

Intel® Server System SR1690WB Service Guide

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

Intel Order Number E78186-004

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Preface

About this Manual

Thank you for purchasing and using the Intel® Server System SR1690WB.

This manual is written for system technicians responsible for troubleshooting, upgrading, and repairing this server board. This document provides a brief overview of the features of the board/chassis, a list of accessories or other components you may need, troubleshooting information, and instructions on how to add and replace components on the Intel® Server System SR1690WB. For the latest version of this manual, see <http://support.intel.com/support/motherboards/server/S5500WB>.

Manual Organization

Chapter 1 provides a list of reference resources. In this chapter, you will find a list of technical documents that give additional details on the Intel® Server System SR1690WB, and the location where they can be found.

Chapter 2 provides a brief overview of the Intel® Server System SR1690WB. In this chapter, you will find a list of the server board features, photos and illustrations of the product, and product diagrams to help you identify components and their locations.

Chapter 3 provides instructions on using the utilities that are shipped with the board or that may be required to update the system. This includes how to navigate through the BIOS Setup screens, how to perform a BIOS update, and how to reset the password or CMOS. Information about the specific BIOS settings and screens available in the Intel® Server System SR1690WB Technical Product Specification. See the “[Server System References](#)” chapter for more information.

Chapter 4 provides instructions on adding and replacing components. Use this chapter for step-by-step instructions and diagrams for installing or replacing components such as the memory, processor, front panel board, and the battery, among other components.

The rest of this manual provides technical specifications, regulatory information, “Getting Help” information, and the warranty.

Product Contents

The Intel® Server System SR1690WB ships with the Intel® Server Board S5500WB. For further information, see the following documents:

- *Intel® Server Board S5500WB Technical Product Specification*
- *Intel® Server System SR1690WB Technical Product Specification*

The contents of the server system are listed below.

Intel® Server System SR1690WB - Product Contents

Your Intel® Server System SR1690WB ships with the following items:

- Intel® Server Board S5500WB, installed in the server system
- Chassis master assembly with single 650W high-efficiency power supply unit
- One PCI Express* riser card assembly, installed in the server system
- Four system fan blowers, installed in the server system
- Standard control panel module and cables (I/O and USB), installed in the server system
- Four hot-swap HDD carriers, installed in the server system
- System air duct, installed in the server system
- Attention document, in the server system product box
- Quick Start User's Guide, in the server system product box
- Intel® Server Deployment Toolkit 3.0 CD
- Hardware accessory bag, described as below:
 - Optical drive latch assembly
 - Optical drive SATA/Power cable
 - Rack handles
 - One SES cable
 - Various types of screws
 - Two STS-100P processor heatsinks for 1U rack chassis

Note: *You may need or want to purchase one or more of the following items for your server:*

- One or two Intel® Xeon 5500 series and Intel® Xeon 5600 series processors
- DDR3 RDIMM/UDIMM Memory
- Hard drive
- Slimline CD-ROM or DVD-ROM drive
- RAID controller add-in card

- Operating system
- For information about which accessories, memory, processors, and third-party hardware were tested and can be used with your board, and for ordering information for Intel products, see: <http://support.intel.com/support/motherboards/server/S5500WB/compat.htm>

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 Deployment Toolkit 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 Deployment Toolkit 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 Deployment Toolkit 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 Deployment Toolkit 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，请阅读本文件中的所有注意事项及安全声明。并参阅 <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

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 system, you must unplug the AC power cord from the wall outlet. 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 server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server 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 chapter only 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.

ESD and handling boards: 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.

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.

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1 Server System References

If you need more information about this product or information about the accessories that can be used with this server system, use the following resources.

Table 1. Server System References

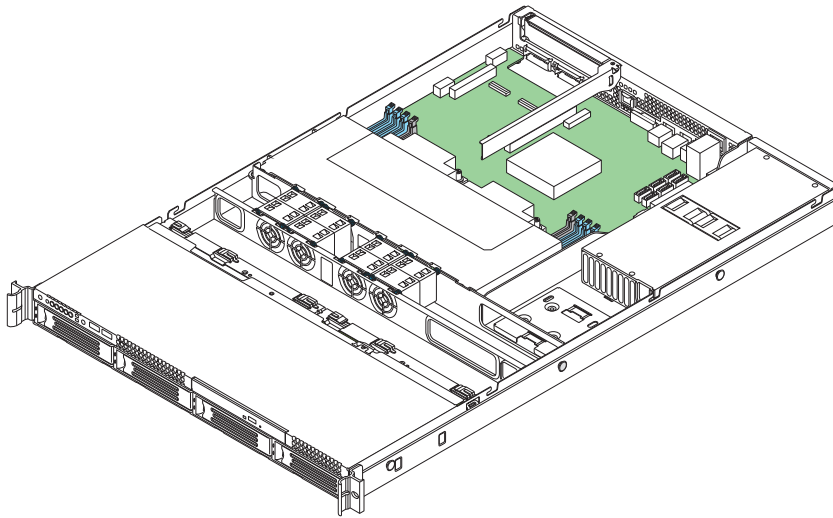
For this information or software	Use this Document or Software
For in-depth technical information about the server system, including sub-system overviews and mechanical drawings	<p><i>Intel® Server System SR1690WB Technical Product Specification can be found at:</i> http://support.intel.com/support/motherboards/server/S5500WB/</p> <p><i>Intel® Server System SR1690WB Technical Product Specification can be found at:</i> http://support.intel.com/support/motherboards/server/S5500WB/</p>
For basic BIOS settings and chipset information	<p><i>Intel® Server System SR1690WB Technical Product Specification Found at:</i> http://support.intel.com/support/motherboards/server/S5500WB/</p>
If you just received this product and need to install it	<p><i>Intel® Server System SR1690WB Quick Start User's Guide in the product box</i></p>
Accessories or other Intel server products	<p>Spares and Configuration Guide can be found at: http://support.intel.com/support/motherboards/server/S5500WB/</p>
Hardware (peripheral boards, adapter cards) and operating systems that were tested with this product	<p>Tested Hardware and Operating System List can be found at: http://support.intel.com/support/motherboards/server/S5500WB/</p>
Processors that were tested with this product	<p>Supported Processors can be found at: http://support.intel.com/support/motherboards/server/S5500WB/</p>
DIMMs that were tested with this product	<p>Supported Memory can be found at: http://support.intel.com/support/motherboards/server/S5500WB/</p>
To make sure your system falls within the allowed power budget	<p>Power Budget Tool can be found at: http://support.intel.com/support/motherboards/server/S5500WB/</p>
For software to manage your Intel® server	<p>Intel® Server Management Software can be found at: http://support.intel.com/support/motherboards/server/sysmgmt/index.htm and on the Intel® Server Management Software CD that ships with your system.</p>

Table 1. Server System References

For this information or software	Use this Document or Software
For drivers	Driver (for an extensive list of drivers available) Operating System Driver (for operating system drivers) http://support.intel.com/support/motherboards/server/S5500WB/
For firmware and BIOS updates	Firmware Update can be found at: http://support.intel.com/support/motherboards/server/S5500WB/
For diagnostics test software	Diagnostics: Platform Confidence Test (PCT) Found at: http://support.intel.com/support/motherboards/server/S5500WB/ and available on the <i>Intel® Server Deployment Toolkit 3.0 CD that ships with your system.</i>

2 Server System Features

This chapter briefly describes the main features of the Intel® Server System SR1690WB. This chapter provides illustrations of the product, a list of the server system features, and diagrams showing the location of important components and connections on the server system.



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Figure 1. Intel® Server System SR1690WB

Table 2 summarizes the features of the server system.

Table 2. Intel® Server System SR1690WB Feature Summary

Feature	Description
Dimensions	<ul style="list-style-type: none">• 1.69 inches (43mm) high• 17.76 inches (451.17mm) wide• 26.42 inches (671.08mm) deep• 24.58 lbs (11.15kg) weight
Raw Storage Capacity	System raw storage capacity is based on the HDD capacity and number of HDDs used in the system. Raw storage capacity is the sum of single HDD capacity used in system.
External Drive Bays	Four hot-pluggable external drive bays
Hard Disk Drive Supported	<ul style="list-style-type: none">• 3.5-inch SATA, SAS HDD.• 2.5-inch SATA, SAS HDD.

Table 2. Intel® Server System SR1690WB Feature Summary

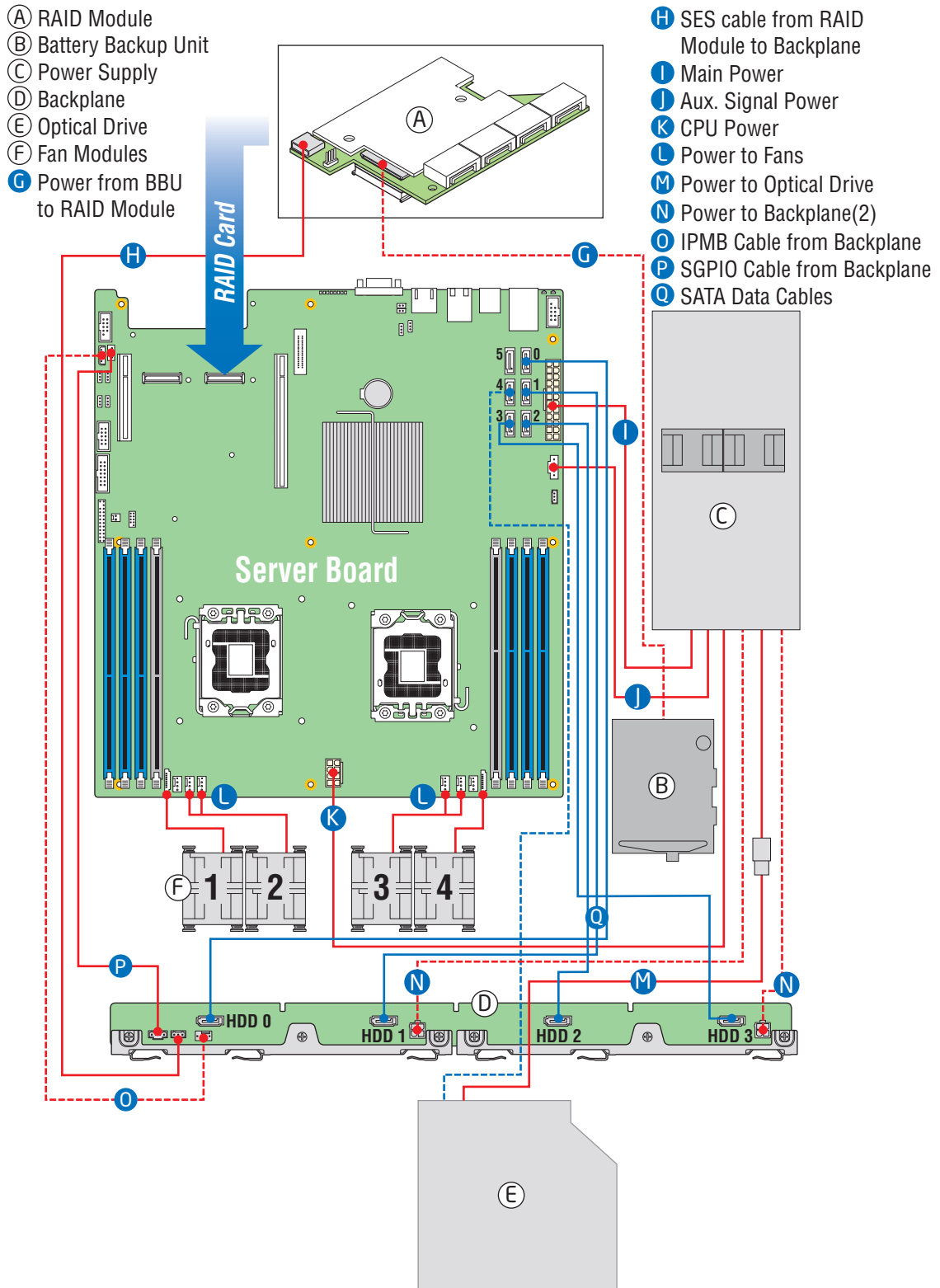
Feature	Description
Processor	<ul style="list-style-type: none"> • Support for one or two Intel® Xeon® Processor 5500 series and Intel® Xeon® Processor 5600 series processors in FC-LGA 1366 Socket B package with up to 95 W Thermal Design Power (TDP). • Supports future processor compatibility guidelines 4.8 GT/s, 5.86 GT/s, and 6.4 GT/s Intel® Quick Path Interconnect (Intel® QPI). Meets EVRD11.1
Memory Capacity	Expandable to 64 GB maximum.
Memory Type	<ul style="list-style-type: none"> • 240-pin keyed support for 800/166/1333 MT/s ECC Registered (RDIMM) or Unbuffered (UDIMM) DDR3 memory. • 8 DIMMs total across six memory channels (three channels per processor in a 2:1:1 configuration). No support for Quad-Rank x4 DIMMs
DIMM Slots	Eight
Chipset	Intel® Chipset which includes the following components: Intel® 5500 chipset IOH (IOH24D) Intel® 82801Jx I/O Controller Hub (ICH10R)
System Connectors/ Headers	<ul style="list-style-type: none"> • External I/O connectors: <ul style="list-style-type: none"> – DB-15 Video connectors – RJ-45 serial Port A connector – RJ-45 connector for 10/100/1000 LAN – One 2x USB 2.0 connectors – One RJ-45 over USB for 10/100/1000 LAN • Internal connectors/headers: <ul style="list-style-type: none"> – Two USB 2x5 pin header, supporting up to four USB 2.0 ports – One low-profile USB 2x5 pin – One DH-10 Serial Port B header – One 2x8 pin VGA header with presence detection to switch from rear I/O video connector – Six SATA II connectors – Dual Connectors for Intel® I/O Expansion Module – One RMM3 connector to support optional Intel® Remote Management Module 3 – SATA SW RAID 5 Activation Key Connector – One SSI-EEB compliant front panel header
System Fan Support	<ul style="list-style-type: none"> • Two sets of CPU fans • Two sets of DIMM fans
Add-in Adapter Support	Intel® Server Board S5500WB SSI-compliant One riser slot supporting full-height or low-profile 1U and 1U MD2 PCI Express* x16 riser cards. Two connectors supporting double- and single-wide Intel® I/O Expansion Modules.

Table 2. Intel® Server System SR1690WB Feature Summary

Feature	Description
On-board Video	On-board Server Engines* LLC Pilot II Controller Matrox* G200 2D Video Graphics controller Uses 8 MB of the BMC 32 MB DDR2 Memory
LAN Support	Two 10/100/1000 ports provided by Intel® 82576 with Intel® I/O Acceleration Technology (I/OAT)
System Power	Single 650-W power supply, 80 plus silver with PFC
System Management	On-board Server Engines* LLC Pilot II Controller. Integrated Baseboard Management Controller (Integrated BMC), IPMI 2.0 compliant <ul style="list-style-type: none"> • Basic <ul style="list-style-type: none"> – BMC Controller: ARC 926E-S microcontroller – Super IO: Serial Port logic, legacy interfaces, LPC interface, Port80 – Hardware Monitoring: Fan speed control and voltage monitoring • Advanced <ul style="list-style-type: none"> – Video and USB compression and redirection – NC-SI port, a high-speed sideband management interface – Integrated Super I/O on LPC interface

Cable Routing

When you add or remove components from your server system, make sure your cables are routed correctly before reinstalling the server system cover. Use caution to make sure no cables or wires are pinched and that the airflow from the fans is not blocked. Use the following figures to determine the correct cable routing for the SR1690WB system.



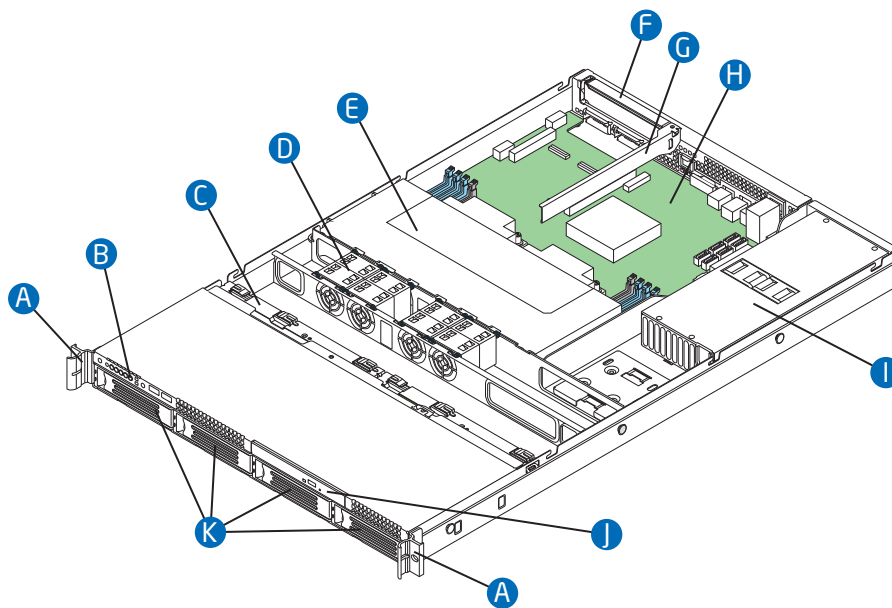
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Figure 2. Cable Routing

Chassis Component Identification

This section helps you identify the components of your server system. If you are near the system, you can also use the Quick Reference Label provided on the inside of the chassis cover to assist in identifying components.

Internal Components

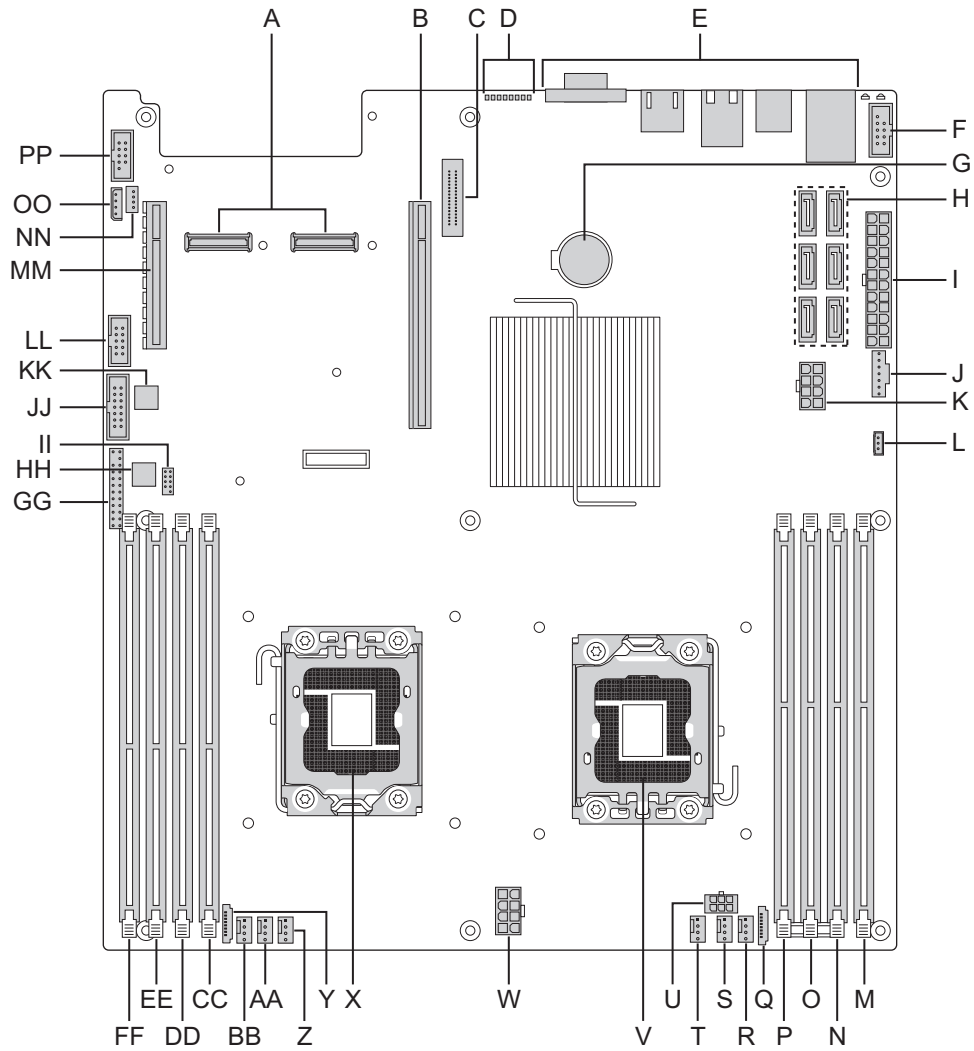


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A. Rack handles (two)	G. PCI Express* x16 riser
B. Front Control Panel	H. Mother board
C. Hot swap backplane	I. 650W power supply unit
D. System Fans (CPU fans and Memory fans)	J. Optional slimline optical drive
E. Air Duct	K. Hot swap HDD carrier
F. PCI Express* add-in card bracket	

Figure 3. System Components

Server Board Connector and Component Locations



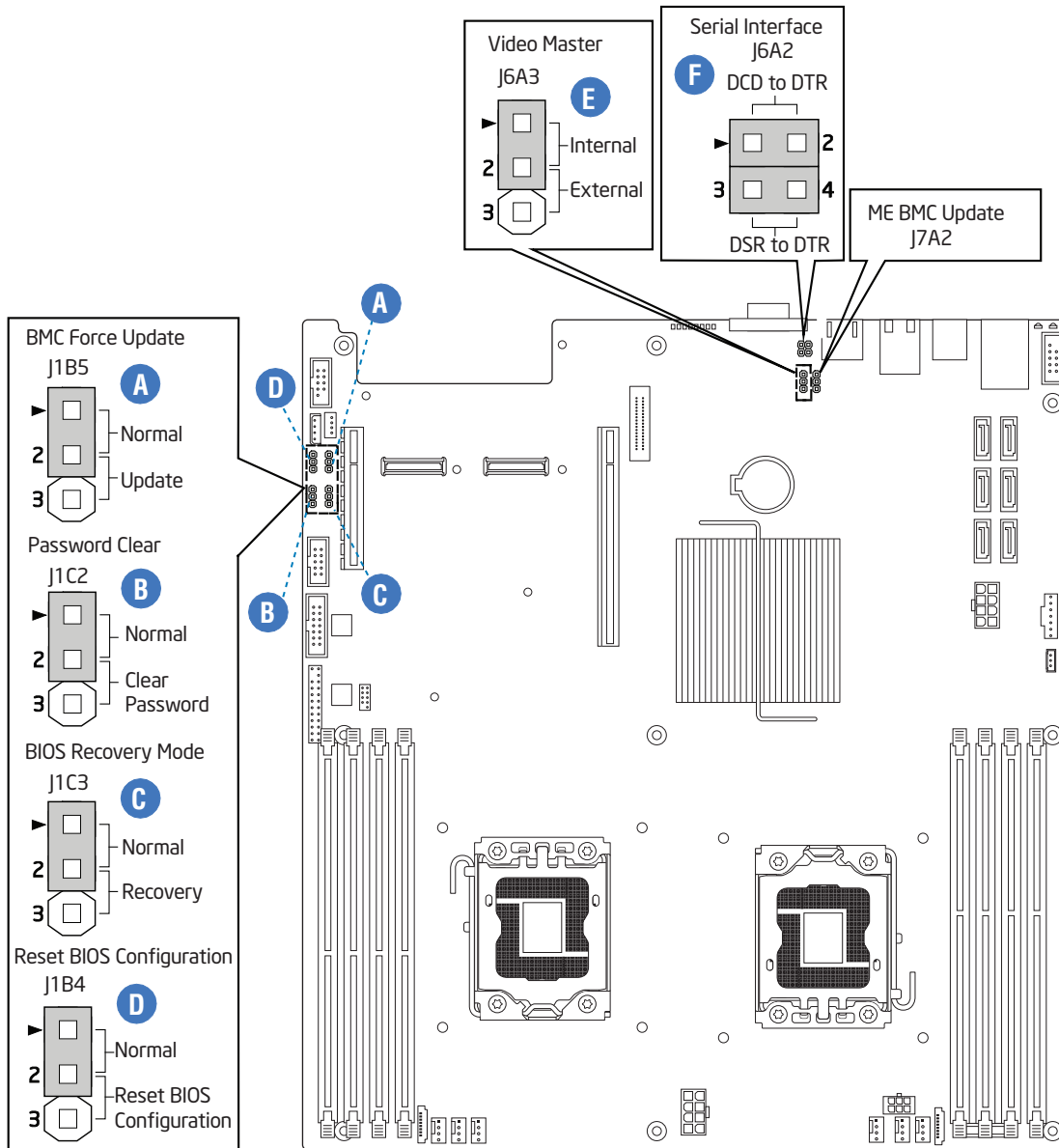
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	Description		Description
A.	Dual Intel® I/O Expansion Module Connectors	W.	8-pin CPU Connector
B.	PCI Express* x16 Gen2	X.	Processor Socket 2
C.	Remote Management Module 3	Y.	4-pin Fan Connector (CPU2)
D.	POST Code LEDs	Z.	4-pin Fan Connector (CPU2A)
E.	External I/O	AA.	4-pin Fan Connector (MEM2)
F.	USB Connector	BB.	8-pin Fan Connector (MEM2R)

	Description		Description
G.	Battery	CC.	DIMM Slot D2
H.	SATA Connectors 0~5	DD.	DIMM Slot D1
I.	24-pin Power Connector	EE.	DIMM Slot E1
J.	N/A	FF.	DIMM Slot F1
K.	Aux Power (5-pin or 7-pin)	GG.	Front Panel Connector
L.	RAID Key	HH.	HDD LED Header
M.	DIMM Slot C1	II.	Low-Profile USB Connector
N.	DIMM Slot B1	JJ.	Internal VGA Connector
O.	DIMM Slot A1	KK.	N/A
P.	DIMM Slot A2	LL.	USB Connector
Q.	8-pin Fan Connector (MEM1R)	MM.	Slot 1 PCI Express* x8 Gen2
R.	4-pin Fan Connector (MEM1)	NN.	SGPIO Connector
S.	4-pin Fan Connector (CPU1A)	OO.	IMPB Connector
T.	4-pin Fan Connector (CPU1)	PP.	Serial Port B
U.	N/A		
V.	Processor Socket 1		

Figure 4. Server Board Connector and Component Locations

Configuration Jumpers



AF003049

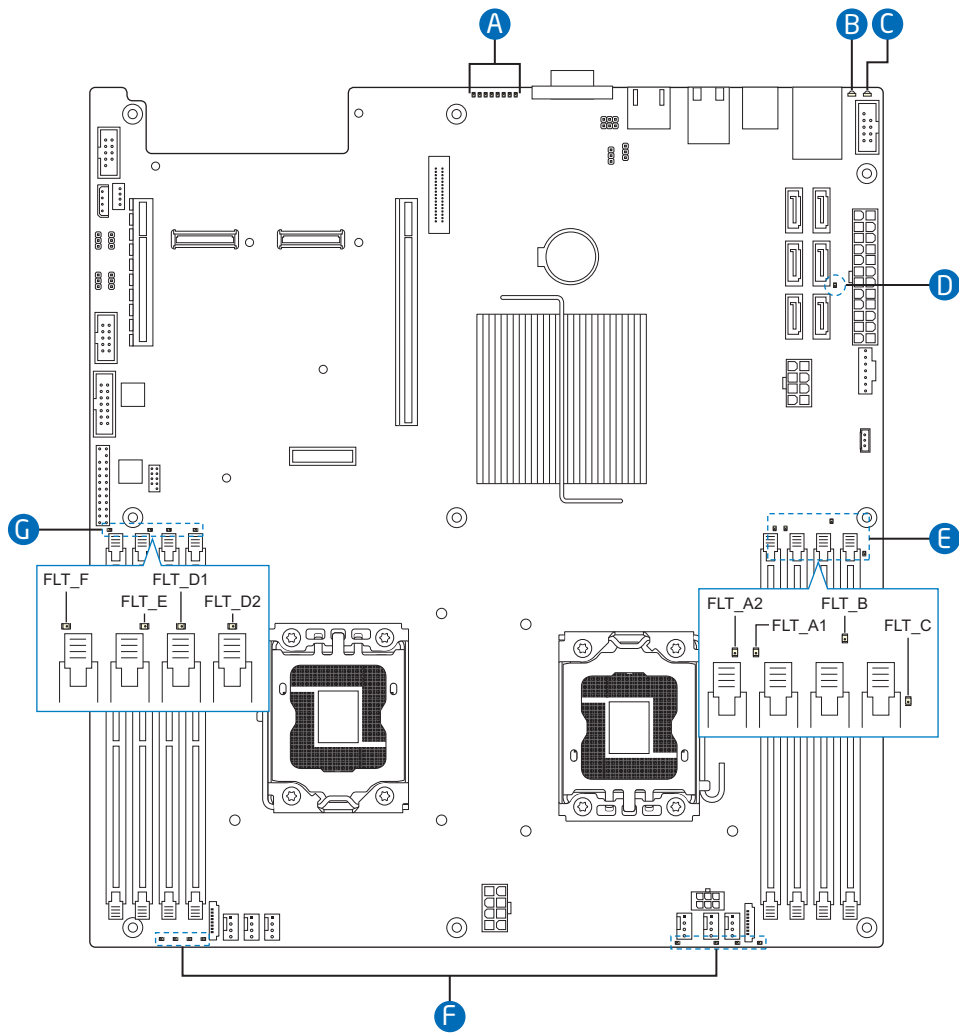
Jumper Name	Pins	What happens at system reset...
J8C1: BMC Force Update	1-2	BMC Firmware Force Update Mode - Disabled (Default)
	2-3	BMC Firmware Force Update Mode - Enabled
Password Clear(J1C2)	1-2	Normal System Operation (Default)
	2-3	Administrator and user passwords are cleared on the next reset
BIOS Recovery(J1C3)	1-2	Normal System Operation (Default)
	2-3	The main system BIOS will not boot with these pins jumpered. Note: the system boots from EFI-bootable recovery media with a recovery BIOS image.
Reset BIOS Configuration(J1 B4)	1-2	Normal System Operation (Default)
	2-3	Clear CMOS settings
Video Master(J6A3)e	1-2	Internal connector overrides
	2-3	External connector overrides
Serial Interface(J6A2)	1-2	DTR (Data Terminal Ready) mode
	2-3	DCD (Data Carrier Detect) mode
	None	DSR (Data Set Ready) mode

Figure 5. Configuration Jumper Location

Intel® Light Guided Diagnostics

The server system contains numerous LEDs providing the following functions:

- The System Status LED on the front and back panels (see [Figure 6](#)) shows the overall health of the system (green, blinking green, blinking amber, and off).
- The System Identification LED on the back panel (see [Figure 6](#)) helps identify the server from among several servers. By default, the ID LED is off, and blue when activated by button or software.
- DIMM Fault LEDs on the server board (see [Figure 6](#)) help identify failed and failing DIMM slots. The DIMM fault LEDs turn on (amber) if there is a DIMM fault.
- POST Code Diagnostic LEDs on the server board (see [Figure 6](#)) change color or state (off, green, red, amber) according to the POST sequence.
- The 5-V STBY LED on the server board (see [Figure 6](#)) is illuminated (green) when AC power is applied.
- The Fan Fault LEDs on the server board (see [Figure 6](#)) help identify failed and failing fans. The fan fault LEDs turn on (amber) if there is a fan fault.

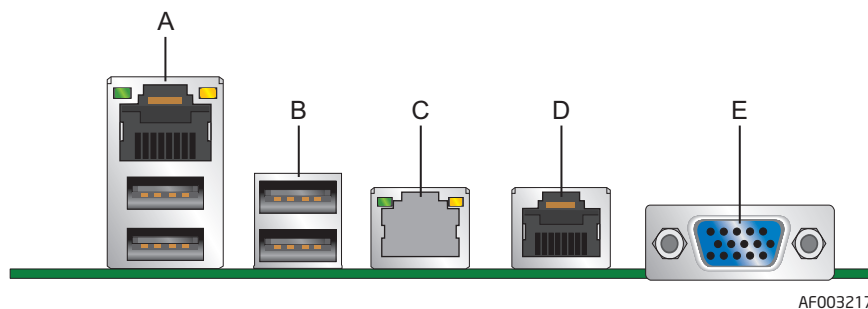


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A. Diagnostic LED	G. CPU2 DIMM fault LEDs
B. System Status LED	
C. System ID LED	
D. 5V Standby LED	
E. CPU1 DIMM fault LEDs	
F. Fan Fault LEDs	

Figure 6. Light Guided Diagnostic LEDs

Back Panel Connectors



A. NIC1 connector with USB ports 2, 5	B. USB ports 8, 9
C. NIC2 connector	D. RJ-45 Serial B port
E. Internal Video Connector	

Figure 7. Back Panel Connectors

The NIC LEDs at the right and left of each NIC provide the following information.

Table 3. NIC LED Descriptions

LED	LED State	LED State	Description
NIC1/ NIC2	Left LED	Off	No network connection
		Solid Amber	Network connection in place
		Blinking Amber	Transmit/receive activity
	Right LED	Off	10 Mbps connection (if left LED is on or blinking)
		Solid Amber	100 Mbps connection
		Solid Green	1000 Mbps connection

RAID Support

The Intel® Server Board S5500WB provides an integrated SATA II host controller that supports independent DMA operation on the six Ports and supports data transfer rates of up to 3.0 Gb/Sec.

The ICH10R provides support for Intel® Matrix Storage Technology, providing both AHCI and integrated RAID functionality. The industry-leading RAID capability provides high-performance RAID 0, 1, 5 and 10 functionality on up to six SATA ports.

The BIOS Setup utility provides multiple drive configuration options on the Advanced | Mass Storage Controller Configuration setup page, some of which affect the ability to configure RAID. The “Onboard SATA Controller” option is enabled by default. When this option is enabled, the “SATA Mode” option can be set to ENHANCED mode, COMPATIBILITY mode, AHCI mode or SW RAID mode. The modes affect the configuration as follows:

- ENHANCED mode supports up to six SATA ports with IDE Native Mode.
- COMPATIBILITY mode supports up to four SATA ports[0/1/2/3] with IDE Legacy mode and 2 SATA ports[4/5] with IDE Native Mode.
- AHCI mode supports all SATA ports using the Advanced Host Controller Interface when the option is enabled.

Note: For AHCI capability in EFI, the AHCI legacy Option ROM should be set to “disabled”.

- SW RAID mode supports configuration of SATA ports for RAID via RAID configuration software.

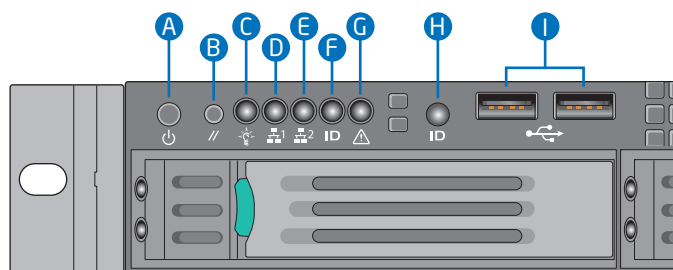
For RAID 0, 1, and 10, enclosure management is provided through the SATA_SGPIO connector on the server board when a cable is attached between this connector on the server board and to the backplane or I2C interface.

If RAID 5 is desired, the optional Intel® RAID Activation Key AXXRAKSW5 can be installed. To enable RAID 5, this activation key is placed on the SATA Key connector that is located at the right side of the server board. For information on how to install the Intel® RAID Activation Key AXXRAKSW5 accessory to enable RAID 5, see the documentation that is included with the accessory kit.

Front Panel of Server System

Standard Control Panel

The following diagram shows the features of the standard control panel.



AF003218

Item	Feature
A.	Power/Sleep Button
B.	System Reset Button
C.	Power/Sleep LED
D.	System NIC 1 Activity LED
E.	System NIC 2 Activity LED
F.	System Identification LED
G.	System Status LED
H.	System Identification Button
I.	USB 2.0 connectors – Port 0 & 1

Figure 8. Front Control Panel - Intel® Server System SR1690WB

Table 4. Control Panel LED Functions

LED	Color	State	Description
Power/ Sleep	Green	On	Power On/ACPI S0 state
	Green	Blink	Sleep /ACPI S1 state
	-	Off	Power Off /ACPI S5 state
LAN 1 and LAN 2	Green	On	LAN Link no Access
	Green	Blink	LAN Activity
	-	Off	No Link

Table 4. Control Panel LED Functions

LED	Color	State	Description
System ID	Blue	On	Identify Active via command or button
		Off	No Identification
System Status	Green	On	System Ready / No Alarm
	Green	Blink	System ready, but degraded: redundancy lost such as the power supply or fan failure; non-critical temp/voltage threshold; battery failure; or predictive power supply failure.
	Amber	On	Critical Alarm: Critical power modules failure, critical fans failure, voltage (power supply), critical temperature and voltage
	Amber	Blink	Non-Critical Alarm: Redundant fan failure, redundant power module failure, non-critical temperature and voltage
	-	Off	AC power off: System unplugged AC power on: System powered off and in standby, no prior degraded/non-critical/critical state

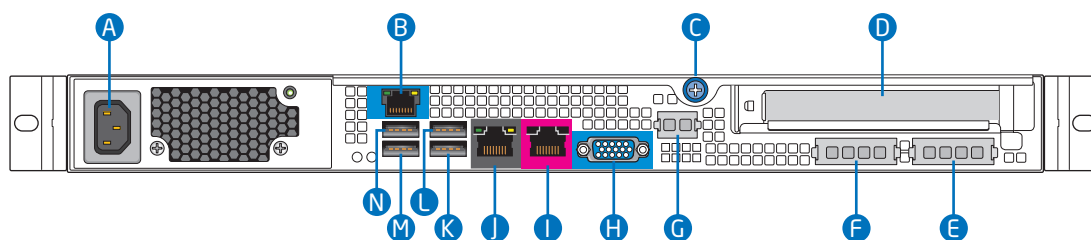
Note: Blink rate is ~1 Hz at 50% duty cycle.

It is also off when the system is powered off (S5) or in a sleep state (S1).

The power LED sleep indication is maintained on standby by the chipset. If the system is powered down without going through the BIOS, the LED state in effect at the time of power off is restored when the system is powered on until the BIOS clear it.

If the system is not powered down normally, it is possible the Power LED will blink at the same time the system status LED is off due to a failure or configuration change that prevents the BIOS from running.

Rear of Server System



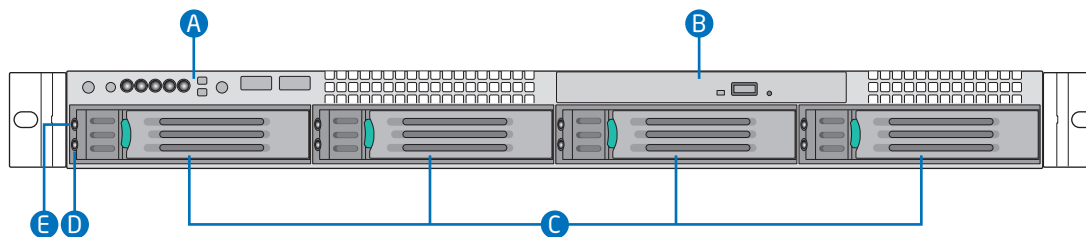
AF003220

A. AC Power Receptacle	I. RJ-45 Serial B port
B. NIC 1 connector	J. NIC2 Connector
C. Top Cover Release Screw	K. USB port 9
D. PCI Express* Add-in Card	L. USB port 8
E. IO module external connector 2 (optional)	M. USB port 5
F. IO module external connector 1 (optional)	N. USB port 2
G. Management Network Interface (optional)	
H. Internal Video Connector	

Figure 9. Server System I/O Connector Locations

Peripheral Devices

The server system provides locations and hardware for installing hard drives and a slimline optical drive. You must purchase the drives separately. The following figure shows the available options.



AF003221

A.	Front Control Panel
B.	Slimline Optical Drive
C.	Hard Drive Bays HDD0~3
D.	HDD Status LED
E.	HDD Power LED

Figure 10. Optional Peripherals

Hard Disk Drives

The server system ships with four hot-swap drive carriers for installing four SATA/SAS Hard disk drives, both 3.5-inch or 2.5-inch HDDs.

For instructions on installing hard drives, see [“Installing and Removing a Hot-swap Hard Drive” on page -35.](#)

Slimline Optical Drive latch

You can use a slimline optical drive latch with an optional optical drive. One slimline optical drive latch is included with your server system; you must purchase the optical drive separately.

You can only insert or remove the slimline optical drive when the system power is turned off. Drive in the optical drive bay is NOT hot-swappable. For installation instructions on installing an optical drive, see [“Installing or Removing a Slimline Optical Drive” on page -38.](#)

To use one of the drives provided by Intel, use the following order codes:

- SATA Slimline DVD Drive: **AXXSATADVDRAM**
- SATA Slimline DVD Rewriteable Drive: **AXXSATADVDRWROM**

Rack-Mounted Systems

Your Intel® Server System SR1690WB can be mounted into a rack. Intel provides three options to mount this server into a rack. When installing the chassis into a rack, Intel recommends you install systems from the bottom of the rack to the top. In other words, install the first system in the rack into the bottom position of the rack, the second system in the second position from the bottom, and so on. Instructions for installing your chassis into a rack are included in the rail kit.

Hardware Requirements

To avoid integration difficulties and possible board damage, your system must meet the requirements outlined below. For a list of qualified components, see the links under “[Server System References](#)”.

Processor

The Intel® Server System SR1690WB supports one or two Intel® Xeon® Processor 5500 series and Intel® Xeon® Processor 5600 series with 95W Thermal Design Power (TDP) or less and with a max data transfer rate of 6.4 GT/s. For a complete list of supported processors, see the links under “[Server System References](#)”.

Memory

The Intel® Server System SR1690WB supports a DDR3-based memory subsystem. The Intel® Server System SR1690WB supports two DIMMs per channel. The silkscreen on the board for the DIMMs displays DIMM_A1, DIMM_A2, DIMM_B1, DIMM_B2, DIMM_D1, DIMM_D2, DIMM_E1, DIMM_E2. See Figure 11. The minimal memory population possible is DIMM_A1.

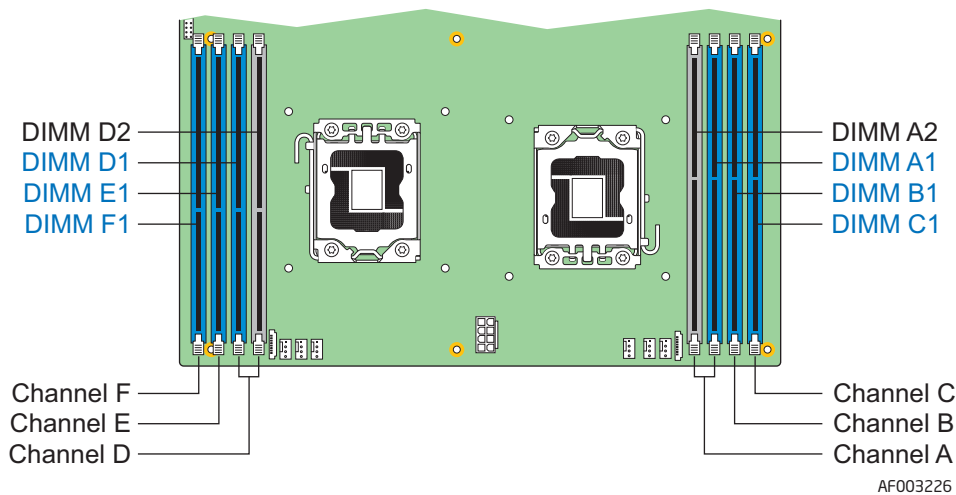


Figure 11. DIMM Configuration Diagram

For two slots per channel configurations, the server board requires DDR3 DIMMs within a channel to be populated starting with the DIMM farthest from the processor. See the following figure (Figure 12).

For a complete list of supported memory DIMMs, see the links under “[Server System References](#)”.

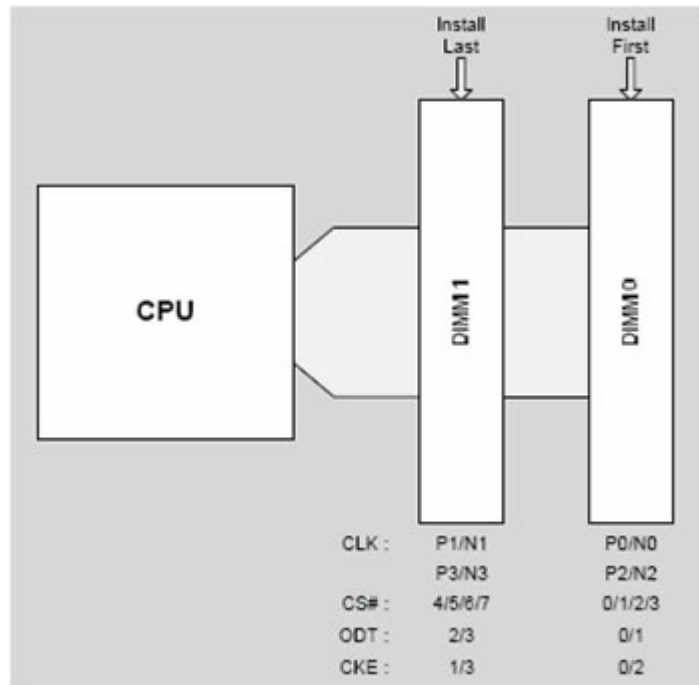


Figure 12. Channel Slots Configuration

The Independent Channel Mode is the default Maximum Performance Mode preferred for Intel® Xeon® Processor 5500 series and Intel® Xeon® Processor 5600 series based platforms. All three channels may be populated in any order and have no matching requirements. All channels must run at the same interface frequency, but individual channels may run at different DIMM timings (RAS latency, CAS latency, and so forth).

Memory Sparing and Mirroring

The spare mode is not supported by Intel® Server System SR1690WB.

With memory mirroring, the system maintains two copies of all data in the memory subsystem. If a DIMM fails, the data is not lost because the second copy of the data is available from the mirrored DIMM in the opposite channel. The system will not fail due to memory error unless both the primary and the mirrored copy of the data become corrupt at the same time.

In a mirrored system, the maximum usable memory is one-half of the installed memory, with a minimum of two DIMMs installed. Since the data is duplicated across DIMMs, it means that up to one-half of the installed DIMMs are actively in use at any one time. The remaining DIMMs are used for mirroring.

See the *Intel® Server System S5500WB Technical Product Specification* for additional information regarding the memory sub-system.

Power Supply

The Power supply in SR1690WB system provides 650W at maximum. The power supply must provide a minimum of 2.6 A of 5V standby current or the board will not boot.

Optional Hardware

Intel® RAID Activation Key

If RAID 5 is needed, you can install the optional Intel® RAID Activation Key AXXRAKSW5. To enable RAID 5, this activation key is placed on the SATA Key connector located at the left side of the server board. For information on how to install the Intel® RAID Activation Key AXXRAKSW5 accessory to enable RAID 5, see the documentation that is included with the accessory kit.

Intel® Remote Management Module 3

The RMM3 advanced management board serves two purposes. The first is to give the customer the option to add a dedicated management 100-Mbit LAN interface to the product. The second is to give additional flash space, enabling the Advanced Management functions to support WS-MAN and CIMOM. The RMM3 comes with a third 10/100GbE NIC that connects to the board. RMM3 management traffic can use the third NIC or NIC 1.

To install the RMM3 module, following the instruction in the RMM3 kit package, which is purchased separately.

Intel® I/O Expansion Module

The Intel® Server System SR1690WB supports a variety of I/O Module options using 2x4 PCI Express* Gen2 Intel® I/O Expansion Module connectors on the rear of the server board. It accommodates both the double-wide I/O expansion modules and the PCI Express* Gen 1 I/O modules. Below is the list of supported I/O modules on SR1690WB:

Table 5. List of Supported I/O Modules on SR1690WB

Product Code	Description
AXX4SASMOD	Intel® SAS Entry RAID I/O Expansion Module: Provides 4-port pass through SAS, entry-level RAID 0/1/1E, and optional host RAID (4 internal ports).
AXXGBIOMOD	Dual Gigabit Ethernet I/O Expansion Module
AXXROMBSASMR	Intel® Integrated RAID I/O Expansion Module: Provides four internal ports, full-featured SAS / SATA RAID 0,1,5,6 and striping capability for spans 10, 50, 60. You must order the optional backup battery AXXRSBBU3 separately.
AXXSASIOMOD	External 4-port SAS I/O Expansion Module.
AXX10GBIOMOD	Dual-port 10 Gigabit Ethernet I/O Expansion Module with CX4 connectors.
AXX4GBIOMOD2	Quad port Gigabit Ethernet I/O Expansion Module based on the Intel® 82576EB Gigabit Ethernet Controller.
AXXIBQDRMOD	InfiniBand* I/O Expansion Module Single Port QDR.

3 Hardware Installations and Upgrades

Before You Begin

Before working with your server product, pay close attention to the “[Safety Information](#)” at the beginning of this manual.

***Note:** Whenever you service the system, you must first power down the server and unplug all peripheral devices and the AC power cord.*

Tools and Supplies Needed

- Phillips* (cross head) screwdrivers (#1 bit and #2 bit)
- Needle nosed pliers
- Pen or pencil
- Antistatic wrist strap and conductive foam pad (recommended)

System References

All references to the left, right, front, top, and bottom assume the reader is facing the front of the server system as it would be positioned for normal operation.

Removing and Installing the System Cover

Removing the System Cover

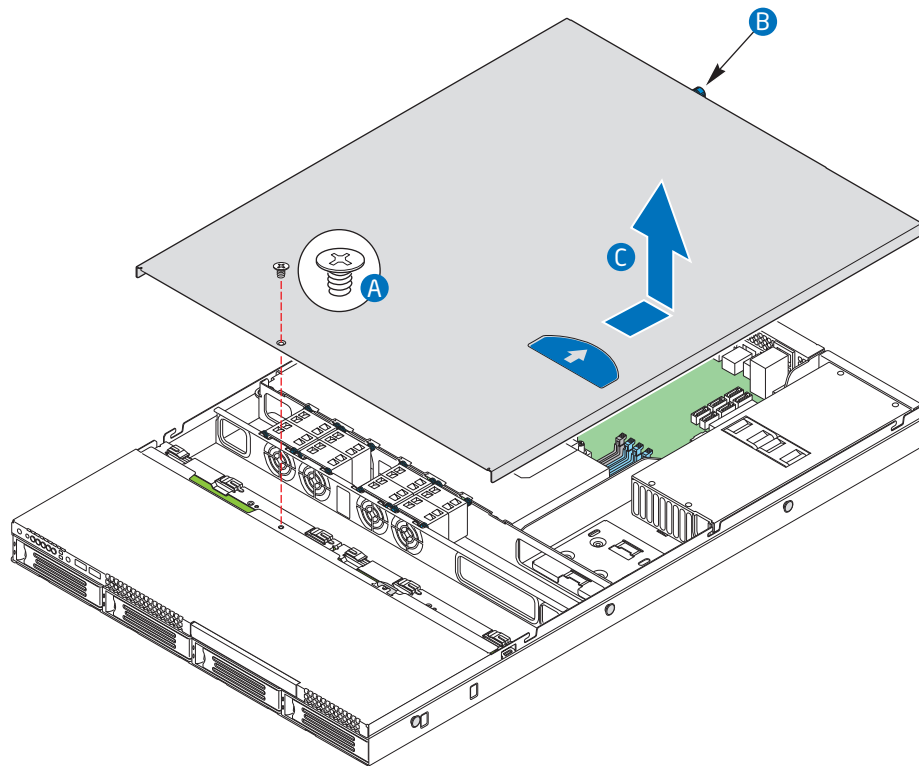
You must operate the server system with the system cover in place to ensure proper cooling. You must remove the top cover to add or replace components inside of the server.

None of the internal components are hot-swappable. Before you remove the server system cover, power down the server and unplug all peripheral devices and the AC power cable.

***Note:** You may need a non-skid surface or a stop behind the server system to prevent the server system from sliding on your work surface.*

1. Remove the top cover screw (see letter “A”).
2. Loosen the screw at the rear of the chassis (see letter “B”).
3. Push rearward on the blue grip point at the front of the server.

4. Slide the cover back until it stops and then lift the cover upward to remove it. See letter “C”.

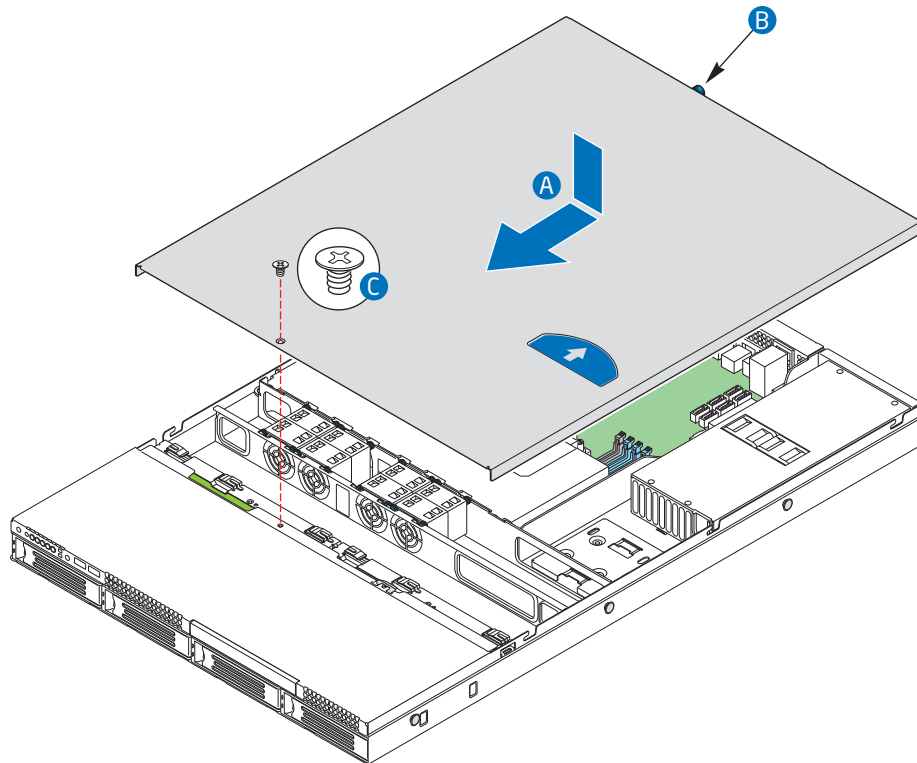


AF003222

Figure 13. Removing the Server System Cover

Installing the System Cover

1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)”.
2. Place the cover over the server system so that the side edges of the cover sit just inside the server system sidewalls. Slide the cover forward (see letter “A” in [Figure 14](#)).
3. Tighten the screw at the rear of the server (see letter “B”) and install the two screws at the front of the server (see letter “C”).



AF003223

Figure 14. Installing the Server System Cover

Removing and Installing the Processor Air Duct

The system requires the use of an air duct to direct airflow and sustain appropriate air pressure. Always operate your server system with the air duct in place. The air duct is required for proper airflow within the server system.

Removing the Processor Air Duct

1. Observe the safety and ESD precautions at the beginning of this book. See [“Safety Information”](#).
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the server system cover. For instructions, see [“Removing the System Cover”](#).
4. Lift the processor air duct from its location behind the two system blower fans.

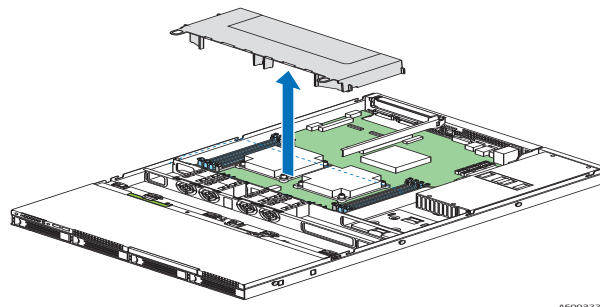
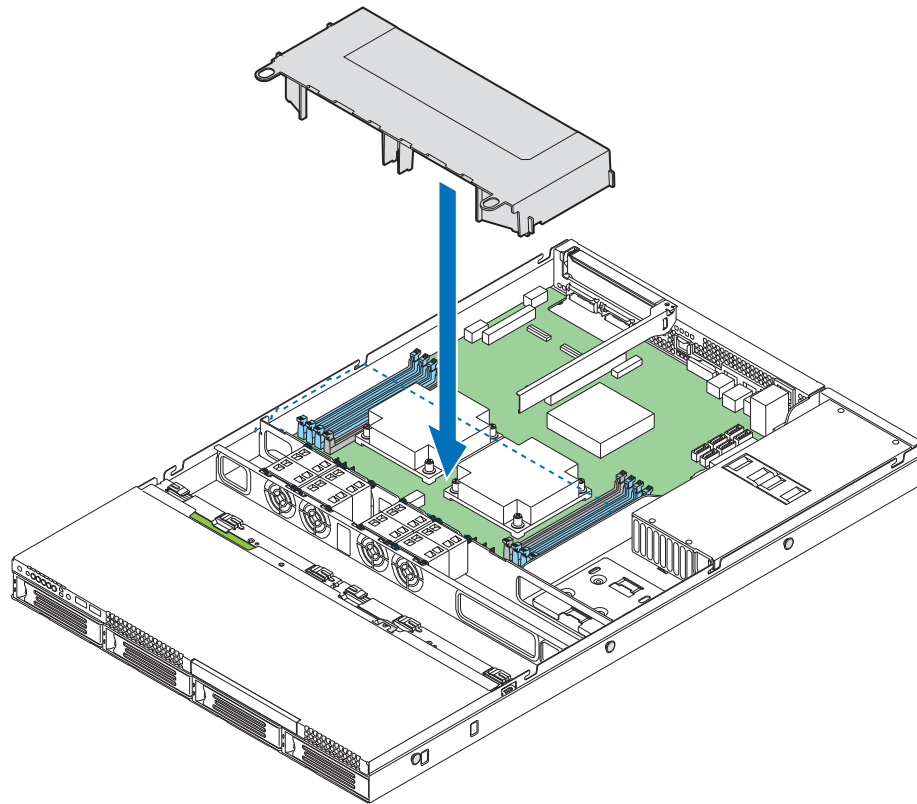


Figure 15. Removing the Processor Air Duct

Installing the Processor Air Duct

1. Observe the safety and ESD precautions at the beginning of this book. See [“Safety Information”](#).
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the server system cover. For instructions, see [“Removing the System Cover”](#).
4. Lower the air duct into place; align the air duct side walls to the corresponding slots on the bracket behind the four system blower fans and insert into position. Use caution not to pinch or disengage cables that may be near or under the air duct.



AF003225

Figure 16. Installing the Processor Air Duct

Installing and Removing Memory

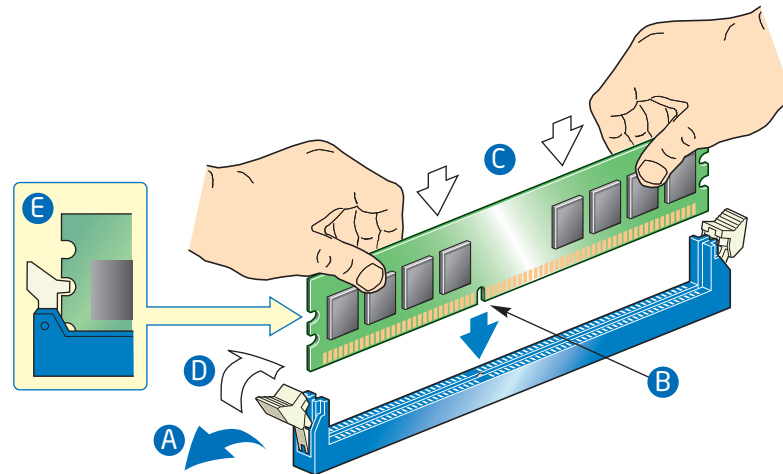
The silkscreen on the board for the DIMMs displays DIMM_A1, DIMM_A2, DIMM_B1, and DIMM_B2, DIMM_D1, DIMM_D2, DIMM_E1, and DIMM_E2 starting from the inside of the board. For two slots per channel configurations, the server board requires DDR3 DIMMs within a channel to be populated starting with the DIMM farthest from the processor. The DIMM farthest from the processor per channel is in blue on boards.

Installing DIMMs

To install DIMMs, follow these steps:

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server.
3. Turn off the server.
4. Disconnect the AC power cord from the server.

5. Remove the cover from the server and locate the DIMM sockets (see [Figure 17](#)).



AF003227

Figure 17. Installing the Memory

6. Make sure the clips at either end of the DIMM socket(s) are pushed outward to the open position (see letter “A” in [Figure 17](#)).
7. Holding the DIMM by the edges, remove it from its anti-static package.
8. Position the DIMM above the socket. Align the two small notches in the bottom edge of the DIMM with the keys in the socket (see letter “B” in [Figure 17](#)).
9. Insert the bottom edge of the DIMM into the socket (see letter “C” in [Figure 17](#)).
10. When the DIMM is inserted, push down on the top edge of the DIMM until the retaining clips snap into place (see letter “D” in [Figure 17](#)). Make sure the clips are firmly in place (see letter “E” in [Figure 17](#)).
11. Replace the server’s cover and reconnect the AC power cord.

Removing DIMMs

To remove a DIMM, follow these steps:

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Remove the AC power cord from the server.
4. Remove the server's cover.
5. Gently spread the retaining clips at each end of the socket. The DIMM lifts from the socket.
6. Holding the DIMM by the edges, lift it from the socket, and store it in an anti-static package.

7. Reinstall and reconnect any parts you removed or disconnected to reach the DIMM sockets.
8. Replace the server's cover and reconnect the AC power cord.

Installing or Replacing the Processor

Note: Use the following instructions to install or replace a processor instead of using the instructions that came with the processor.

Caution: Processor must be appropriate: If you install a processor that is inappropriate for your server, you may damage the server board. See “[Server System References](#)” for a link to the list of compatible processor(s).

ESD and handling processors: Reduce the risk of electrostatic discharge (ESD) damage to the processor by doing the following: (1) Touch the metal chassis before touching the processor or server board. Keep part of your body in contact with the metal chassis to dissipate the static charge while handling the processor. (2) Avoid moving around unnecessarily.

Installing the Processor

To install a processor, follow these instructions:

1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)” for more information.
2. Turn off all peripheral devices connected to the server and turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the server's cover. See the document that came with your server chassis for instructions on removing the server's cover.
5. Locate the processor socket and open the socket lever (see [Figure 18](#)).

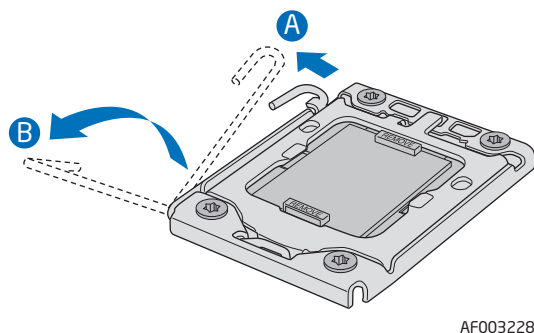
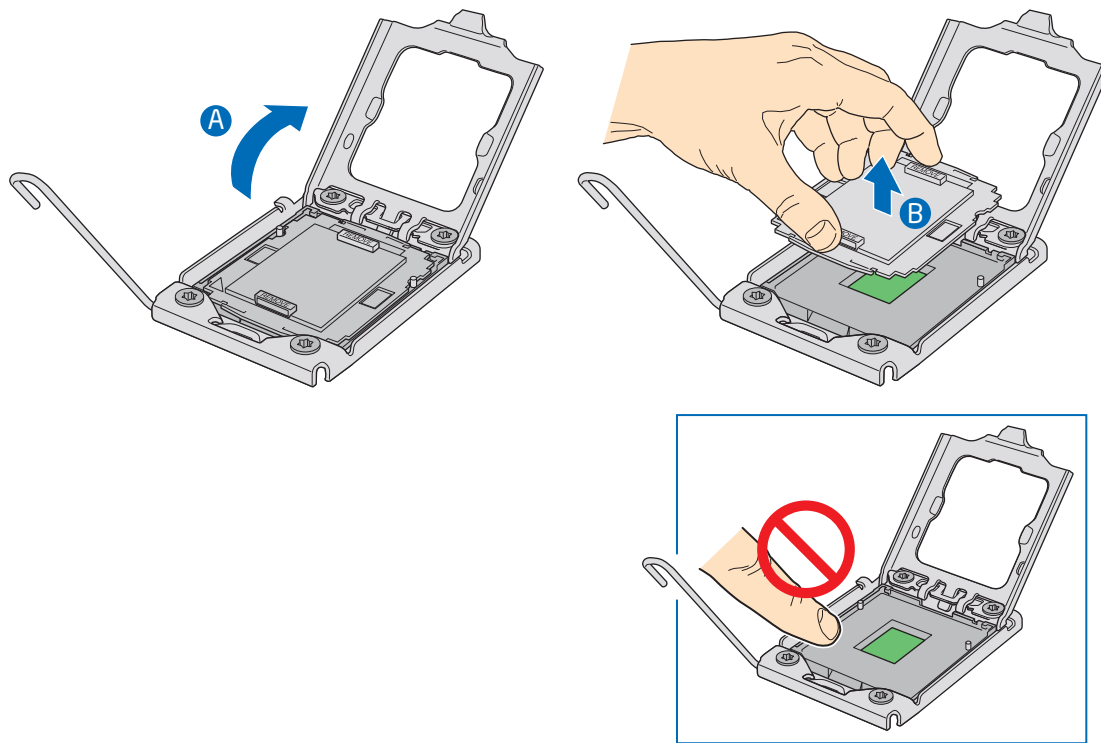


Figure 18. Lifting the Load Lever

6. Open the load plate (see letter “A” in [Figure 18](#) and letter “B” in [Figure 18](#)).



AF003229

Figure 19. Open the Load Plate

7. Remove the socket protective cover (see [Figure 19](#)).
8. Take the processor out of the box and remove the protective shipping cover ([Figure 20](#)).

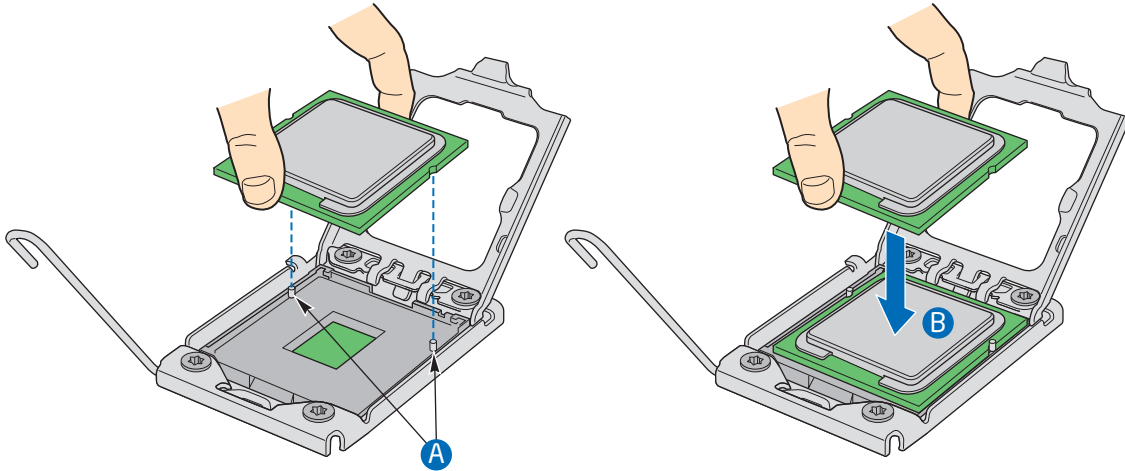


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Figure 20. Removing the socket

Note: Do not touch the socket pins; they are very sensitive and easily damaged.

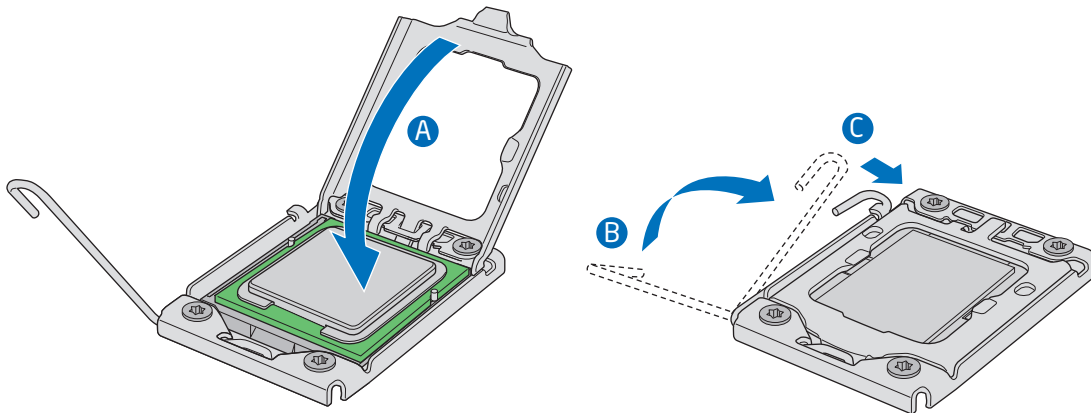
9. Align the processor cutouts to match the two socket pins, and then insert the processor into the socket as shown in [Figure 21](#).



AF003293

Figure 21. Aligning the Processor

10. Close the load plate (see the letter “A” in [Figure 22](#)), close the socket lever and ensure the load plate tab engages under the socket lever when fully closed. (See letter “B” and “C” in [Figure 22](#))



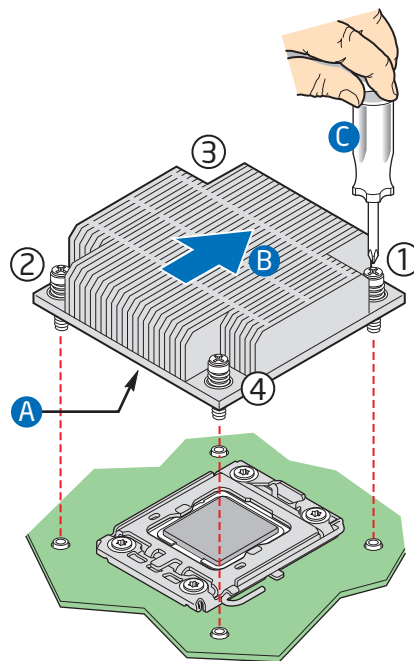
AF003294

Figure 22. Close the Load Plate and Socket Lever

Note: Make sure the alignment triangle mark and the alignment triangle cutout align correctly. To assist in package orientation and alignment with the socket:

Installing the Heat Sink(s)

1. If a protective film covers the thermal interface material (TIM) on the underside of the heat sink, remove the protective film.
2. Align heat sink fans to the front and back of the chassis for correct airflow. Airflow goes from front-to-back of chassis.
3. Each heat sink has four captive fasteners and should be tightened as shown.
4. Using a #2 Phillips* screwdriver, finger-tighten each fastener diagonally according to the white-circled numbers (see [Figure 23](#)).
5. Securely re-tighten each fastener again in the same order as performed in Step 4.
6. Attach fan power cable to server board as shown below.



AF003295

Figure 23. IU Reference Heat sink Assembly

7. Reinstall and reconnect any parts you removed or disconnected to reach the processor sockets.
8. Replace the server's cover and reconnect the AC power cord. See the documentation that came with your server chassis for instructions on installing the server's cover.

Replacing a Processor

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server. Turn off the server.

3. Remove the AC power cord from the server.
4. Remove the server's cover.
5. Unplug the processor fan cable from the server board.
6. Loosen the four captive screws on the corners of the heat sink.
7. Twist the heat sink slightly to break the seal between the heat sink and the processor.
8. Lift the heat sink from the processor. If it does not pull up easily, twist the heat sink again. Do not force the heat sink from the processor. Doing so could damage the processor.
9. Lift the processor lever.
10. Raise the CPU load plate.
11. Remove the processor.
12. If installing a replacement processor, see “[Installing the Processor](#)”. Otherwise, install the protective socket cover over the empty processor socket and reinstall the chassis cover.

Installing and Removing a Hot-swap Hard Drive

You can install up to two fixed SATA drives in the Intel® Server System SR16WB90 Service Guide. See “[Server System References](#)” for a link to a list of supported hardware.

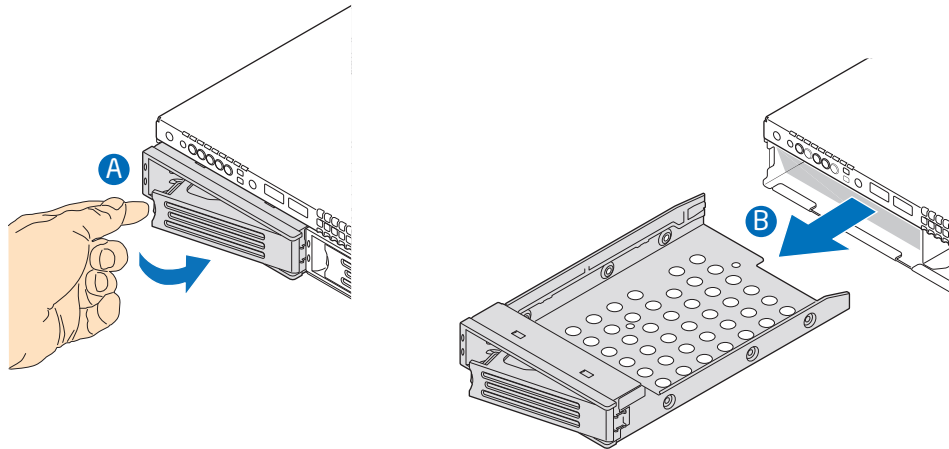
Caution: *If you install less than four drives or devices, the empty drive bays must be occupied by carriers with drive blanks to maintain proper system cooling.*

To avoid possible damage to your server system, use only the drive carriers that came with your system.

Installing a SAS or SATA Hot-swap Hard Disk Drive

Note: *The server system does not support all hard drives. See “[Server System References](#)” for a link to a list of supported hardware.*

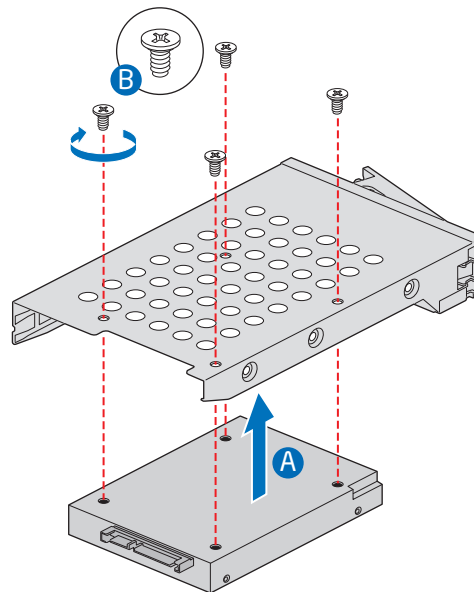
1. Open the latch at the front of the hard drive carrier (see letter “A”).
2. Pull out on the black lever and slide the carrier from the server system (see letter “B”).



AF003302

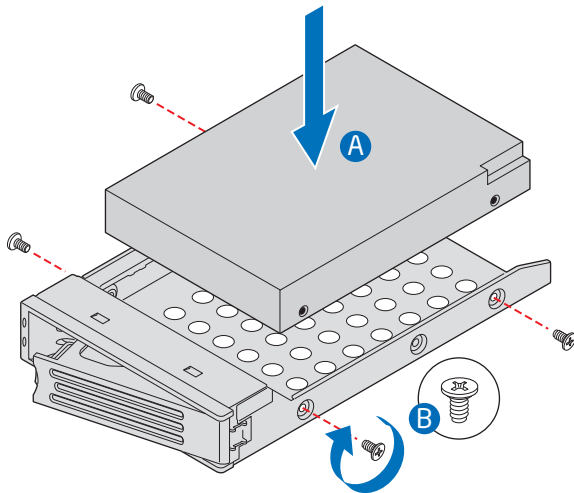
Figure 24. Pulling out the back lever

3. Remove the hard drive from its wrapper and place it on an antistatic surface.
4. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
5. With the drive circuit-side down, position the connector end of the drive so that it is facing the rear of the drive carrier.
6. Align the holes in the drive to the holes in the drive carrier and attach it to the carrier with the screws that were attached to the drive blank.



AF003303

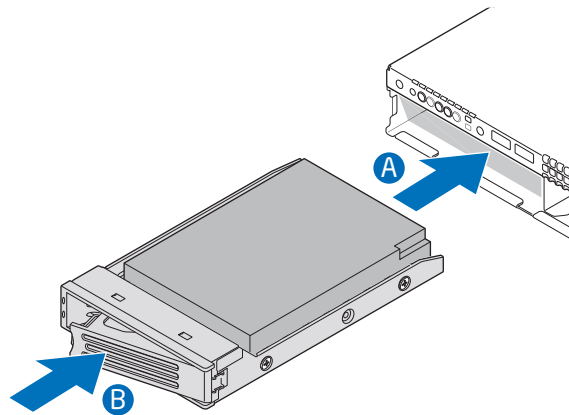
Figure 25. 2.5 HDD Installation



AF003304

Figure 26. 3.5 HDD Installation

7. With the black lever in the fully open position, slide the drive assembly into the server system. The green latch at the front of the drive carrier must be to the right. Do not push on the black drive carrier lever until the lever begins to close by itself.
8. When the black drive carrier lever begins to close by itself, push on it to lock the drive assembly into place.



AF003305

Figure 27. Locking the drive assembly

Removing a SAS or SATA Hot-swap Hard Disk Drive

1. Press in on the green latch at the front of the hard drive carrier, and pull out on the black lever to slide the carrier from the server system.
2. Remove the four screws that attach the hard drive to the drive carrier. Lift the drive from the carrier and store the drive in an anti-static bag.
3. With the black lever in the fully open position, slide the drive carrier into the server system. The green latch must be to the right. Do not push on the black lever until the lever begins to close by itself.

Note: *All hard drive carriers must be installed in the server system and populated either with a drive or without a drive to maintain system thermals.*

4. When the black lever begins to close by itself, push on it to lock the drive carrier into place.

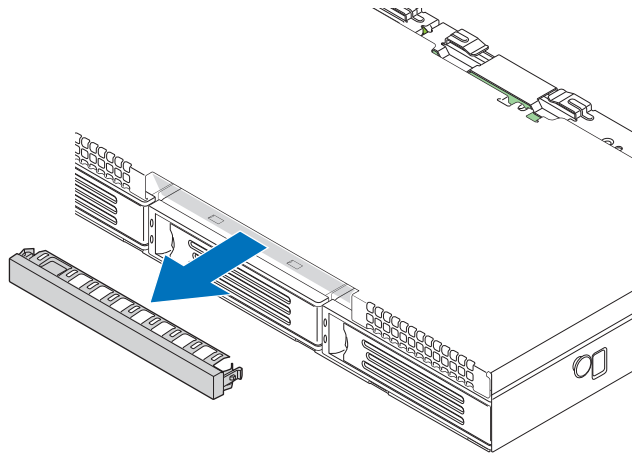
Installing or Removing a Slimline Optical Drive

Caution: *Slimline optical drives are NOT hot-swappable. Before removing or replacing the drive, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.*

To maintain proper system cooling, if you do not install a device at this location, you must install the provided filler blank.

Installing a Slimline Optical Drive

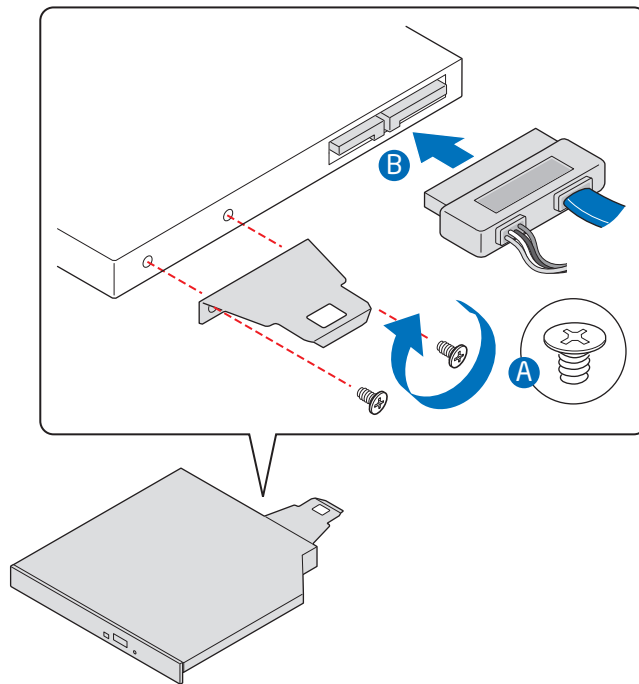
1. Remove the slimline drive bay filler blank, if installed.



AF003311

Figure 28. Removing the Knockout in Bezel for Optical Opening

2. Obtain the optical drive, and the optical drive latch from system package.
3. Screw the latch to the optical drive, and plug in the composed SATA/SATA Power cable, which is shipped in system package.

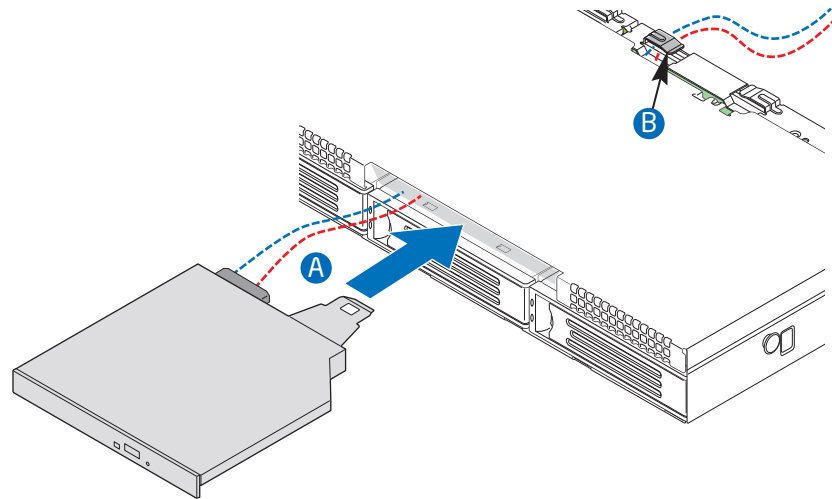


AF003312

Figure 29. Attaching the Brackets to the Optical Drive

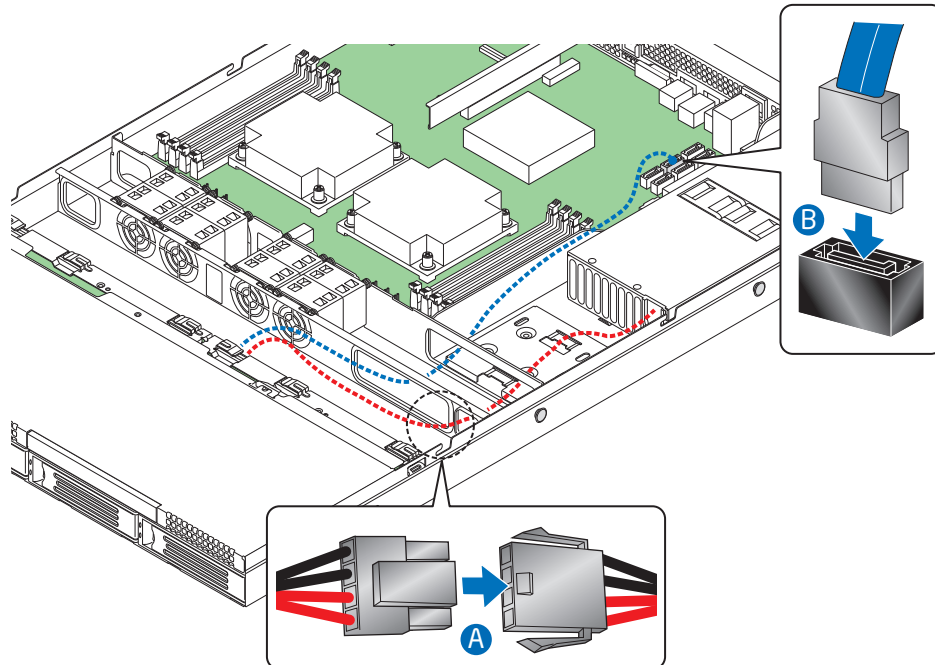
4. Lead the SATA/SATA Power cable through the optical drive bay before inserting the drive.

- Slide the optical drive assembly in through the front of the chassis, as shown by letter “A” in the following figure. The assembly will automatically be locked if the drive assembly is in position.



AF003313

- Connect the SATA cable connector to SATA port 4 or 5 on server board.
- Connect the SATA power connector to P6 connector from system power supply.



AF003314

Figure 30. Installing the Optical Drive into the Server System

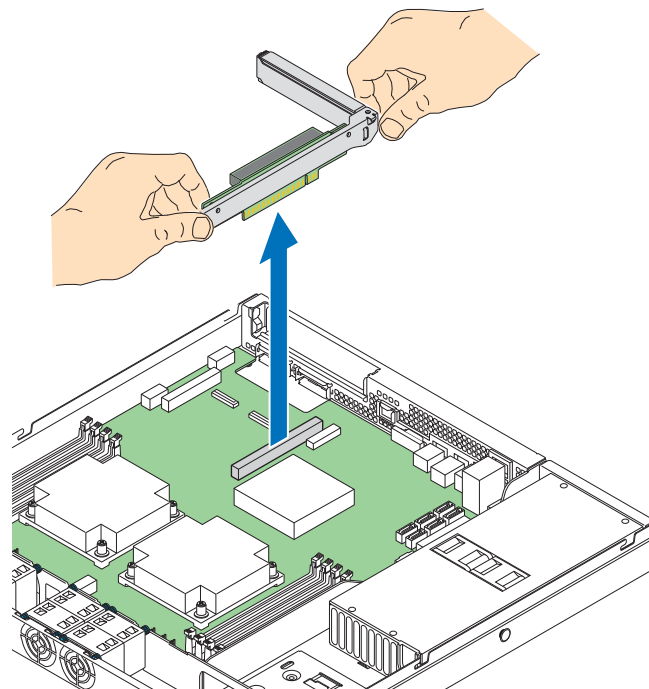
Removing a Slimline Optical Drive

1. Disconnect the SATA power from system power supply and SATA cable connector from server board.
2. Press the optical latch and slide the optical drive assembly out of the chassis.
3. Install slimline drive bay filler blank, if no optical drive installed.

Installing and Removing the PCI Riser Assembly

Removing the PCI Riser Assembly

1. Disconnect any cables attached to any add-in cards.
2. Grasp the riser assembly and pull up to release it from the system.

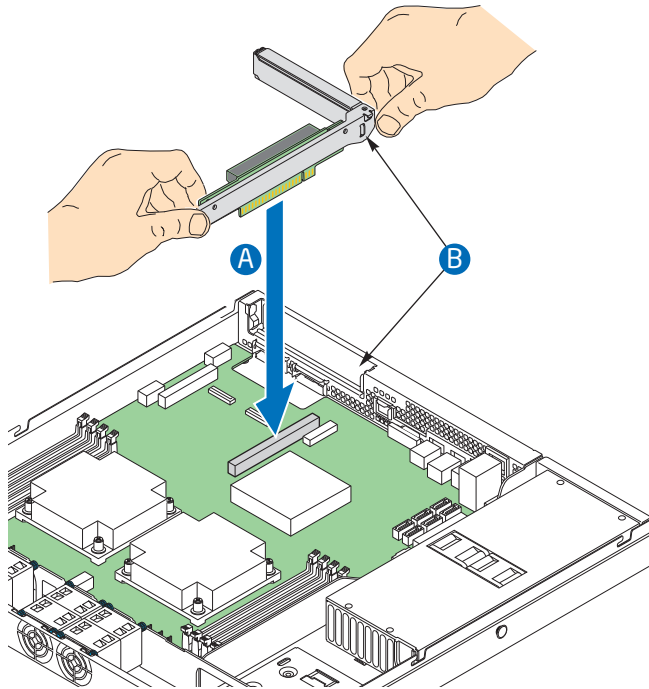


AF003322

Figure 31. Removing the PCI Riser Assembly from the Server System

Installing the PCI Riser Assembly

1. Lower the riser assembly into place (see letter “A”).
2. Align the two hooks in the riser assembly with the matching slots at the back of the server system (see letter “B”).



AF003323

Figure 32. Installing the PCI Riser Assembly

3. Press down uniformly until the two hooks on the rear of the PCI riser assembly engage the server system back panel slots. The riser card will seat into the matching socket on the server board. Ensure the riser card is fully seated.

Installing and Removing a PCI Add-In Card

The following instructions describe how to install and remove a PCI add-in card.

Installing a PCI Add-In Card

Peripherals and add-in cards are not included in your system. You must purchase them separately. The riser card supports a full-height or low-profile PCI Express* 2.0 x8 add-in card.

1. After removing the PCI riser assembly from the server system, remove the screw that attaches the PCI bracket shield to the rear of the chassis to remove the shield. Retain the screw.
2. Insert the PCI card edge connector in the slot on the PCI riser.

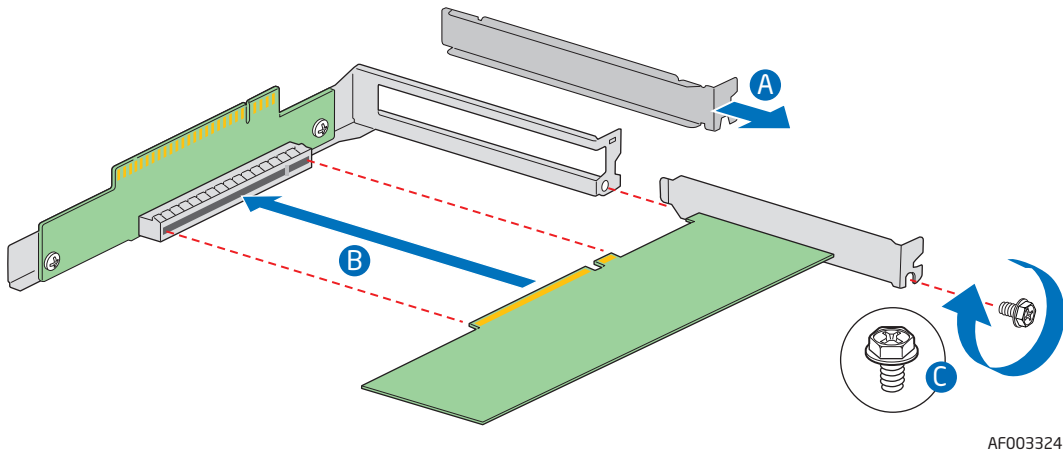


Figure 33. Installing a PCI Card in a Riser Card

3. Insert the riser card with the attached PCI card into the PCI slot on the server board. Press firmly on the riser card until it is fully seated. Be sure to press down on the riser card, not on the PCI card.

Caution: Press the riser card straight down into the slot. Tipping the riser card while installing into the slot may damage the riser card or slot on the server board.

4. Use the screw removed in step 1 to secure the riser card assembly to the chassis.

Removing a PCI Add-In Card

1. Remove the screw holding the add-in card in place (see letter “A”).
2. Remove the PCI add-in card from the riser card connector (see letter “B”).

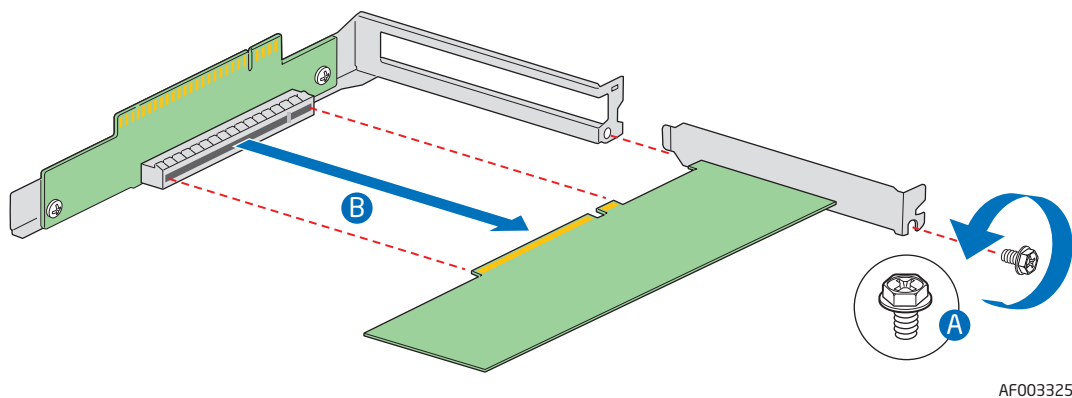


Figure 34. Removing a PCI Card in a Riser Card

Removing and Installing the System Fans

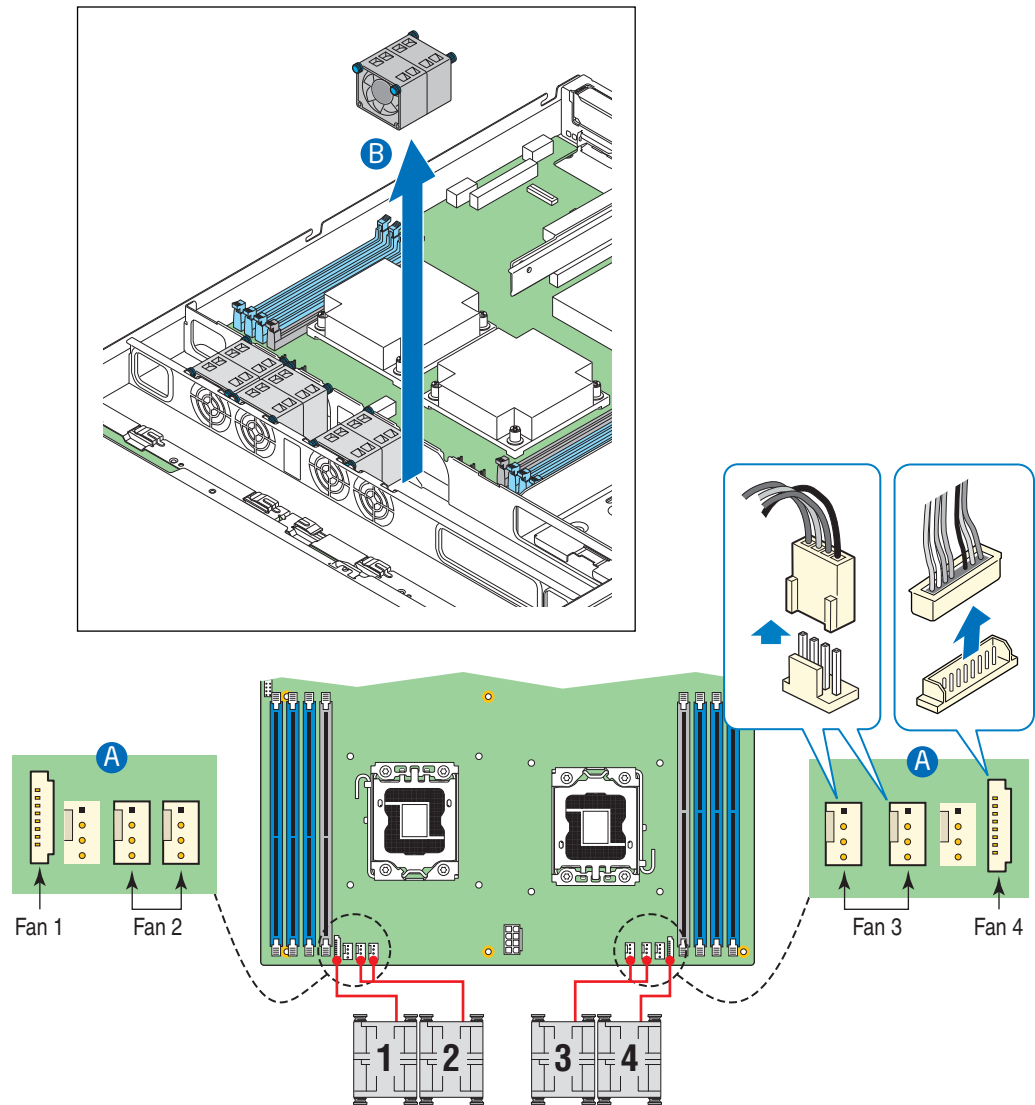
Caution: *The system fans are NOT hot-swappable. Before removing or replacing, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.*

Note: *The fans that are integrated into the power supply cannot be replaced separately. If one of the fans in the power supply fails, you must replace the power supply.*

The system fans are located in the front of the server system, which you can individually replace if one of them fails. If a fan in the power supply fails, you must replace the power supply. Use the following steps to replace a system fan.

Replacing the System Fans

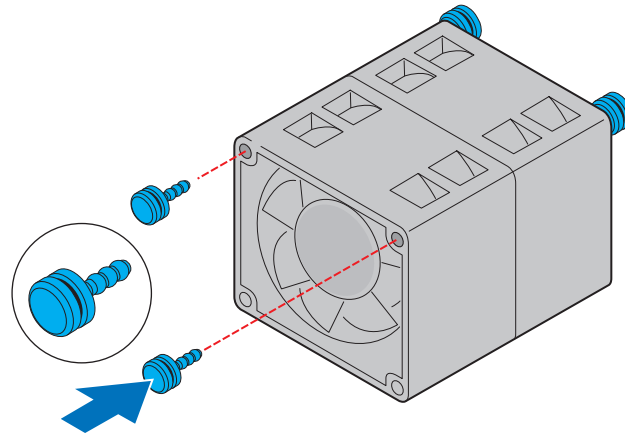
1. Remove the processor air duct. For instructions, see [“Removing the Processor Air Duct”](#).



AF003309

Figure 35. Replacing the system fans

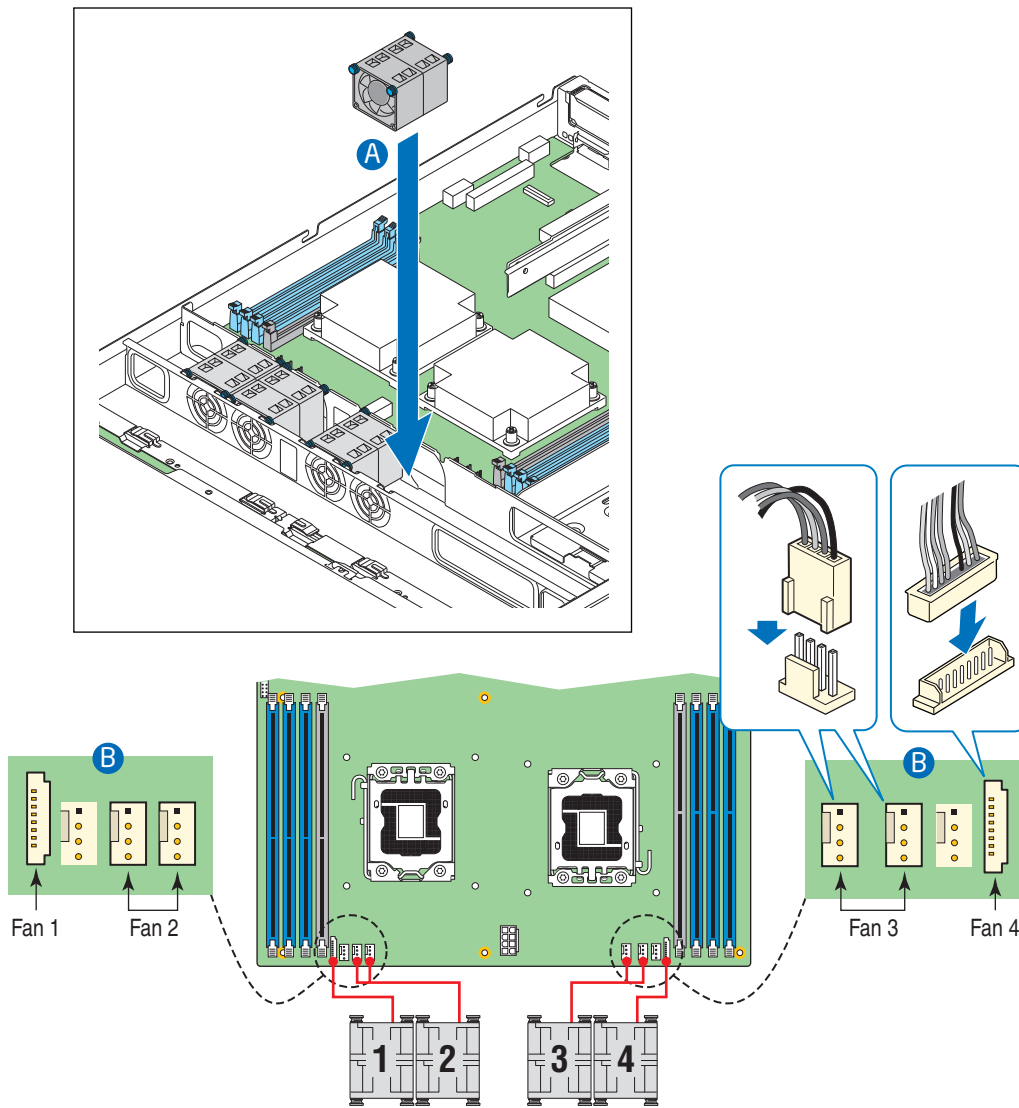
2. Disconnect the two 4-pin or one 8-pin system fan cables from the server board. See letters “2” in the following figure.
3. Lift the failed fan from the module.
4. Remove the plastic screws from the failed fans and install them into the new fans.



AF003308

Figure 36. Remove the screws from the fans

5. Position the replacement fan so the connector on the fan is at the right and pointing down.
6. With the fan oriented correctly, insert the fan into the fan module (see letter “3”), and insert the fan cable into the matching connector on the server board. (see letter “2”).



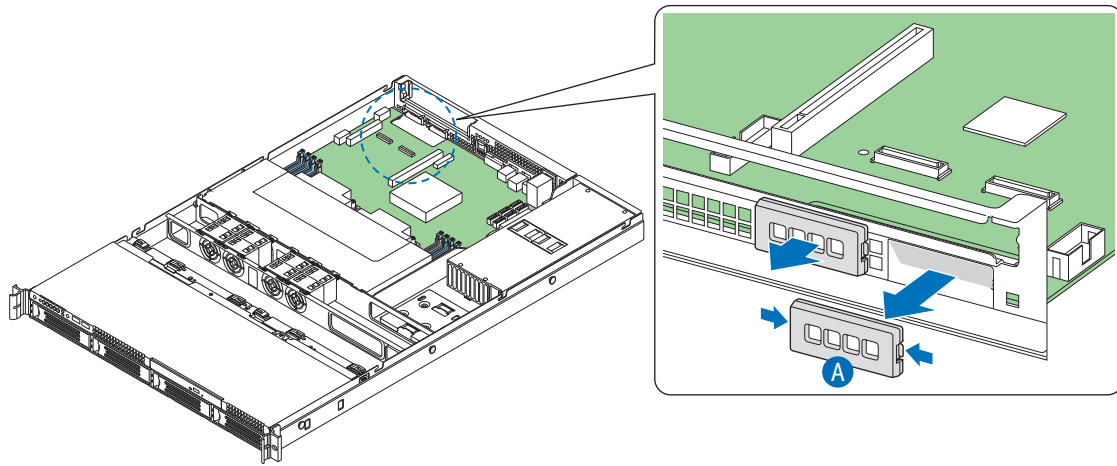
AF003310

Figure 37. Inserting the fan into the fan module

Installing and Removing the I/O Expansion Module(s)

Installing the I/O Expansion Module(s)

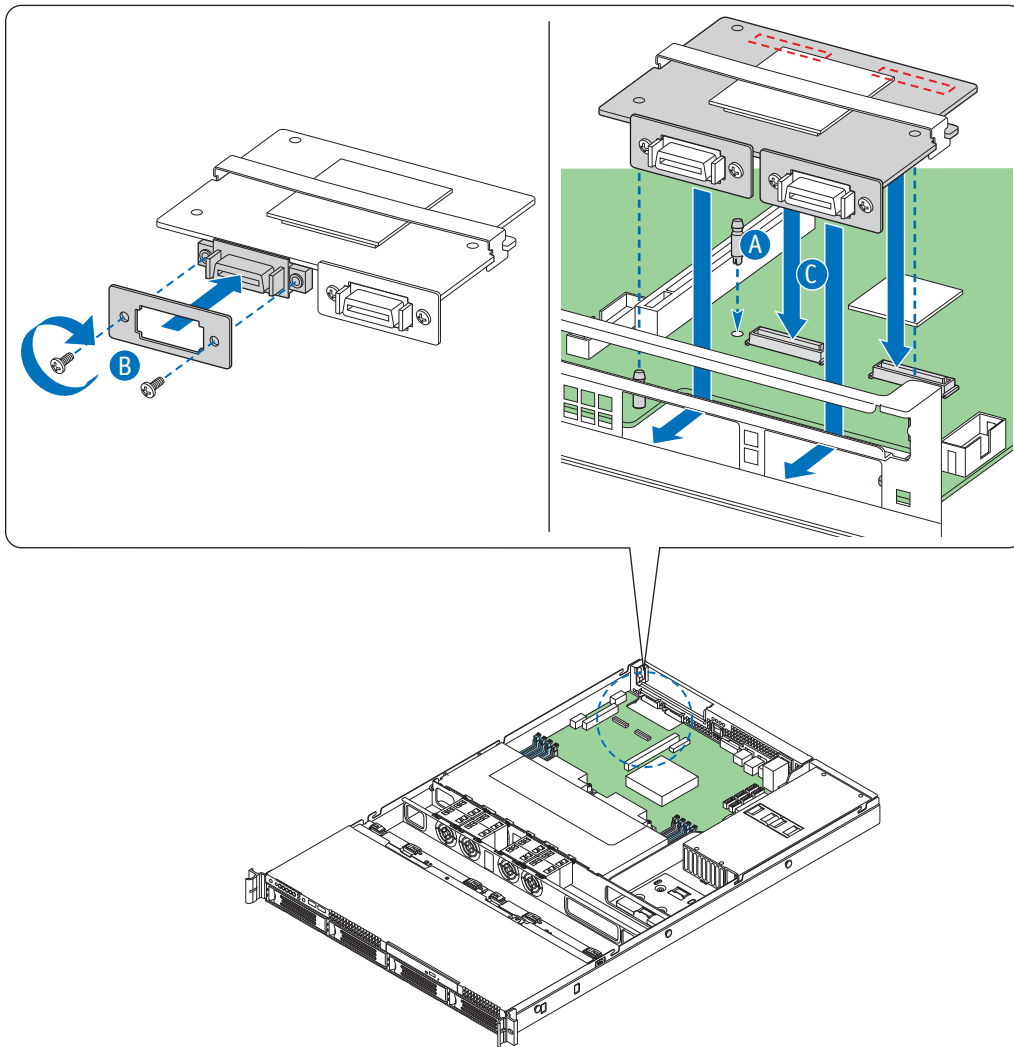
1. Squeeze the sides of the I/O expansion module cover to disengage it from the server system back panel and remove it (see letter "A").



AF003317

Figure 38. Installing the I/O Expansion Module(s)

2. Attach the standoffs to the server board (see letter “A”) and attach the I/O shield gasket to the module (see letter “B”).
3. Attach the I/O expansion module(s) to the server board (see letter “C”).



AF003318

Figure 39. Attaching the I/O Expansion Module(s)

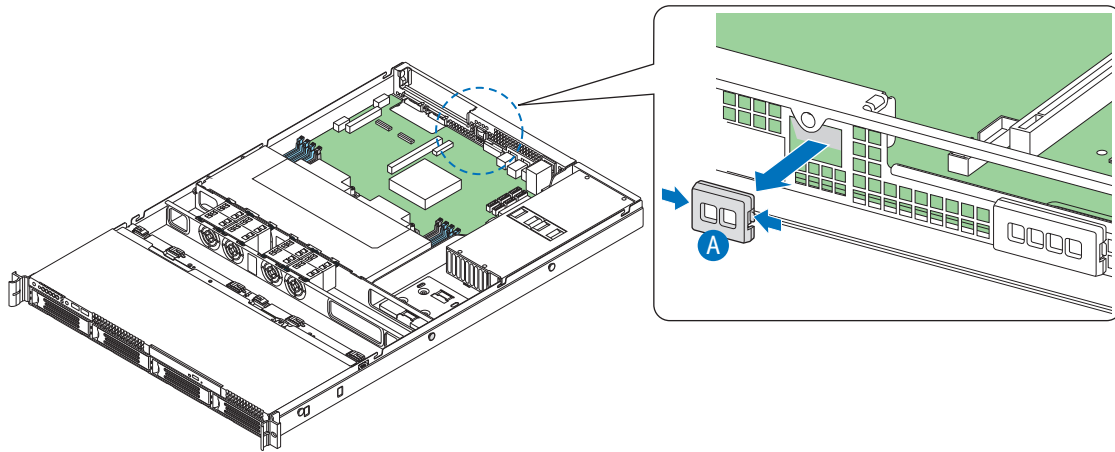
Removing the I/O Expansion Module(s)

1. Remove the I/O expansion module(s) from the server board (see letter “A”).
2. Remove the standoffs from the server board (see letter “B”).
3. Install the I/O expansion module cover into the system back panel (see letter “C”).

Installing and Removing the Intel® Remote Management Module 3 and the Intel® RMM 3 NIC

Installing the Intel® RMM3 and Intel® RMM3 NIC

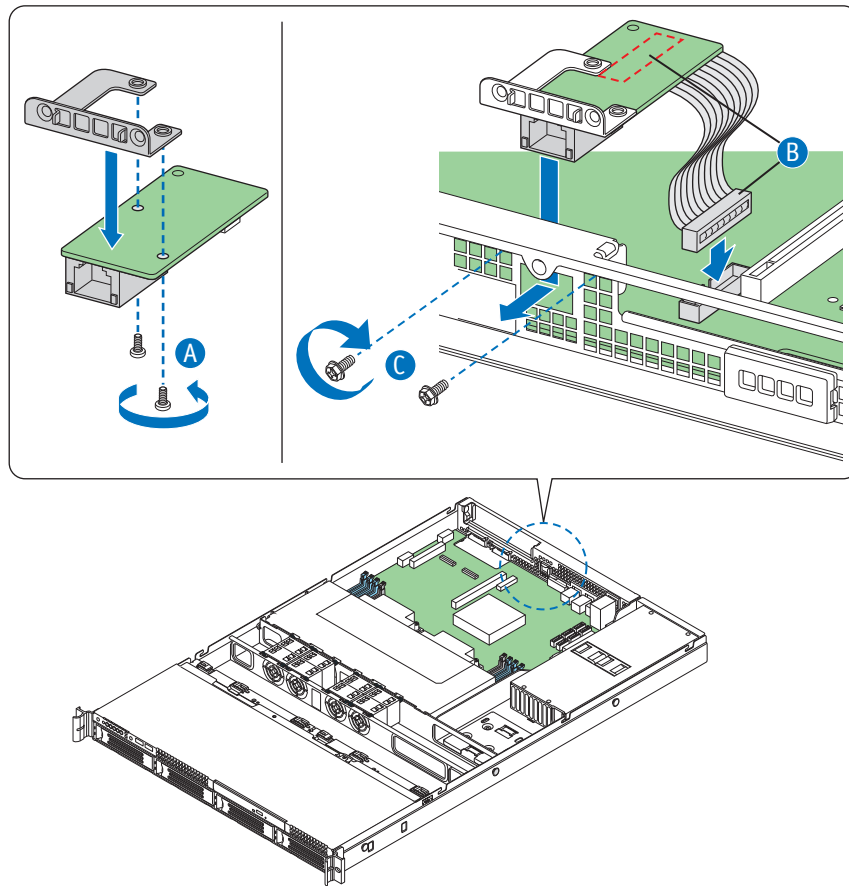
1. Squeeze the sides of the Intel® RMM3 NIC module cover to disengage it from the server system back panel and remove it (see letter “A”)



AF003315

Figure 40. Installing the Intel® RMM3 and Intel® RMM3 NIC

2. Attach the bracket of Intel® RMM3 NIC module by two screws (see letter “A”).
3. Connect the Intel® RMM3 cable to the slot on server board (see letter “B”).
4. Attach the Intel® RMM3 module to rear chassis by two screws (see letter “C”).



AF003316

Figure 41. Attach the Intel® RMM3 module to rear chassis

Removing the Intel® RMM3 and Intel® RMM3 NIC

Use the reverse steps to remove the Intel® RMM3 module

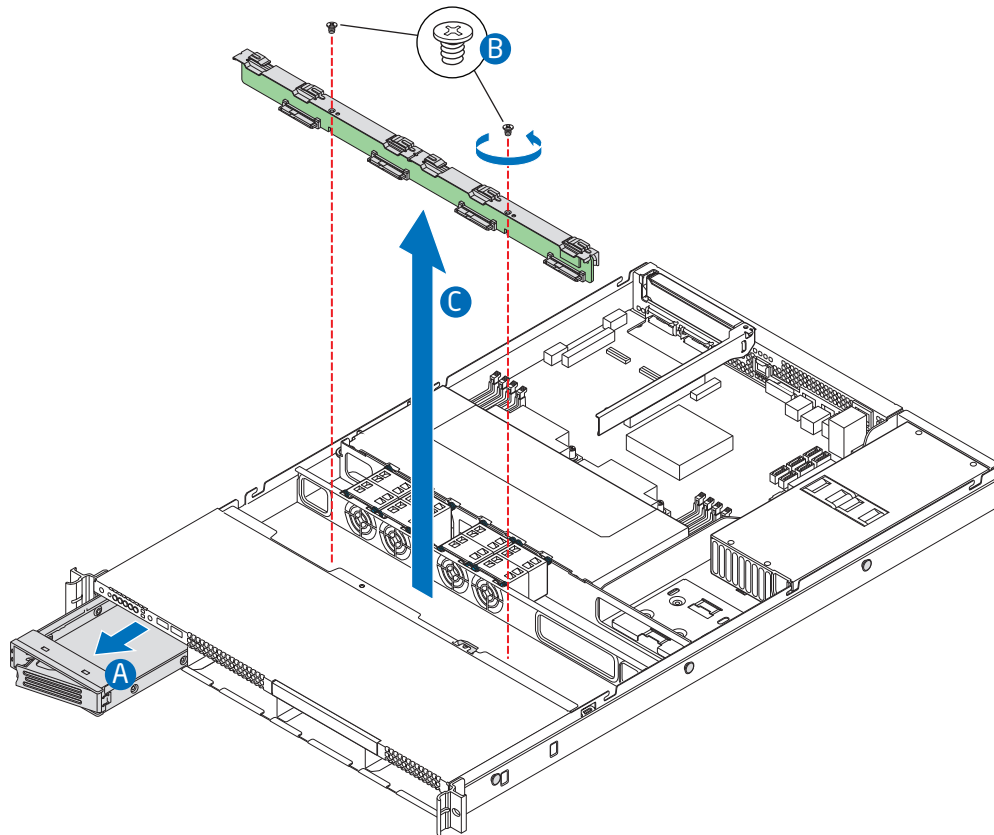
1. Remove the two screws from rear chassis to loosen Intel® RMM3 board (see letter “C”).
2. Plug out Intel® RMM3 NIC module cable from the server board (see letter “B”).
3. Install the Intel® RMM3 NIC module cover into the system back panel (see letter “A”).

Replacing the Backplane Board

The instructions below describe how to replace the backplane board in the system.

Removing the Backplane Board

1. Disengage hard drives from the backplane board (see letter “A”).
2. Disconnect all cables from the backplane board.
3. Remove two screws on the top of backplane bracket (see letter “B”).
4. Pull out the backplane assembly vertically from the chassis (see letter “C”).

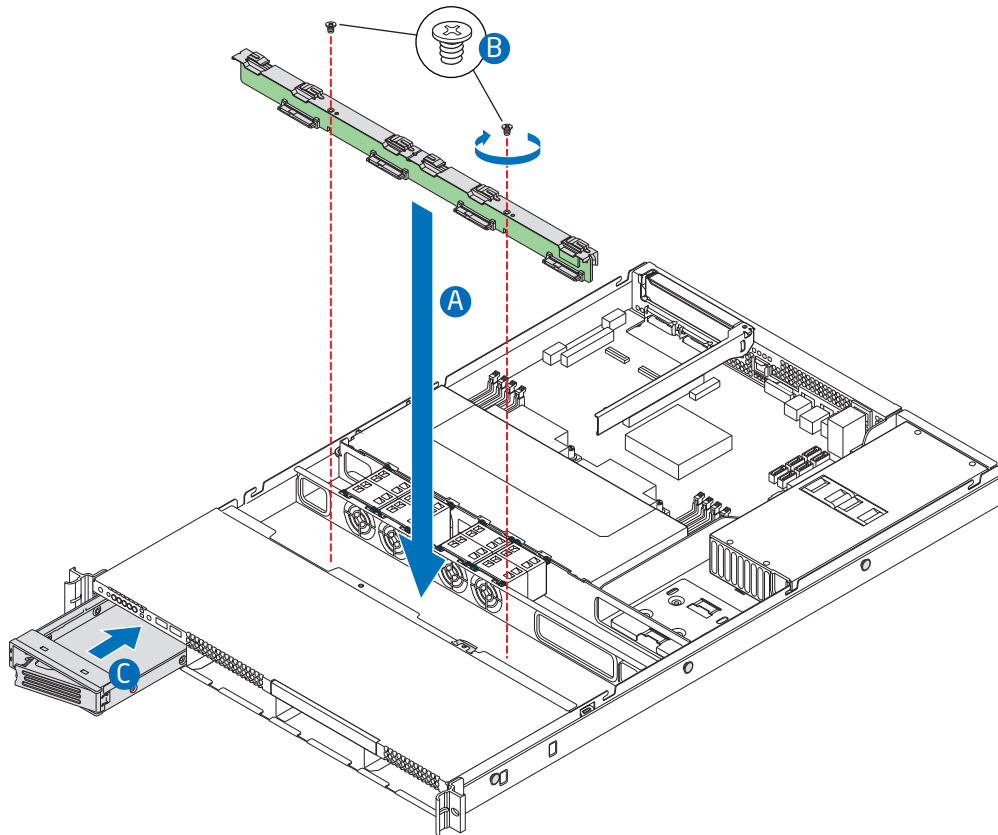


AF003300

Figure 42. Removing the backplane board

Installing the Backplane Board

1. Lower the backplane assembly into the system (see letter “A”) and fix the backplane assembly into fix position, aligning with two screw holes on chassis.
2. Tighten two screws to lock the backplane assembly in position (see letter “B”).
3. Connect data/power cables to the backplane connectors.
4. Engage hard drives back to the backplane (see letter “C”).



AF003301

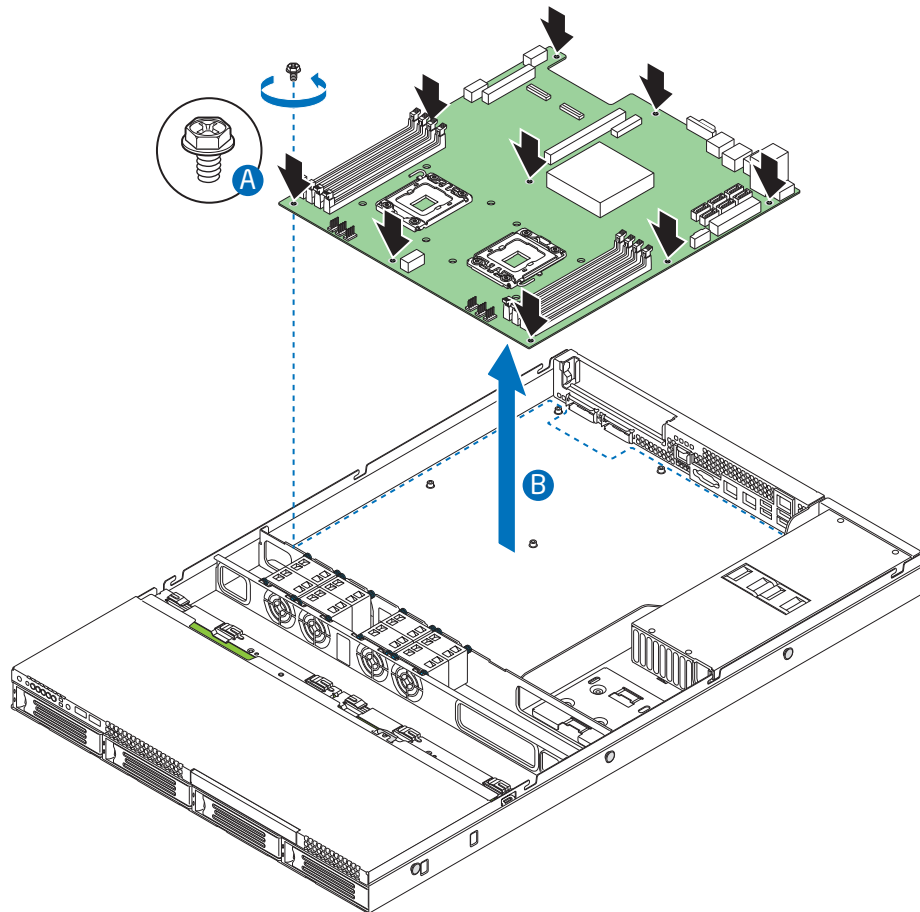
Figure 43. Installing the backplane board

Replacing the Server Board

Removing the Server Board

1. Remove the system air duct.
2. If installed, remove the memory, processor heat sinks, and processors from the server.
3. If installed, remove the PCI riser assembly.
4. If installed, disconnect all SATA cables from the server board.
5. Disconnect the system fans cables from server board.
6. Disconnect all power cables coming from the power supply to the server board.

7. Remove the nine screws from the server board (see letter “A”) and lift the server board from the server system (see letter “B”).



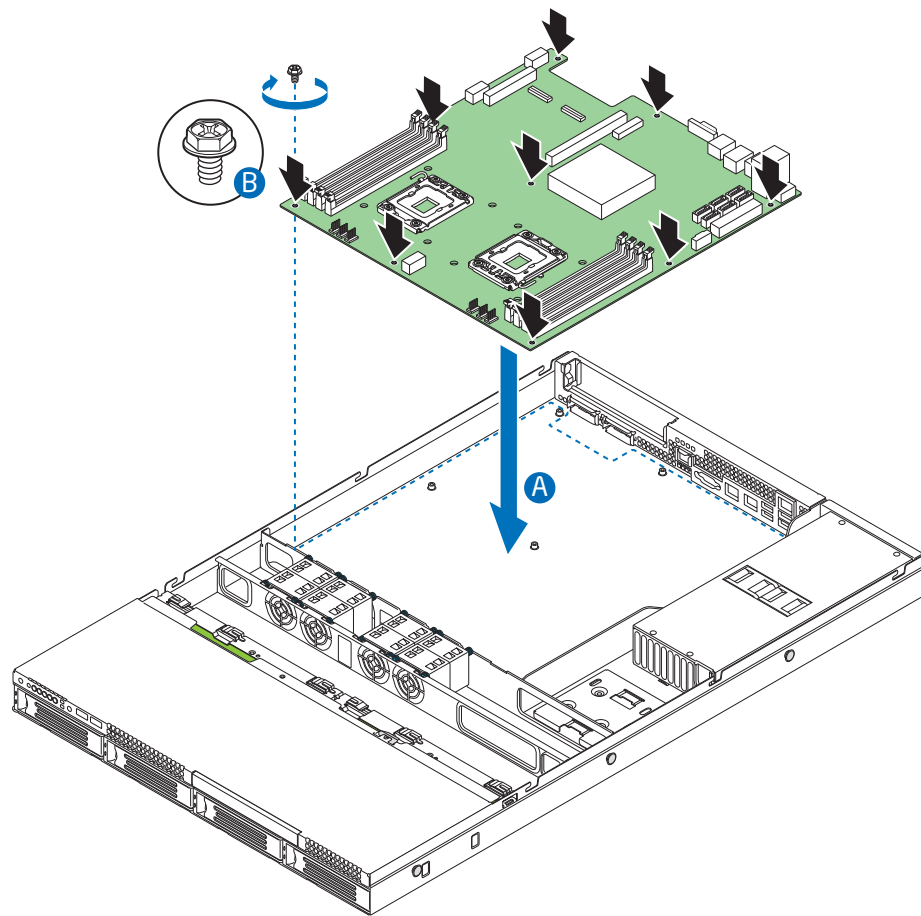
AF003297

Figure 44. Removing the Server Board

8. Install the replacement server board. See “Installing the Server Board” on page -54.

Installing the Server Board

1. Place the server board into the server system as shown in the following figure (see letter “A”).
2. Attach the server board with nine screws (see letter “B”).



AF003298

Figure 45. Installing the Server Board

3. Re-connect all power cables coming from the power supply to the server board.
4. Re-connect the system fan cables to server board.
5. Re-connect all SATA cables to the server board.
6. Install the PCI riser assembly.
7. Install the memory, processor heat sinks, and processors.
8. Install the system air duct.

Replacing the Backup Battery

The lithium battery on the server board powers the RTC for up to 10 years in the absence of power. When the battery starts to weaken, it loses voltage, and the server settings stored in CMOS RAM in the RTC (for example, the date and time) may be wrong. Contact your customer service representative or dealer for a list of approved devices.

Warning: *Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.*

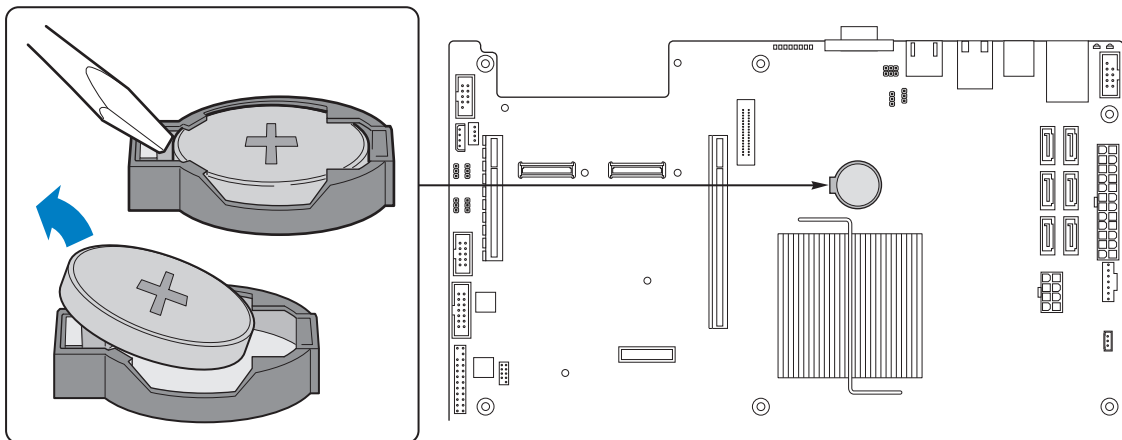
Advarsel: Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Advarsel: Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

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

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

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the server's cover and locate the battery.
5. Insert the tip of a small flat bladed screwdriver, or an equivalent, under the tab in the plastic retainer. Gently push down on the screwdriver to lift the battery.
6. Remove the battery from its socket.



AF003299

Figure 46. Replacing the Backup Battery

7. Dispose of the battery according to local ordinance.
8. Remove the new lithium battery from its package, and, being careful to observe the correct polarity, insert it in the battery socket.
9. Close the chassis.
10. Run Setup to restore the configuration settings to the RTC.

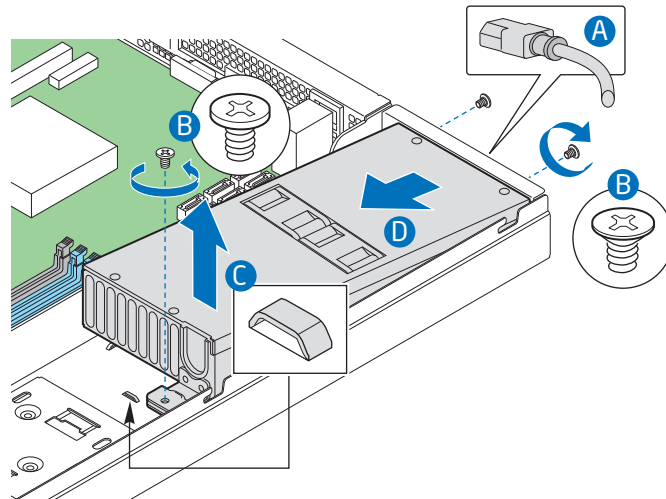
Replacing the Power Supply

Caution: *The power supply is not hot-swappable. Before removing or replacing the power supply, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.*

Removing the Power Supply

You can replace the power supply if it fails or if one of the fans integrated into it fails. To replace the power supply, use the following instructions.

1. Disconnect all power supply cables including power at rear of chassis (see letter “A”).
2. Remove the three screws securing the power supply to the back panel (see letter “B”).



AF003319

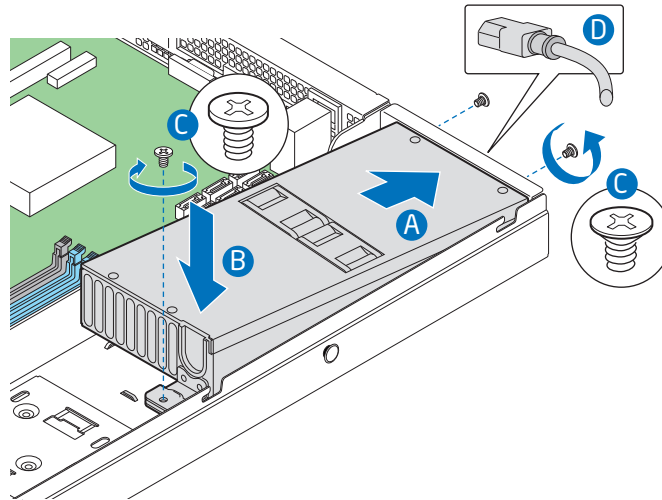
Figure 47. Removing the Power Supply from the Server System

3. Lift the power supply up to clear the chassis tab (see letter “C”) and remove the power supply by sliding it out (see letter “D”).

Installing the Power Supply

1. Insert the replacement power supply by first engaging the back panel (see letter “A”).

2. Lower the front of the power supply into place behind the chassis tab (see letter “B”).



AF003320

Figure 48. Installing the Power Supply into the Server System

3. Secure the power supply to the back panel with three screws (see letter “C”).
4. Connect all cables, including the power at the rear of the chassis (see letter “D”).

Installing and Removing the Rack Handles

Installing the Rack Handles

1. Align the rack handle with the holes on the side of the server system and attach the rack handle with the three screws.

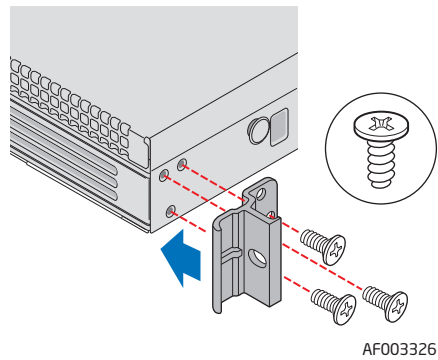


Figure 49. Installing the Rack Handle

2. Repeat step 1 on the opposite side of the server.

Removing the Rack Handles

1. Remove the three screws holding the rack handle in place, and remove the rack handle from the server system.

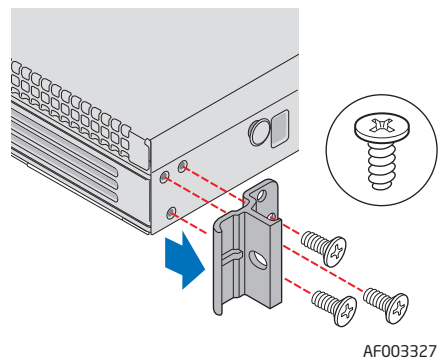


Figure 50. Removing the Rack Handle

4 Server Utilities

Using the BIOS Setup Utility

This section describes the BIOS Setup Utility options, which is used to change server configuration defaults. You can run the BIOS Setup with or without an operating system being present. See [“Server System References”](#) for a link to the Intel® Server Board S5500WB Technical Product Specification where you can find details about specific BIOS setup screens.

Starting Setup

You can enter and start BIOS Setup under several conditions:

- When you turn on the server, after POST completes the memory test.
- When you have moved the CMOS jumper on the server board to the “Clear CMOS” position (enabled).

In the two conditions listed above, during the Power On Self Test (POST), you will see this prompt:

```
Press <F2> to enter SETUP
```

In a third condition, when CMOS/NVRAM is corrupted, you will see other prompts but not the <F2> prompt:

```
Warning: CMOS checksum invalid  
Warning: CMOS time and date not set
```

In this condition, the BIOS loads default values for CMOS and attempts to boot.

If You Cannot Access Setup

If you cannot access BIOS Setup, you might need to clear the CMOS memory. For instructions on clearing the CMOS, see [“Clearing the CMOS”](#).

Setup Menus

Each BIOS Setup menu page contains a number of features. Except for those features that are provided only to display automatically configured information, each feature is associated with a value field that contains user-selectable parameters. If a user has adequate security rights, they can change these parameters. If a value cannot be changed for any reason, the feature's value field is inaccessible.

“Setup Menu Key Use” describes the keyboard commands you can use in the BIOS Setup menus.

Table 6. Setup Menu Key Use

Key to Press	Description
<F1>	Pressing <F1> on any menu launches the general help window.
Left and right arrows	The left and right arrow keys are used to move between the major menu pages. The keys have no effect if a submenu or pick list is displayed.
Up arrow	Select Item up - The up arrow is used to select the previous value in a menu item's option list, or a value field pick list. Pressing <Enter> activates the selected item.
Down arrow	Select Item down - The down arrow is used to select the next value in a menu item's option list, or a value field pick list. Pressing <Enter> activates the selected item.
<F5> or <->	Change Value - The minus key or <F5> function key is used to change the value of the current item to the previous value. This key scrolls through the values in the associated pick list without displaying the full list.
<F6> or <+>	Change Value - The plus key or <F6> function key is used to change the value of the current menu item to the next value. This key scrolls through the values in the associated pick list without displaying the full list. On 106-key Japanese keyboards, the plus key has a different scan code than the plus key on the other keyboard, but it has the same effect.
<Enter>	Execute Command - The <Enter> key is used to activate submenus when the selected feature is a submenu, or to display a pick list if a selected feature has a value field, or to select a sub-field for multi-valued features like time and date. If a pick list is displayed, the <Enter> key will undo the pick list, and allow another selection in the parent menu.
<Esc>	Exit - The <Esc> key provides a mechanism for backing out of any field. This key will undo the pressing of the <Enter> key. When the <Esc> key is pressed while editing any field or selecting features of a menu, the parent menu is re-entered. When the <Esc> key is pressed in any submenu, the parent menu is re-entered. When the <Esc> key is pressed in any major menu, the exit confirmation window is displayed and the user is asked whether changes can be discarded.
<F9>	Setup Defaults - Pressing <F9> causes the following to display: <pre style="margin-left: 40px;"> Setup Confirmation Load default configuration now? [Yes] [No] </pre> If “Yes” is selected and <Enter> is pressed, all Setup fields are set to their default values. If “No” is selected and the <Enter> key is pressed, or if <Esc> is pressed, the user is returned to where they were before <F9> was pressed without affecting any existing field values.

Table 6. Setup Menu Key Use

Key to Press	Description
<F10>	<p>Save and Exit - Pressing <F10> causes the following message to display:</p> <pre> Setup Confirmation Save Configuration changes and exit now? [Yes] [No]</pre> <p>If “Yes” is selected and <Enter> is pressed, all changes are saved and Setup is exited. If “No” is selected and <Enter> is pressed, or if <Esc> is pressed, the user is returned to where they were before <F10> was pressed without affecting any existing values.</p>

Upgrading the BIOS

The upgrade utility allows you to upgrade the BIOS in flash memory. The code and data in the upgrade file include the following:

- On-board system BIOS, including the recovery code, BIOS Setup Utility, and strings.
- On-board video BIOS, and other option ROMs for devices embedded on the server board.
- OEM binary area
- Microcode
- A way to change the BIOS language

Preparing for the Upgrade

The following steps explain how to prepare to upgrade the BIOS, including how to record the current BIOS settings and how to obtain the upgrade utility.

In the unlikely event a BIOS error occurs during the BIOS upgrade process, you may need to follow a recovery process to return the system to service. For additional information, see “[Server System References](#)” for a link to the necessary firmware and BIOS updates software and instructions.

Recording the Current BIOS Settings

1. Boot the computer and press <F2> when you see the message:
Press <F2> Key if you want to run SETUP
2. Write down the current settings in the BIOS Setup program.

Note: Do not skip step 2. You need these settings to configure your server at the end of the procedure.

Obtaining the Upgrade

Download the BIOS image file to a temporary folder on your hard drive. See [“Server System References”](#) for a link to the update software.

Note: *Review the instructions and release notes provided in the readme file distributed with the BIOS image file before attempting a BIOS upgrade. The release notes contain critical information regarding jumper settings, specific fixes, or other information to complete the upgrade.*

Upgrading the BIOS

Download the BIOS image file to a temporary folder on your hard drive. See [“Server System References”](#) for a link to the update software.

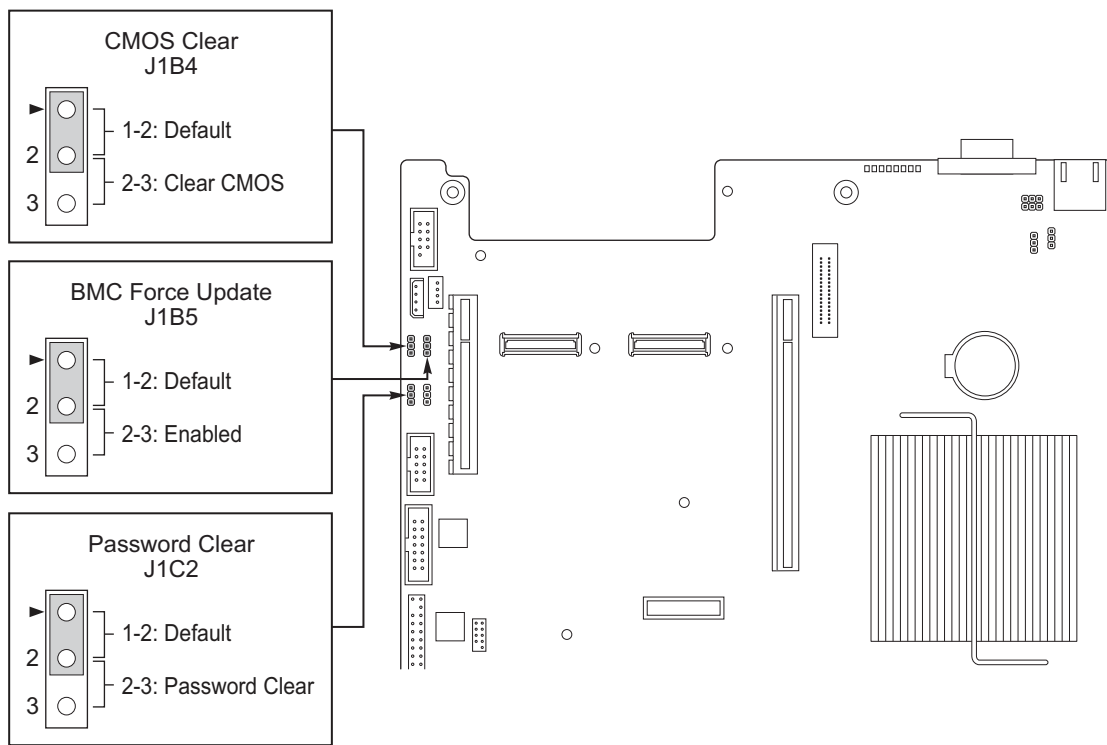
Caution: *Do not power down the system during the BIOS update process! The system resets automatically when the BIOS upgrade process completes. Doing so may corrupt the system BIOS.*

Note: *You may encounter a CMOS Checksum error or other problem after reboot. If this happens, shut down the system and boot it again. CMOS checksum errors require that you enter Setup, check your settings, save your settings, and exit Setup.*

Clearing the CMOS

If you cannot access the BIOS setup screens, you must use the CMOS Clear jumper to reset the configuration RAM. The CMOS Clear jumper is located on jumper block at J1B4 on the server board.

1. Power down the system; do not disconnect the AC power.
2. Open the server.
3. Move the jumper from the normal operation position, at pins 1 and 2 to the CMOS Clear Force Erase position, covering pins 2 and 3.



AF003214

Figure 51. CMOS Recovery Jumper

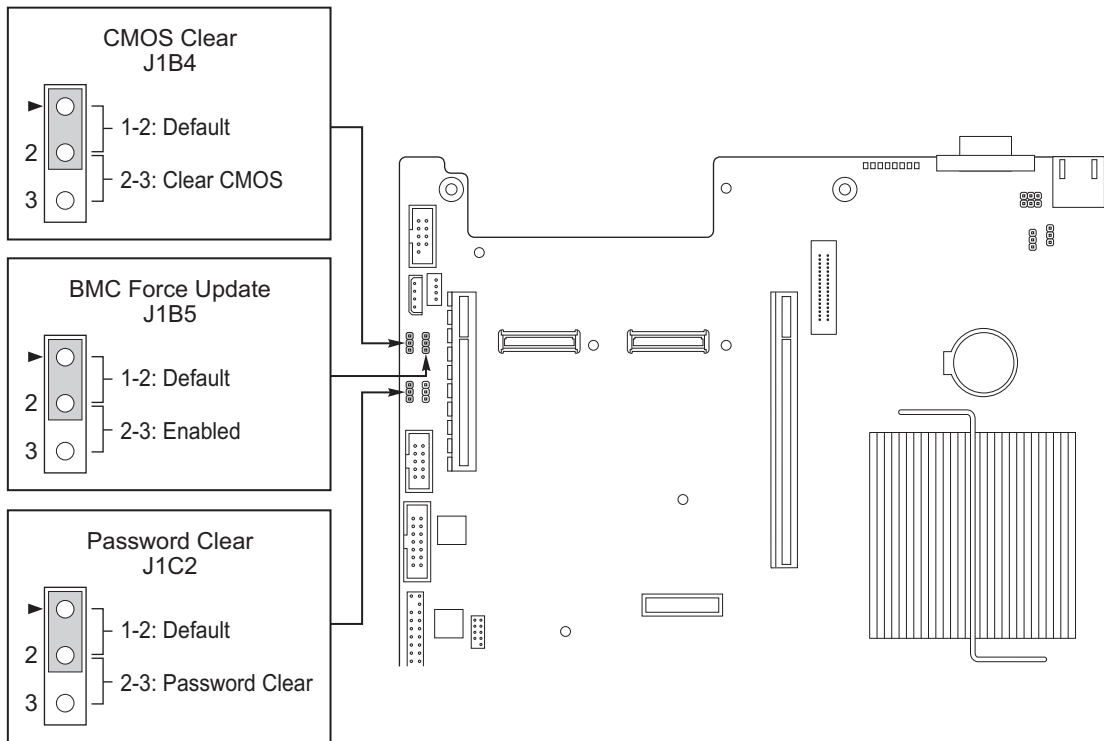
4. Reconnect the AC power and power up the system.
5. When the system begins beeping, power it down and disconnect the AC power.
6. Return the CMOS Clear jumper to the spare location, covering pins 1 and 2.
7. Close the server chassis; reconnect the AC power and power up the system.
8. The CMOS is now cleared and you can reset it by going into the BIOS setup.

Resetting the Password

If the user or administrator password(s) is lost or forgotten, moving the password reset jumper into the “clear” position clears both passwords. Before you can set a new password(s), you must restore the password reset jumper to its original position. The password clear jumper is located on jumper block at location J1C2 on the server board.

1. Power down the system and disconnect the AC power.
2. Open the server chassis.
3. Move the jumper from the normal operation position, Password Clear Protect, at pins 1 and 2 to the Password Clear Erase position, covering pins 2 and 3.

4. Reconnect the AC power; power up the system.
5. Power down the system and disconnect the AC power.
6. Return the Password Reset jumper to the Password Protect position, covering pins 1 and 2. Reconnect AC power and power up the server.
7. The password is now cleared and you can reset it by going into the BIOS setup.



AF003214

Figure 52. Password Recovery Jumper

Appendix A: Technical Reference

650-W Single Power Supply Input Voltages

- 100-127V at 47/63 Hz; 8.6 A max.
- 200-240V at 47/63 Hz; 4.3 A max.

650-W Single Power Supply Output Voltages

The following table lists the total wattage available from the power subsystem for each voltage. Ensure your loads do not exceed the combined total wattage of 650 W. For information about calculating the power usage for your configuration, see “Power Budget Tool.”

Table 7. 650-W Single Power Supply Output Voltages

Voltage	Maximum Continuous
+3.3 V	13.8A
+5 V	19.6A
+12 V1	11.3A
+12 V2	11.3A
+12 V3	9.1A
+12 V4	9.1A
-12 V	0.43A
+5 VSB	3.0A

1. Maximum continuous total DC output power should not exceed 650 watts.
2. Peak load on the combined 12V output shall not exceed 52A peak.
3. Maximum continuous load on the combined 12V output shall not exceed 47A
4. Peak total DC output power should not exceed 700 Watts peak.
5. Peak power and peak current loading shall be supported for a minimum of 12 seconds.
6. Combined 3.3V & 5V power shall not exceed 150W.

System Environmental Specifications

Table 8. System Environmental Specifications

Temperature	
Non-operating	-40 ° to +70 °C.
Operating	10° C to 35° C (50° F to 90° F) with the maximum rate of change not to exceed 10° C per hour
Humidity	
Non-operating	90% relative humidity (non-condensing) at 35°C.
Shock	
Operating	2.0 g, 11 msec, 1/2 sine
Unpackaged	Trapezoidal, 25 g, velocity change 136 inches/sec
Packaged	Non-palletized free fall at a height of 30 inches
Acoustic noise	Sound Pressure: 55 dBA (rack mount) in an idle state at typical office ambient temperature. (23 +/- degrees C) Sound Power: 7.0 BA in an idle state at typical office ambient temperature. (23 +/- 2 degrees C).
Electrostatic discharge (ESD)*	+/-12 kV except I/O port +/-8 KV, per Intel Environmental Test Specification.

*The system requires the use of a shielded LAN cable to comply with Immunity regulatory requirements. Use of non-shield cables may result in the product having insufficient protection against electromagnetic effects, which may cause improper operation of the product.

Appendix B: Intel® Server Issue Report Form

Note: For the fastest service, please submit your form via the Internet.

Date Submitted: _____

Company Name: _____

Contact Name: _____

Email Address: _____

Intel Server Product: _____

Priority (Critical, Hot, High, Low): _____

Brief Problem Description. Provide a brief description below. See the last page for space to include a detailed problem description.

Board / Chassis Information

Baseboard Revision - PBA#: _____

Baseboard Serial Number: _____

CPU1 Speed/Stepping/Spec: _____

CPU2 Speed/Stepping/Spec: _____

System BIOS Version: _____

HSC Firmware Version: _____

Chassis Model: _____

Intel® Server System SR1690WB: _____

Other (Vendor/Model): _____

DIMM Configuration

DIMM A1 MB and Vendor / part number: _____

DIMM A2 MB and Vendor / part number: _____

DIMM B1 MB and Vendor / part number: _____

DIMM C1 MB and Vendor / part number: _____

DIMM D1 MB and Vendor / part number: _____

DIMM D2 MB and Vendor / part number: _____

DIMM E1 MB and Vendor / part number: _____

DIMM F1 MB and Vendor / part number: _____

Operating System Information

Operating System: _____

Version: _____

Service Pack: _____

Add-in Card, Peripheral, Video, NIC

Check each box below as applicable, and provide the requested information:

Peripheral or Peripheral Description, Driver Revision, IRQ #, I/O Base Address, and FW

Peripheral	Description	Driver Revision	IRQ	I/O Base Address	FW Revision #
PCI Express* Gen2 x8					
On-board Video					
Add-in Video					
On-board NIC1 (10/100/1000Mb/s)					
On-board NIC2 (10/100/1000Mb/s)					
Intel® I/O Expansion Module					

Revision #NIC

Hard Drive Information

Drive Type (SATA/SAS)	Make/Model	IRQ	FW Revision #
SATA_0			
SATA_1			
SATA_2			
SATA_3			
SATA_4			
SATA_5			

Management Information

On-Board Platform Instrumentation only _____

Intel® Remote Management Module _____

Complete Problem Description

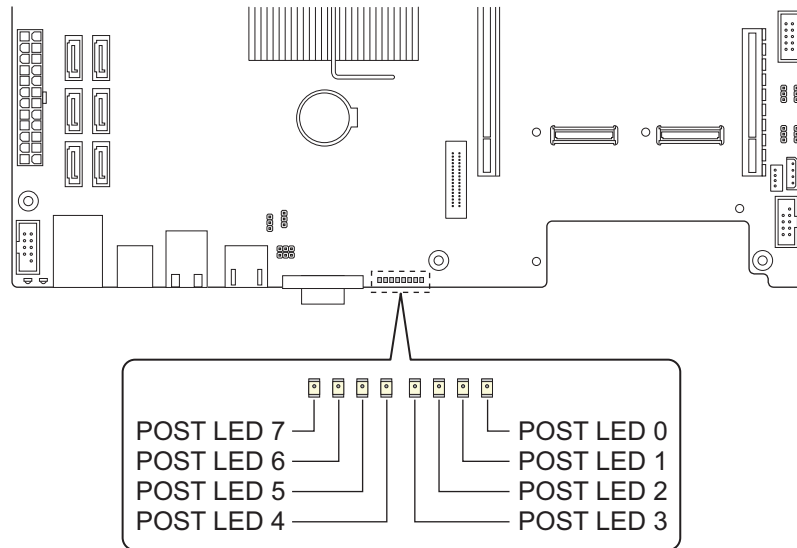
In the space below, provide a complete description of the steps used to reproduce the problem or a complete description of where the problem can be found. Please also include any details on troubleshooting already done.

Appendix C: LED Decoder

During the system boot process, the BIOS executes a number of platform configuration processes, each of which is assigned a specific hex POST code number. As each configuration routine is started, the BIOS displays the POST code to the POST Code Diagnostic LEDs on the back edge of the server board. To assist in troubleshooting a system hang during the POST process, the Diagnostic LEDs can be used to identify the last POST process that was executed.

Each POST code is represented by the Eight amber Diagnostic LEDs. The POST codes are divided into two nibbles, an upper nibble and a lower nibble. The upper nibble bits are represented by Diagnostic LEDs #4, #5, #6, #7. The lower nibble bits are represented by Diagnostics LEDs #0, #1, #2 and #3. Given the bit is set in the upper and lower nibbles, then corresponding LED is lit. If the bit is clear, corresponding LED is off.

The Diagnostic LED #7 is labeled as “MSB”, and the Diagnostic LED #0 is labeled with “LSB”.



AF003321

Figure 53. Diagnostic LED Placement Diagram

Table 9. POST Progress Code LED Example

LEDs	Upper Nibble LEDs				Lower Nibble LEDs			
	MSB							LSB
	LED #7	LED #6	LED #5	LED #4	LED #3	LED #2	LED #1	LED #0

Table 9. POST Progress Code LED Example

	8h	4h	2h	1h	8h	4h	2h	1h
Status	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Results	1	0	1	0	1	1	0	0
	Ah				Ch			

- Upper nibble bits = 1010b = Ah; Lower nibble bits = 1100b = Ch; the two are concatenated as ACh.

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	1 = On, 0= Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
Host Processor									
0x10h	0	0	0	1	0	0	0	0	Power-on initialization of the host processor (bootstrap processor)
0x11h	0	0	0	1	0	0	0	1	Host processor cache initialization (including AP)
0x12h	0	0	0	1	0	0	1	0	Starting application processor initialization
0x13h	0	0	0	1	0	0	1	1	SMM initialization
0x14h	0	0	0	1	0	1	0	0	Selection of Processor with least feature use as Boot Strap Processor
0x15h	0	0	0	1	0	1	0	1	Switch an AP processor to become the new Boot Strap Processor
Chipset									
0x21h	0	0	1	0	0	0	1	0	Initializing a chipset component
Memory									

Table 10. Diagnostic LED POST Code Decoder

0x22h	0	0	1	0	0	0	1	0	Reading configuration data from memory (SPD on FBDIMM)
0x23h	0	0	1	0	0	0	1	1	Detecting presence of memory
0x24h	0	0	1	0	0	1	0	0	Programming timing parameters in the memory controller
0x25h	0	0	1	0	0	1	0	1	Configuring memory parameters in the memory controller
0x26h	0	0	1	0	0	1	1	0	Optimizing memory controller settings
0x27h	0	0	1	0	0	1	1	1	Initializing memory, such as ECC init
0x28h	0	0	1	0	1	0	0	0	Testing memory
0xE4h	1	1	1	0	0	1	0	0	BIOS cannot communicate with DIMM (serial channel hardware failure)
0xE6h	1	1	1	0	0	1	1	0	DIMM(s) failed Memory iBIST or Memory Link Training failure
0xE8h	1	1	1	0	1	0	0	0	No memory available (system halted)
0xE9h	1	1	1	0	1	0	0	1	Unsupported or invalid DIMM configuration (system halted)
0xEAh	1	1	1	0	1	0	1	0	DIMM training sequence failed (system halted)
0xEBh	1	1	1	0	1	0	1	1	Memory test failed (system halted)
0xECh	1	1	1	0	1	1	0	0	Unsupported or invalid DIMM configuration (system halted)
0xEDh	1	1	1	0	1	1	0	1	Unsupported or invalid DIMM configuration (system halted)
0xEBh	1	1	1	0	1	0	1	1	DIMM with corrupted SPD data detected (system halted)

Table 10. Diagnostic LED POST Code Decoder

Intel® Quickpath Interconnect (QPI)									
0xA0h	1	0	1	0	0	0	0	0	QPI Initialization
0xA1h	1	0	1	0	0	0	0	1	QPI Initialization
0xA2h	1	0	1	0	0	0	1	0	QPI Initialization
0xA3h	1	0	1	0	0	0	1	1	QPI Initialization
0xA4h	1	0	1	0	0	1	0	0	QPI Initialization
0xA5h	1	0	1	0	0	1	0	1	QPI Initialization
0xA6h	1	0	1	0	0	1	1	0	QPI Initialization
0xA7h	1	0	1	0	0	1	1	1	QPI Initialization
0xA8h	1	0	1	0	1	0	0	0	QPI Initialization
0xA9h	1	0	1	0	1	0	0	1	QPI Initialization
0xAAh	1	0	1	0	1	0	1	0	QPI Initialization
0xABh	1	0	1	0	1	0	1	1	QPI Initialization
0xACh	1	0	1	0	1	1	0	0	QPI Initialization
0xADh	1	0	1	0	1	1	0	1	QPI Initialization
0xAEh	1	0	1	0	1	1	1	0	QPI Initialization
0xAFh	1	0	1	0	1	1	1	1	QPI Initialization
Integrated Memory Controller (IMC)									
0xB0h	1	0	1	1	0	0	0	0	Memory Initialization of Integrated Memory Controller
0xB1h	1	0	1	1	0	0	0	1	Memory Initialization of Integrated Memory Controller
0xB2h	1	0	1	1	0	0	1	0	Memory Initialization of Integrated Memory Controller
0xB3h	1	0	1	1	0	0	1	1	Memory Initialization of Integrated Memory Controller
0xB4h	1	0	1	1	0	1	0	0	Memory Initialization of Integrated Memory Controller
0xB5h	1	0	1	1	0	1	0	1	Memory Initialization of Integrated Memory Controller

Table 10. Diagnostic LED POST Code Decoder

0xB6h	1	0	1	1	0	1	1	0	Memory Initialization of Integrated Memory Controller
0xB7h	1	0	1	1	0	1	1	1	Memory Initialization of Integrated Memory Controller
0xB8h	1	0	1	1	1	0	0	0	Memory Initialization of Integrated Memory Controller
0xB9h	1	0	1	1	1	0	0	1	Memory Initialization of Integrated Memory Controller
0xBAh	1	0	1	1	1	0	1	0	Memory Initialization of Integrated Memory Controller
0xBBh	1	0	1	1	1	0	1	1	Memory Initialization of Integrated Memory Controller
0xBCh	1	0	1	1	1	1	0	0	Memory Initialization of Integrated Memory Controller
0xBDh	1	0	1	1	1	1	0	1	Memory Initialization of Integrated Memory Controller
0xBEh	1	0	1	1	1	1	1	0	Memory Initialization of Integrated Memory Controller
0xBFh	1	0	1	1	1	1	1	1	Memory Initialization of Integrated Memory Controller

Table 10. Diagnostic LED POST Code Decoder

PCI Bus									
0x50h	0	1	0	1	0	0	0	0	Enumerating PCI buses
0x51h	0	1	0	1	0	0	0	1	Allocating resources to PCI buses
0x52h	0	1	0	1	0	0	1	0	Hot Plug PCI controller initialization
0x53h	0	1	0	1	0	0	1	1	Reserved for PCI bus
0x54h	0	1	0	1	0	1	0	0	Reserved for PCI bus
0x55h	0	1	0	1	0	1	0	1	Reserved for PCI bus
USB									
0x56h	0	1	0	1	0	1	1	0	Initializing USB host controllers
0x57h	0	1	0	1	0	1	1	1	Detecting USB devices
0x58h	0	1	0	1	1	0	0	0	Resetting USB bus
0x59h	0	1	0	1	1	0	0	1	Reserved for USB devices
ATA / ATAPI / SATA									
0x5Ah	0	1	0	1	1	0	1	0	Resetting SATA bus and all devices
0x5Bh	0	1	0	1	1	0	1	1	Detecting the presence of ATA device
0x5Bh	0	1	0	1	1	1	0	0	Enable SMART if supported by ATA device
0x5Bh	0	1	0	1	1	1	0	1	Reserved for ATA
SMBUS									
0x5Eh	0	1	0	1	1	1	1	0	Resetting SMBUS
0x5Fh	0	1	0	1	1	1	1	1	Reserved for SMBUS
I/O Controller Hub									
0x61h	0	1	1	0	0	0	0	1	Initializing I/O Controller Hub
Super I/O									
0x63h	0	1	1	0	0	0	1	1	Initializing Super I/O
Local Console									
0x70h	0	1	1	1	0	0	0	0	Resetting the video controller (VGA)

Table 10. Diagnostic LED POST Code Decoder

0x71h	0	1	1	1	0	0	0	1	Disabling the video controller (VGA)
0x72h	0	1	1	1	0	0	1	0	Enabling the video controller (VGA)
0x73h	0	1	1	1	0	0	1	1	Reserved for video controller (VGA)
Remote Console									
0x78h	0	1	1	1	1	0	0	0	Resetting the console controller
0x79h	0	1	1	1	1	0	0	1	Disabling the console controller
0x7Ah	0	1	1	1	1	0	1	0	Enabling the console controller
0x7Bh	0	1	1	1	1	0	1	1	Reserved for console controller
Keyboard (only USB)									
0x90h	1	0	0	1	0	0	0	0	Resetting the keyboard
0x91h	1	0	0	1	0	0	0	1	Disabling the keyboard
0x92h	1	0	0	1	0	0	1	0	Detecting the presence of the keyboard
0x93h	1	0	0	1	0	0	1	1	Enabling the keyboard
0x94h	1	0	0	1	0	1	0	0	Clearing keyboard input buffer
0x96h	1	0	0	1	0	1	0	1	Reserved for keyboard
Mouse (only USB)									
0x98h	1	0	0	1	0	0	1	0	Resetting the mouse
0x99h	1	0	0	1	0	0	1	1	Detecting the mouse
0x9Ah	1	0	0	1	0	1	1	0	Detecting the presence of mouse
0x9Bh	1	0	0	1	0	1	1	1	Enabling the mouse
0x9Ch	1	0	0	1	0	0	1	0	Reserved for mouse
Serial Port									
0xA8h	1	0	1	0	1	0	0	0	Resetting the serial port
0xA9h	1	0	1	0	1	0	0	1	Disabling the serial port
0xAAh	1	0	1	0	1	0	1	0	Detecting the presence of the serial port

Table 10. Diagnostic LED POST Code Decoder

0xABh	1	0	1	0	1	0	1	1	Clearing serial port buffer
0xACh	1	0	1	0	1	1	0	0	Enabling serial port
0xADh	1	0	1	0	1	1	0	1	Reserved for serial port
Fixed Media									
0xB0h	1	0	1	1	0	0	0	0	Resetting fixed media device
0xB1h	1	0	1	1	0	0	0	1	Disabling fixed media device
0xB2h	1	0	1	1	0	0	1	0	Detecting presence of a fixed media device (IDE hard drive detection, and so on)
0xB3h	1	0	1	1	0	0	1	1	Enabling / configuring a fixed media device
0xB4h	1	0	1	1	0	1	0	0	Reserved for fixed media
Removable Media									
0xB8h	1	0	1	1	1	0	0	0	Resetting removable media device
0xB9h	1	0	1	1	1	0	0	1	Disabling removable media device
0xBAh	1	0	1	1	1	0	1	0	Detecting presence of a removable media device (IDE CDROM detection, etc.)
0xBCh	1	0	1	1	1	1	0	0	Enabling / configuring a removable media device
0xBDh	1	0	1	1	1	1	0	1	Reserved for removable media device
Boot Device Selection (BDS)									
0xD0	1	1	0	1	0	0	0	0	Entered the Boot Device Selection phase (BDS)
0xD1	1	1	0	1	0	0	0	1	Return to last good boot device
0xD2	1	1	0	1	0	0	1	0	Set up boot device selection policy
0xD3	1	1	0	1	0	0	1	1	Connect boot device controller
0xD4	1	1	0	1	0	1	0	0	Attempt flash update boot mode

Table 10. Diagnostic LED POST Code Decoder

0xD5	1	1	0	1	0	1	0	1	Transfer control to EFI boot
0xD6	1	1	0	1	0	1	1	0	Trying boot device selection
0xDF	1	1	0	1	1	1	1	1	Reserved for boot device selection
Pre-EFI Initialization (PEI) Core									
0xE0h	1	1	1	0	0	0	0	0	Entered Pre-EFI Initialization phase (PEI)
0xE1h	1	1	1	0	0	0	0	1	Started dispatching early initialization modules (PEIM)
0xE2h	1	1	1	0	0	0	1	0	Initial memory found, configured, and installed correctly
0xE3h	1	1	1	0	0	0	1	1	Transfer control to the DXE Core
PEI Modules									
0xF0h	1	1	1	1	0	0	0	0	Install PEIM for Platform Status Codes
0xF1h	1	1	1	1	0	0	0	1	Detecting Platform Type
0xF2h	1	1	1	1	0	0	1	0	Early Platform Initialization
0xF3h	1	1	1	1	0	0	1	1	PEI Modules initialized
Driver Execution Environment (DXE) Core									
0xE4h	1	1	1	0	0	1	0	0	Entered EFI driver execution phase (DXE)
0xE5h	1	1	1	0	0	1	0	1	Started dispatching drivers
0xE6h	1	1	1	0	0	1	1	0	Started connecting drivers
DXE Drivers									
0xE7h	1	1	1	0	1	1	0	1	Waiting for user input
0xE8h	1	1	1	0	1	0	0	0	Checking password
0xE9h	1	1	1	0	1	0	0	1	Entering BIOS setup
0xEAh	1	1	1	0	1	1	0	0	Flash Update
0xEBh	1	1	1	0	1	1	0	1	Legacy Option ROM Initialization
0xECh	1	1	1	0	1	0	0	0	DXE Drivers initialized

Table 10. Diagnostic LED POST Code Decoder

0xEDh	1	1	1	0	1	0	0	1	Transfer control to Boot Device Selection (BDS)
0xEEh	1	1	1	0	1	1	0	0	Calling Int 19. One beep unless silent boot is enabled.
0xEFh	1	1	1	0	1	1	0	1	Unrecoverable boot failure
Pre-EFI Initialization Module (PEIM) / Recovery									
0x30h	0	0	1	1	0	0	0	0	Crisis recovery has been initiated because of a user request
0x31h	0	0	1	1	0	0	0	1	Crisis recovery has been initiated by software (corrupt flash)
0x34h	0	0	1	1	0	1	0	0	Loading crisis recovery capsule
0x35h	0	0	1	1	0	1	0	1	Handing off control to the crisis recovery capsule
0x36h	0	0	1	1	0	1	1	0	Begin crisis recovery
0x3Eh	0	0	1	1	1	1	1	0	No crisis recovery capsule detected
0x3Fh	0	0	1	1	1	1	1	1	Crisis recovery capsule failed integrity check of capsule descriptors

Appendix D: Getting Help

If you encounter an issue with your server system, follow these steps to obtain support:

1. Visit the following Intel support web page:

<http://support.intel.com/support/motherboards/server>

This web page provides 24x7 support when you need it to get the latest and most complete technical support information on all Intel Enterprise Server and Storage Platforms. Information available at the support site includes:

- Latest BIOS, firmware, drivers and utilities
- Product documentation, installation and quick start guides
- Full product specifications, technical advisories and errata
- Compatibility documentation for memory, hardware add-in cards, chassis support matrix and operating systems
- Server and chassis accessory parts list for ordering upgrades or spare parts
- A searchable knowledge base to search for product information throughout the support site

2. If you are still unable to obtain a solution to your issue, send an e-mail to Intel's technical support center using the online form available at

<http://supportmail.intel.com/scripts-emf/welcome.aspx>

3. Lastly, you can contact an Intel support representative using one of the support phone numbers available at <http://support.intel.com/support/9089.htm> (charges may apply). Intel customer support suggests filling out the issue report form available at “[Intel® Server Issue Report Form](#)” to better service the issue.

Intel also offers Channel Program members around-the-clock 24x7 technical phone support on Intel® server boards, server chassis, server RAID controller cards, and Intel® Server System SR1690WB Service Guide Server Management at <http://www.intel.com/reseller/>.

Note: You will need to log in to the Reseller site to obtain the 24x7 number.

Warranty Information

To obtain warranty information, visit the following Intel web site:

<http://support.intel.com/support/motherboards/server/sb/CS-010807.htm>

Appendix E: 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 server system, 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 system does not result in a Class B device.

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

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

- UL60950 – CSA 60950(USA / Canada)
- EN60950 (Europe)
- IEC60950 (International)

- CB Certificate & Report, IEC60950 (report to include all country national deviations)
- GS Certification (Germany)
- GOST R 50377-92 - Certification (Russia)
- Ukraine Certification (Ukraine)
- CE - Low Voltage Directive 73/23/EEE (Europe)
- IRAM Certification (Argentina)

Product EMC Compliance - Class A Compliance

Note: *Legally the product is required to comply with Class A emission requirements as it is intended for a commercial type market place. Intel targets 10db margin to Class A Limits*

The Intel® Server System SR1690WB was tested and verified to comply with the following electromagnetic compatibility (EMC) regulations when installed 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)
- Ukraine Certification (Ukraine)
- KCC Certification (EMI) (Korea)

Certifications / Registrations / Declarations

- NRTL ETL 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 / Certification (Russia)
- KCC Certification (Korea)
- IRAM Certification (Argentina)
- Ecology Declaration (International)
- China RoHS Environmental Friendly Use Period
- Packaging & Product Recycling Marks

Product Regulatory Compliance References

The following table references Server Chassis Compliance and markings that may appear on the product. Markings below are typical markings however, may vary or be different based on how certification is obtained.

Note: Certifications Emissions requirements are to Class A.

Table 11. Product Regulatory Compliance References



Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Australia / New Zealand	AS/NZS CISPR22 (Emissions)	 N232
Argentina	IRAM Certification (Safety)	

Table 11. Product Regulatory Compliance References




Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Canada / USA	CSA 60950 – UL 60950-1 (Safety) Listing	
	Industry Canada ICES-003 (Emissions)	CANADA ICES-003 CLASS A CANADA NMB-003 CLASSE A
	FCC CFR 47, Part 15 (Emissions)	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 interference receive, including interference that may cause undesired operation.
CENELEC Europe	Low Voltage Directive 2206/95/EC(Europe – EN60950-1); EMC Directive 2004/108/EEC EN55022 (Emissions) EN55024 (Immunity) EN61000-3-2 (Harmonics) EN61000-3-3 (Voltage Flicker) CE Declaration of Conformity	
Germany	GS Certification – EN60950-1	
International	CB Certification – IEC60950-1 CISPR 22 / CISPR 24	None Required
Japan	VCCI Certification	<p>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</p>

Table 11. Product Regulatory Compliance References

Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Korea	KCC Certification	 인증번호: CPU-SR1690(A)
Russia	GOST-R 50377-92 Certification GOST R 29216-91 (Emissions) GOST R 50628-95 (Immunity)	 MO04
Ukraine	Ukraine Certification	None Required
Taiwan	BSMI CNS13438	 R33025 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> 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 </div>

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)

Electromagnetic Compatibility Notices (International)

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。

English translation of the notice above:

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)

The BSMI Certification number and the following warning is located on the product safety label which is located on the bottom side (pedestal orientation) or side (rack mount configuration).

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.

KCC (Korea)

Following is the KCC certification information for Korea.



인증번호 : CPU-SR1690 (A)

Rack Mount Installation Guidelines

Anchor the equipment rack: The equipment rack must be anchored to an unmovable support to prevent it from falling over when one or more servers are extended in front of the rack on slides. You must also consider the weight of any other device installed in the rack. A crush hazard exists should the rack tilt forward which could cause serious injury.

Temperature: The temperature, in which the server operates when installed in an equipment rack, must not go below 5 °C (41 °F) or rise above 40 °C (104 °F). Extreme fluctuations in temperature can cause a variety of problems in your server.

Ventilation: The equipment rack must provide sufficient airflow to the front of the server to maintain proper cooling. The rack must also include ventilation sufficient to exhaust a maximum of 1023 BTUs (British Thermal Units) per hour for the server. The rack selected and the ventilation provided must be suitable to the environment in which the server will be used.

If AC power supplies are installed:

Mains AC power disconnection: The AC power cord(s) is considered the mains disconnect for the server and must be readily accessible when installed. If the individual server power cord(s) will not be readily accessible for disconnection then you are responsible for installing an AC 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 rack, not just to the server(s).

Grounding the rack installation: To avoid the potential for an electrical shock hazard, you must include a third wire safety ground conductor with the rack installation. If the server power cord is plugged into an AC outlet that is part of the rack, then you must provide proper grounding for the rack itself. If the server power cord is plugged into a wall AC outlet, the safety ground conductor in the power cord provides proper grounding only for the server. You must provide additional, proper grounding for the rack and other devices installed in it.

Overcurrent protection: The server is designed for an AC line voltage source with up to 20 amperes of overcurrent protection per cord feed. If the power system for the equipment rack is installed on a branch circuit with more than 20 amperes of protection, you must provide supplemental protection for the server.

If DC power supplies are installed:

Connection with a DC (Direct Current) source should only be performed by trained service personnel. The server with DC input is to be installed in a Restricted Access Location in accordance with articles 110-16, 110-17, and 110-18 of the National Electric Code, ANSI/NFPA 70. The DC source must be electrically isolated by double or reinforced insulation from any hazardous AC source.

Main DC power disconnect: You are responsible for installing a properly rated DC power disconnect for the server system. This mains disconnect must be readily accessible, and it must be labeled as controlling power to the server. The circuit breaker of a centralized DC power system may be used as a disconnect device when easily accessible and should be rated no more than 10 amps.

Grounding the server: To avoid the potential for an electrical shock hazard, you must reliably connect an earth grounding conductor to the server. The earth grounding conductor must be a minimum 18AWG connected to the earth ground stud(s) on the rear of the server. The safety ground conductor should be connected to the chassis stud with a listed closed two-hole crimp terminal having 5/8 inch pitch. The nuts on the chassis earth ground studs should be installed with a 10 in/lbs torque. The safety ground conductor provides proper grounding only for the server. You must provide additional, proper grounding for the rack and other devices installed in it.

Overcurrent protection: Overcurrent protection circuit breakers must be provided as part of each host equipment rack and must be incorporated in the field wiring between the DC source and the server. The branch circuit protection shall be rated minimum 75Vdc, 10 A maximum per feed pair. If the DC power system for the equipment rack is installed with more than 10 amperes of protection, you must provide supplemental protection for the server.

Power Cord Usage Guidelines

Warning: Do not attempt to modify or use an AC power cord set that is not the exact type required. You must use a power cord set that meets the following criteria:

- Rating: In the U.S. and Canada, cords must be UL (Underwriters Laboratories, Inc.) Listed/CSA (Canadian Standards Organization) Certified type SJT, 18-3 AWG (American Wire Gauge). Outside of the U.S. and Canada, cords must be flexible harmonized (<HAR>) or VDE (Verband Deutscher Elektrotechniker, German Institute of Electrical Engineers) certified cord with 3 x 0.75 mm conductors rated 250 VAC (Volts Alternating Current).
- Connector, wall outlet end: Cords must be terminated in grounding-type male plug designed for use in your region. The connector must have certification marks showing certification by an agency acceptable in your region and for U.S. must be Listed and rated 125% of overall current rating of the server.
- Connector, server end: The connectors that plug into the AC receptacle on the server must be an approved IEC (International Electrotechnical Commission) 320, sheet C13, type female connector.
- Cord length and flexibility: Cords must be less than 4.5 meters (14.76 feet) long.

Product Ecology Compliance

Intel has a system in place to restrict the use of banned substances in accordance with world wide product ecology regulatory requirements. The following is Intel's product ecology compliance criteria.

Table 12. Product Ecology Compliance



Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
California	<p><u>CA. Lithium Perchlorate insert</u></p> <p>California Code of Regulations, Title 22, Division 4.5; Chapter 33: Best Management Practices for Perchlorate Materials.</p>	<p>Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate</p> <p>This notice is required by California Code of Regulations, Title 22, Division 4.5; Chapter 33: Best Management Practices for Perchlorate Materials. This product / part includes a battery which contains Perchlorate material.</p>
China	<p><u>China RoHS</u></p> <p>China RoHS (MII Measure 39)</p> <p>Product marked with the Environmental Friendly Usage Period (EFUP) label of 20yrs, substance table in Simplified Chinese either placed with the product documentation or separate insert.</p>	
	<p><u>China Recycling (GB18455-2001)</u></p> <p>Mark requires to be applied to be retail product only. Marking applied to bulk packaging and single packages. Not applied to internal packaging such as plastics, foams, etc.</p>	
Intel Internal Specification	<p>All materials, parts and subassemblies must not contain restricted materials as defined in Intel's <i>Environmental Product Content Specification</i> of Suppliers and Outsourced Manufacturers – http://supplier.intel.com/ehs/environmental.htm</p>	None Required

Table 12. Product Ecology Compliance


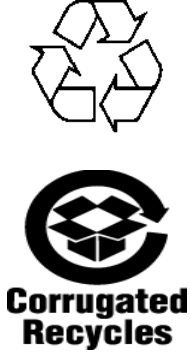
Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Europe	<p><u>Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC -</u></p> <p>Mark applied to system level products only.</p>	
	<p><u>European Directive 2002/95/EC -</u></p> <p>Restriction of Hazardous Substances (RoHS) Threshold limits and banned substances are noted below.</p> <ul style="list-style-type: none"> • Quantity limit of 0.1% by mass (1000 PPM) for: Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls Diphenyl Ethers (PBB/PBDE) • Quantity limit of 0.01% by mass (100 PPM) for: Cadmium 	None Required
Intel Internal Specification	<p>All materials, parts and subassemblies must not contain restricted materials as defined in Intel's <i>Environmental Product Content Specification</i> of Suppliers and Outsourced Manufacturers – http://supplier.intel.com/ehs/environmental.htm</p>	None Required
International	<p><u>ISO11469 -</u></p> <p>Plastic parts weighing >25gm are intended to be marked with per ISO11469.</p>	>PC/ABS<

Table 12. Product Ecology Compliance

Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
	<p>Recycling Markings – Fiberboard (FB) and Cardboard (CB) are marked with international recycling marks. Applied to outer bulk packaging and single package.</p>	

Other Markings

Table 13. Other Markings


Compliance Description	Compliance Reference	Compliance Reference Markings
Stand-by Power	Stand-by Power Warnings Applied to product if stand-by power switch is used.	
Multiple Power Cords	Multiple Power Cords Warnings Applied to product if more than one power cord is used.	<p>English:</p> <p>This unit has more than one power supply cord. To reduce the risk of electrical shock, disconnect (2) two power supply cords before servicing.</p>
		<p>Simplified Chinese:</p> <p>注意： 本設備包括多條電源系統電纜。 為避免遭受電擊， 在進行維修之前應斷開兩 (2) 條電源系統電纜。</p>
		<p>Traditional Chinese:</p> <p>注意： 本設備包括多條電源系統電纜。 為避免遭受電擊， 在進行維修之前應斷開兩 (2) 條電源系統電纜。</p>
		<p>German:</p> <p>Dieses Geräte hat mehr als ein Stromkabel. Um eine Gefahr des elektrischen Schlages zu verringern trennen sie beide (2) Stromkabeln bevor Instandhaltung.</p>

Table 13. Other Markings

Compliance Description	Compliance Reference	Compliance Reference Markings
Ground Connection	Ground Connection Warnings	Line1 : "WARNING:" Swedish on line2: "Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk." Finnish on line 3: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan." English on line 4: "Connect only to a properly earth grounded outlet."
Country of Origin	Logistic Requirements Applied to products to indicate where product was made.	Made in China

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) - NRTL 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. Total server configuration is not to exceed the maximum loading conditions of the power supply.

End-of-Life / Product Recycling

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

Appendix F: 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.


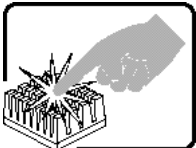
Appendix G: Installation/Assembly Safety Instructions

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 Resource CD and/or at:

<http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>

English

	<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>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>

Wichtige Sicherheitshinweise

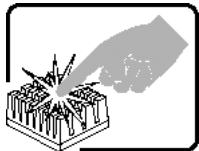
Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen auf der Ressourcen-CD oder unter:

<http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>



SICHERHEISSMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:

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.


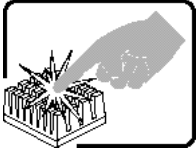


Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.

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 CD Resource CD ou bien rendez-vous sur le site:

<http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>

	<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>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>

Instrucciones de seguridad importantes

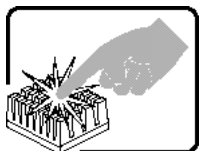
Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea Intel Server Boards and Server Chassis Safety Information en el CD Resource y/o en:

<http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>



INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:

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.


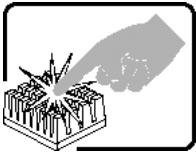


Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.

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。参见 Resource CD（资源光盘）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》）。

Italiano

	<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>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>

Appendix H: 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.

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 ernsten 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

Caution: Durch Betätigen der mit dem Standby-Symbol gekennzeichneten Netztaaste 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

Caution: 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

Caution: 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.

Caution: 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.

Caution: 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)

Caution: *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

Caution: *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

Caution: *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.

- Vérifiez si les câbles, les cartes d'extension et les autres composants sont correctement installés.
- Fixez les couvercles du boîtier du produit, comme décrit dans le manuel d'installation.

Laser-Peripheralgeräte oder -Komponenten

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

- Öffnen Sie keinesfalls das Gehäuse von Laser-Peripheralgeräten oder Laser-Komponenten.
- Laser-Peripheralgeräte 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.

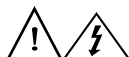
- Dans les régions sujettes aux orages magnétiques, nous vous recommandons de brancher votre système à un suppresseur de surtension et de déconnecter les lignes de télécommunication de votre modem pendant les orages.
- Équipé d'une prise murale reliée à la terre.
- Équipé d'un espace suffisant pour accéder 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[®], las carcasas de servidor de Intel[®] (montaje en bastidor 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 cualificado 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





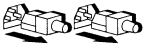

Para reducir la posibilidad de que se produzcan lesiones personales o daños en la propiedad, antes de empezar a instalar el producto, lea, observe y cumpla toda la información e instrucciones de seguridad siguientes. Puede que se utilicen los siguientes símbolos de seguridad en la documentación y es 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 están desenchufados. Asegúrese de que los cables de alimentación de CA estén desenchufado antes de abrir la carcasa, 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.

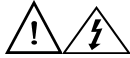
La fuente de alimentación de este producto no contiene piezas que puedan ser reparadas por el usuario. No abra la fuente de alimentación. Dentro de la fuente de alimentación puede haber niveles de tensión, corriente y energía peligrosos. Devuélvala al fabricante para repararla.

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 bastidor

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

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

Extraiga las piezas del equipo del bastidor 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 bastidor. 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 bastidor 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.

Otros riesgos

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、火灾以及设备毁坏的危险，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。打开机箱或增加或去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

