	<ol style="list-style-type: none"> Reseat the DIMM in the indicated slot. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> DIMM in indicated slot (Trained service technician only) System board assembly
201-xxx-n99	Multiple DIMM failure, see error text. n = number of failing pair; see "Installing Memory Modules" on page 20 .	<ol style="list-style-type: none"> See the error text for failing DIMMs. (Trained service technician only) Replace the system board assembly.

<ul style="list-style-type: none"> Follow the suggested actions in the order in which they are listed in the Action column until the problem is solved. If an action step is preceded by “(Trained service technician only),” that step must be performed only by a trained service technician. 		
Error code	Description	Action
202-xxx-001	Failed system cache test.	<ol style="list-style-type: none"> Reseat microprocessor 1. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 1 (Trained service technician only) System board assembly
202-xxx-002	Failed system cache test.	<ol style="list-style-type: none"> Reseat microprocessor 2. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> (Trained service technician only) Microprocessor 2 (Trained service technician only) System board assembly
217-198--xxx	Could not establish drive parameters.	<ol style="list-style-type: none"> Reseat hard disk drive x. Flash the BIOS code. Replace the following components one at a time, in the order shown, restarting the server each time. <ol style="list-style-type: none"> Hard disk drive x (Trained service technician only) System board assembly
217-xxx-000	Failed hard disk drive test. If RAID is configured, the fixed disk number refers to the RAID logical drive.	<ol style="list-style-type: none"> Reseat hard disk drive 1. Replace hard disk drive 1.
217-xxx-001	Failed hard disk drive test. If RAID is configured, the fixed disk number refers to the RAID logical drive.	<ol style="list-style-type: none"> Reseat hard disk drive 2. Replace hard disk drive 2.
405-xxx-000	Failed Ethernet test on controller on the system board.	<ol style="list-style-type: none"> Make sure that Ethernet is not disabled in the Configuration/Setup Utility program. (Trained service technician only) Replace the system board assembly.

Recovering from a BIOS Update Failure

The server has an advanced recovery feature that will automatically switch to a backup BIOS page if the BIOS code in the server has become damaged, such as from a power failure during an update.

The flash memory of the blade server consists of a primary page and a backup page. If the BIOS code in the primary page is damaged, the baseboard management controller will detect the error and automatically switch to the backup page to start the server. If this happens, a POST message `Booted from backup POST/BIOS image` is displayed. The backup page version may not be the same version as the primary image.

You can then recover or restore the original primary page BIOS by using a BIOS flash diskette.

To recover the BIOS code and restore the server operation to the primary page, complete the following steps:

1. Download the latest version of the BIOS code from <http://support.intel.com/support/>.
2. Update the BIOS code, following the instructions that come with the update file that you downloaded. This will automatically restore and update the primary page.
3. Restart the blade server.

If that procedure fails, the blade server might not restart correctly or might not display video. To manually restore the BIOS code, complete the following steps:

1. Read the safety information that begins on page [Appendix D, “Safety Information” on page 99](#) and [“Handling Static-sensitive Devices” on page 12](#).
2. Turn off the blade server.
3. Remove the blade server from the SBCE unit (see [“Removing and Installing the Blade server in a SBCE unit” on page 12](#)).
4. Remove the cover (see [“Operating the Blade Server Cover” on page 15](#)).
5. Locate switch block SW2 on the system board (see [“System Board Switches” on page 9](#)).
6. Move the BIOS backup page switch (SW2-1) to the ON position to enable the backup page.
7. Replace the cover and reinstall the blade server in the SBCE unit, making sure that the media tray is selected by the relevant blade server.
8. Insert the BIOS flash diskette into the diskette drive.
9. Restart the blade server. The system begins the power-on self-test (POST).
10. Select **1 - Update POST/BIOS** from the menu that contains various flash (update) options.

Important: Do not press *Y* when asked to backup the ROM location, the damaged BIOS will be copied into the secondary page.

When you are prompted whether you want to move the current POST/BIOS image to the backup ROM location, press *N*.

11. When you are prompted whether you want to save the current code to a diskette, press *N*.
12. Select **Update the BIOS**.

Important: Do not restart the blade server at this time.

Remove the flash diskette from the diskette drive.

13. Turn off the blade server, remove it from the SBCE unit, and remove the cover of the blade server.
14. Move switch SW2-1 to OFF to return to the normal startup mode.
15. Replace the cover and reinstall the blade server in the SBCE unit; then restart the blade server. The system starts up.

Service Processor (BMC) Error Codes

The baseboard management controller (BMC) log contains up to 512 of the most recent service processor errors in IPMI format. These messages are a combination of plain text and error code numbers. You can view the BMC log from the Configuration/Setup Utility menu by selecting **Advanced Setup > Baseboard Management Controller (BMC) Settings > BMC System Event Log**.

You can view additional information and error codes in plain text by viewing the management-module event log in your SBCE unit.

Solving SAS Hard Disk Drive Problems

For any SAS error message, one or more of the following devices might be causing the problem:

- A failing SAS device (adapter, drive, or controller)
- An improper SAS configuration

For any SAS error message, make sure that the SAS devices are configured correctly.

Solving Undetermined Problems

When you are diagnosing a problem in the Intel® Server Compute Blade SBXD62, you must determine whether the problem is in the blade server or in the SBCE unit.

- If all of the blade servers have the same symptom, it is probably a SBCE unit problem; for more information, see the *Hardware Maintenance Manual and Troubleshooting Guide* for your SBCE unit.
- If the SBCE unit contains more than one blade server and only one of the blade servers has the problem, troubleshoot the blade server that has the problem.

If the diagnostic tests did not diagnose the failure or if the blade server is inoperative, use the information in this section.

If you suspect that a software problem is causing failures (continuous or intermittent), see [“Software Problems” on page 68](#).

Damaged data in CMOS memory or damaged BIOS code can cause undetermined problems. To reset the CMOS data, remove and replace the battery to override the power-on password and clear the CMOS memory; see [“Battery” on page 22](#). If you suspect that the BIOS code is damaged, see [“Recovering from a BIOS Update Failure” on page 78](#).

Check the LEDs on all the power supplies of the SBCE unit where the blade server is installed. If the LEDs indicate that the power supplies are working correctly, and reseating the blade server does not correct the problem, complete the following steps:

1. Make sure that the control panel connector is correctly seated on the system board (see [“System Board Connectors” on page 8](#) for the location of the connector).
2. If no LEDs on the control panel are working, replace the bezel assembly; then, try to power-on the blade server from the SBCE Web interface (see the SBCE documentation for more information).
3. Turn off the blade server.
4. Remove the blade server from the SBCE unit and remove the cover.
5. Make sure that the server is cabled correctly.
6. Remove or disconnect the following devices, one at a time, until you find the failure. Reinstall, turn on, and reconfigure the blade server each time.
 - I/O-expansion card.
 - Drives.
 - Memory modules. The minimum configuration requirement is 1 GB (two 512 MB DIMMs).

The following minimum configuration is required for the blade server to start:

- System board
 - One microprocessor
 - Two 512 MB DIMMs
 - A functioning SBCE unit
7. Install and turn on the blade server. If the problem remains, suspect the following components in the following order:
 - a. DIMM
 - b. System board
 - c. Microprocessor

If the problem is solved when you remove an I/O-expansion card from the server but the problem recurs when you reinstall the same adapter, suspect the I/O-expansion card; if the problem recurs when you replace the adapter with a different one, suspect the system board.

If you suspect a networking problem and the blade server passes all the system tests, suspect a network cabling problem that is external to the system.

Calling Intel for Service

See [Appendix A, “Getting Help”](#) on page 83 for information about calling Intel for service.

When you call for service, have as much of the following information available as possible:

- Machine type and model
- Microprocessor and hard disk drive upgrades
- Failure symptoms
 - Does the server fail the diagnostic programs? If so, what are the error codes?
 - What occurs? When? Where?
 - Is the failure repeatable?
 - Has the current server configuration ever worked?
 - What changes, if any, were made before it failed?
 - Is this the original reported failure, or has this failure been reported before?
- Diagnostic program type and version level
- Hardware configuration (print screen of the system summary)
- BIOS code level
- Operating-system type and version level

You can solve some problems by comparing the configuration and software setups between working and nonworking servers. When you compare servers to each other for diagnostic purposes, consider them identical only if all the following factors are exactly the same in all the servers:

- Machine type and model
- BIOS level
- Adapters and attachments, in the same locations
- Address jumpers, terminators, and cabling
- Software versions and levels
- Diagnostic program type and version level
- Configuration option settings
- Operating-system control-file setup

A Getting Help

World Wide Web

<http://support.intel.com/support/motherboards/server/ss4000-e/>.

Telephone

All calls are billed US \$25.00 per incident, levied in local currency at the applicable credit card exchange rate plus applicable taxes. (Intel reserves the right to change the pricing for telephone support at any time without notice).

For an updated support contact list, see <http://www.intel.com/support/9089.htm/>

U.S. and Canada

1-800-404-2284

Europe

Belgium 02 714 3182

Denmark ... 38 487077

Finland 9 693 79297

France..... 01 41 918529

Germany ... 069 9509 6099

Holland..... 020 487 4562

Italy..... 02 696 33276

Norway 23 1620 50

Spain..... 91 377 8166

Sweden..... 08 445 1251

UK..... 870 6072439

In Asia-Pacific region

Australia.... 1800 649931

Cambodia.. 63 2 636 9797 (via Philippines)

China 800 820 1100 (toll-free)

..... 8 621 33104691 (not toll-free)

Hong Kong 852 2 844 4456

India..... 0006517 2 68303634 (manual toll-free. You need an IDD-equipped telephone)

Indonesia ... 803 65 7249

Korea 822 767 2595

Malaysia 1 800 80 1390

Myanmar... 63 2 636 9796 (via Philippines)

New Zealand 0800 444 365

Pakistan..... 632 63684 15 (IDD via Philippines)

Philippines 1 800 1 651 0117

Singapore .. 65 6213-1311

Taiwan 2 2545-1640

Thailand 1 800 631 0003

Vietnam 632 6368416 (IDD via Philippines)

Japan

Domestic.... 0120 868686

Outside country 81 298 47 0800

Latin America

Argentina .. Contact AT&T USA at 0-800 222 1288. Once connected, dial 800 843 4481

Brazil 001-916 377 0180

Chile

Easter Island. Contact AT&T USA at 800 800 311. Once connected, dial 800 843 4481

Mainland and Juan .. Contact AT&T USA at 800 225 288. Once connected, dial 800 843 4481

Colombia... Contact AT&T USA at 01 800 911 0010. Once connected, dial 800 843 4481

Costa Rica . Contact AT&T USA at 0 800 0 114 114. Once connected, dial 800 843 4481

Ecuador

(Andimate) Contact AT&T USA at 1 999 119. Once connected, dial 800 843 4481

(Pacifictel) Contact AT&T USA at 1 800 225 528. Once connected, dial 800 843 4481

Guatemala. Contact AT&T USA at 99 99 190. Once connected, dial 800 843 4481

Mexico Contact AT&T USA at 001 800 462 628 4240. Once connected, dial 800 843 4481

Miami 1 800 621 8423

Panama..... Contact AT&T USA at 00 800 001 0109. Once connected, dial 800 843 4481

Paraguay ... 001 916 377 0114

Peru 001 916 377 0114

Uruguay..... 001 916 377 0114

Venezuela... Contact AT&T USA at 0 800 2255 288. Once connected, dial 800 843 4481

B Warranty

Limited Warranty for Intel® Chassis Subassembly Products

Intel warrants that the Products (defined herein as the Intel® chassis subassembly and all of its various components and software delivered with or as part of the Products) to be delivered hereunder, if properly used and installed, will be free from defects in material and workmanship and will substantially conform to Intel's publicly available specifications for a period of three (3) years after the date the Product was purchased from an Intel authorized distributor. Software of any kind delivered with or as part of products is expressly provided “as is” unless specifically provided for otherwise in any software license accompanying the software.

If any Product furnished by Intel which is the subject of this Limited Warranty fails during the warranty period for reasons covered by this Limited Warranty, Intel, at its option, will:

- REPAIR the Product by means of hardware and/or software; OR
- REPLACE the Product with another Product; OR
- REFUND the then-current value of the Product if Intel is unable to repair or replace the Product.

If such Product is defective, transportation charges for the return of Product to buyer within the USA will be paid by Intel. For all other locations, the warranty excludes all costs of shipping, customs clearance, and other related charges. Intel will have a reasonable time to make repairs or to replace Product or to refund the then-current value of the Product.

In no event will Intel be liable for any other costs associated with the replacement or repair of Product, including labor, installation or other costs incurred by buyer and in particular, any costs relating to the removal or replacement of any product soldered or otherwise permanently affixed to any printed circuit board.

This Limited Warranty, and any implied warranties that may exist under state law, apply only to the original purchaser of the Product.

Extent of Limited Warranty

Intel does not warrant that Products to be delivered hereunder, whether delivered stand-alone or integrated with other Products, including without limitation semiconductor components, will be free from design defects or errors known as “errata.” Current characterized errata are available upon request.

This Limited Warranty does not cover damages due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing.

Warranty Limitations and Exclusions

These warranties replace all other warranties, expressed or implied including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Intel makes no expressed warranties beyond those stated here. Intel disclaims all other warranties, expressed or implied including, without limitation, implied warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not allow the exclusion of implied warranties, so this limitation may not apply.

All expressed and implied warranties are limited in duration to the limited warranty period. No warranties apply after that period. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitations of Liability

Intel's responsibility under this, or any other warranty, implied or expressed, is limited to repair, replacement, or refund, as set forth above. These remedies are the sole and exclusive remedies for any breach of warranty. Intel is not responsible for direct, special, incidental, or consequential damages resulting from any breach of warranty under another legal theory including, but not limited to, lost profits, downtime, goodwill, damage to or replacement of equipment and property, and any costs of recovering, reprogramming, or reproducing any program or data stored in or used with a system containing this product. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This limited warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction.

Any and all disputes arising under or related to this Limited Warranty shall be adjudicated in the following forums and governed by the following laws: for the United States of America, Canada, North America, and South America, the forum shall be Santa Clara, California, USA, and the applicable law shall be that of the State of California, USA; for the Asia Pacific region, the forum shall be Singapore and the applicable law shall be that of Singapore; for Europe and the rest of the world, the forum shall be London and the applicable law shall be that of the United Kingdom.

In the event of any conflict between the English language version and any other translated version(s) of this Limited Warranty, the English language version shall control.

How to Obtain Warranty Service

To obtain warranty service for this Product, you may contact Intel or your authorized distributor.

- North America and Latin America To obtain warranty repair for the product, please go to the following Web site to obtain instructions: <http://support.intel.com/support/motherboards/draform.htm>
- In Europe and in Asia Contact your original authorized distributor for warranty service.

Any replacement Product is warranted under this written warranty and is subject to the same limitations and exclusions for the remainder of the original warranty period.

Telephone Support

If you cannot find the information you need on Intel's World Wide Web site (<http://www.intel.com/>), call your local distributor or an Intel Customer Support representative. See “[Getting Help](#)” for telephone numbers.

Returning a Defective Product

Before returning any product, call your authorized dealer/distribution authority.

C Regulatory and Compliance Information

Product Regulatory Compliance

Warning: *To ensure regulatory compliance, you must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products/components will void the UL listing and other regulatory approvals of the product and will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.*

To help ensure EMC compliance with your local regional rules and regulations, before computer integration, make sure that the chassis, power supply, and other modules have passed EMC testing using a server board with a microprocessor from the same family (or higher) and operating at the same (or higher) speed as the microprocessor used on this server board. The final configuration of your end system product may require additional EMC compliance testing. For more information, please contact your local Intel representative.

This is an FCC Class A device. Integration of it into a Class B chassis does not result in a Class B device.

Product Safety Compliance

This server chassis product, when correctly integrated per this guide, complies with the following safety and electromagnetic compatibility (EMC) regulations.

Intended Application

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as: medical, industrial, telecommunications, NEBS, residential, alarm systems, test equipment, etc.), other than an ITE application, may require further evaluation.

Product Safety Compliance

The server chassis complies with the following product safety requirements:

- UL60950 - CSA 60950 (USA / Canada)
- EN60950 (Europe)
- IEC60950 (International)
- CB Certificate & Report, IEC60950 (report to include all country national deviations)

- GS License (Germany)
- GOST R 50377-92 - License (Russia)
- Belarus License (Belarus)
- Ukraine License (Ukraine)
- CE - Low Voltage Directive 73/23/EEE (Europe)
- IRAM Certification (Argentina)
- GB4943- CNCA Certification (China)

Product EMC Compliance - Class A Compliance

This server chassis has been tested and verified to comply with the following electromagnetic compatibility (EMC) regulations when installed in a compatible Intel® host system. For information on compatible host system(s) refer to Intel's Server Builder Web site or contact your local Intel representative.

- FCC /ICES-003 - Emissions (USA/Canada) Verification
- CISPR 22 - Emissions (International)
- EN55022 - Emissions (Europe)
- EN55024 - Immunity (Europe)
- EN61000-3-2 - Harmonics (Europe)
- EN61000-3-3 - Voltage Flicker (Europe)
- CE - EMC Directive 89/336/EEC (Europe)
- VCCI Emissions (Japan)
- AS/NZS 3548 Emissions (Australia / New Zealand)
- BSMI CNS13438 Emissions (Taiwan)
- GOST R 29216-91 Emissions (Russia)
- GOST R 50628-95 Immunity (Russia)
- Belarus License (Belarus)
- Ukraine License (Ukraine)
- RRL MIC Notice No. 1997-41 (EMC) & 1997-42 (EMI) (Korea)
- GB 9254 - CNCA Certification (China)
- GB 17625 - (Harmonics) CNCA Certification (China)

Certifications / Registrations / Declarations

- UL Certification (US/Canada)
- CE Declaration of Conformity (CENELEC Europe)
- FCC/ICES-003 Class A Attestation (USA/Canada)

- VCCI Certification (Japan)
- C-Tick Declaration of Conformity (Australia)
- MED Declaration of Conformity (New Zealand)
- BSMI Certification (Taiwan)
- GOST R Certification / License (Russia)
- Belarus Certification / License (Belarus)
- RRL Certification (Korea)
- IRAM Certification (Argentina)
- CNCA Certification (China)
- Ecology Declaration (International)

Product Regulatory Compliance Markings

This Intel[®] server chassis product bears the following regulatory marks.

Table 1. Product Regulatory Compliance Markings








Regulatory Compliance	Region	Marking
cULus Listing Marks	USA/Canada	
GS Mark	Germany	
CE Mark	Europe	
FCC Marking (Class A)	USA	This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. Manufactured by Intel Corporation
EMC Marking (Class A)	Canada	CANADA ICES-003 CLASS A CANADA NMB-003 CLASSE A
VCCI Marking (Class A)	Japan	この装置は、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。VCCI-A

Table 1. Product Regulatory Compliance Markings

Regulatory Compliance	Region	Marking
BSMI Certification Number & Class A Warning	Taiwan	 <div data-bbox="881 541 1305 646" style="border: 1px solid black; padding: 5px;"> <p>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</p> </div>
GOST R Marking	Russia	
RRL MIC Mark	Korea	
China Compulsory Certification Mark	China	

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions related to the EMC performance of this product, contact:

Intel Corporation
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124-6497
1-800-628-8686

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 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 the receiver.
- Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class A or B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals, that are not shielded and grounded may result in interference to radio and TV reception.

Industry Canada (ICES-003)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadien des Communications.

English translation of the notice above:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled: "Digital Apparatus," ICES-003 of the Canadian Department of Communications.

Europe (CE Declaration of Conformity)

This product has been tested in accordance to, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.

VCCI (Japan)

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。

English translation of the preceding notice:

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

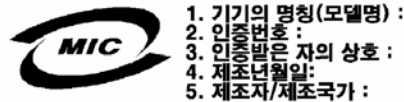
BSMI (Taiwan)

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

The BSMI Certification Marking and EMC warning is located on the outside rear area of the product.

Korean Compliance (RRL)

Following is the RRL certification information for Korea.



English translation of the notice above:

1. Type of Equipment (Model Name): On License and Product
2. Certification No.: On RRL certificate. Obtain certificate from local Intel representative
3. Name of Certification Recipient: Intel Corporation
4. Date of Manufacturer: Refer to date code on product
5. Manufacturer/Nation: Intel Corporation/Refer to country of origin marked on product

Regulated Specified Components

To maintain the UL listing and compliance to other regulatory certifications and/or declarations, the following regulated components must be used and conditions adhered to. Interchanging or use of other components will void the UL listing and other product certifications and approvals.

Updated product information for configurations can be found on the Intel Server Builder Web site at the following URL:

<http://channel.intel.com/go/serverbuilder>

If you do not have access to Intel's Web address, please contact your local Intel representative.

- **Server chassis:** (base chassis is provided with power supply and fans) - UL listed.
- **Server board:** you must use an Intel server board - UL recognized.
- **Add-in boards:** must have a printed wiring board flammability rating of minimum UL94V-1. Add-in boards containing external power connectors and/or lithium batteries must be UL recognized or UL listed. Any add-in board containing modem telecommunication circuitry must be UL listed. In addition, the modem must have the appropriate telecommunications, safety, and EMC approvals for the region in which it is sold.
- **Peripheral storage devices:** must be a UL recognized or UL listed accessory and TUV or VDE licensed. Maximum power rating of any one device is 19 watts. Total server configuration is not to exceed the maximum loading conditions of the power supply.

Restriction of Hazardous Substances (RoHS) Compliance

Intel has a system in place to restrict the use of banned substances in accordance with the European Directive 2002/95/EC. Compliance is based on declaration that materials banned in the RoHS Directive are either (1) below all applicable substance threshold limits or (2) an approved/pending RoHS exemption applies.

Note: RoHS implementing details are not fully defined and may change.

Threshold limits and banned substances are noted as follows:

- Quantity limit of 0.1% by mass (1000 PPM) for:
 - Lead
 - Mercury
 - Hexavalent chromium
 - Polybrominated biphenyls diphenyl ethers (PBDE)
- Quantity limit of 0.01% by mass (100 PPM) for:
 - Cadmium

End of Life / Product Recycling

Product recycling and end-of-life take back systems and requirements vary from country to country. Contact the retailer or distributor of this product for information on product recycling and / or take back.

D Safety Information

English

Server Safety Information

This document applies to Intel® server boards, Intel® server chassis (pedestal and rack-mount) and installed peripherals. To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read this document and observe all warnings and precautions in this guide before installing or maintaining your Intel® server product.







In the event of a conflict between the information in this document and information provided with the product or on the website for a particular product, the product documentation takes precedence.

Your server should be integrated and serviced only by technically qualified persons.

You must adhere to the guidelines in this guide and the assembly instructions in your server manuals to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL Listing and other regulatory approvals of the product, and may result in noncompliance with product regulations in the region(s) in which the product is sold.

Safety Warnings and Cautions

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following safety instructions and information. The following safety symbols may be used throughout the documentation and may be marked on the product and / or the product packaging.

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	Indicates to unplug all AC power cord(s) to disconnect AC power
	Please recycle battery

Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as medical, industrial, residential, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

Site Selection

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean, dry, and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight and radiators.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

Equipment Handling Practices

Reduce the risk of personal injury or equipment damage:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.
- To reduce the weight for easier handling, remove any easily detachable components.

Power and Electrical Warnings

Caution: *The power button, indicated by the stand-by power marking, DOES NOT completely turn off the system AC power, 5V standby power is active whenever the system is plugged in. To remove power from system, you must unplug the AC power cord from the wall outlet. Your system may use more than one AC power cord. Make sure all AC power cords are*

unplugged. Make sure the AC power cord(s) is/are unplugged before you open the chassis, or add or remove any non hot-plug components.

Do not attempt to modify or use an AC power cord if it is not the exact type required. A separate AC cord is required for each system power supply.

Some power supplies in Intel® servers use Neutral Pole Fusing. To avoid risk of shock use caution when working with power supplies that use Neutral Pole Fusing.

The power supply in this product contains no user-serviceable parts. Do not open the power supply. Hazardous voltage, current and energy levels are present inside the power supply. Return to manufacturer for servicing.

When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing it from the server.

To avoid risk of electric shock, turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it.

Power Cord Warnings

If an AC power cord was not provided with your product, purchase one that is approved for use in your country.

Caution: *To avoid electrical shock or fire, check the power cord(s) that will be used with the product as follows:*

- *Do not attempt to modify or use the AC power cord(s) if they are not the exact type required to fit into the grounded electrical outlets*
- *The power cord(s) must meet the following criteria:*
- *The power cord must have an electrical rating that is greater than that of the electrical current rating marked on the product.*
- *The power cord must have safety ground pin or contact that is suitable for the electrical outlet.*
- *The power supply cord(s) is/are the main disconnect device to AC power. The socket outlet(s) must be near the equipment and readily accessible for disconnection.*
- *The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground.*

System Access Warnings

Caution: *To avoid personal injury or property damage, the following safety instructions apply whenever accessing the inside of the product:*

- *Turn off all peripheral devices connected to this product.*
- *Turn off the system by pressing the power button to off.*
- *Disconnect the AC power by unplugging all AC power cords from the system or wall outlet.*

- *Disconnect all cables and telecommunication lines that are connected to the system.*
- *Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.*
- *Do not access the inside of the power supply. There are no serviceable parts in the power supply. Return to manufacturer for servicing.*
- *Power down the server and disconnect all power cords before adding or replacing any non hot-plug component.*
- *When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing the power supply from the server.*

Caution: *If the server has been running, any installed processor(s) and heat sink(s) may be hot. Unless you are adding or removing a hot-plug component, allow the system to cool before opening the covers. To avoid the possibility of coming into contact with hot component(s) during a hot-plug installation, be careful when removing or installing the hot-plug component(s).*

Caution: *To avoid injury do not contact moving fan blades. If your system is supplied with a guard over the fan, do not operate the system without the fan guard in place.*

Rack Mount Warnings

The equipment rack must be anchored to an unmovable support to prevent it from tipping when a server or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.

Install equipment in the rack from the bottom up, with the heaviest equipment at the bottom of the rack.

Extend only one piece of equipment from the rack at a time.

You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server(s).

To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Electrostatic Discharge (ESD)

Caution: *ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground -- any unpainted metal surface -- on your server when handling parts.*

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a

conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Other Hazards

Battery Replacement

Caution: *There is the danger of explosion if the battery is incorrectly replaced. When replacing the battery, use only the battery recommended by the equipment manufacturer.*

Dispose of batteries according to local ordinances and regulations.

Do not attempt to recharge a battery.

Do not attempt to disassemble, puncture, or otherwise damage a battery.

Cooling and Airflow

Caution: *Carefully route cables as directed to minimize airflow blockage and cooling problems.*

For proper cooling and airflow, operate the system only with the chassis covers installed. Operating the system without the covers in place can damage system parts. To install the covers:

- *Check first to make sure you have not left loose tools or parts inside the system.*
- *Check that cables, add-in boards, and other components are properly installed.*
- *Attach the covers to the chassis according to the product instructions.*

Laser Peripherals or Devices

Caution: *To avoid risk of radiation exposure and/or personal injury:*

- *Do not open the enclosure of any laser peripheral or device*
- *Laser peripherals or devices have are not user serviceable*
- *Return to manufacturer for servicing*

Deutsch

Sicherheitshinweise für den Server

Das vorliegende Dokument bezieht sich auf Intel® Serverplatinen, Intel® Servergehäuse (Standfuß und Rack) sowie installierte Peripheriegeräte. Es enthält Warnungen und Vorsichtsmaßnahmen zur Vermeidung von Gefahren durch Verletzung, Stromschlag, Feuer und Beschädigungen von Geräten. Lesen Sie diese Dokument daher sorgfältig, bevor Sie Ihr Intel® Serverprodukt installieren oder warten.







Bei Widersprüchen zwischen den hier vorliegenden Angaben und den Informationen im Lieferumfang des Produkts oder auf der Website des betreffenden Produkts hat die Produktdokumentation Vorrang.

Die Integration und Wartung des Servers darf nur durch technisch qualifizierte Personen erfolgen.

Um die Einhaltung der vorhandenen Zulassungen und Genehmigungen für das Produkt zu gewährleisten, sind die Richtlinien in diesem Handbuch sowie die Montageanleitungen in den Serverhandbüchern zu beachten. Verwenden Sie nur die beschriebenen, zugelassenen Komponenten, die im vorliegenden Handbuch angegeben werden. Die Verwendung anderer Produkte oder Komponenten führt zum Erlöschen der UL-Zulassung und anderer Genehmigungen für das Produkt. Dadurch kann das Produkt gegen Produktbestimmungen verstoßen, die im Verkaufsland gelten.

Sicherheitshinweise und Vorsichtsmaßnahmen

Um Verletzungen und Beschädigungen zu vermeiden, sollten Sie vor dem Beginn der Produktinstallation die nachfolgend aufgeführten Sicherheitshinweise und -informationen sorgfältig lesen und befolgen. In dem vorliegenden Handbuch sowie auf dem Produkt und auf der Verpackung werden folgende Sicherheitssymbole verwendet:

VORSICHT	Weist auf eine Gefahrenquelle hin, die bei Nichtbeachtung des VORSICHTSHINWEISES zu leichteren Verletzungen bzw. Sachbeschädigungen führen kann.
WARNUNG	Weist auf eine Gefahrenquelle hin, die bei Nichtbeachtung der WARNUNG zu ernstesten Verletzungen führen kann.
	Weist auf potentielle Gefahr bei Nichtbeachtung der angezeigten Informationen hin.
	Weist auf die Gefahr eines Stromschlags hin, der bei Nichtbeachtung der Sicherheitshinweise zu schweren oder tödlichen Verletzungen führen kann.
	Weist auf Verbrennungsgefahr an heißen Bauteilen bzw. Oberflächen hin.
	Weist darauf hin, daß das Anfassen des Gebläses zu Verletzungen führen kann.
	Bedeutet, alle Netzkabel abzuziehen und das Gerät von der Netzspannung zu trennen.
	Bereiten Sie bitte Batterie auf

Zielbenutzer der Anwendung

Dieses Produkt wurde in seiner Eigenschaft als IT-Gerät getestet, das in Büros, Schulen, Computerräumen und ähnlichen öffentlichen Räumlichkeiten installiert werden kann. Die Eignung dieses Produkts für andere Einsatzbereiche als IT (z. B. Medizin, Industrie, Alarmsysteme oder Prüfgeräte) kann u. U. weitere Tests erfordern.

Standortauswahl

Das System ist für den Betrieb innerhalb normaler Büroumgebungen geeignet. Wählen Sie einen Standort, der folgenden Kriterien entspricht:

- Sauber, trocken und frei von Partikeln in der Luft (außer dem normalen Raumstaub).
- Gut belüftet, nicht in der Nähe von Wärmequellen und keiner direkten Sonnenbestrahlung ausgesetzt.
- Nicht in der Nähe von Vibrations- oder Erschütterungsquellen.
- Abgeschirmt von starken elektromagnetischen Feldern, die durch elektrische Geräte erzeugt werden.
- In gewittergefährdeten Gebieten sollten Sie das System an einen Überspannungsschutz anschließen und bei einem Gewitter die Telekommunikationskabel zum Modem abziehen.
- Eine ordnungsgemäß geerdete Wandsteckdose muß vorhanden sein.
- Ausreichender Freiraum für den Zugang zu den Netzkabeln, da diese die Hauptvorrichtung zum Trennen des Produkts von der Stromversorgung sind.

Handhabung von Geräten

Beachten Sie zur Vermeidung von Verletzungen oder Beschädigungen an den Geräten die folgenden Hinweise:

- Halten Sie beim Transportieren und Anheben von Geräten die örtlichen Gesundheits- und Sicherheitsvorschriften ein.
- Verwenden Sie mechanische oder andere geeignete Hilfsmittel zum Transportieren oder Anheben von Geräten.
- Entfernen Sie alle Komponenten, die sich leicht abnehmen lassen, um das Gewicht zu reduzieren und die Handhabung zu erleichtern.

Warnungen zu Netzspannung und Elektrizität

Vorsicht: Durch Betätigen der mit dem Standby-Symbol gekennzeichneten Netztaste wird das System NICHT vollständig vom Netz getrennt. Es sind weiterhin 5 V aktiv, solange das System eingesteckt ist. Um das System vollständig vom Strom zu trennen, muß das Netzkabel aus der Steckdose abgezogen werden. Das System verfügt möglicherweise über mehrere Netzkabel. Vergewissern Sie sich in diesem Fall, daß alle Netzkabel abgezogen sind. Wenn Sie Komponenten ein- oder ausbauen möchten, die nicht hot-plug-fähig sind, stellen Sie sicher, daß zuvor alle Netzkabel abgezogen sind.

Nehmen Sie keine Änderungen am Netzkabel vor, und verwenden Sie kein Kabel, das nicht genau dem geforderten Typ entspricht. Jedes Netzteil im System muß über ein eigenes Netzkabel angeschlossen werden.

Einige Netzteile von Intel Servern verwenden Nullleitersicherungen. Vorsicht ist geboten im Umgang mit Netzteilen, welche Nullleitersicherungen verwenden, um das Risiko eines elektrischen Schlages zu vermeiden

Das Netzteil in diesem Produkt enthält keine Teile, die vom Benutzer gewartet werden können. Öffnen Sie das Netzteil nicht. Im Netzteil bestehen gefährliche Spannungen, Ströme und Energiequellen. Schicken Sie das Gerät für Wartungsarbeiten an den Hersteller zurück.

Wenn Sie ein hot-plug-fähiges Netzteil austauschen, ziehen Sie dessen Netzkabel ab, bevor Sie es aus dem Server ausbauen.

Zur Vermeidung von Stromschlägen schalten Sie den Server aus, und trennen Sie vor dem Öffnen des Geräts das Netzkabel sowie alle an den Server angeschlossene Telekommunikationssysteme, Netzwerke und Modems.

Hinweis für Netzkabel

Wenn kein Netzkabel mit dem Produkt geliefert wurde, kaufen Sie ein Kabel, das für die

Vorsicht: Prüfen Sie zur Vermeidung von Stromschlag- oder Feuergefahr die mit dem Produkt zu verwendenden Netzkabel wie folgt:

- Nehmen Sie keine Änderungen an einem Netzkabel vor, und benutzen sie es nicht, wenn es nicht genau in die geerdeten Netzsteckdosen paßt.
- Netzkabel müssen die folgenden Anforderungen erfüllen:
- Die Nennbelastbarkeit des Netzkabels muß mindestens so hoch sein wie die am Produkt angegebenen Nennstromaufnahme.
- Das Netzkabel muß einen zur Netzsteckdose passenden Schutzkontakt besitzen.
- Die Netzkabel sind die Hauptvorrichtung zum Trennen des Geräts vom Stromnetz. Die Steckdose muß in der Nähe der Anlage angebracht und gut erreichbar sein.
- Netzkabel müssen an eine ordnungsgemäß geerdete Steckdose angeschlossen sein.

Warnhinweise für den Systemzugang

Vorsicht: Um Verletzungen und Beschädigungen zu vermeiden, sollten Sie vor Arbeiten im Produktinneren folgende Sicherheitsanweisungen beachten:

- Schalten Sie alle am Produkt angeschlossenen Peripheriegeräte aus.
- Schalten Sie das System mit dem Netzschalter aus.
- Trennen Sie das Gerät von der Stromquelle, indem Sie alle Netzkabel vom System bzw. aus der Steckdose ziehen.
- Ziehen Sie alle Kabel und alle an das System angeschlossenen Telekommunikationsleitungen ab.
- Bewahren Sie alle Schrauben und anderen Befestigungselemente gut auf, nachdem Sie die Gehäuseabdeckung entfernt haben. Wenn Sie Ihre Arbeiten im Systeminneren beendet haben, befestigen Sie die Gehäuseabdeckung mit den Originalschrauben bzw. -befestigungselementen.
- Führen Sie keine Arbeiten im Netzteil aus. Das Netzteil enthält keine für den Benutzer wartungsbedürftigen Teile. Schicken Sie das Gerät für Wartungsarbeiten an den Hersteller zurück.
- Schalten Sie den Server aus, und ziehen Sie alle Netzkabel ab, bevor Sie Komponenten ein- oder ausbauen, die nicht hot-plug-fähig sind.
- Wenn Sie ein hot-plug-fähiges Netzteil austauschen, ziehen Sie dessen Netzkabel ab, bevor Sie es aus dem Server ausbauen.

Vorsicht: War Ihr Server in Betrieb, können die installierten Prozessoren und Kühlkörper heiß sein. Sofern Sie keine Hot-Plug-Komponenten ein- oder ausbauen, warten Sie mit dem Abnehmen der Abdeckungen, bis das System abgekühlt ist. Gehen Sie beim Aus- oder Einbauen von Hot-Plug-Komponenten sorgfältig vor, um nicht mit heißen Komponenten in Berührung zu kommen.

Vorsicht: Berühren Sie nicht die rotierenden Lüfterflügel, um Verletzungen zu vermeiden. Falls Ihr System mit einer Lüfterabdeckung besitzt, darf es nicht ohne diese Abdeckung betrieben werden.

Warnhinweise für Racks

Das Geräte-Rack muß auf einer geeigneten, festen Unterlage verankert werden, um ein Umkippen zu vermeiden, wenn ein Server oder andere Geräte herausgezogen werden. Bei der Installation des Racks müssen die Anweisungen des Rack-Herstellers beachtet werden.

Gehen Sie bei der Installation von Geräten im Rack immer von unten nach oben vor, und bauen Sie das schwerste Gerät an der untersten Position im Rack ein.

Ziehen Sie jeweils immer nur ein Gerät aus dem Rack heraus.

Sie müssen für die gesamte Rack-Einheit einen Netztrennschalter einrichten. Dieser Netztrennschalter muß leicht zugänglich sein und über eine Kennzeichnung verfügen, die besagt, daß er die Stromzufuhr zur gesamten Einheit steuert und nicht nur zu den Servern.

Zur Vermeidung von Stromschlaggefahr müssen das Rack selbst und alle darin eingebauten Geräte ordnungsgemäß geerdet sein.

Elektrostatische Entladungen (ESD)

Vorsicht: *Elektrostatische Entladungen können zur Beschädigung von Festplatten, Platinen und anderen Komponenten führen. Daher sollten Sie alle Arbeiten an einer ESD-Workstation ausführen. Steht ein solcher Arbeitsplatz nicht zur Verfügung, erzielen Sie einen gewissen Schutz vor elektrostatischen Entladungen durch Tragen einer Antistatik-Manschette, die Sie während der Arbeit zur Erdung an einem beliebigen unlackierten Metallteil des Computergehäuses befestigen.*

Gehen Sie bei der Handhabung von Platinen immer mit größter Vorsicht vor. Sie können äußerst empfindlich gegenüber elektrostatischer Entladung sein. Halten Sie Platinen nur an den Kanten fest. Legen Sie die Platinen nach dem Auspacken aus der Schutzhülle oder nach dem Ausbau aus dem Server mit der Bauelementseite nach oben auf eine geerdete, statisch entladene Unterlage. Verwenden Sie dazu, sofern verfügbar, eine leitfähige Schaumstoffunterlage, aber nicht die Schutzhülle der Platine. Ziehen Sie die Platine nicht über eine Fläche.

Andere Gefahren

Batterieaustausch

Vorsicht: Wird die Batterie unsachgemäß ausgetauscht, besteht Explosionsgefahr. Verwenden Sie als Ersatz nur die vom Gerätehersteller empfohlene Batterie.

Beachten Sie bei der Entsorgung von Batterien die gültigen Bestimmungen.

Versuchen Sie nicht, eine Batterie aufzuladen.

Versuchen Sie nicht, eine Batterie zu öffnen oder sonstwie zu beschädigen.

Kühlung und Luftstrom

Vorsicht: Verlegen Sie Kabel sorgfältig entsprechend der Anleitung, um Störungen des Luftstroms und Kühlungsprobleme zu vermeiden.

Zur Gewährleistung des ordnungsgemäßen Kühlungs- und Luftstromverhaltens darf das System nur mit angebrachten Gehäuseabdeckungen betrieben werden. Die Inbetriebnahme des Systems ohne Abdeckung kann zur Beschädigung von Systemkomponenten führen. So bringen Sie die Abdeckung wieder an:

- Vergewissern Sie sich zunächst, daß Sie keine Werkzeuge oder Teile im Gehäuse vergessen haben.
- Prüfen Sie, ob Kabel, Erweiterungskarten sowie weitere Komponenten ordnungsgemäß angebracht sind.
- Befestigen Sie die Abdeckungen am Gehäuse des Produkts, wie in dessen Anleitung beschrieben.

Laser-Peripheriegeräte oder -Komponenten

Vorsicht: Beachten Sie zur Vermeidung von Strahlung und Verletzungen die folgenden Hinweise:

- Öffnen Sie keinesfalls das Gehäuse von Laser-Peripheriegeräten oder Laser-Komponenten.
- Laser-Peripheriegeräte oder -Komponenten besitzen keine für den Benutzer wartungsbedürftigen Teile.
- Schicken Sie das Gerät für Wartungsarbeiten an den Hersteller zurück.

Français

Consignes de sécurité sur le serveur

Ce document s'applique aux cartes serveur Intel®, au châssis de serveur Intel® (sur pieds et sur rack) et aux périphériques installés. Pour réduire les risques de dommages corporels, d'électrocution, d'incendie et de dommages matériels, lisez ce document et respectez tous les avertissements et précautions mentionnés dans ce guide avant d'installer ou de mettre à jour votre produit serveur Intel®.







En cas de conflit entre les informations fournies dans ce document et celles livrées avec le produit ou publiées sur le site Web pour un produit particulier, la documentation du produit prime.

Votre serveur doit être intégré et entretenu uniquement par des techniciens qualifiés.

Vous devez suivre les informations de ce guide et les instructions d'assemblage des manuels de serveur pour vérifier et maintenir la conformité avec les certifications et approbations de produit existantes. Utilisez uniquement les composants décrits et réglementés spécifiés dans ce guide. L'utilisation d'autres produits/composants annulera la liste UL et les autres approbations réglementaires du produit, et le produit peut ne pas être conforme aux autres lois et réglementations locales applicables au produit.

Sécurité: avertissements et mises en garde

Pour éviter de vous blesser ou d'endommager votre équipement, lisez et respectez toutes les informations et consignes de sécurité avant de commencer l'installation du produit. Les symboles de sécurité suivants peuvent être utilisés tout au long de cette documentation et peuvent figurer sur le produit ou sur son emballage.

ATTENTION	Indique la présence d'un risque pouvant entraîner des blessures physiques mineures ou endommager légèrement le matériel si la mise en garde n'est pas prise en compte.
AVERTISSEMENT	Indique la présence d'un risque pouvant entraîner des blessures corporelles graves si l'avertissement n'est pas pris en compte.
	Indique un risque potentiel si les informations signalées ne sont pas prises en compte.
	Indique des risques d'électrocution pouvant entraîner des blessures corporelles graves ou mortelles si les consignes de sécurité ne sont pas respectées.
	Signale des composants ou des surfaces soumis à des températures élevées.
	Indique de ne pas toucher aux pales de ventilateur, car cela peut entraîner des blessures.
	Indique de débrancher tous les cordons d'alimentation secteur pour déconnecter l'alimentation.
	Veillez réutiliser la batterie

Domaines d'utilisation prévus

Ce produit a été testé comme équipement informatique (ITE) et peut être installé dans des bureaux, des écoles, des salles informatiques et des endroits commerciaux similaires. L'utilisation du présent produit dans des catégories et environnements de produits et domaines d'application (par exemple, le domaine médical, industriel, résidentiel, les systèmes d'alarme et les appareils de contrôle) autres qu'ITE doit faire l'objet d'évaluations supplémentaires.

Sélection d'un emplacement

Le système est conçu pour fonctionner dans un environnement standard de bureau. Choisissez un emplacement respectant les conditions suivantes :

- Propre, sec et exempt de particules en suspension (autres que la poussière normale d'une pièce).
- Bien ventilé et à l'écart des sources de chaleur telles que la lumière directe du soleil et les radiateurs.
- À l'écart des sources de vibration ou des chocs physiques.
- Isolé des champs électromagnétiques importants produits par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques, nous vous recommandons de brancher votre système à un suppresseur de surtension et de déconnecter les lignes de télécommunication de votre modem pendant les orages.
- Équipé d'une prise murale reliée à la terre.
- Équipé d'un espace suffisant pour accéder aux cordons d'alimentation secteur, car ils servent de disjoncteur principal d'alimentation du produit.

Pratiques de manipulation de l'équipement

Réduisez le risque de dommages personnels ou matériels :

- Conformez-vous aux exigences de médecine du travail et de sécurité lorsque vous déplacez et soulevez le matériel.
- Utilisez l'assistance mécanique ou toute autre assistance appropriée lorsque vous déplacez et soulevez le matériel.
- Pour réduire le poids en vue de faciliter la manipulation, retirez tout composant amovible.

Alimentation et avertissements en matière d'électricité

Attention: Le bouton d'alimentation, indiqué par le symbole de mise en veille, NE COUPE PAS complètement l'alimentation secteur du système car le courant de veille 5 V reste actif lorsque le système est sous tension. Pour couper l'alimentation du système, vous devez débrancher le cordon d'alimentation secteur de la prise murale. Votre système peut utiliser plusieurs cordons d'alimentation secteur. Assurez-vous que tous les cordons d'alimentation sont débranchés. Vous devez les débrancher avant d'ouvrir le châssis, d'ajouter ou de supprimer un composant non connectable à chaud.

Les alimentations de certains serveurs Intel sont munies de doubles fusibles pôle/neutre: veuillez observer les précautions d'usage afin d'éviter tout risque d'électrocution.

N'essayez pas de modifier ou d'utiliser un cordon d'alimentation secteur s'il ne s'agit pas du type exact requis. Un cordon secteur est requis pour chaque alimentation système.

Le bloc d'alimentation de ce produit ne contient aucun composant réparable par l'utilisateur. N'ouvrez pas le bloc d'alimentation. L'intérieur de celui-ci est soumis à des niveaux dangereux de tension, de courant et d'énergie. Renvoyez-le au fabricant en cas de problème.

Lorsque vous remplacez un bloc d'alimentation à chaud, débranchez le cordon du bloc d'alimentation en cours de remplacement avant de le retirer du serveur.

Pour éviter tout risque d'électrocution, mettez le système hors tension et débranchez les cordons d'alimentation ainsi que les systèmes de télécommunication, réseaux et modems reliés au système avant d'ouvrir ce dernier.

Avertissements sur le cordon d'alimentation

Si aucun cordon d'alimentation secteur n'a été fourni avec votre produit, vous devez vous en procurer un qui soit approuvé pour une utilisation dans votre pays.

Attention: Pour éviter tout risque d'électrocution ou d'incendie, vérifiez les cordons d'alimentation qui seront utilisés avec le produit comme suit:

- N'essayez pas d'utiliser ou de modifier les cordons d'alimentation en CA s'ils ne correspondent pas exactement au type requis pour les prises électriques reliées à la terre.
- Les cordons d'alimentation doivent répondre aux critères suivants :
- Le cordon d'alimentation doit supporter une intensité supérieure à celle indiquée sur le produit.
- Le cordon d'alimentation doit posséder une broche ou un contact de mise à la terre approprié à la prise électrique.
- Les cordons d'alimentation électrique représentent le principal dispositif de déconnexion raccordé à l'alimentation secteur. Les prises de courant doivent se trouver à proximité de l'équipement et être facilement accessibles pour une déconnexion.
- Les cordons d'alimentation doivent être branchés sur des prises électriques correctement reliées à la terre.

Avertissements sur l'accès au système

Attention: Pour éviter de vous blesser ou d'endommager votre équipement, les consignes de sécurité suivantes s'appliquent chaque fois que vous accédez à l'intérieur du produit:

- Mettez hors tension tous les périphériques connectés à ce produit.
- Éteignez le système en appuyant sur le bouton d'alimentation.
- Déconnectez l'alimentation secteur en débranchant tous les cordons d'alimentation secteur du système ou de la prise murale.
- Déconnectez l'ensemble des câbles et lignes de télécommunication qui sont connectés au système.
- Mettez toutes les vis ou autres attaches de côté lorsque vous retirez les panneaux d'accès. Une fois que vous avez terminé d'accéder à l'intérieur du produit, refixez le panneau d'accès avec les vis ou attaches d'origine.
- N'essayez pas d'accéder à l'intérieur du bloc d'alimentation. Il ne contient aucune pièce réparable. Renvoyez-le au fabricant en cas de problème.
- Mettez le serveur hors tension et débranchez tous les cordons d'alimentation avant d'ajouter ou de remplacer tout composant non connectable à chaud.
- Lorsque vous remplacez le bloc d'alimentation à chaud, débranchez le cordon du bloc d'alimentation en cours de remplacement avant de retirer le bloc du serveur.

Attention: Si le serveur a été utilisé, les processeurs et dissipateurs de chaleur installés peuvent être chauds. À moins que vous n'ajoutiez ou ne retiriez un composant connectable à chaud, laissez le système refroidir avant d'ouvrir les panneaux. Pour éviter tout risque d'entrer en contact avec un composant chaud lors d'une installation à chaud, prenez toutes les précautions nécessaires lorsque vous retirez ou installez des composants connectables à chaud.

Attention: Pour éviter de vous blesser, ne touchez pas les pales de ventilateur en mouvement. Si votre système est fourni avec une protection sur le ventilateur, ne mettez pas le système en route sans la protection en place.

Avertissements sur le montage en rack

Le rack doit être fixé à un support inamovible pour éviter qu'il ne bascule lors de l'extension d'un serveur ou d'un élément de l'équipement. Le rack doit être installé conformément aux instructions du fabricant.

Installez les équipements dans le rack en partant du bas, en plaçant le plus lourd en bas du rack.

N'étendez qu'un seul élément de l'équipement à partir du rack à la fois.

Vous êtes responsable de l'installation d'un disjoncteur principal d'alimentation pour la totalité du rack. Ce disjoncteur principal doit être rapidement accessible et doit être étiqueté comme contrôlant toute l'unité, et pas uniquement le ou les serveurs.

Pour éviter tout risque d'électrocution, le rack et chaque élément de l'équipement installé dans le rack doivent être correctement reliés à la terre.

Décharges électrostatiques (ESD)

Attention: *Les décharges électrostatiques (ESD) peuvent endommager les lecteurs de disque dur, les cartes et d'autres pièces. Il est fortement conseillé d'effectuer l'ensemble des procédures décrites à un poste de travail protégé contre les ESD. Au cas où aucun poste de ce type ne serait disponible, protégez-vous contre les ESD en portant un bracelet antistatique relié à la masse du châssis (n'importe quelle surface métallique non peinte) de votre serveur lorsque que vous manipulez les pièces.*

Manipulez toujours les cartes avec précaution. Elles peuvent être extrêmement sensibles aux ESD. Ne tenez les cartes que par leurs bords. Après avoir retiré une carte de son emballage de protection ou du serveur, placez-la sur une surface reliée à la terre, exempte de charge statique, composants orientés vers le haut. Utilisez si possible un tapis de mousse conducteur, mais pas l'emballage de la carte. Veillez à ce que la carte ne glisse sur aucune surface.

Autres risques

Remplacement de la pile

Attention: *Il existe un risque d'explosion si la pile n'est pas correctement remplacée. Lors du remplacement de la pile, utilisez uniquement celle recommandée par le fabricant du matériel.*

Mettez la pile au rebut en vous conformant aux réglementations locales.

N'essayez pas de recharger une pile.

N'essayez pas de démonter, de percer ou d'endommager la pile d'une quelconque façon.

Refroidissement et ventilation

Attention: *Routez les câbles avec précaution comme indiqué pour minimiser les blocages de circulation d'air et les problèmes de refroidissement.*

Afin de permettre une ventilation et un refroidissement corrects, ne mettez le système en marche que lorsque les panneaux du châssis sont en place. L'utilisation du système sans les panneaux peut endommager les composants système. Pour installer les panneaux :

- Vérifiez tout d'abord que vous n'avez pas oublié d'outils ou de composants détachés à l'intérieur du système.
- Vérifiez que les câbles, les cartes d'extension et les autres composants sont correctement installés.
- Fixez les panneaux au châssis en suivant les instructions du produit.

Périphériques laser

Attention: *Pour éviter tout risque d'exposition aux rayonnements et/ou de dommage personnel:*

- *N'ouvrez pas l'enceinte d'un périphérique laser.*
- *Les périphériques laser ne sont pas réparables par l'utilisateur.*
- *Retournez-les au fabricant en cas de problème.*

Español

Información de seguridad del servidor

Este documento se aplica a las tarjetas de servidor de Intel[®], los gabinetes de servidor de Intel[®] (montaje en rack y en pedestal) y los dispositivos periféricos. Para reducir el riesgo de daños corporales, descargas eléctricas, fuego y en el equipo, lea este documento y preste atención a todas las advertencias y precauciones de esta guía antes de instalar o mantener el producto de servidor de Intel[®].







En el caso de que haya diferencias entre la información para un producto en particular contenida en este documento y la información proporcionada con dicho producto o en el sitio Web, la documentación del producto es la que prevalece.

Sólo personal técnico calificado debe montar y prestar los servicios para el servidor.

Debe ceñirse a las directrices de esta guía y a las instrucciones de montaje de los manuales del servidor para asegurar y mantener el cumplimiento con las certificaciones y homologaciones existentes de los productos. Utilice sólo los componentes descritos y homologados que se especifican en esta guía. El uso de otros productos o componentes anulará la homologación UL y otras certificaciones oficiales del producto, pudiendo dejar de ser compatible con las normativas locales de los países en los que se comercializa.

Advertencias y precauciones sobre seguridad

Para reducir la posibilidad de que se produzcan lesiones personales o daños en la propiedad, antes de empezar a instalar el producto, lea, observe y cumpla toda la información e instrucciones de seguridad siguientes. Puede que se utilicen los siguientes símbolos de seguridad en la documentación y es posible que aparezcan en el producto o en su embalaje.

PRECAUCIÓN	Indica la existencia de un riesgo que podría causar lesiones personales o daños en la propiedad leves si no se tiene en cuenta la PRECAUCIÓN.
ADVERTENCIA	Indica la existencia de un riesgo que podría causar lesiones personales graves si no se tiene en cuenta la ADVERTENCIA.
	Indica un riesgo potencial si no se tiene en cuenta la información indicada.
	Indica riesgo de descargas eléctricas que podrían causar lesiones graves o la muerte si no se siguen las instrucciones de seguridad.
	Indica componentes o superficies calientes.
	Indica que no se deben tocar las aspas de los ventiladores, ya que de lo contrario se podrían producir lesiones.
	Indica que es necesario desenchufar los cables de alimentación de CA para desconectar la alimentación de CA
	Recicle por favor la batería

Aplicaciones y usos previstos

Este producto ha sido evaluado como equipo de tecnología informática (ITE) que puede instalarse en oficinas, escuelas, salas de equipos informáticos o lugares de ámbito comercial similares. Es posible que sea necesario llevar a cabo una evaluación adicional para comprobar si este producto es apropiado para otras categorías de productos y entornos además de las aplicaciones informáticas (por ejemplo, soluciones médicas, industriales, residenciales, sistemas de alarma y equipos de pruebas).

Selección de la ubicación

El sistema se ha diseñado para funcionar en un entorno normal de oficinas. Seleccione una ubicación que esté:

- Limpia, seca y libre de macropartículas en suspensión en el aire (que no sean el polvo habitual de la habitación).
- Bien ventilada y alejada de fuentes de calor, incluida la luz solar directa y los radiadores.
- Alejada de fuentes de vibración o de golpes físicos.
- Aislada de campos electromagnéticos producidos por dispositivos eléctricos.
- En zonas propensas a tormentas eléctricas, se recomienda que conecte el servidor a un supresor de sobretensiones y desconecte las líneas de telecomunicaciones al módem durante una tormenta eléctrica.
- Provista de una toma de corriente alterna correctamente conectada a tierra.
- Provista de espacio suficiente para acceder a los cables de la fuente de alimentación ya que constituyen la desconexión principal de la alimentación.

Manipulación del equipo

Reduzca el riesgo de daños personales o en el equipo:

- Respete los requisitos de sanidad y seguridad laborales de su país cuando traslade y levante el equipo.
- Utilice medios mecánicos u otros que sean adecuados al trasladar o levantar el equipo.
- Para que el peso sea menor para manipularlo con más facilidad, extraiga los componentes que sean de fácil extracción.

Advertencias de alimentación y eléctricas

Precaución: El botón de encendido, indicado con la marca del modo de reposo o stand-by, NO DESCONECTA completamente la alimentación de CA del sistema, ya que el modo de reposo de 5 V sigue activo mientras el sistema está enchufado. Para desconectar el sistema debe desenchufar el cable de alimentación de CA de la toma de la pared. Puede usar más de un cable de alimentación de CA con el sistema. Asegúrese de que todos los cables de alimentación de CA estén desenchufados. Asegúrese de que los cables de alimentación de CA estén desenchufado antes de abrir el gabinete, agregar o extraer cualquier componente que no es de conexión en funcionamiento.

Algunas fuentes de alimentación de electricidad de los servidores de Intel utilizan el polo neutral del fuselaje. Para evitar riesgos de choques eléctricos use precauciones al trabajar con las fuentes de alimentación que utilizan el polo neutral de fuselaje.

No intente modificar ni utilizar un cable de alimentación de CA si no es del tipo exacto requerido. Se necesita un cable de CA para cada fuente de alimentación del sistema.

La fuente de alimentación de este producto no contiene piezas que puedan ser reparadas por el usuario. No abra la fuente de alimentación. Dentro de la fuente de alimentación puede haber niveles de tensión, corriente y energía peligrosos. Devuélvala al fabricante para repararla.

Al reemplazar una fuente de alimentación de conexión en funcionamiento, desenchufe el cable de alimentación de la fuente de alimentación que va a reemplazar antes de extraerla del servidor.

Para evitar el riesgo de descargas eléctricas, antes de abrir el servidor, apáguelo, desconecte el cable de alimentación, los sistemas de telecomunicaciones, las redes y los módems conectados al mismo.

Advertencias sobre el cable de alimentación

Si no se ha proporcionado con el producto ningún cable de alimentación de CA, adquiera alguno cuyo uso esté aprobado en su país.

Precaución: Para evitar descargas eléctricas o fuego, revise los cables de alimentación que usará con el producto tal y como se describe a continuación:

- No intente modificar ni utilizar los cables de alimentación de CA si no son exactamente del modelo especificado para ajustarse a las tomas de corriente conectadas a tierra
- Los cables de alimentación deben reunir los siguientes requisitos:
- El cable de alimentación debe disponer de una capacidad nominal de corriente eléctrica mayor que la capacidad especificada en el producto.
- El cable de alimentación debe disponer de una patilla o contacto de conexión a tierra que sea apto para la toma de corriente.
- Los cables de la fuente de alimentación son los dispositivos de desconexión principales a la corriente alterna. El enchufe o enchufes de zócalo deben encontrarse cerca del equipo y el acceso a ellos debe poderse efectuar de forma inmediata con el fin de desconectarlos.

- Los cables de la fuente de alimentación deben estar conectados a los enchufes con una toma de tierra adecuada.

Advertencias el acceso al sistema

Precaución: Para evitar lesiones personales o daños en la propiedad, se aplican las siguientes instrucciones de seguridad siempre que se acceda al interior del producto:

- Apague todos los dispositivos periféricos conectados a este producto.
- Pulse el botón de alimentación para apagar el sistema.
- Desconecte la alimentación de CA desenchufando los cables de alimentación de CA del sistema o de la toma de corriente alterna.
- Desconecte todos los cables y líneas de telecomunicación que estén conectados al sistema.
- Guarde todos los tornillos o elementos de fijación cuando retire las cubiertas de acceso. Cuando termine de operar en el interior del producto, vuelva a colocar los tornillos o los elementos de fijación originales de la cubierta de acceso.
- No acceda al interior de la fuente de alimentación. No hay elementos en la fuente de alimentación que usted pueda reparar y utilizar. Devuélvala al fabricante para repararla.
- Apague el servidor y desconecte todos los cables de alimentación antes de agregar o reemplazar cualquier componente que no es de conexión en funcionamiento.
- Al reemplazar una fuente de alimentación de conexión en funcionamiento, desenchufe el cable de alimentación de la fuente de alimentación que va a reemplazar antes de extraerla del servidor.

Precaución: Si el servidor se ha estado ejecutando, los procesadores y disipadores de calor estarán recalentados. A no ser que esté instalando o extrayendo un componente de conexión en funcionamiento, deje que el sistema se enfríe antes de abrir las cubiertas. Para que no llegue a tocar los componentes que estén calientes cuando esté realizando una instalación de conexión en funcionamiento, tenga cuidado al extraer o instalar los componentes de conexión en funcionamiento.

Precaución: Para evitar posibles daños, no toque las aspas en movimiento de los ventiladores. Si el sistema se le ha suministrado con una protección para el ventilador, asegúrese de que cuando esté funcionando el sistema la protección esté en su sitio.

Advertencias sobre el montaje en rack

El rack para el equipo se debe sujetar con un soporte fijo para evitar que se caiga cuando se extraiga un servidor o una pieza del mismo. El rack debe instalarse siguiendo las instrucciones del fabricante del bastidor.

Instale el equipo en el rack comenzando desde la parte de abajo, con el equipo más pesado en la parte inferior del rack.

Extraiga las piezas del equipo del rack de una a una.

El usuario es el responsable de la instalación de un dispositivo de desconexión de la alimentación principal para toda la unidad del rack. El acceso a este dispositivo de desconexión deberá ser de fácil acceso y deberán incluirse indicaciones que lo identifiquen como el control de alimentación eléctrica de toda la unidad, no sólo de los servidores.

Para evitar el riesgo de descargas eléctricas, deberá instalar una conexión a tierra apropiada para el rack y para cada pieza del equipo instalada en el mismo.

Descarga electrostática (ESD)

Precaución: *Las descargas electrostáticas pueden dañar las unidades de disco, las tarjetas y otros componentes. Recomendamos que realice todos los procedimientos en una estación de trabajo protegida contra descargas electrostáticas. En caso de que no haya una disponible, protéjase de alguna forma contra las descargas llevando un brazalete antiestático conectado a la toma de tierra de la carcasa (cualquier superficie de metal que no esté pintada) del servidor cuando manipule las piezas.*

Manipule siempre las tarjetas con el máximo cuidado. Pueden ser sumamente sensibles a las descargas electrostáticas. Sujételas sólo por los bordes. Una vez extraída la tarjeta de su envoltorio de protección o del servidor, colóquela con el lado de los componentes hacia arriba sobre una superficie con toma de tierra y sin carga estática. Utilice una almohadilla de espuma conductora si dispone de ella, pero nunca el envoltorio de la tarjeta. No deslice la tarjeta sobre ninguna superficie.

Sustitución de la batería

Precaución: Existe el peligro de explosión si la batería no se reemplaza correctamente. Al reemplazar la batería, utilice sólo la batería recomendada por el fabricante del equipo.

Deseche las baterías respetando la normativa local.

No intente recargar la batería.

No intente desmontar, pinchar o causar cualquier otro desperfecto a una batería.

Enfriamiento y circulación de aire

Precaución: El tendido de los cables debe realizarse cuidadosamente tal y como se le indica para reducir al mínimo los problemas de obstrucción de la ventilación y de refrigeración.

Para conseguir una refrigeración y corriente de aire adecuadas, compruebe que cuando sistema esté funcionando, las cubiertas de la carcasa están instaladas. Si utiliza el sistema sin las cubiertas, podría dañar sus componentes. Para instalar las cubiertas:

- *Compruebe primero que no ha dejado herramientas o piezas sueltas dentro del sistema.*
- *Compruebe que los cables, tarjetas adicionales y otros componentes están instalados correctamente.*
- *Sujete las cubiertas a la carcasa siguiendo las instrucciones del producto.*

Periféricos o dispositivos láser

Precaución: Para evitar el riesgo de la exposición a radiaciones o de daños personales:

- *No abra la caja de ningún periférico o dispositivo láser*
- *Los periféricos o dispositivos láser no pueden ser reparados por el usuario*
- *Haga que el fabricante los repare.*

简体中文

服务器安全信息

本文档适用于 Intel® 服务器主板、Intel® 服务器机箱（基座和机架固定件）和已安装的外设。为减少人身伤害、电击、火灾以及设备损坏的危险，请在安装或维护 Intel® 服务器产品之前阅读本文档并遵循本指南中的所有警告和预防措施。






如果本文档中的信息与特定产品的随附信息或 Web 站点信息之间存在不一致，请以产品文档为准。

服务器须由合格的技术人员进行集成和维护。

必须遵守本指南的规定和服务器手册的装配指导，以确保符合现有的产品认证和审批。仅使用本指南中描述和规定的指定组件。使用其他产品 / 组件将使产品的 UL 认证和其他管理审批无效，并可能导致产品不符合销售地的产品法规。

安全警告与注意事项

为避免人身伤害与财产损失，安装本产品之前，请阅读以下所有安全指导和信息。下面所列的安全符号可能在整个文档中使用并可能标注于产品和 / 或产品包装之上。

注意	表示如果无视此“?? ? 项”?? ? ? ? ? 轻微人身伤害或财产损失的危险。
警告	表示如果无视此“?? ”?? ? ? ? ? ? ? 严重人身伤害的危险。
	表示如果无视所示信息，即存在潜在的危险。
	表示如果不遵守安全指导，存在可导致严重伤害或死亡的电击危险。
	表示灼热组件或表面。
	表示请勿触摸风机叶片，否则可能致伤。
	表示拔下所有交流电线，断开交流电源

预期应用使用

根据评估，本产品为信息技术设备 (ITE)，可安装在办公室、学校、计算机房和类似的商业场所。本产品对于非 ITE 应用的其他产品种类和环境（如医疗、工业、住宅、报警系统和测试设备）的适用性尚有待进一步的评估。

场地选择

本系统专为在典型办公环境运行而设计。请选择符合以下条件的地点：

- 清洁、干燥，无气载微粒（而非一般的室内尘埃）。
- 通风良好，远离热源（包括直接日晒和散热器）。
- 远离振动源或物理震动。
- 与电气设备产生的强大电磁场隔离。
- 在易受闪电袭击的地区，我们建议将系统插入电涌抑制器并在闪电期间断开通信线路与调制解调器之间的连接。
- 提供正确接地的墙壁插座。
- 提供足够的空间，以便拿取电源供应线，因为这是本产品的主要电源断开器。

设备操作规范

减少人身伤害或设备受损的危险：

- 移举设备时遵守当地的职业健康与安全要求。
- 借助机械手段或其他合适的手段移举设备。
- 拆除一切易分离组件，以降低重量并方便操作。

电源与电气警告

注意事项

电源按钮（如待机电源标记所示）并不能完全关闭系统的交流电源，只要系统已接通电源，就存在 5V

待机电源。要从系统切断电源，须从墙壁电源插座中拔下交流电线。您的系统可能不止使用一根交流电线。请确保所有的交流电线都已拔下。打开机箱或增加或删除任何热插拔组件之前，确保交流电线已拔下。

若非所需的确切类型，请勿尝试修改或使用交流电线。系统的每个电源供应设备都需要一根单独的交流电线。

本产品的电源供应设备包含非用户维修部件。请勿打开电源供应设备。电源供应设备包含非常危险的电压级、电流级和能量级。请与生产商联系维修事宜。

替换热插拔电源供应设备时，请先拔下需替换的电源供应设备上的电源线，再将其从服务器上移除。

为避免电击，请在打开服务器之前，关闭服务器并断开服务器上连接的电源线、电信系统、网络和调制解调器。

电源线警告

如果产品未提供交流电线，请购买一根您所在国家批准使用的交流电线。

注意事项

为避免电击或火灾危险，请按如下所述对产品所用的电源线进行检查：

- 若非所需的符合接地插座的确切类型，请勿尝试修改或使用交流电线
- 电源线须符合以下标准：
 - 电源线的电气额定值须大于产品上标注的电流额定值。
 - 电源线须拥有适合插座的安全接地插头或触点。
- 电源线为交流电源的主要断开设备。插座须靠近设备并可随时断开。
- 电源线须插入所提供的拥有合适接地的插座。

系统使用警告

注意事项

为避免人身伤害或财产损失，无论何时检查产品内部，以下安全指导都适用：

- 关闭所有与本产品相连的外设。
- 按下电源按钮至关闭状态，关闭系统。
- 从系统或墙壁插座上拔下所有交流电线，断开交流电源。
- 断开与系统相连的所有线缆和通信线路。
- 卸除舱口盖时，保留所有螺钉及其他紧固件。完成产品内部检查之后，请用螺钉或紧固件重新固定舱口盖。
- 请勿打开电源供应设备。电源供应设备内没有可维修部件。请与生产商联系维修事宜。
- 增加或替换任何非热插拔组件之前，请关闭服务器电源并断开所有电源线。
- 替换热插拔电源供应设备时，请先拔下需替换的电源供应设备上的电源线，然后再从服务器上移除电源供应设备。

注意事项

如果服务器一直在运行，任何已安装的处理器和吸热设备都可能很热。除非要增加或移除热插拔组件，否则请待系统冷却后再开盖。为避免在热插拔组件安装过程中接触灼热组件，移除或安装热插拔组件时务须小心。

注意事项

为避免受伤，请勿触摸运转的风机叶片。如果系统的风机上配有防护装置，请勿卸下风机防护装置运行系统。

机架固定件警告

设备的机架须固定在稳固的支座上，以防从中安装服务器或设备时倒塌。须按照机架生产商提供的安装说明进行安装。

从下往上将设备安装在机架上，最重的设备安装在机架的最底层。

一次只从机架上安装一件设备。

您须负责安装整个机架装置的主要电源断开设备。此主要断开设备须随时可用，且须标明为控制整个装置（而不仅限于服务器）的电源。

为避免潜在的电击危险，须对机架及其上所安装的每一件设备实行正确的安全接地。

静电放电 (ESD)

注意事项

ESD 会损坏磁盘驱动器、主板及其他部件。我们建议您执行 ESD 工作站的所有步骤。如果没有 ESD 工作站，则采取一些静电放电保护措施，操作部件时，戴上与服务器上的机箱接地或任何未喷漆金属表面连接的防静电腕带。

操作主板时始终保持小心。它们可能对 ESD 非常敏感。拿持主板时只接触边缘。从保护包装中或从服务器上取出主板后，请将主板组件侧面朝上放置于无静电的接地表面上。请使用导电泡沫垫（若有），不要使用主板包装。请勿将主板在任何表面上滑动。

其他危险

替换电池

注意事项

不正确替换电池可能导致爆炸危险。替换电池时，请只使用设备生产商推荐使用的电池。

请按当地法规处置电池。

请勿对电池充电。

请勿拆卸、刺穿或以其他方式损坏电池。

冷却和气流

注意事项

按照说明小心布置线缆，尽量减少气流阻塞和冷却问题。

为保证适当的冷却和气流，运行系统时请确保机箱盖已安装。未安装机箱盖即运行系统可能导致系统部件受损。安装机箱盖的步骤如下：

- 首先检查并确保系统内没有遗留的未固定工具或部件。
- 检查线缆、内插板和其他组件已正确安装。
- 按产品说明安装机箱盖。

激光外设或激光设备

注意事项

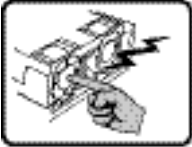
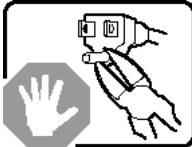
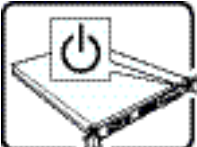

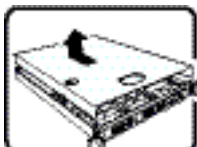
为避免幅射暴露和 / 或人身伤害：

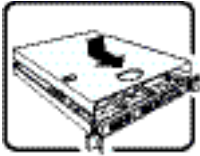
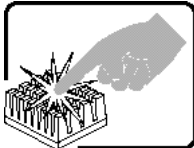
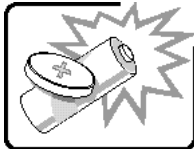
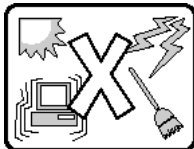
- 请勿打开任何激光外设或激光设备的外壳
- 激光外设或激光设备为非用户维修设备

请与生产商联系维修事宜

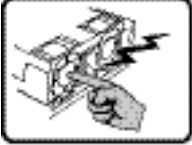
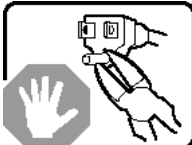
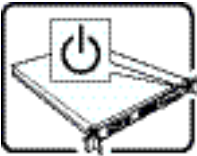

E Installation/Assembly Safety Instructions

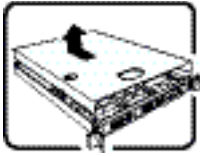
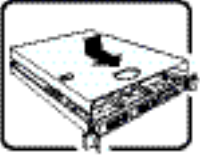
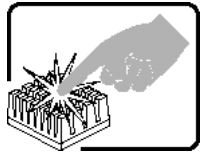
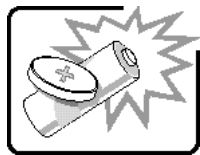
English

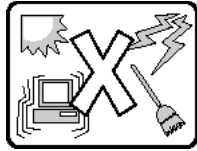
	<p>The power supply in this product contains no user-serviceable parts. Refer servicing only to qualified personnel.</p>
	<p>Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.</p>
	<p>The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply.</p> <p>The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.</p>
	<p>SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:</p> <ol style="list-style-type: none"> 1. Turn off all peripheral devices connected to the system. 2. Turn off the system by pressing the power button. 3. Unplug all AC power cords from the system or from wall outlets. 4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system. 5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system-any unpainted metal surface-when handling components. 6. Do not operate the system with the chassis covers removed.
	<p>After you have completed the six SAFETY steps above, you can remove the system covers. To do this:</p> <ol style="list-style-type: none"> 1. Unlock and remove the padlock from the back of the system if a padlock has been installed. 2. Remove and save all screws from the covers. 3. Remove the cover(s).

	<p>For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:</p> <ol style="list-style-type: none"> 1. Check first to make sure you have not left loose tools or parts inside the system. 2. Check that cables, add-in boards, and other components are properly installed. 3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly. 4. Insert and lock the padlock to the system to prevent unauthorized access inside the system. 5. Connect all external cables and the AC power cord(s) to the system.
	<p>A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.</p>
	<p>Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.</p>
	<p>The system is designed to operate in a typical office environment. Choose a site that is:</p> <ul style="list-style-type: none"> • Clean and free of airborne particles (other than normal room dust). • Well ventilated and away from sources of heat including direct sunlight. • Away from sources of vibration or physical shock. • Isolated from strong electromagnetic fields produced by electrical devices. • In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm. • Provided with a properly grounded wall outlet. • Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

Deutsch

	<p>Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.</p>
	<p>Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.</p>
	<p>Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.</p>
	<p>SICHERHEISSMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:</p> <ol style="list-style-type: none">1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.2. Schalten Sie das System mit dem Hauptschalter aus.3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.

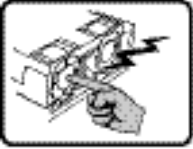
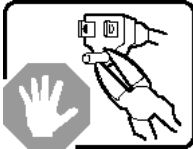
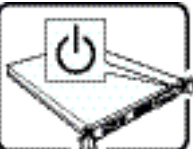

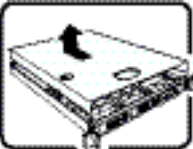
	<p>SICHERHEISSMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:</p> <ol style="list-style-type: none"> 1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus. 2. Schalten Sie das System mit dem Hauptschalter aus. 3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose. 4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab. 5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden. 6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.
	<p>Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:</p> <ol style="list-style-type: none"> 1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben. 2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation. 3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an. 4. Bringen Sie die Verschlößeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern. 5. Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.
	<p>Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.</p>
	<p>Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.</p>

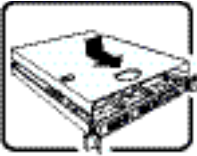
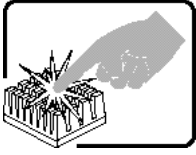
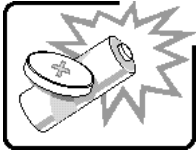
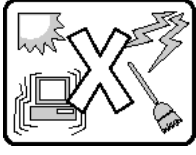


Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

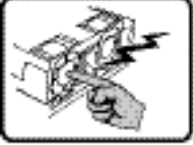
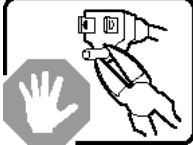
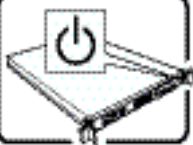

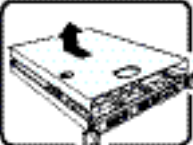
- "sauber und staubfrei sein (Hausstaub ausgenommen);
- "gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
- "keinen Erschütterungen ausgesetzt sein;
- "keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
- "in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitungen mit dem Modem bestehen;
- "mit einer geerdeten Wechselstromsteckdose ausgerüstet sein;
- "über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird

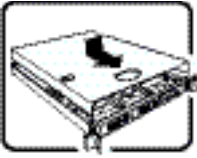
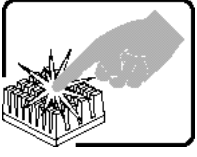
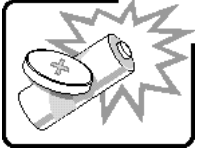
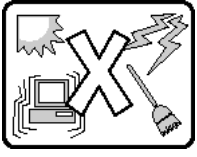
Français

	<p>Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.</p>
	<p>Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit</p>
	<p>Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.</p>
	<p>CONSIGNES DE SÉCURITÉ -Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes:</p> <ol style="list-style-type: none">1. Mettez hors tension tous les périphériques connectés au système.2. Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir).3. Débranchez tous les cordons d'alimentation c.a. du système et des prises murales.4. Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système.5. Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier).6. Ne faites pas fonctionner le système tandis que le boîtier est ouvert.
	<p>Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit:</p> <ol style="list-style-type: none">1. Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le.2. Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr.3. Retirez les panneaux.

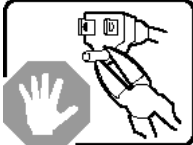
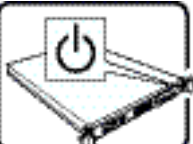
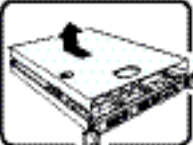
	<p>Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit:</p> <ol style="list-style-type: none"> 1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système. 2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés. 3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt. 4. Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système. 5. Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.
	<p>Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.</p>
	<p>Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.</p>
	<p>Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être:</p> <ul style="list-style-type: none"> • "Propre et dépourvu de poussière en suspension (sauf la poussière normale). • "Bien aéré et loin des sources de chaleur, y compris du soleil direct. • "A l'abri des chocs et des sources de vibrations. • "Isolé de forts champs électromagnétiques géenérés par des appareils électriques. • "Dans les régions sujettes aux orages magnétiques il est recomandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage. • "Muni d'une prise murale correctement mise à la terre. • "Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).

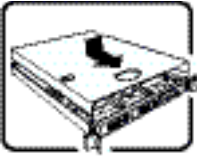
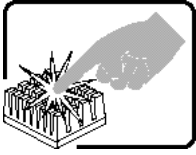
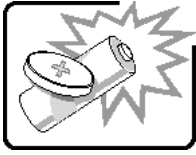
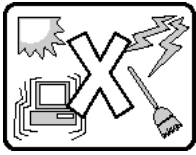
Español

	<p>El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación</p>
	<p>No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido. El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto</p>
	<p>Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.</p>
	<p>INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:</p> <ol style="list-style-type: none">1. Apague todos los dispositivos periféricos conectados al sistema.2. Apague el sistema presionando el interruptor encendido/apagado.3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.5. Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujeta a la toma de tierra del chasis - o a cualquier tipo de superficie de metal sin pintar.6. No ponga en marcha el sistema si se han extraído las tapas del chasis.
	<p>Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:</p> <ol style="list-style-type: none">1. Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno.2. Extraiga y guarde todos los tornillos de las tapas. Extraiga las tapas.

	<p>Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:</p> <ol style="list-style-type: none"> 1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema. 2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente. 3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente. 4. Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización. 5. Conecte todos los cables externos y los cables de alimentación CA al sistema.
	<p>Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.</p>
	<p>Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.</p>
	<p>El sistema está diseñado para funcionar en un entorno de trabajo normal. escoja un lugar:</p> <ul style="list-style-type: none"> • "Limpio y libre de partículas en suspensión (salvo el polvo normal). • "Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa. • "Alejado de fuentes de vibración. • "Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos. • "En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas. • "Provisto de una toma de tierra correctamente instalada. • "Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.

Italiano

	<p>Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.</p>
	<p>Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato</p>
	<p>L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.</p>
	<p>PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:</p> <ol style="list-style-type: none">1. Spegner tutti i dispositivi periferici collegati al sistema.2. Spegner il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.3. Togliere tutte le spine dei cavi del sistema dalle prese elettriche.4. Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.5. Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema - qualsiasi superficie non dipinta - .6. Non far operare il sistema quando il telaio è senza le coperture.
	<p>Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come segue:</p> <ol style="list-style-type: none">1. Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato.2. Togliere e mettere in un posto sicuro tutte le viti delle coperture.3. Togliere le coperture.

	<p>Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:</p> <ol style="list-style-type: none"> 1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema. 2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente. 3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente. 4. Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema. 5. Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.
	<p>Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.</p>
	<p>Esiste il pericolo di un'esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.</p>
	<p>Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:</p> <ul style="list-style-type: none"> • "Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente). • "Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta. • "Al riparo da urti e lontana da fonti di vibrazione. • "Isolata dai forti campi magnetici prodotti da dispositivi elettrici. • "In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem. • "Dotata di una presa a muro correttamente installata. • "Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.

