

Intel® Server System SC5400RA User's Guide

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

Intel Order Number D36227-002

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Safety Information

Important Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See also Intel Server Boards and Server Chassis Safety Information on the *Intel® Server Deployment Toolkit 2.0 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 2.0 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 2.0 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 2.0 CD* y/o en <http://support.intel.com/support/motherboards/server/sb/cs-010770.htm>.

重要安全指导

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

Warnings

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.

Preface

About this Manual

Thank you for purchasing and using the Intel® Server System SC5400RA.

This manual is written for system technicians who are responsible for troubleshooting, upgrading, and repairing this server system. This document provides a brief overview of the features of the server system, 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 SC5400RA. For the latest version of this manual, see <http://support.intel.com/support/motherboards/server/SC5400RA/>.

Manual Organization

Chapter 1 provides a brief overview of the Intel® Server System SC5400RA. In this chapter, you will find a list of the server system features, photos of the product, and product diagrams to help you identify components and their locations.

Chapter 2 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 fans, power supply, drives, and other components.

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 is available in the Technical Product Specification. See “Additional Information and Software” on page ix for a link to the Technical Product Specification.

Chapter 4 provides technical reference information on cable routing, power supply specifications, and system environment requirements.

At the back of this document, you will find appendices on safety, regulatory, "getting help", and warranty information.

Product Contents, Order Options, and Accessories

Your Intel® Server System SC5400RA ships with the following items:

- One Intel® server board SC5400RA, installed in the chassis
- One 830-watt power supply, installed in the chassis
- One box of hardware components, referred to in this list as the "server system hardware box"
- Fans, pre-installed in your server system
- One chassis intrusion switch and cable, installed in your server system
- Attention document, in the server system product box
- One Intel® Server System SC5400RA *Quick Start User's Guide*, in the server system hardware box
- One USB cable, installed in the server system
- One IDE cable, in the hardware box
- One COM2 cable, in the hardware box
- Four 24-inch and two 34-inch SATA cables, in the hardware box
- One accessory kit that contains screws and wire ties.
- One *Intel® Server Deployment Toolkit 2.0 CD*
- Two CD package of system management software:
 - One *Intel® System Management Software 1.5 CD*
 - One *Intel® Deployment Assistant CD*

In addition, you may need or want to purchase one or more of the following accessory items for your server:

Processor, memory DIMMs, hard drive, floppy drive, CD-ROM or DVD-ROM drive, RAID controller, operating system.

For information about which accessories, memory, processors, and third-party hardware have been tested and can be used with your board, and for ordering information for Intel products, see <http://support.intel.com/support/motherboards/server/SC5400RA/compat.htm>.

Additional Information and Software

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. These files are available at <http://support.intel.com/support/motherboards/server/SC5400RA/>.

Unless otherwise indicated in the table below, once on this Web page, type the document or software name in the search field at the left side of the screen and select the option to search "This Product."

For this information or software	Use this Document or Software
For in-depth technical information about this product, including BIOS settings and chipset information	<i>Intel® Server System SC5400RA Technical Product Specification</i>
If you just received this product and need to install it	<i>Intel® Server System SC5400RA Quick Start User's Guide</i> in the product box
For virtual system tours and interactive repair information	A link to the SMaRT Tool is available under "Other Resources" at the right side of the screen at: http://support.intel.com/support/motherboards/server/SC5400RA/
Accessories or other Intel server products	Spares and Configuration Guide
Hardware (peripheral boards, adapter cards) and operating systems that have been tested with this product	<i>Tested Hardware Operating Systems List</i>
For software to manage your Intel® server	Intel® System Management Software
For diagnostics test software	Search for "Diagnostics"

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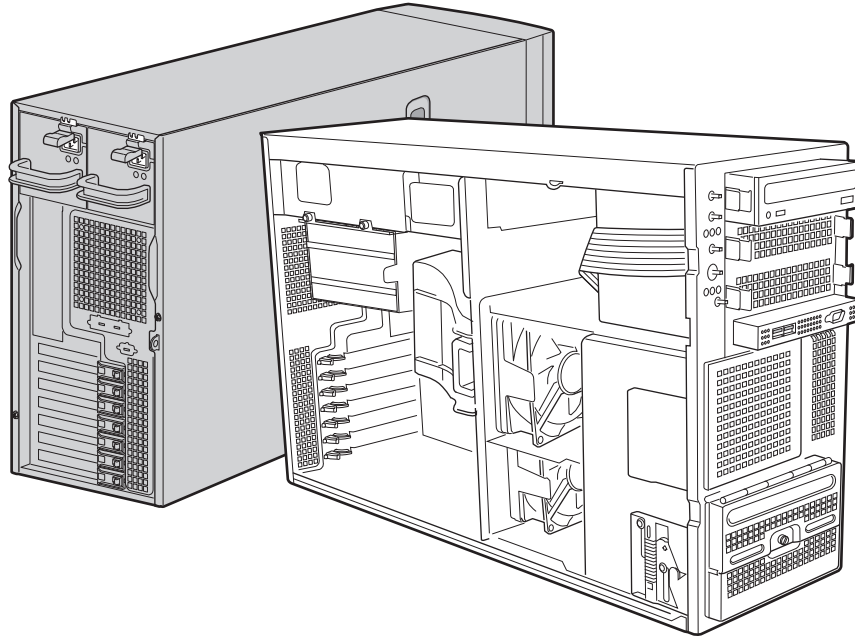
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1 Server System Features

This chapter briefly describes the main features of the Intel® Server System SC5400RA. This chapter provides a list of the server system features, and diagrams that show the location of important components and connections in the server system.



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Figure 1. Intel® Server System SC5400RA

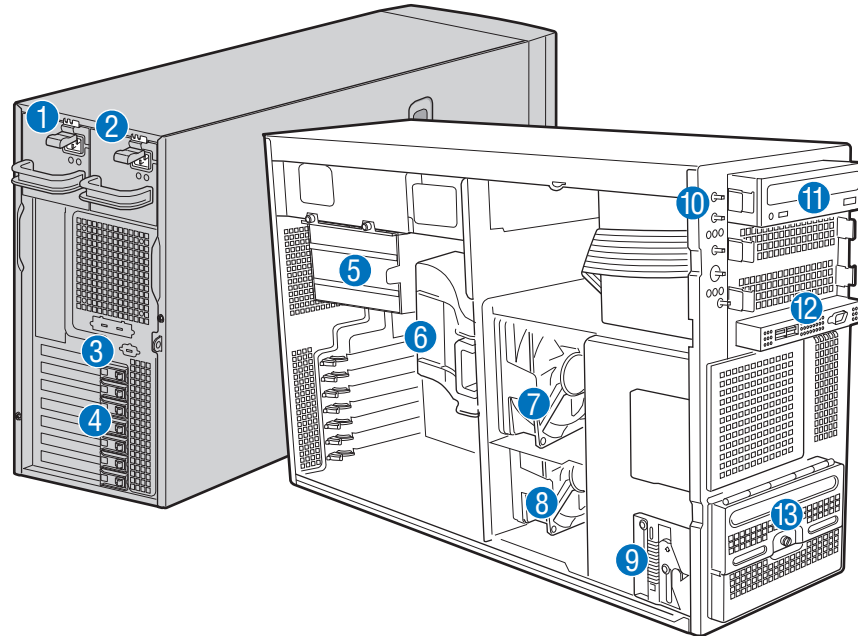
The table below summarizes the features of the Intel® Server System SC5400RA.

Table 1. Server System Features

Feature	Description
Dimensions	<ul style="list-style-type: none"> • 16.6 inches high (pedestal: 17 inches) • 8.6 inches wide • 27.4 inches deep (pedestal: 28.4 inches) • 36.2 kilograms
Hard Drives	<p>One fixed drive bay for up to six fixed SATA drives.</p> <p>Optional hot swap drive bay:</p> <ul style="list-style-type: none"> • Ultra ATA-100 support: One IDE channel that is capable of supporting up to two drives • Six SATA connectors at 3 GB/s
Peripherals	Three multi-mount 5.25-inch peripheral bays
RAID support	Six-port SATA with BIOS-enabled embedded RAID 0, 1, and 10 with optional RAID 5 support provided by the Intel® RAID Activation Key AXXRAKSW5.
Control Panel (dependent on option selected)	<ul style="list-style-type: none"> • Front Control Panel • Intel® Local Control Panel (optional)
LEDs and displays (dependent on option selected)	<p>With Front Control Panel:</p> <ul style="list-style-type: none"> • NIC1 Activity • NIC2 Activity • Power / Sleep • System Status • System Identification • Hard Drive Activity
Power Supply	One 830-W power supply is standard. Upgradable to 830-W redundant power by adding a second power supply module.
USB 2.0	<ul style="list-style-type: none"> • Two front panel USB ports with Front Control Panel • Four back panel USB ports • One internal USB port on the server board
Video	<ul style="list-style-type: none"> • On-board ATI* ES1000 video controller with 16-MB DDR SDRAM • One rear panel video port
Processor support	Support for up to two Dual-Core Intel® Xeon® processor 5000 or 5100 sequence with a 677-, 1066-, or 1333-MHz front side bus or up to two Quad-Core Intel® Xeon® processors with a 1066-, or 1333-MHz front side bus
System memory support	<ul style="list-style-type: none"> • DDR2-533 and DDR2-667 FBDIMM sockets that support a total of 64 MB memory • Quad-channel memory architecture
Intel® S5000P chipset	<ul style="list-style-type: none"> • Intel® 6321ESB I/O Controller Hub • Intel® 5000P Memory Controller Hub

Feature	Description
Cooling	Two fixed, non-redundant chassis fans: <ul style="list-style-type: none"> • One 120-mm fan • One 92-mm fan
Add-in card slots	Six expansion slots: <ul style="list-style-type: none"> • One PCI Express* x4 slot • Three PCI Express* x8 slots • One 64-bit 100-MHz PCI-X* slot • One 64-bit 100- / 133-MHz PCI-X slot
I/O control support	External connections: <ul style="list-style-type: none"> • PS/2* ports for keyboard and mouse • DB9 serial port A connection • One DH10 serial port B connector • Two RJ45 NIC connectors for 10/100/1000 Mb connections: Dual GbE with Intel® I/O Acceleration Technology • Four USB 2.0 ports at the back of the board Internal connections: <ul style="list-style-type: none"> • One 9-pin USB header that supports two external USB 2.0 ports • One internal USB port that supports a peripheral, such as a floppy drive • One DH10 serial port B header • One ATA-100 40-pin connector • One SSI-compliant 24-pin front control panel header
Management support	<ul style="list-style-type: none"> • Support for the Intel® Local Control Panel (optional component sold separately) • Support for the Intel® Remote Management Module (optional component sold separately) • Support for Intel® System Management software • Intel® Light-Guided Diagnostics on field replaceable units

Component Identification



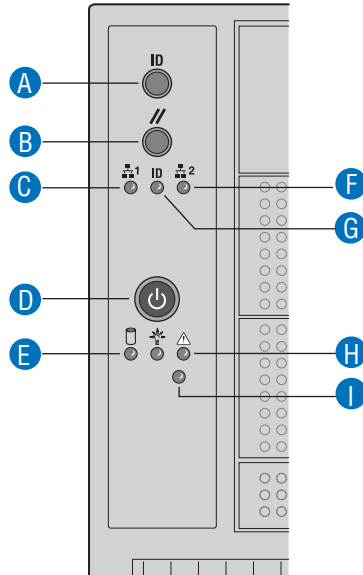
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1. Hot swap power supply	8. Fixed fan - small
2. Hot swap power supply (optional)	9. Hard drive cage release mechanism
3. Rear Serial B connector	10. Front panel controls
4. PCI add-in card panel	11. 5.25-inch device bays (three)
5. Memory cage	12. Front panel USB / Serial B connectors
6. Processor air duct	13. Six-drive fixed drive cage
7. Fixed fan - large	

Figure 2. Component Locations

Front Control Panel

The following figure shows the features available on the front control panel. The Intel[®] Local Control Panel is optional.



TP00701

A. ID Toggle Switch	F. NIC2 Activity LED (green)
B. Reset Button	G. ID LED (blue)
C. NIC 1 Activity LED (green)	H. Status LED (bi-color)
D. Power Button	I. NMI Button
E. Hard Drive Activity LED (green)	

Figure 3. Front Control Panel

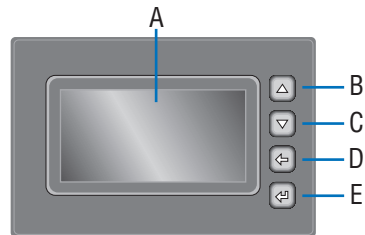
Descriptions of the front control panel LEDs are listed in the following table.

Table 2. Front Control Panel LED Descriptions

LED Name	Color	Condition	Description
Power LED	Green	On	Power on
		Off	Power off
Status	Green	On	System ready
		Blink	System ready, but degraded: some CPU fault, DIMM killed
	Green/Blink Amber	Blink	Condition during BMC reset.
	Amber	On	Critical alarm: critical power module failure, critical fan failure, voltage (power supply), voltage and thermal fault
		Blink	Non-critical failure: redundant fan failure, redundant power failure, non-critical power and voltage
		Off	System not ready: POST error/NMI event/PCI or terminator missing
Hard drive activity	Green	Blink	Hard drive activity
NIC1 activity	Green	On	Linked
		Blink	LAN activity
		Off	Idle
NIC2 activity	Green	On	Linked
		Blink	LAN activity
		Off	Idle
ID LED	Blue	Blink	Server identification; toggled by ID button or software
		Off	Server identification; toggled by ID button or software

Intel® Local Control Panel (optional component)

The following figure shows the features available on the Intel® Local Control Panel. The Intel Local Control Panel is optional.

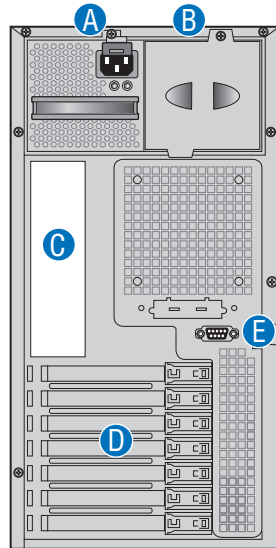


AF000955

Callout	Function
A.	LCD display (variable content)
B.	LCD up navigation button
C.	LCD down navigation button
D.	LCD backup level navigation button
E.	LCD command enter button

Figure 4. Intel® Local Control Panel Features

Back Panel Features

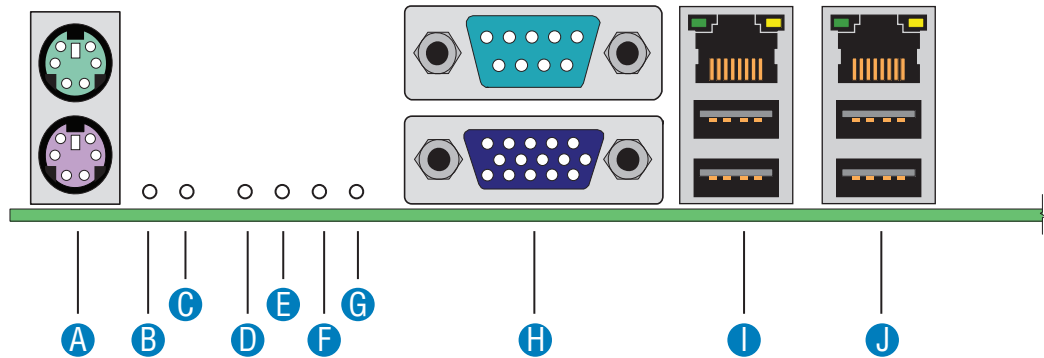


AF001485

A. Power supply	D. PCI card area
B. Location for installing optional redundant power supply	E. Rear Serial B Connector (optional)
C. I/O Ports. See Figure 6 on page 9	

Figure 5. Server System Back

The diagram and table show the back panel connectors and LEDs. For information about the LEDs, see “[Intel® Light-Guided Diagnostics](#)” on page 15.



AF000421

A. Mouse (top), Keyboard (bottom)	F. Bit 1 LED (POST LED)
B. Status LED	G. LSB LED (POST LED)
C. ID LED	H. Serial A (top), Video (bottom)
D. MSB LED (POST LED)	I. NIC1 (top), two USB (bottom)
E. Bit 2 LED (POST LED)	J. NIC 2 (top), two USB (bottom)

Figure 6. Back Panel Connectors and LEDs

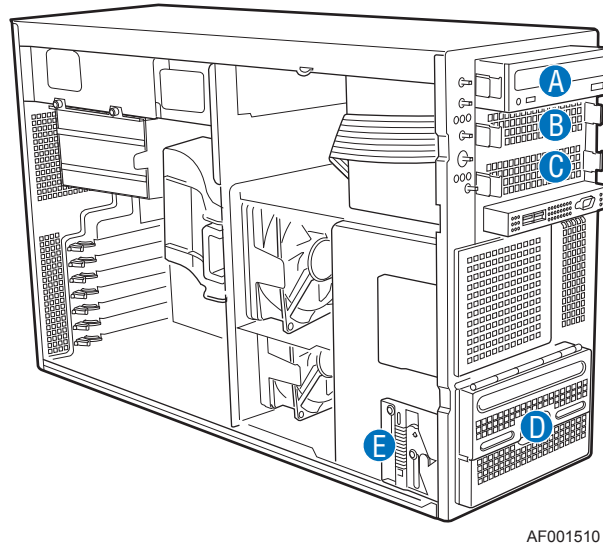
The NIC LEDs at the right and left of each NIC provide the following information.

Table 3. NIC LEDs

LED	LED State	Description
Left	Off	No network connection is in place
	Solid green	Active network connection is in place
	Blinking green	Transmit / receive activity is occurring
Right	Off	10 Mbps connection (if left LED is on or blinking)
	Solid green	100 Mbps connection
	Solid amber	1000 Mbps connection

Peripheral Devices

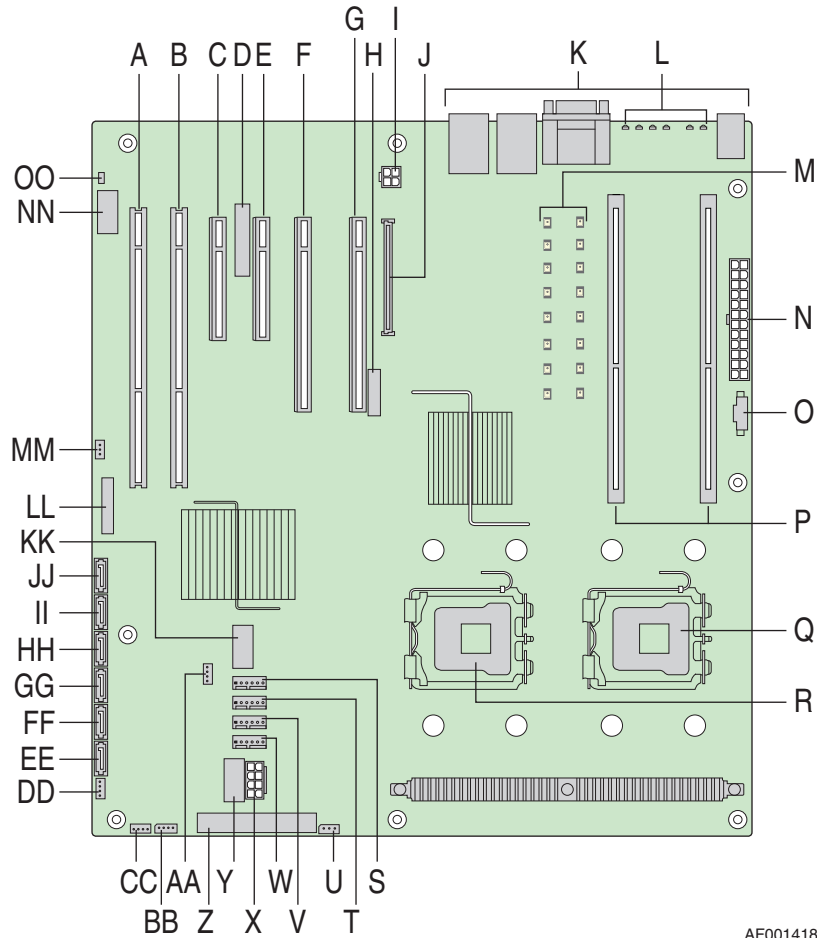
The server system provides locations and hardware for installing hard drives, a floppy drive, a CD-ROM drive, or a DVD-ROM drive. The drives must be purchased separately. The following figure shows the available options.



-
- A. Slimline floppy drive / DVD-ROM drive / CD-ROM drive
 - B. Optical or floppy drive bay
 - C. Optical or floppy drive bay
 - D. Hard drive cage for six hard drives. Can be replaced with 6-drive hot-swap drive cage.
 - E. Release mechanism for hard drive cage
-

Figure 7. Optional Peripherals

Server Board Connector and Header Locations



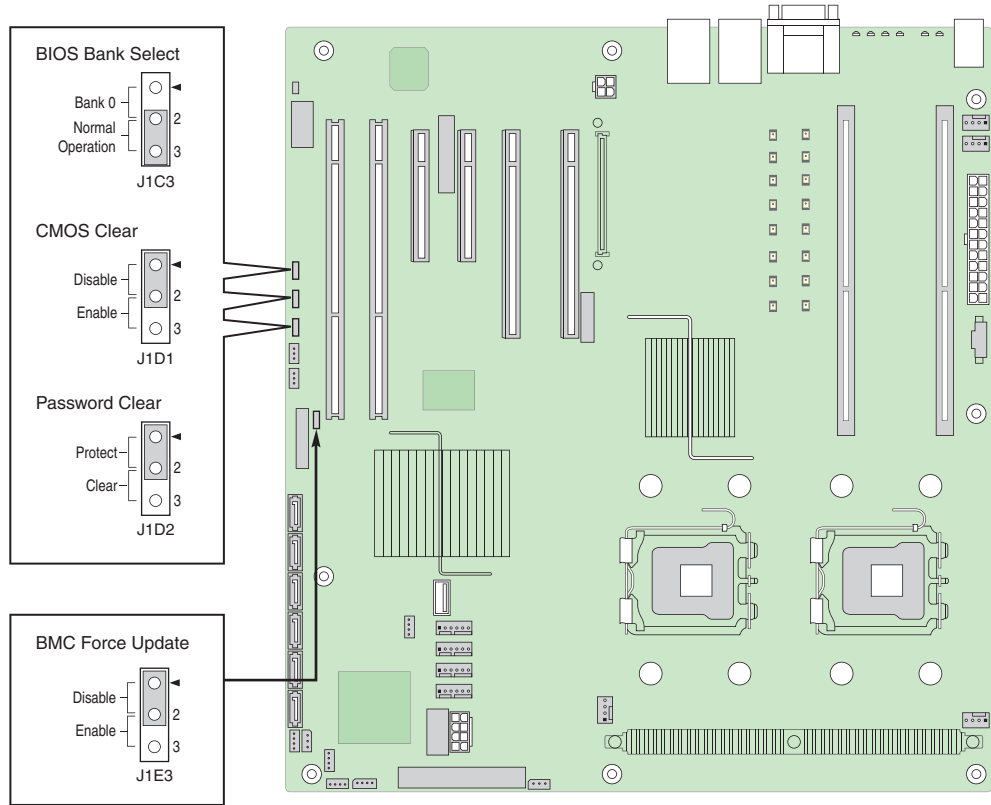
AF001418

A. PCI-X* 64-bit, 100-MHz slot 1	O. Auxiliary power signal connector	CC. Hot-swap backplane B header
B. PCI-X 64-bit, 100-/133-MHz slot 2	P. DIMM riser sockets (see Figure 11 on page 20)	DD. Hot-swap backplane A header
C. PCI Express* x4 slot 3	Q. Processor 1 socket	EE. SATA 0
D. RMM NIC connector	R. Processor 2 socket	FF. SATA 1
E. PCI Express x8 slot 4	S. System fan 4 header	GG. SATA 2
F. PCI Express x8 slot 5	T. System fan 3 header	HH. SATA 3
G. PCI Express x8 slot 6	U. IPMB connector	II. SATA 4
H. CMOS battery	V. System fan 2 header	JJ. SATA 5
I. P12V4 connector	W. System fan 1 header	KK. USB port

J. RMM connector (connector for Intel® Remote Management Module)	X. Processor power connector	LL. Front control panel header
K. Back panel I/O ports (see Figure 6 on page 9)	Y. USB header	MM. SATA_Key: SATA RAID 5 key connector
L. Diagnostic and Identify LEDs (see “Intel® Light-Guided Diagnostics” on page 15)	Z. IDE connector	NN. Serial B / emergency management port header
M. DIMM LEDs (see “Intel® Light-Guided Diagnostics” on page 15)	AA. Enclosure management SATA SGPIO header	OO. Chassis intrusion header
N. Main power connector	BB. Intel® Local Control Panel header	

Figure 8. Server Board Connector and Component Locations

Configuration Jumpers



AF001419

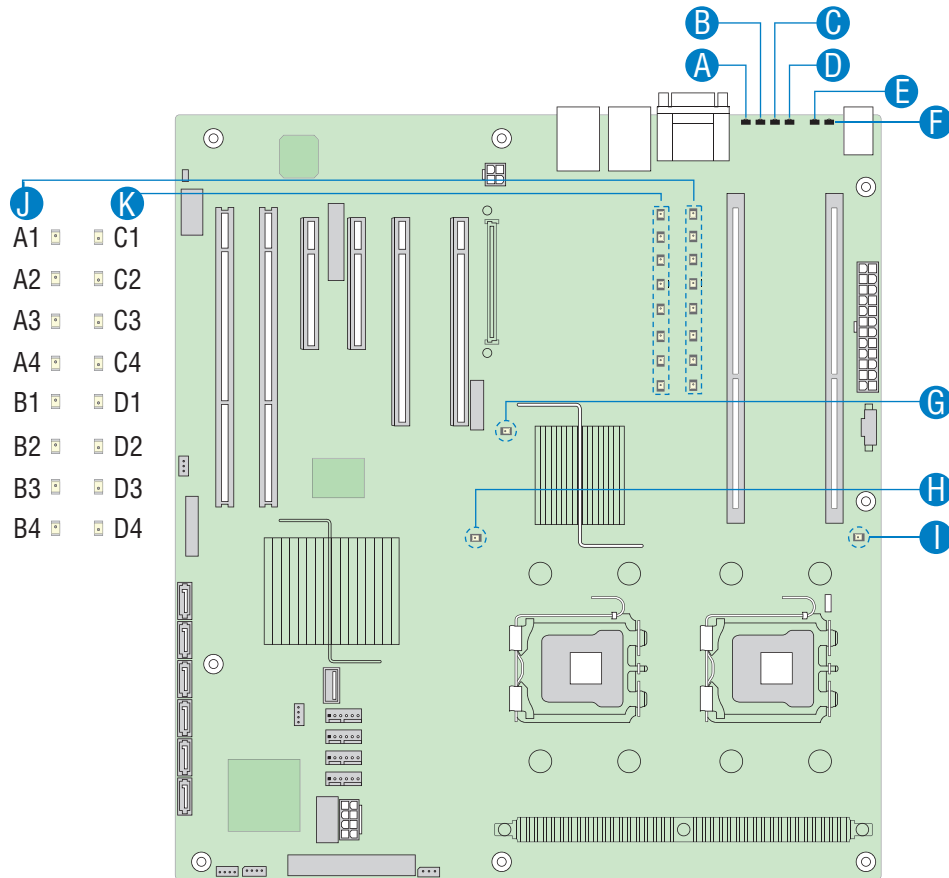
Jumper Name	Pins	What Happens at System Reset
BIOS Bank Select (J1C3)	1 - 2	Bank 0: Boot to an alternate BIOS.
	2 - 3	Boot from the standard BIOS. These pins should be jumpered for normal operation.
CMOS Clear (J1D1)	1 - 2	Protect CMOS: these pins should be jumpered for normal operation.
	2 - 3	Erase CMOS: If these pins are jumpered for 5 to 10 seconds, the CMOS settings will be cleared on the next server reset. These pins should not be jumpered for normal operation. To clear the CMOS: Power down the server, leaving AC power connected. Place the jumper on pins 2 - 3 for 5 to 10 seconds. Move the jumper back to pins 1 - 2. Power on the server.

Jumper Name	Pins	What Happens at System Reset
Password Clear (J1D2)	1 - 2	Protect password: These pins should be jumpered for normal operation.
	2 - 3	Erase password: If these pins are jumpered for 5 to 10 seconds, the password will be cleared on the next server reset. These pins should not be jumpered for normal operation. To use this jumper to reset the password: Power down the server. Place the jumper on pins 2 - 3. Power on the server and wait 5 to 10 seconds. Power down the server. Move the jumper back to pins 1 - 2. Power on the server.
BMC Force Update (J1E3)	1 - 2	Disable force update: These pins should be jumpered for normal operation.
	2 - 3	Enable force update: Jumpering these pins forces a BMC update.

Figure 9. Configuration Jumpers

Intel® Light-Guided Diagnostics

The server board contains diagnostic LEDs to help you identify failed and failing components and to help you identify the server from among several servers. Except for the ID LED, the status LED, and the +5-volt standby LED, the LEDs turn on (amber) only if a failure occurs.



AF001420

Callout	LED	Function
A.	LSB LED	POST LED. The sequence of lit POST LEDs is used to identify specific errors that might occur during the boot process. See the appendix of the Technical Product Specification for a description of how to read these LEDs.
B.	Bit 1 LED	POST LED. The sequence of lit POST LEDs is used to identify specific errors that might occur during the boot process. See the appendix of the Technical Product Specification for a description of how to read these LEDs.

Callout	LED	Function
C.	Bit 2 LED	POST LED. The sequence of lit POST LEDs is used to identify specific errors that might occur during the boot process. See the appendix of the Technical Product Specification for a description of how to read these LEDs.
D.	MSB LED	POST LED. The sequence of lit POST LEDs is used to identify specific errors that might occur during the boot process. See the appendix of the Technical Product Specification for a description of how to read these LEDs.
E.	ID LED	This LED can be turned on and off either by pressing a server system button or by using system management software. This LED is useful when the system is grouped with several systems, such as in a rack, and you need to easily find the system to perform maintenance on it.
F.	Status LED	The status LED indicates whether a system is operating correctly, has experienced a minor fault, or a major system error. For details about this LED, see the Technical Product Specification.
G.	+5-volt standby LED	This LED is green whenever AC power is applied to the system. The system does not need to be powered on in order for this LED to be on.
H.	Processor 2 fault LED	This LED indicates a fault has occurred with the processor installed in socket CPU_2 socket. Replace the faulty processor.
I.	Processor 1 fault LED	This LED indicates a fault has occurred with the processor installed in socket CPU_1 socket. Replace the faulty processor.
J.	DIMM riser card 1 fault LEDs	This LED indicates a fault has occurred with the corresponding DIMM in DIMM riser card 1. Replace the failed DIMM. See Figure 11 on page 20 to locate the DIMM sockets.
K.	DIMM riser card 2 fault LEDs	This LED indicates a fault has occurred with the corresponding DIMM in DIMM riser card 2. Replace the failed DIMM. See Figure 11 on page 20 to locate the DIMM sockets.

Figure 10. System LEDs

Intel® Remote Management Module and RMM NIC Accessory

The Intel® Remote Management Module and the RMM NIC is an optional accessory kit. These components plug into connectors on the server board and act as components of the server board, not as separate products. These two components must be installed together.

These components provide a way to view and operate the server remotely, in real-time. Keyboard, video, and mouse control (KVM) is redirected to a managing system. This provides remote control. USB media redirection allows you to use a USB device anywhere on the network as if it was installed on the managed server. For example, you can insert a CD-ROM disk in a workstation CD-ROM drive and the managed server will view it as its own CD-ROM drive.

For installation instructions, see [“Installing and Removing the Intel® Remote Management Module and the Intel® RMM NIC”](#) on page 79.

Rack-mount Installation Options

Your Intel® Server System SC5400RA can be mounted into a rack. Intel provides a tool-less rail kit and a cable management arm to mount this server system into a rack. When installing the server system 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 server system into a rack are included in the rail kit.

The order numbers are as follows:

- Tool-less Rail Kit: ARIGRACK
- Cable Management Arm: AXXCMA3U7U (requires the tool-less rail kit, ARIGRACK)

Storage Device Options

The Intel® Server System SC5400RA supports the following drive options:

- Optical hard disk drives
- Six SATA ports at 3 GB/s
- Parallel ATA (IDE): The server board includes one IDE connector.

Hard Disk Drives

One drive cage that supports six cabled drives ships with the server system. An optional hot-swap drive cage can be installed to replace the six-drive fixed drive cage. For instructions on installing hard drives, see [“Installing and Removing Hot-swap Drive\(s\)” on page 38](#).

Note: *Drives can consume up to 17 watts of power each. Drives must be specified to run at a maximum ambient temperature of 45° C.*

The Intel® Server System SC5400RA does not support all hard drives. See [“Additional Information and Software” on page ix](#) for an Internet link to a list of supported hardware.

Floppy / CD-ROM / DVD-ROM Slimline Carriers

For installation instructions on installing a floppy drive see [“Installing and Removing a Slimline USB Floppy/CD-ROM / DVD-ROM Drive Combo” on page 42](#). For installation instructions on installing a CD-ROM drive or DVD-ROM drive, see [“Installing and Removing a DVD-ROM or CD-ROM Drive” on page 51](#).

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

- Slimline CD-ROM Drive: AXXSCD
- Slimline DVD/CDR Drive: AXXDVDCDR
- Slimline Floppy Drive: AXXCDUSBFDBRK

Note: *The Intel® Server System SC5400RA does not support all slimline floppy, CD-ROM or DVD-ROM hard drives. See [“Additional Information and Software” on page ix](#) for an Internet link to a list of supported hardware. Intel provides accessory kits for these drives.*

Processor and Memory 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 [“Additional Information and Software” on page ix](#).

Processor

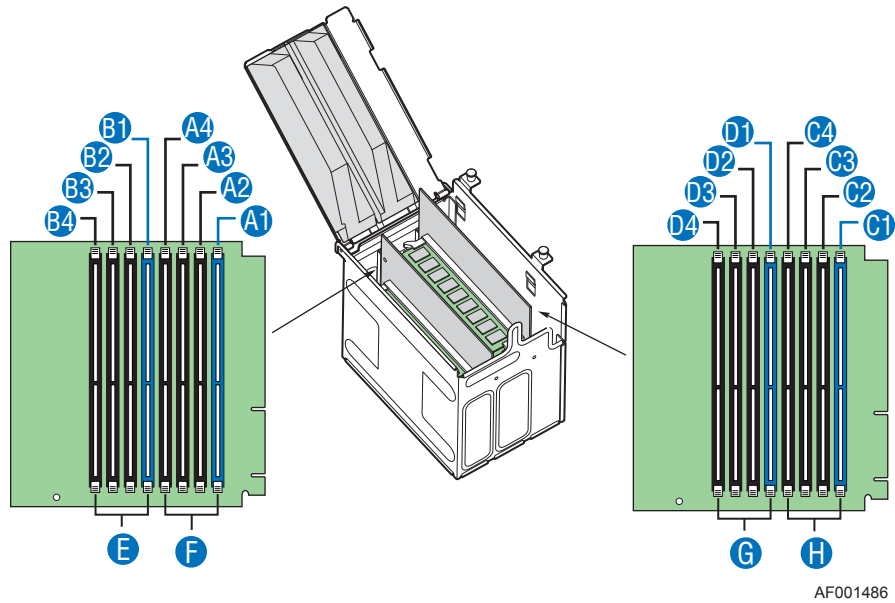
One or two Multi-Core Intel® Xeon® processors 5000, 5100, or 5300 sequence. For a list of supported processors, see the links under [“Additional Information and Software” on page ix](#).

Memory

The Intel® Server System SC5400RA provides 16 DIMM sockets in four channels:

- Channel A is in the left riser card, nearest to the center of the server board. This channel consists of
 - DIMM_A1 (must be populated for minimum configuration)
 - DIMM_A2
 - DIMM_A3
 - DIMM_A4
- Channel B is in the left riser card, nearest to the center of the server board. This channel consists of
 - DIMM_B1 (must be populated for minimum configuration)
 - DIMM_B2
 - DIMM_B3
 - DIMM_B4
- Channel C is in the right riser card, nearest to the right side of the server board. This channel consists of
 - DIMM_C1 (must be populated for minimum configuration)
 - DIMM_C2
 - DIMM_C3
 - DIMM_C4
- Channel D is in the right riser card, nearest to the right side of the server board. This channel consists of
 - DIMM_D1 (must be populated for minimum configuration)
 - DIMM_D2
 - DIMM_D3
 - DIMM_D4

See the following diagram to identify the DIMM sockets.



AF001486

Callout	DIMM Socket	Callout	DIMM Socket
Riser Card 1, at the left		Riser Card 2, at the right	
A1	DIMM_A1	C1	DIMM_C1
A2	DIMM_A2	C2	DIMM_C2
A3	DIMM_A3	C3	DIMM_C3
A4	DIMM_A4	C4	DIMM_C4
B1	DIMM_B1	D1	DIMM_D1
B2	DIMM_B2	D2	DIMM_D2
B3	DIMM_B3	D3	DIMM_D3
B4	DIMM_B4	D4	DIMM_D4
E	Channel B	G	Channel D
F	Channel A	H	Channel C

Figure 11. DIMM Sockets

Either 4, 8, 12, or 16 DIMMs must be used. A minimum of four 512 MB FBDIMMs are required. These must be in sockets DIMM_A1 and DIMM_B1 on riser card 1, and DIMM_C1 and DIMM_D1 on riser card 2.

If 8 DIMMs are used, they must be in the 4 sockets noted above in addition to DIMM_A2 and DIMM_B2 on riser card 1, and DIMM_C2 and DIMM_D2 on riser card 2.

If 12 DIMMs are used, they must be in the 8 sockets noted above in addition to DIMM_A3 and DIMM_B3 on riser card 1, and DIMM_C3 and DIMM_D3 on riser card 2.

If 16 DIMMs are used, all sockets on both riser cards are populated.

FBDIMMs must meet the following requirements:

- Use only FBDIMMs (DDR2-533 or DDR2-667).
- Use only 240-pin FBDIMMs.
- Use FBDIMMs with capacities of 512 MB, 1 GB, 2 GB, or 4 G.
- Use only FBDIMMs that comply with the JEDEC Rev 2.0 specifications.
- The FBDIMMs must be populated in multiples of four. First populate sockets A1, B1 (card 1), and C1, D1 (card 2). Then populate sockets A2, B2 (card 1), and C2, D2 (card 2), and so on.
- DIMMs within each group of four must be identical with respect to size, speed, and organization. DIMM capacities can be different between different groups of four. For example, a valid mixed-DIMM configuration can consist of 512 MB DIMMs installed in sockets A1, B1, C1, and D1, and 1 GB DIMMs installed in sockets A2, B2, C2, and D2.

Note: Full DIMM heat spreader (FDHS) FBDIMMs are required.

During the boot process, FBDIMMs that do not meet the population requirements are disabled.

For a complete list of supported FBDIMMs, see the links under [“Additional Information and Software”](#) on page ix.

Memory Sparing and Mirroring

The chipset includes hardware that supports memory mirroring and memory on-line sparing. Both memory mirroring and memory on-line sparing provide a way to prevent data loss in case a FBDIMM fails.

In determining your memory requirements, the need for memory sparing or memory mirroring must be considered.

- The minimum FBDIMM population for memory mirroring is four DIMMs: DIMM_A1, DIMM_B1, DIMM_C1 and DIMM_D1.
- The minimum FBDIMM population for memory sparing is eight DIMMs: DIMM_A1, DIMM_A2, DIMM_B1, DIMM_B2, DIMM_C1, DIMM_C2, DIMM_A1, and DIMM_A2.

With memory mirroring the system maintains two copies of all data in the memory subsystem. If a FBDIMM fails, the data is not lost because the second copy of the data is available from the mirrored FBDIMM 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 four FBDIMMs installed. Since the data is duplicated across FBDIMMs, it means that up to one-half of the installed FBDIMMs are actively in use at any one time. The remaining FBDIMMs are used for mirroring.

Memory mirroring and memory sparing are mutually exclusive. Only one can be active at a time. See the *Intel[®] Server Board Technical Product Specification* for additional information regarding the memory sub-system.

2 Hardware Installations and Upgrades

Before You Begin

Before working with your server product, pay close attention to the “[Safety Information](#)” on page iii.

This document provides instructions for adding and replacing server system components.

Tools and Supplies Needed

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

System References

All references to 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 Chassis Cover

Removing the Chassis Cover

The Intel® Server System SC5400RA must be operated with the top cover in place to ensure proper cooling. You will need to remove the top cover to add or replace components inside of the platform. Before removing the top cover, power down the server and unplug all peripheral devices and the AC power cable.

Note: A nonskid surface or a stop behind the server system may be needed to prevent the system from sliding on your work surface.

1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)” on page iii.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord.
4. Remove the access cover screw if it is installed. See letter "A" in the following figure.
5. While holding in the blue button at the top of the chassis (see letter "B"), slide the top cover back until it stops.
6. Lift the cover outward to remove it.

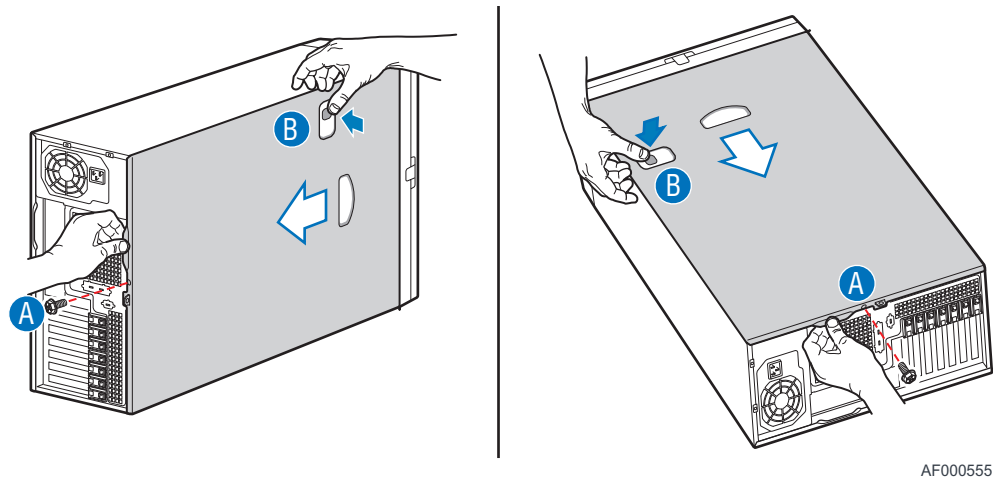
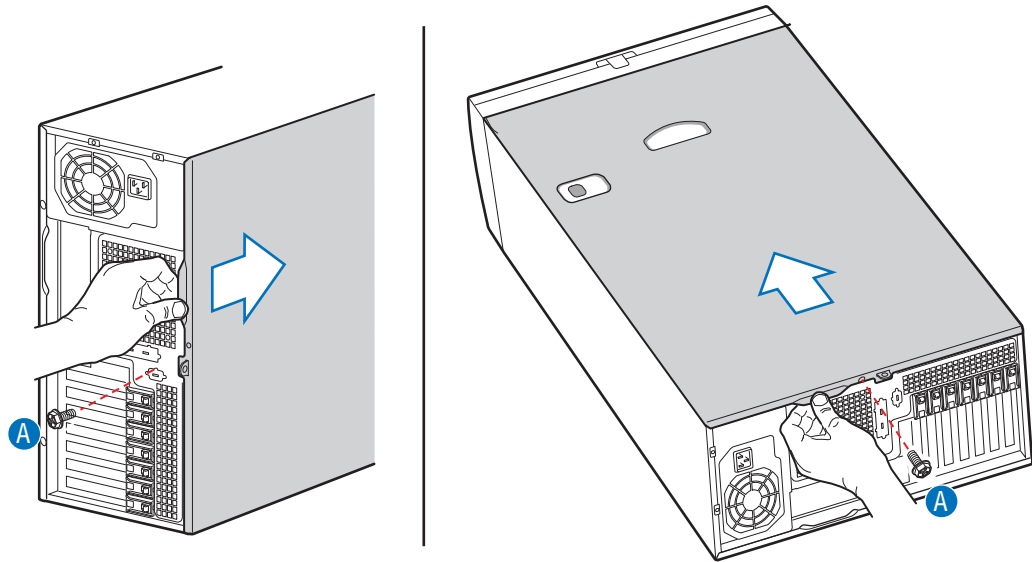


Figure 12. Removing the Chassis Cover

Installing the Chassis Cover

1. Slide the cover onto the chassis.
2. Latch the cover securely to the chassis.
3. If the chassis will be re-shipped, secure the cover to the chassis with the access cover screw. See letter “A” in the following figure.



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Figure 13. Installing the Chassis Cover

Removing and Installing the Front Bezel

Removing the Bezel Assembly (Pedestal Only)

Caution: Do not rotate the bezel assembly more than 40 degrees or you will damage the bezel assembly.

Note: The bezel assembly consists of two components, a front door and a sub-bezel. The system was sent to you with the bezel key attached to the back of the bezel.

1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on [page 24](#).
4. Release the two plastic tabs on the left side of the bezel assembly to disengage the tabs. See letter “A” in the following figure.
5. Rotate the bezel assembly no more than 40 degrees outward. See letter “B” in the figure.
6. At a 40-degree angle, push the bezel assembly away from the chassis. See letter “C”. If the bezel assembly does not immediately disconnect from the chassis, tap the left-hand side of the bezel assembly to disengage the bezel hooks on the right-hand side of the chassis.

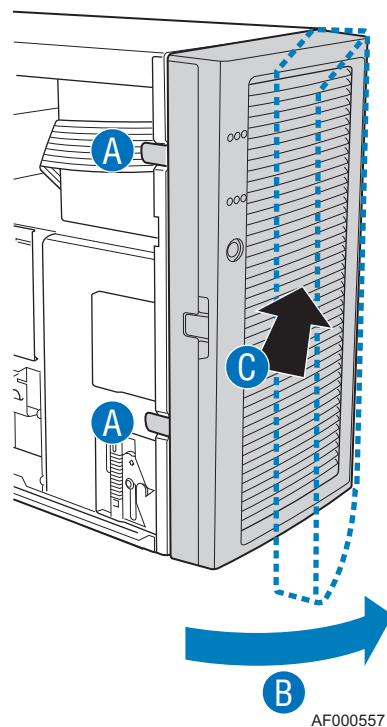
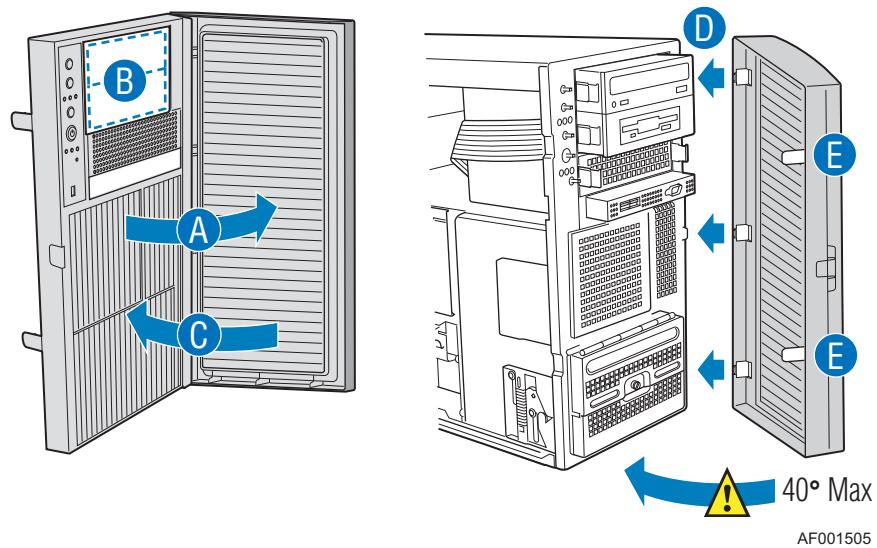


Figure 14. Removing the Front Bezel

Installing the Front Bezel (Pedestal Only)

Caution: This step applies to a pedestal configuration system only. For instructions on installing a bezel in a rack-mount configuration, see the Rack Conversion kit Installation Guide: Intel® Server Chassis SC5400.

1. Open the outer bezel door of the bezel assembly (see letter “A” in the following figure).
2. Remove the filler panels that correspond to installed devices (see letter “B”).
3. Close the outer bezel door (see letter “C”).
4. Fit the right edge of the bezel assembly against the right side of the chassis.
5. Engage the plastic bezel hooks (see letter “D”) into the raised metal slots at the chassis edge.
6. Rotate the bezel assembly toward the chassis.
7. Latch the two plastic tabs (see letter “E”) on the left side of the bezel assembly to the chassis.



AF001505

Figure 15. Installing the Front Bezel

Installing and Removing Fixed Hard Drive(s)

Installing Fixed Hard Drive(s)

1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
4. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
5. Optional: Remove the hard drive cage. The drives can be installed without removing the drive bay from the system. For clarity, the figures below show the installation process with the drive cage removed. If you find it easier to install the drives with the drive bay removed:
 - Push the blue plastic release mechanism upward to release the fixed drive cage. See letter “A” in the following figure.
 - Pull the drive cage from the system. See letter “B” in the figure below.
 - Position the drive bay horizontally before opening the drive cage doors.

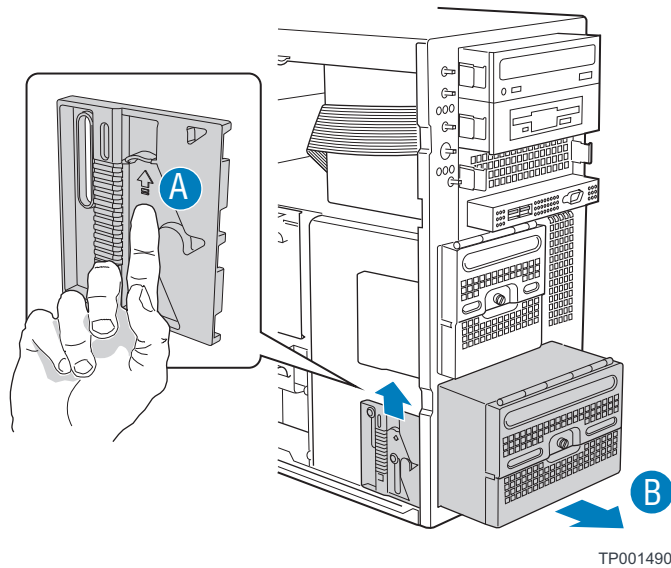
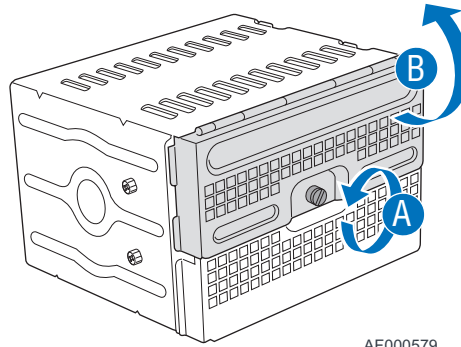


Figure 16. Removing Six-drive Fixed Drive Cage

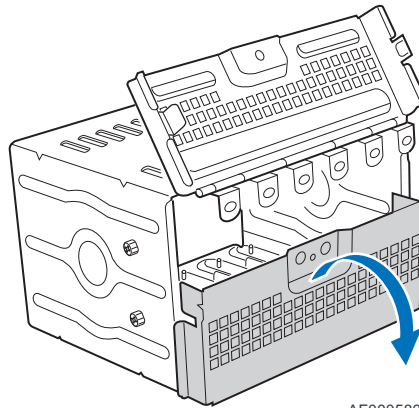
6. Loosen the captive screw. See letter “A” in the following figure.
7. Open the upper door. See letter “B”.



AF000579

Figure 17. Unlocking and Opening Upper Door of Fixed Drive Cage

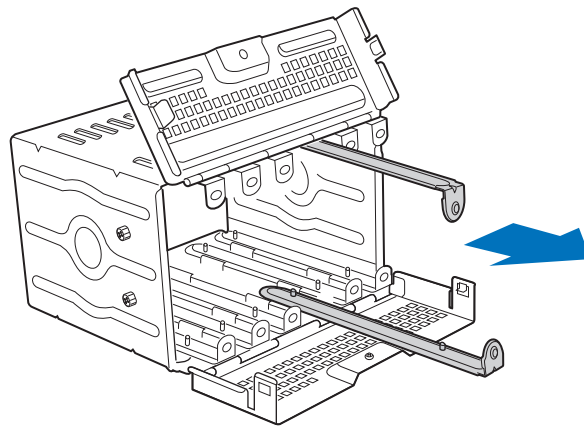
8. Open the lower door.



AF000580

Figure 18. Opening Lower Door of Fixed Drive Cage

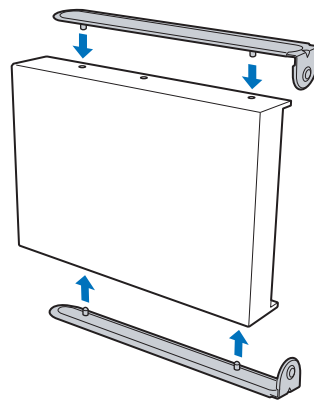
9. Remove a pair of device slides from the drive cage.



AF000581

Figure 19. Removing Slides from Drive Cage

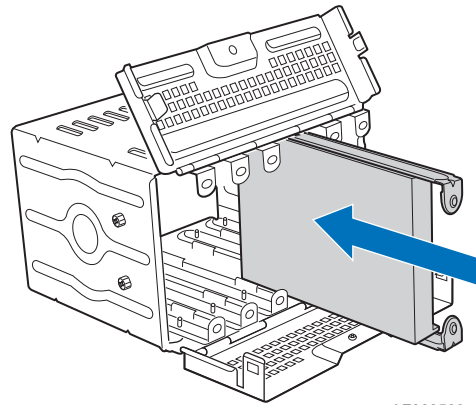
10. Attach the device slides to the hard drive. This is a tool-less operation. Insert pins on device slides into mounting holes on hard drive. Press firmly to secure device slides to hard drive. Ensure that the metal tabs on the device slides are facing the front of the hard drive and facing towards each other, as shown in the figure.



AF000582

Figure 20. Attaching Device Slides to Hard Drive

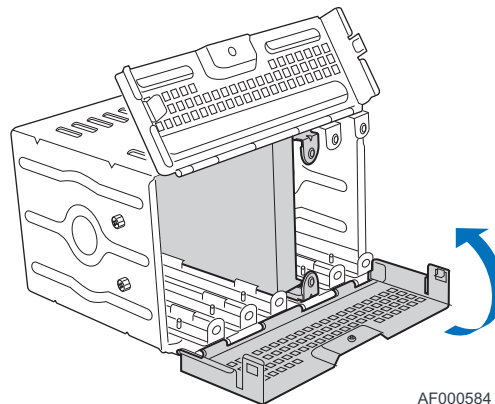
11. Insert the drive/slide assembly into the drive cage. Make sure the cable connector end of the hard drive faces towards the rear of the drive cage.



AF000583

Figure 21. Inserting Drive/Slide Assembly into Drive Cage

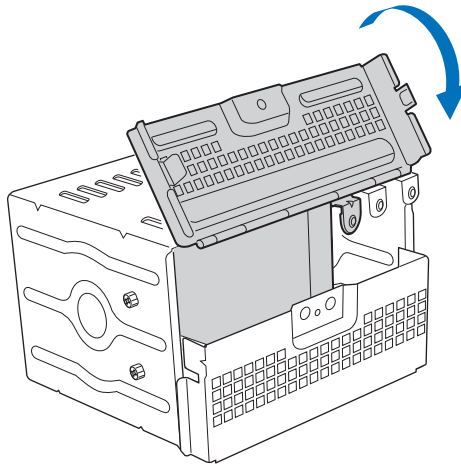
12. Repeat above steps for installation of additional hard drives into the drive cage.
13. Close the lower door of drive cage.



AF000584

Figure 22. Closing Lower Door of Fixed Drive Cage

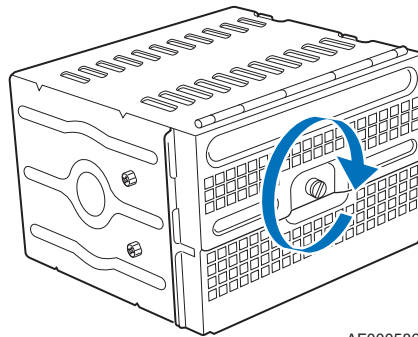
14. Close the upper door of drive cage.



AF000585

Figure 23. Closing Upper Door of Fixed Drive Cage

15. Tighten the captive screw.



AF000586

Figure 24. Tightening Captive Screw

16. If you removed the drive cage, slide it into the server system to re-install it.
17. Connect power and data cables to connectors on hard drive(s).
18. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel”](#) on page 26.
19. Install the chassis cover. For instructions, see [“Installing the Chassis Cover”](#) on page 25.
20. Plug all peripheral devices and the AC power cable into the server.
21. Power up the server.

Removing Fixed Hard Drive(s)

1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
4. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
5. Remove the power and data cables from the hard drive connectors.
6. Optional: Remove the hard drive cage. The drives can be installed without removing the drive bay from the system. For clarity, the figures below show the installation process with the drive cage removed. If you find it easier to install the drives with the drive bay removed:
 - Push the blue plastic release mechanism upward to release the fixed drive cage. See letter “A” in the following figure.
 - Pull the drive cage from the system. See letter “B” in the figure below.
 - Position the drive bay horizontally before opening the drive cage doors.

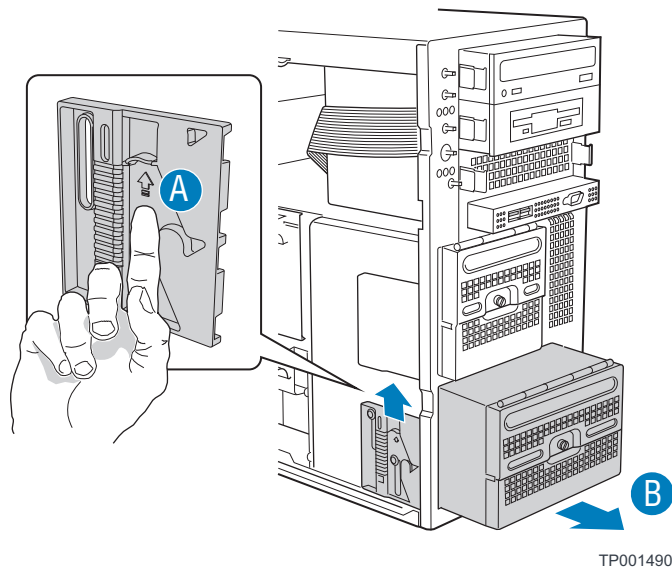
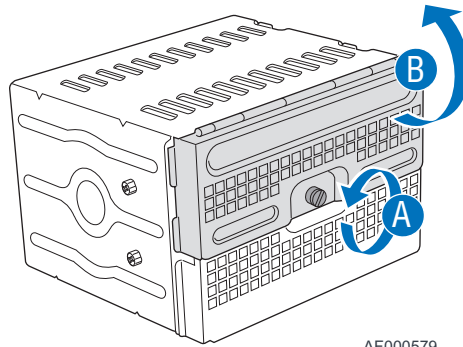


Figure 25. Removing Six-drive Fixed Drive Cage

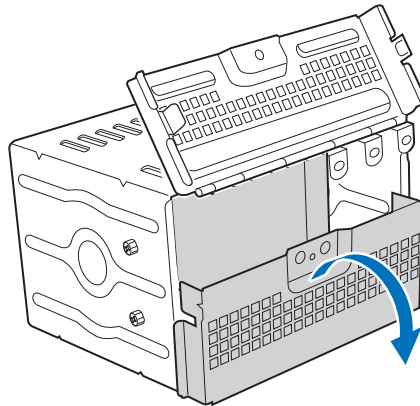
7. Loosen the thumb screw. See letter “A” in the following figure.
8. Open the upper door of the drive cage. See letter “B”.



AF000579

Figure 26. Unlocking and Opening Upper Door of Fixed Drive Cage

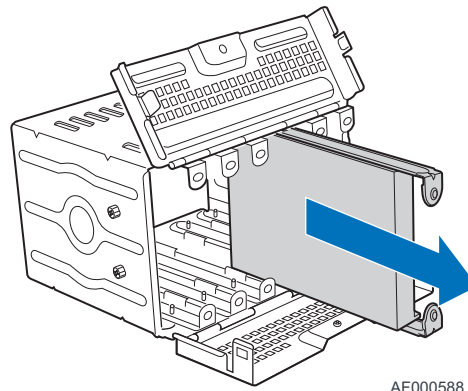
9. Open the lower door.



AF000946

Figure 27. Opening Lower Door of Fixed Drive Cage

10. Remove the drive/slide assembly from the drive cage.



AF000588

Figure 28. Removing Drive/Slide Assembly from Drive Cage

11. Remove the device slides from hard drive. If you are not replacing hard drive, insert empty device slides into drive cage.

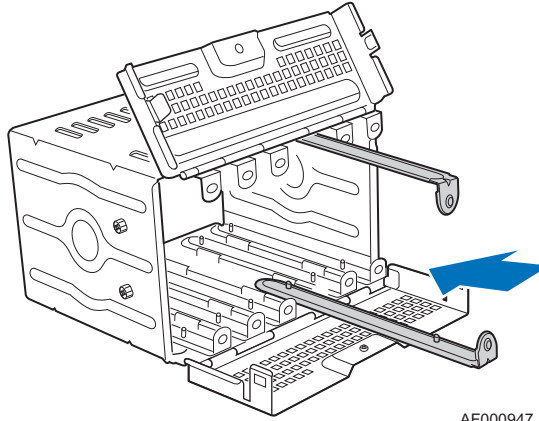


Figure 29. Inserting Empty Device Slides into Drive Cage

12. Close the lower door of drive cage.

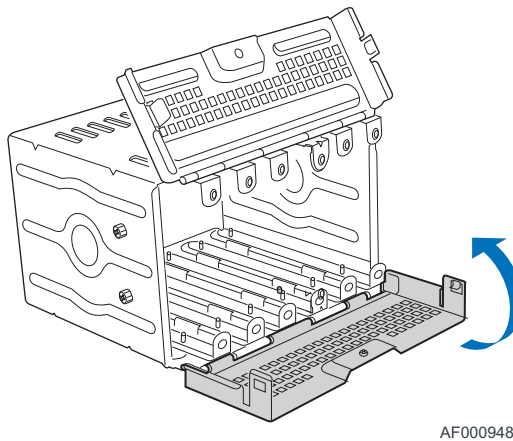


Figure 30. Closing Lower Door of Fixed Drive Cage

13. Close the upper door.

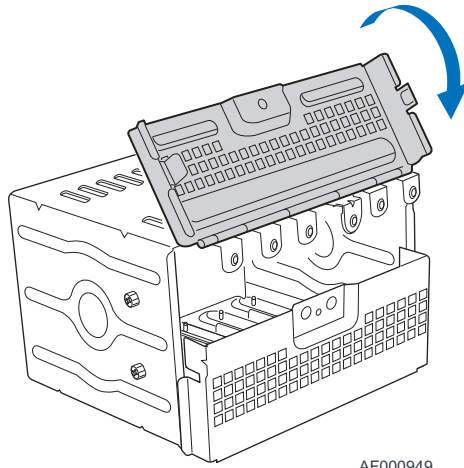
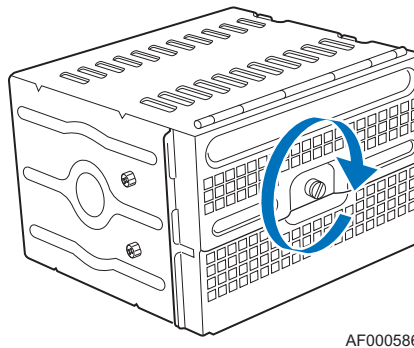


Figure 31. Closing Upper Door of Fixed Drive Cage

14. Tighten the captive screw.



AF000586

Figure 32. Tightening Thumb Screw

15. If you removed the drive cage, slide it into the server system to re-install it.
16. If other hard drives remain in the drive cage, reconnect power and data cables.
17. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
18. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
19. Plug all peripheral devices and the AC power cable into the server.
20. Power up the server.

Installing and Removing Hot-swap Drive(s)

Your server system will have either hot-swap or fixed drives. If your server system has fixed drives, see “Installing and Removing Fixed Hard Drive(s)” on page 28 for drive installation and removal steps.

Installing Hot-swap Drive(s)

1. Press in on the green latch at the end of the drive carrier to disengage it from the hot swap drive cage. See letter “A” in the following figure.
2. Pull out on the black lever to fully open the drive carrier. See letter “B” in the figure.
3. When the lever reaches a fully opened position, it will push the drive carrier out from the hot swap drive cage. Slide the drive carrier out of the drive cage. See letter “C”..

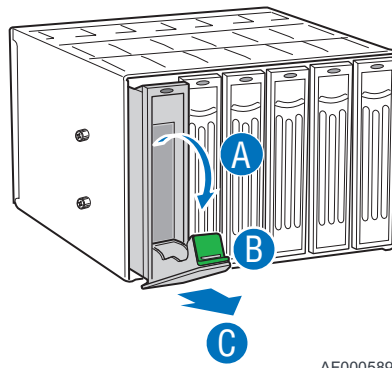


Figure 33. Removing Drive Carrier from Hot-swap Cage

4. Remove the four screws that secure the plastic air baffle to the drive carrier. Remove the plastic air baffle.

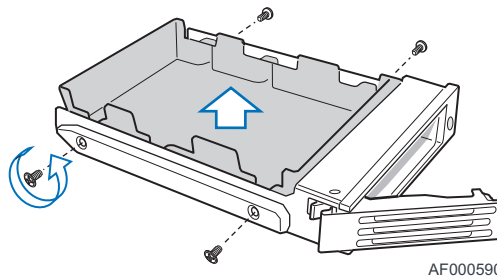


Figure 34. Removing Plastic Air Baffle

5. Secure the hard drive to the drive carrier using the four screws that were formerly attached to the plastic air baffle. Ensure that the connector end of the hard drive is facing the back of the drive carrier. The label side of the hard drive should be facing up in the drive carrier.

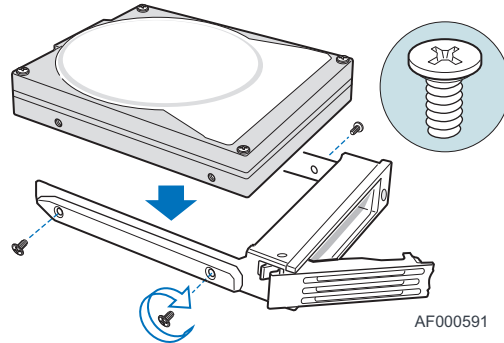


Figure 35. Securing Hard Drive to Drive Carrier

6. With the black lever open, insert the drive carrier into the drive cage. Once inserted, rotate the black lever upwards to latch the drive carrier into position.

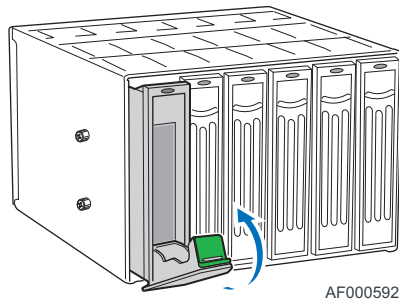


Figure 36. Inserting Drive Carrier into Hot Swap Cage

Removing Hot-swap Drive(s)

1. Rotate the black lever downwards to unlatch the drive carrier. With the black lever open, remove the drive carrier from the drive cage.

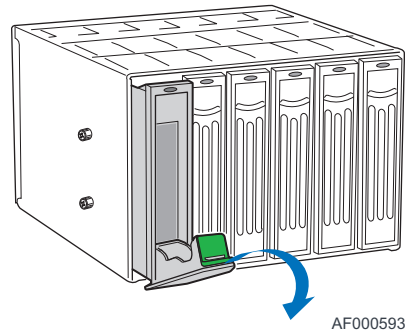


Figure 37. Releasing Drive Carrier from Hot-swap Cage

2. Remove the four screws securing the hard drive to the drive carrier. Remove the hard drive from the drive carrier.

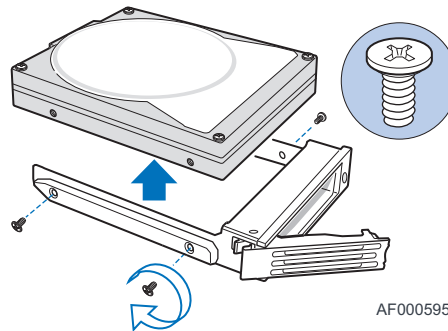


Figure 38. Removing Hard Drive from Drive Carrier

3. If you are not installing a replacement drive, re-install the plastic air baffle into the empty drive carrier. Secure the plastic air baffle to the drive carrier using the four screws that were formerly attached to the hard drive.

Note: *Plastic air baffles are necessary in all empty drive carriers to ensure proper airflow within the server system.*

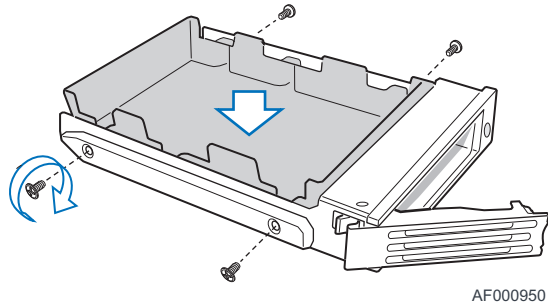


Figure 39. Installing Plastic Air Baffle in Drive Carrier

4. With the black lever open, insert the drive carrier into the drive cage. Once inserted, rotate the black lever upwards to latch the drive carrier into position.

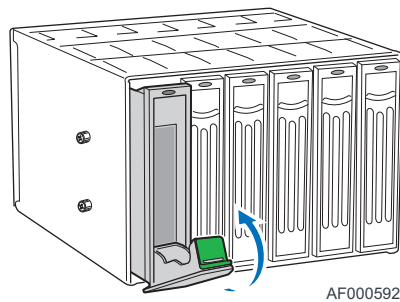


Figure 40. Inserting Drive Carrier into Hot Swap Cage

Installing and Removing a Slimline USB Floppy/ CD-ROM / DVD-ROM Drive Combo

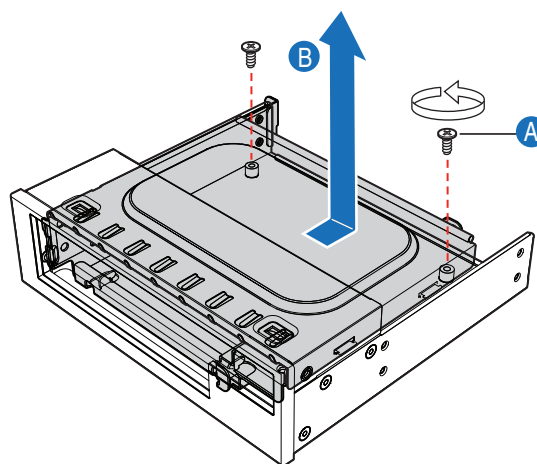
Note: You can install either a slimline CD-ROM drive OR a slimline DVD-ROM drive. You cannot install both.

Note: For Intel supplied CD-ROM/DVD-ROM drives, the correct setting is “No Jumper”.

Note: For non-Intel supplied CD-ROM/DVD-ROM drives, see the documentation that came with your slimline drive for master/slave jumper settings.

Installing a Slimline USB Floppy / CD-ROM / DVD-ROM Slimline Kit

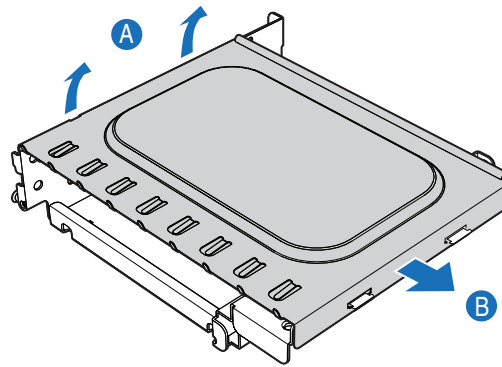
1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)” on page iii.
2. Power down the server system and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
4. Remove the front bezel. For instructions, see “[Removing the Bezel Assembly \(Pedestal Only\)](#)” on page 26.
5. Remove the two screws that attach the drive cage to the drive bay. See letter “A” in the following figure.
6. Tilt the rear of the drive cage up and slide it rearward. See letter “B”.
7. Lift the drive cage up and out of the drive bay.



AF001522

Figure 41. Removing Drive Cage from Drive Bay

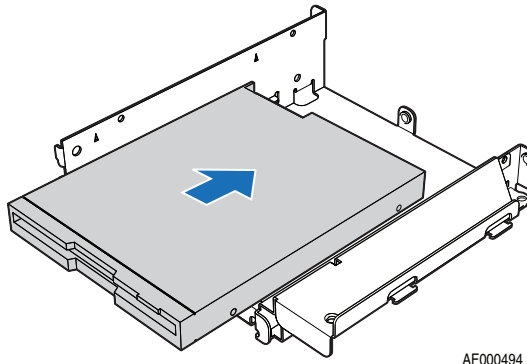
8. Turn the drive cage so you are facing the front of it.
9. Pull out slightly on the rolled lip at the left side of the cage top.
10. Disengage the cage top from the tabs at the left side. See letter “A” in the following figure.
11. Lift the left side of the cage top.
12. Disengage the cage top from the tabs on the right side of the drive cage.
13. Remove the cage top. See letter “B” in the following figure.



AF000492

Figure 42. Removing Cage Top from Drive Cage

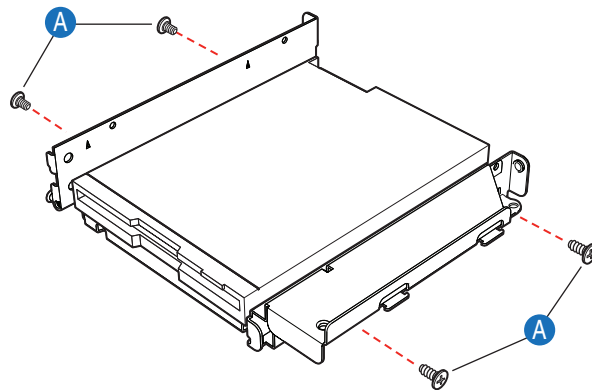
14. Insert the slimline floppy drive into the bottom tray of the drive cage. See the figure below.



AF000494

Figure 43. Inserting Slimline Floppy Drive into Drive Cage

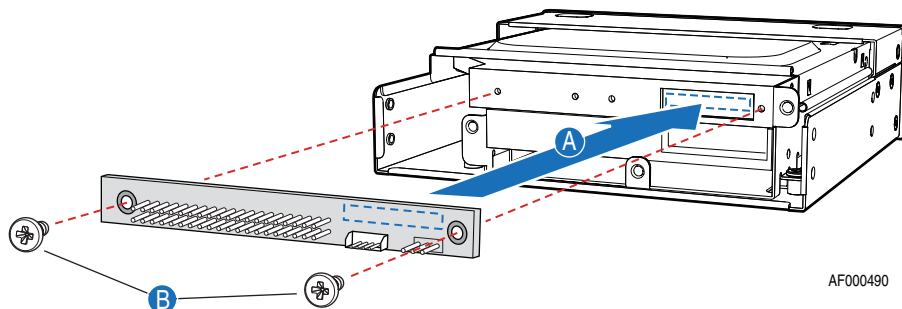
15. Line up the screw holes on the left and right sides of the slimline floppy drive with the corresponding holes in the drive cage. See letter “A” in the following figure. The front of the slimline floppy drive will extend slightly out from the front of the drive cage.
16. Use four screws in the bag labeled “FDU” that came with your slimline drive kit to attach the drive to the drive cage (two screws on each side). Do not completely tighten these screws until the CD-ROM / DVD-ROM drive is inserted into the drive cage.



AF000487

Figure 44. Securing Slimline Floppy Drive to Drive Cage

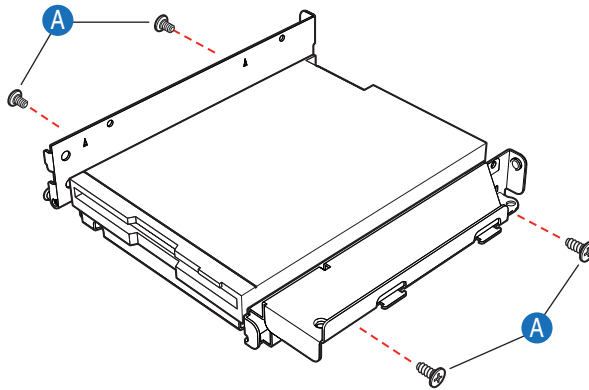
17. Turn the drive cage so that the metal flange at the side of the drive extends to the right.
18. Lay the slimline CD-ROM drive or the slimline DVD-ROM drive in the drive cage, with the front of the drive facing you. The slimline CD-ROM / DVD-ROM drive lies on top of the slimline floppy drive.
19. Insert the backplane connector into the drive connector. See letter “A” in the following figure.
20. Use two screws from the bag labeled “A” to secure backplane to slimline CD-ROM / DVD-ROM drive. See letter “B” in the figure below.



AF000490

Figure 45. Attaching Backplane to Slimline CD-ROM / DVD-ROM Drive

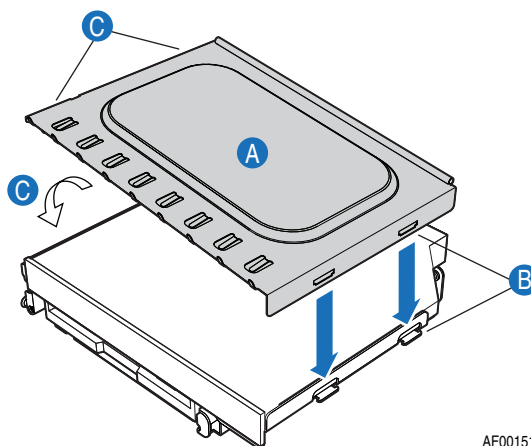
21. Line up the screw holes on the left and right sides of the slimline CD-ROM / DVD-ROM drive with the corresponding screws on the drive cage. See letter “A” in the following figure. The front of the slimline drive will extend slightly from the front of the drive cage.
22. Use four screws from the bag marked “CD” to attach the drive to each side of the drive cage (two screws on each side).



AF000487

Figure 46. Securing Slimline CD-ROM Drive or Slimline DVD-ROM Drive to Drive Cage

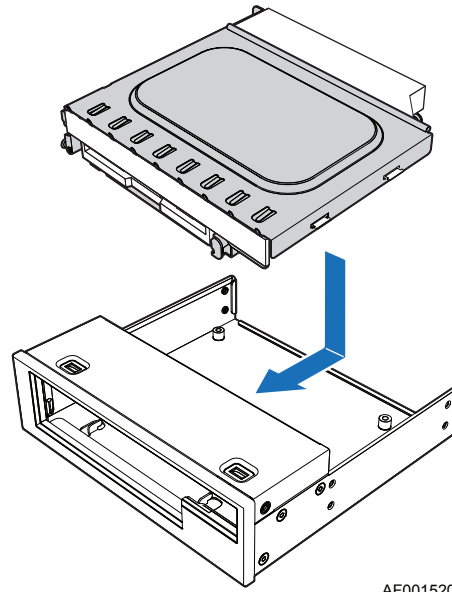
23. Hold the cage top at a downward angle toward the drive cage. See letter “A” in the following figure.
24. Engage the slots at the right side of the cage top to the tabs at drive cage base. See letter “B” in the figure.
25. Rotate the cage top downward at the left side to engage the left tabs. See letter “C”.



AF001519

Figure 47. Installing the Cage Top to the Drive Cage

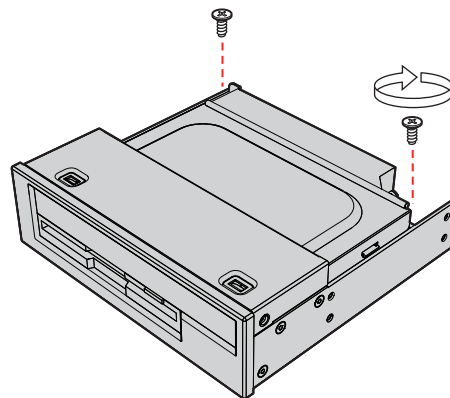
26. Insert the front of the device cage into the drive bay then lower the back of the drive cage. See the following figure. When properly positioned, the front of the cage will be flush and the screw holes in the drive cage will match the screw holes in the bottom of the drive bay.



AF001520

Figure 48. Inserting Drive Cage into Drive Bay

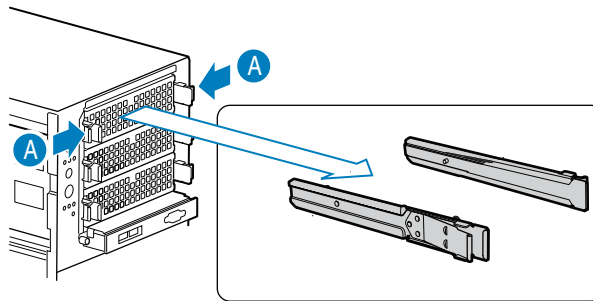
27. Use two screws to secure the drive cage to the drive bay. See the following figure.



AF001521

Figure 49. Attaching Drive Cage to Drive Bay

28. Press in on the side latches to remove the EMI shield/slide assembly from the upper device bay of the server system. See letter “A” in the following figure.



AF000634

Figure 50. Removing EMI Shield/Slide Assembly

29. Attach the drive rails to the slimline drive assembly using the top set of holes. See the following figure.

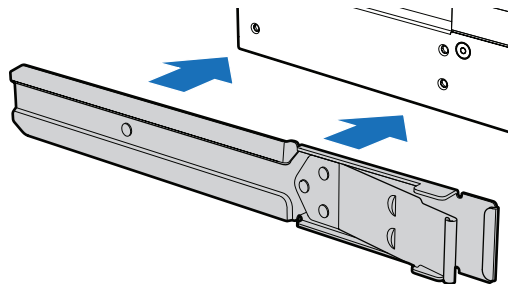
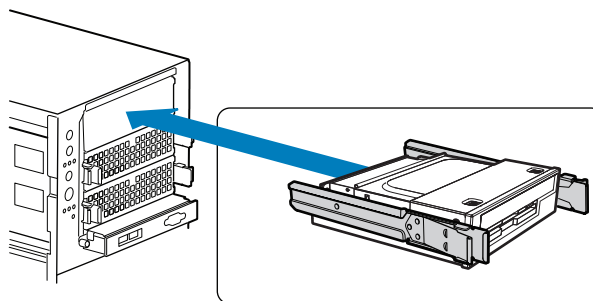


Figure 51. Attaching Drive Rails to Slimline Drive Assembly

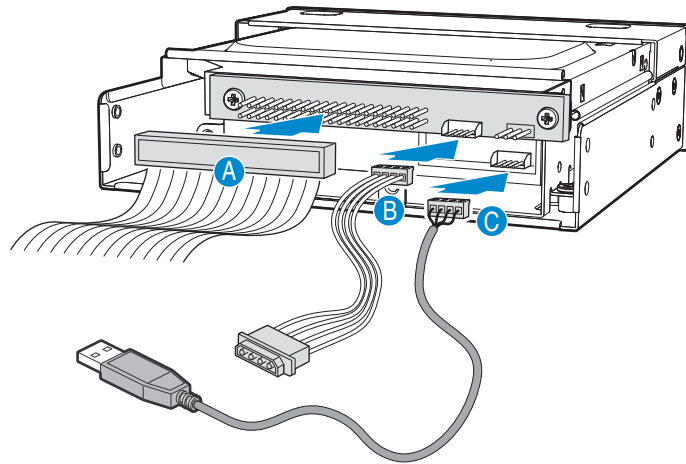
30. Slide the slimline drive assembly into the server chassis. See the following figure. Make sure that the drive rails are in the correct slots in the chassis.



AF000633

Figure 52. Inserting Slimline Drive Assembly

31. Connect the IDE cable from the chassis to the slimline drive backplane. See letter “A” in the following figure.
32. Connect the power adapter cable from a power connection to the slimline drive backplane. See letter “B” in the figure.
33. Connect the USB cable from the server board to the slimline drive backplane. See letter “C”.



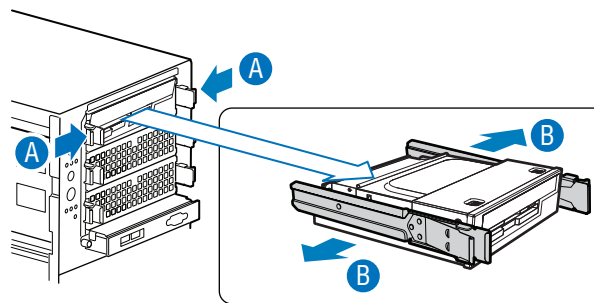
AF000491

Figure 53. Cable Connections

34. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
35. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
36. Plug all peripheral devices and the AC power cable into the server.
37. Power up the server.

Removing a Slimline USB Floppy / CD-ROM / DVD-ROM Combo Drive

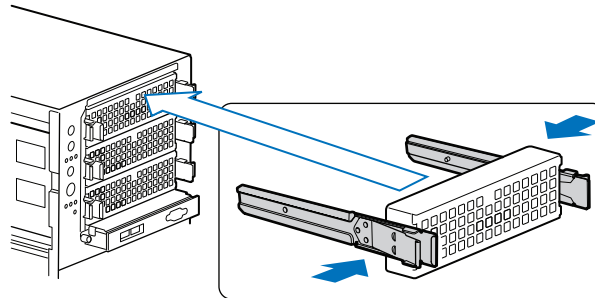
1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover”](#) on page 24.
4. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel”](#) on page 26.
5. Disconnect the power and data cables to the slimline combo drive assembly.
6. Remove the combo drive/slide assembly from the server system by pressing in on the slide release latches. See letter “A” in the following figure.
7. Remove the slides from the slimline combo drive tray by pulling the slides away from the tray. See letter “B”. A gentle pull should release the slide from the side dimple on the drive tray.



AF000575

Figure 54. Removing Slimline DVD-ROM / CD-ROM Drive Assembly from Upper Device Bay

8. If not replacing with another drive, re-attach pair of slides to an EMI shield and re-insert EMI shield/slide assembly into the server system for proper airflow. See the following figure.



AF000605

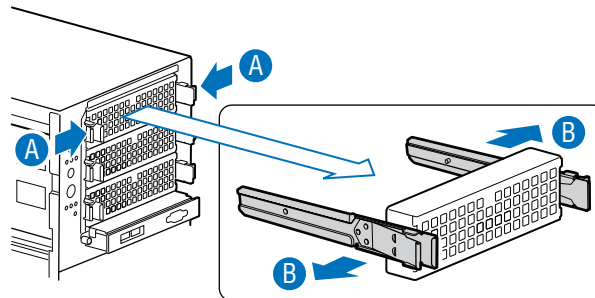
Figure 55. Installing Empty EMI Shield/Slide Assembly

9. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
10. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
11. Plug all peripheral devices and the AC power cable into the server.
12. Power up the server.

Installing and Removing a DVD-ROM or CD-ROM Drive

Installing a DVD-ROM or CD-ROM Drive

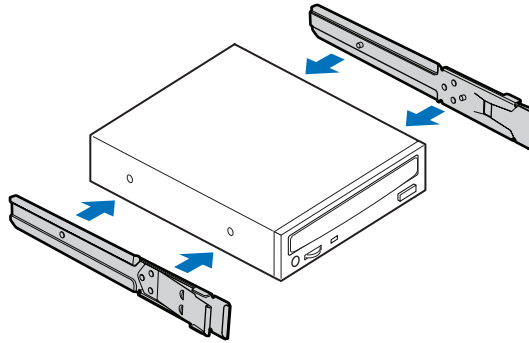
1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover”](#) on page 24.
4. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel”](#) on page 26.
5. Remove the EMI shield/slide assembly from the upper device bay by pressing the two slide assembly latches inward. See letter “A” in the following figure.
6. Remove the slides from the EMI shield by pulling the slides away from the EMI shield to release them from the EMI shield. See letter “B”.



AF000945

Figure 56. Removing EMI Shield/Slide Assembly from Upper Device Bay

7. Attach slides to the DVD-ROM or CD-ROM drive by pressing the slides firmly into the side dimples on the DVD-ROM or CD-ROM drive.



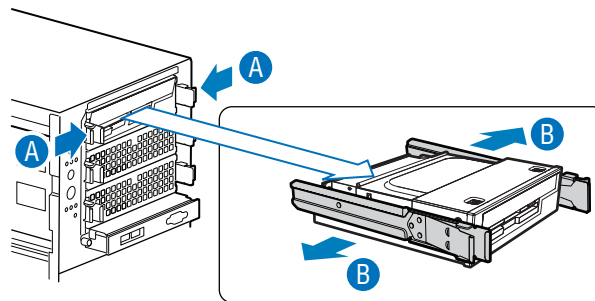
AF001489

Figure 57. Attaching Slides to a DVD-ROM or CD-ROM Drive

8. Insert the drive/slide assembly into the upper device bay until the slides lock into place.
9. Connect power and data cables.
10. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
11. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
12. Plug all peripheral devices and the AC power cable into the server.
13. Power up the server.

Removing a DVD-ROM or CD-ROM Drive

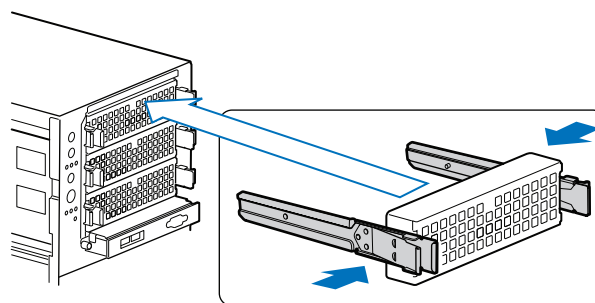
1. Observe the safety and ESD precautions at the beginning of this book.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
4. Remove the front bezel if it is installed. For instructions, see “[Removing and Installing the Front Bezel](#)” on page 26.
5. Disconnect the power and data cables to the DVD-ROM / CD-ROM drive.
6. Remove the DVD-ROM / CD-ROM assembly from the server system by pressing in on the slide release latches. See letter “A” in the following figure.
7. Remove the slides from the DVD-ROM or CD-ROM drive by pulling the slides away from the drive. See letter “B”. A gentle pull should release the slide from the side dimple on the drive.



AF000575

Figure 58. Removing DVD-ROM / CD-ROM Drive Assembly from Upper Device Bay

8. If not replacing with another drive, re-attach pair of slides to an EMI shield and re-insert EMI shield/slide assembly into the server system for proper airflow. See the following figure.



AF000605

Figure 59. Reinserting Empty EMI Shield/Slide Assembly

9. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
10. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
11. Plug all peripheral devices and the AC power cable into the server.
12. Power up the server.

Installing and Removing PCI Add-in Card(s)

Installing PCI Add-in Card(s)

Note: You may want to install an operating system before installing add-in cards.

Do not overload the server board by installing add-in boards that draw excessive current.

Add-in boards can be extremely sensitive to ESD and always require careful handling. After removing the board from its protective wrapper, place it component side up on a grounded, static-free surface. Do not slide the board over any surface.

When removing a full-length add-in card, you must pull back on the latch on the plastic card guide at the front of the chassis to release the card from the card guide.

1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
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 chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
6. Press in on the two plastic tabs to release the PCI add-in card retainer from the server system. See letter “A” in the following figure.
7. Open the back panel PCI add-in card retention device by pulling it open from the inside of the system. See letter “B”.
8. If a PCI slot cover is installed, remove it by pushing the cover out from the inside of the system. See letter “C”.

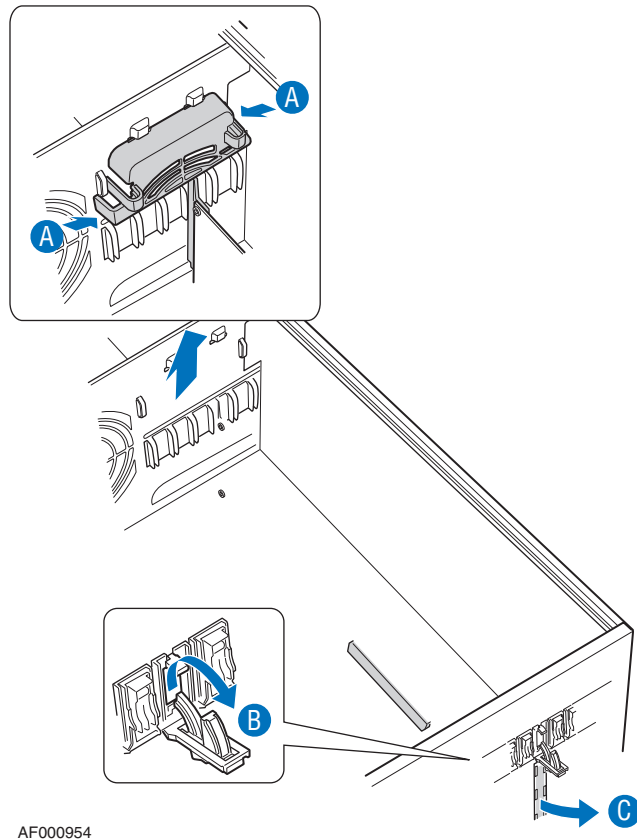
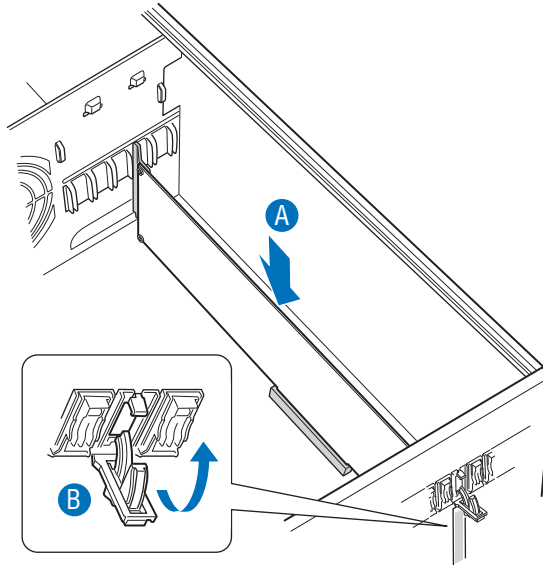


Figure 60. Preparing System for Addition of PCI Add-in Card

9. Remove the PCI add-in card from its protective wrapper. Be careful not to touch the components or gold edge connectors. Place the add-in board on an anti-static surface while you record the type and serial number of the add-in board in your equipment log.
10. Set the jumpers or switches on the board according to the add-in card manufacturer's instructions.

11. Hold the add-in card by its top edge or upper corners. Firmly press the add-in card into an expansion slot on the server board. See letter “A” in the following figure.
12. Close the back panel PCI add-in card retention device. See letter “B”.

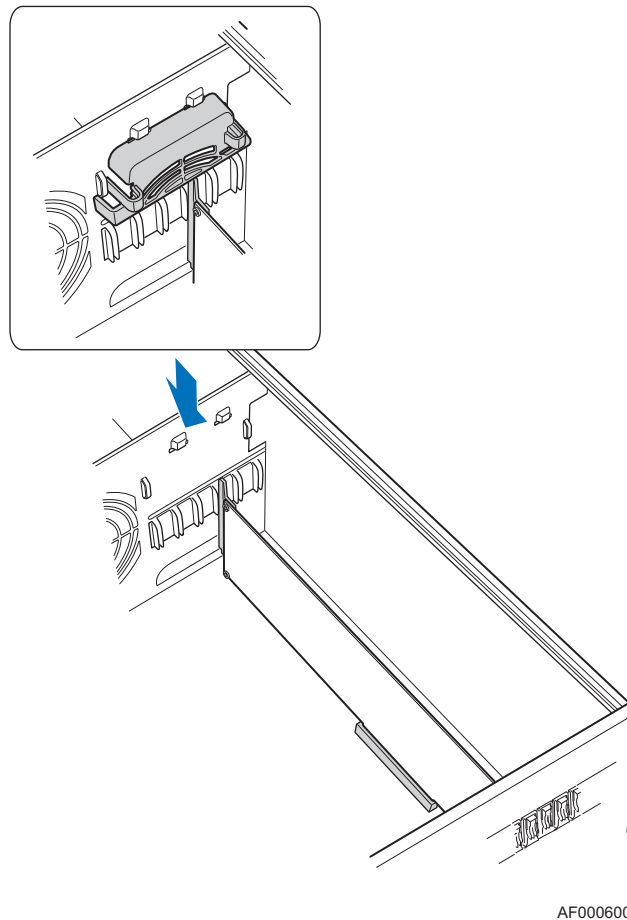


AF000599

Figure 61. Installing Add-in Card

13. Repeat steps 6 through 12 to install any other add-in cards.

14. Reinstall the PCI add-in card retainer.



AF000600

Figure 62. Reinstalling PCI Add-in Card Retainer

15. Attach cables to the add-in cards if necessary. See the add-in card manufacturer's instructions for information.
16. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
17. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
18. Plug all peripheral devices and the AC power cable into the server.
19. Power up the server.

Removing PCI Add-in Card(s)

Caution: *When removing a full-length add-in card, you must pull back the latch on the plastic card guide at the front of the server system to release the card from the card guide.*

1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
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 chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
6. Remove any cables attached to the add-in card, if necessary.
7. Press in on the two plastic tabs to release the PCI add-in card retainer from the server system. See letter “A” in the following figure.
8. Open the back panel PCI add-in card retention device by pulling it open from the inside of the system. See letter “B”.

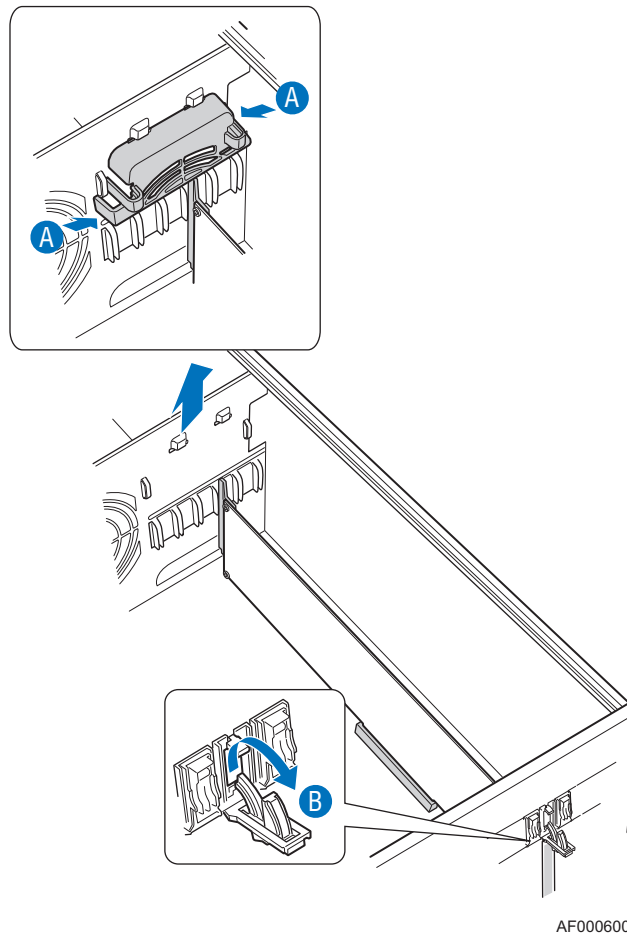


Figure 63. Preparing System for Removal of PCI Add-in Card

9. Firmly grab the PCI add-in card by its top edge or outer corners and lift it from the expansion slot on the server board. Place the removed PCI add-in board in an anti-static protective wrapper.
10. Close the back panel PCI add-in card retention device.
11. Remove additional PCI add-in card as necessary.
12. Reinstall the PCI add-in card retainer.
13. Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
14. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
15. Plug all peripheral devices and the AC power cable into the server.
16. Power up the server.

Installing and Removing Memory

Caution: Use an ESD-approved workstation for this installation. Memory components are sensitive to ESD and require careful handling. After removing a memory riser card from the system, place it with the component side facing up on a grounded, static-free surface. Do not slide the memory riser card across any surface.

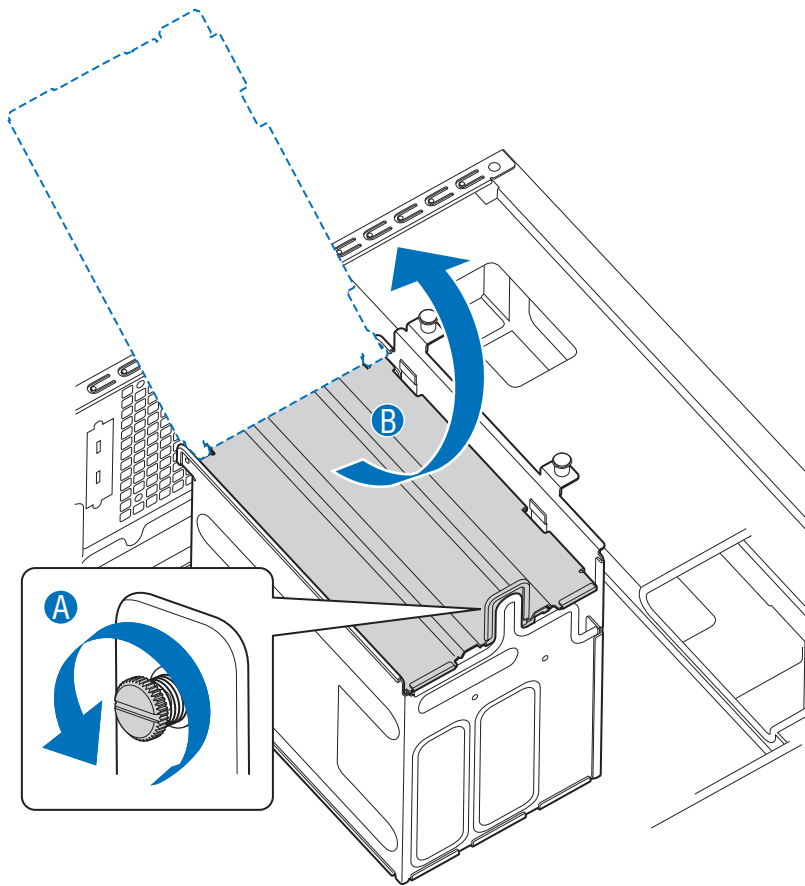
The server board includes two memory riser cards that are installed in a memory riser cage. The DIMMs are installed onto these memory riser cards.

The silkscreen on the memory riser cards displays DIMM_A1, DIMM_A2, DIMM_A3, DIMM_A4, DIMM_B1, DIMM_B2, DIMM_B3, and DIMM_B4 on riser card 1; and DIMM_C1, DIMM_C2, DIMM_C3, DIMM_C4, DIMM_D1, DIMM_D2, DIMM_D3, and DIMM_D4 on riser card 2. DIMM numbering starts from the inside of the board. Riser card 1 is in the socket closest to the MCH. See [“Memory” on page 19](#) for a discussion of the memory requirements and options. See [“Additional Information and Software” on page ix](#) for a link to the list of tested FBDIMMs.

Installing FBDIMMs

To install FBDIMMs, follow these steps:

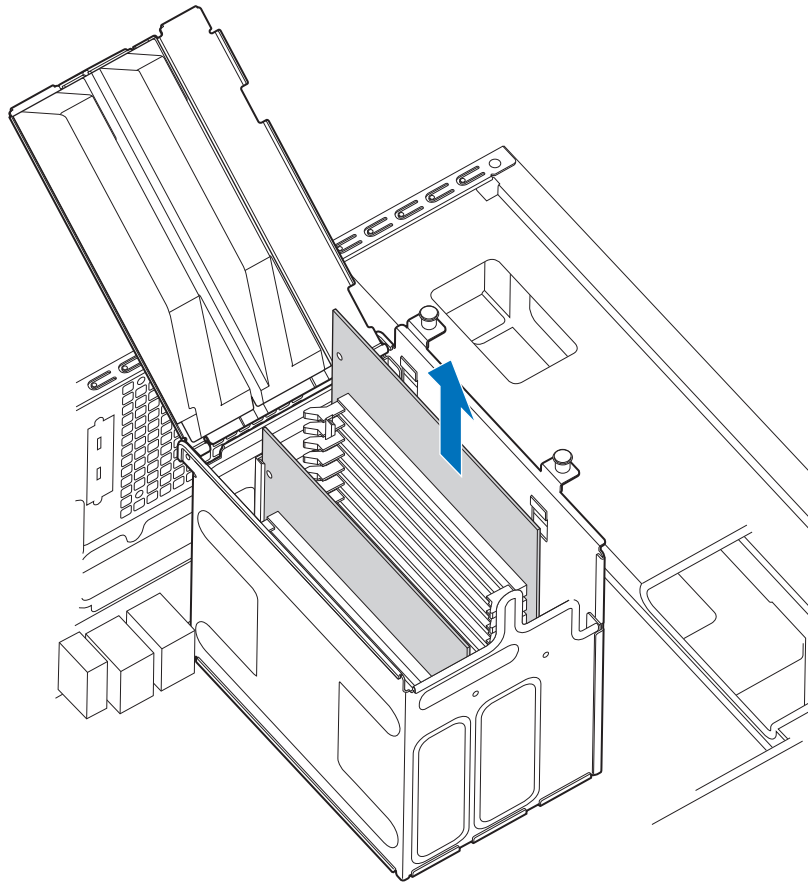
1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Loosen the thumbscrew on the DIMM cage. See letter “A” in the following figure.
6. Lift the DIMM cage cover. See letter “B” in the figure.



AF001406

Figure 64. Opening DIMM Cage

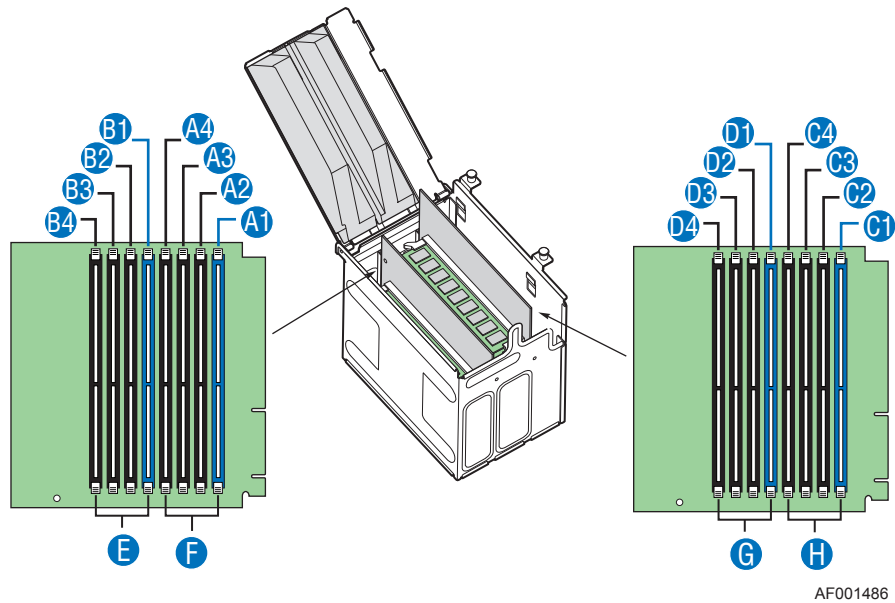
7. Pull the memory riser cards from the DIMM cage. See the figure below.



AF001407

Figure 65. Removing Memory Riser Cards

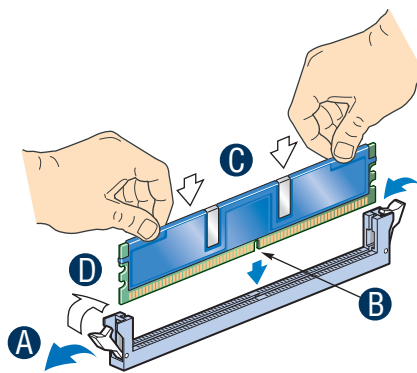
8. Identify the DIMM socket(s) you need to use. See the following figure. DIMMs must be installed in sockets DIMM_A1 and DIMM_B1 on memory riser card 1, and in sockets DIMM_C1 and DIMM_D1 on memory riser card 2.



Callout	DIMM Socket	Callout	DIMM Socket
Riser Card 1, at the left		Riser Card 2, at the right	
A1	DIMM_A1	C1	DIMM_C1
A2	DIMM_A2	C2	DIMM_C2
A3	DIMM_A3	C3	DIMM_C3
A4	DIMM_A4	C4	DIMM_C4
B1	DIMM_B1	D1	DIMM_D1
B2	DIMM_B2	D2	DIMM_D2
B3	DIMM_B3	D3	DIMM_D3
B4	DIMM_B4	D4	DIMM_D4
E	Channel B	G	Channel D
F	Channel A	H	Channel C

Figure 66. DIMM Sockets

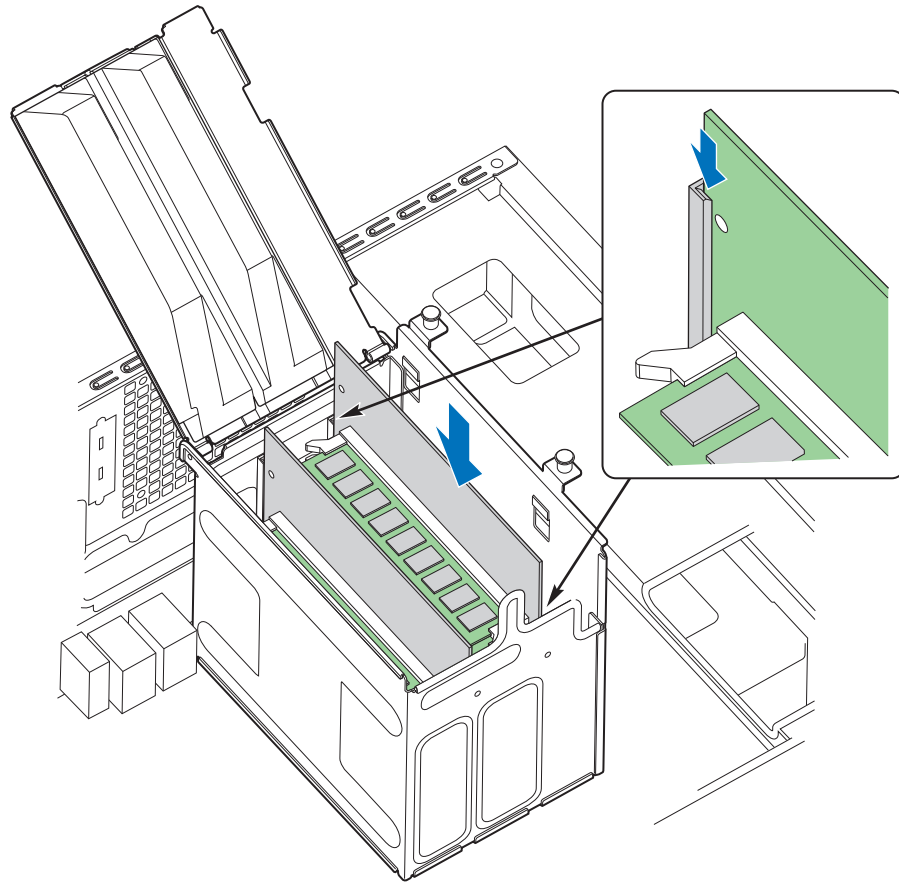
9. Make sure the clips at each end of the DIMM socket(s) are pushed outward to the open position. See letter “A” in [Figure 67](#).
10. Holding the FBDIMM by the edges, remove it from its anti-static package.
11. Position the FBDIMM above the socket. Align the notch on the bottom edge of the FBDIMM with the key in the DIMM socket. The arrow for letter “B” in [Figure 67](#) is pointing to the key in the socket.
12. Insert the bottom edge of the FBDIMM into the socket.
13. When the FBDIMM is inserted, push down on the top edge of the FBDIMM until the retaining clips snap into place. See letter “C” in [Figure 67](#).
14. Make sure the clips latch firmly in place. See letter “D” in [Figure 67](#).



TP000425

Figure 67. Installing FBDIMMs

- Slide the memory riser cards into the memory cage. Be sure to insert each side edge of the memory riser cards through the channel guides in the memory riser cage. See the figure below.



AF001413

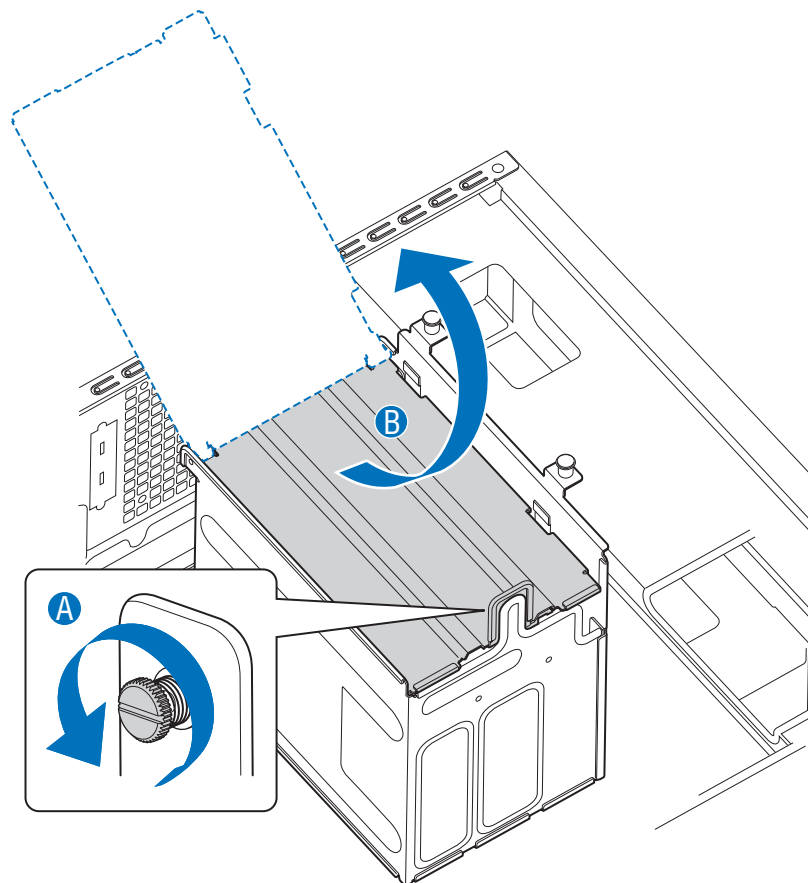
Figure 68. Inserting Memory Riser Cards

- Push firmly on the top edge of the memory riser cards to seat them into the sockets on the server board.
- Close the door on the memory cage and tighten the thumbscrew.
- Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
- Reconnect the AC power cord.

Removing FBDIMMs

To remove a FBDIMM, follow these steps:

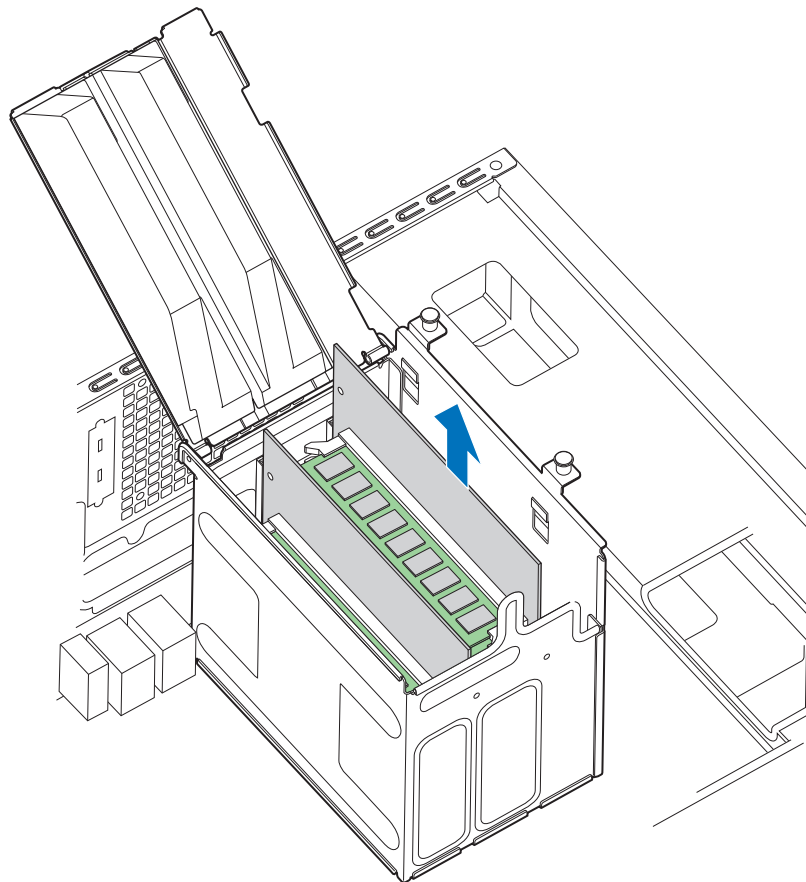
1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Remove the AC power cord from the server.
4. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Loosen the thumbscrew to open the memory riser cage.



AF001406

Figure 69. Opening DIMM Cage

6. Pull the memory board(s) from the DIMM cage. See the following figure.



AF001523

Figure 70. Removing Memory Riser Cards

7. Push the clips at each end of the DIMM socket(s) outward to the open position. The FBDIMM lifts from the socket.
8. Holding the FBDIMM by the edges, lift it from the socket. Store the FBDIMM in an anti-static package.

Note: For your server system to be functional, DIMMs must be installed in sockets DIMM_A1 and DIMM_B1 on memory riser card 1, and in sockets DIMM_C1 and DIMM_D1 on memory riser card 2.

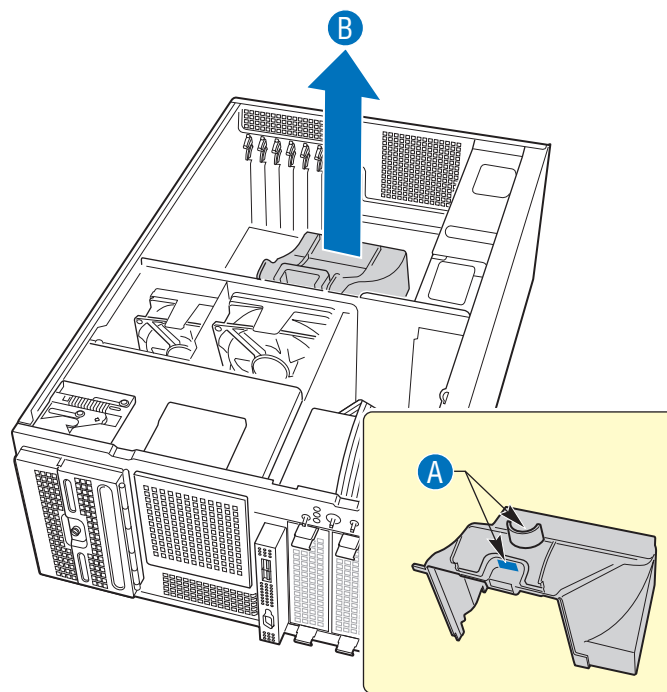
9. Insert the memory board into the memory cage. Push down firmly to seat the memory board into the socket on the server board.
10. Close the door on the memory cage and tighten the thumbscrew on the cage.
11. Replace the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#)
12. Reconnect the AC power cord.

Removing and Installing the Processor Air Duct

Always operate your server system with the processor 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”](#) on page iii.
2. Power down the server system and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover”](#) on page 24.
4. Squeeze together at the touch points on the processor air duct to disengage it from the server system. See letter “A” in the following figure.
5. Lift the processor air duct from the server system. See letter “B”.



AF001506

Figure 71. Removing the Processor Air Duct

Installing the Processor Air Duct

1. Set the processor air duct into place, making sure the tabs on the processor air duct engage their matching slots and hooks in the chassis. See letters “A” and “B” in the figure below.

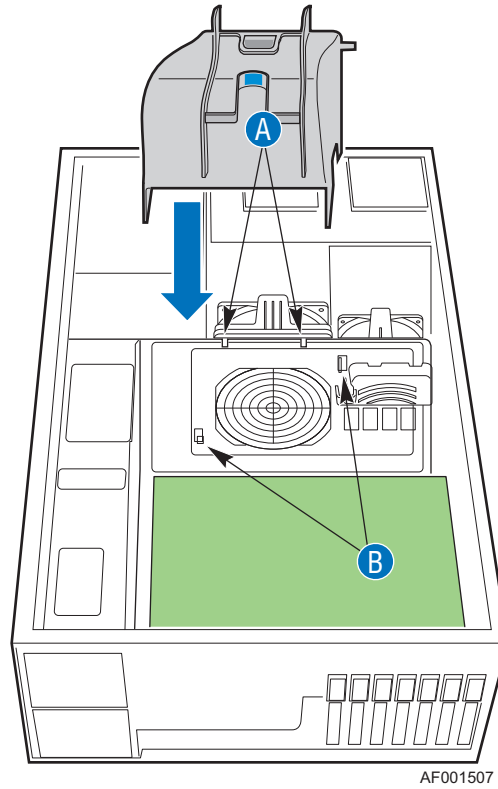


Figure 72. Installing the Air Duct

Installing or Removing a Processor

Caution: *Processor must be appropriate: You may damage the server board if you install a processor that is inappropriate for your server. See [“Additional Information and Software”](#) on page ix for a link to the list of compatible processor(s).*

Caution: *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 a Processor

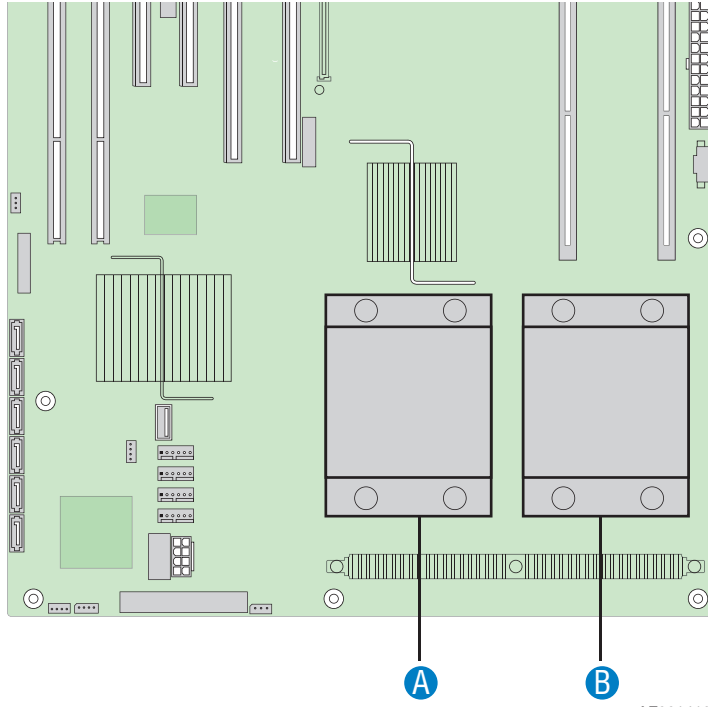
Notes:

- Do not touch the contacts on either the processor or the processor socket.
- Do not force the processor socket into place. When correctly aligned, the socket will easily drop into place.

To install a processor, follow these instructions:

1. Observe the safety and ESD precautions in [“Safety Information”](#) on page 129.
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 chassis cover. For instructions, see [“Removing the Chassis Cover”](#) on page 24.
5. Remove the processor air duct. For instructions, see [“Removing the Processor Air Duct”](#) on page 68.

6. The processor sockets are covered by the heatsinks. Locate the heatsinks / processor sockets. See [Figure 73](#).



Callout	Processor Socket	Callout	Processor Socket
A.	Heatsink and CPU_2 socket	B.	Heatsink and CPU_1 socket

Figure 73. Locating Processor Sockets / Heatsinks

7. Remove the heatsink from the processor socket.

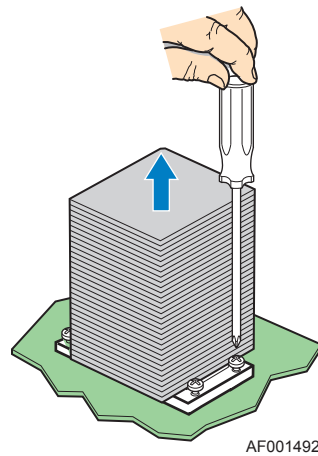


Figure 74. Removing Heatsink

8. Push down on the lever attached to the processor socket. While holding the lever down, pull it towards the center of the board to disengage the lever from the hook. Fully open the lever. See [Figure 75](#).

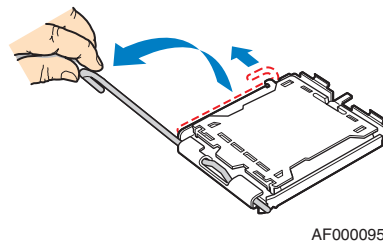


Figure 75. Opening Processor Socket Lever

9. Push down on the rear tab of the load plate to swing the front of the load plate up slightly. Fully open the load plate. See [Figure 76](#).

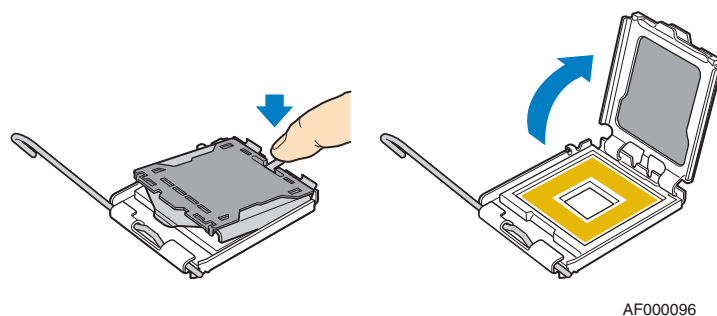
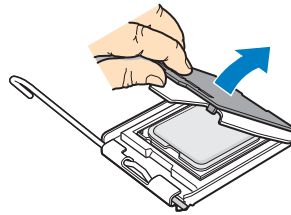


Figure 76. Opening Load Plate

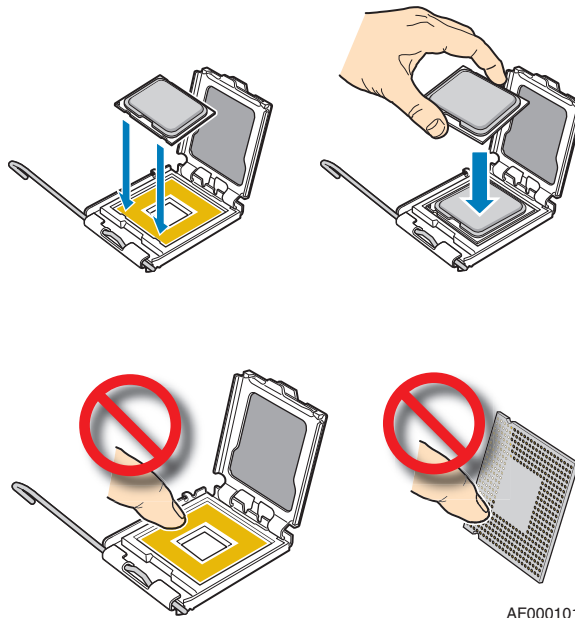
10. If the protective cover is attached from the load plate, remove it and store it for future use.



AF00097

Figure 77. Removing Protective Cover from Load Plate

11. Remove the processor from the box and remove the protective shipping cover.
12. Set the processor in the socket with the processor cutout matching the processor socket notch. See [Figure 78](#).



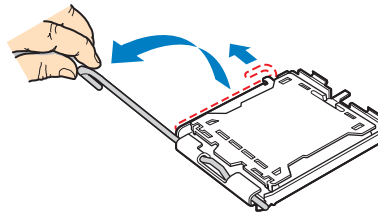
AF000101

Figure 78. Setting Processor in Place

13. Close the load plate.
14. Close the socket lever. Push downward on the socket lever while pushing it toward the center of the processor socket to engage it under the hook on the processor socket.
15. Install the heatsink(s). See [“Installing a Heatsink” on page 76](#) for instructions.

Removing a Processor

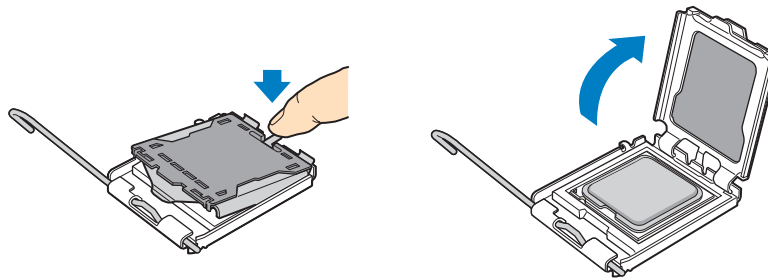
1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Remove the AC power cord from the server.
4. Remove the chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
5. Remove the air duct. For instructions, see “[Removing the Processor Air Duct](#)” on page 68.
6. Remove the heatsink. For instructions, see “[Removing a Heatsink](#)” on page 77.
7. Push down on the lever attached to the processor socket. While holding the lever down, pull it towards the center of the board to disengage the lever from the hook. Fully open the lever. See [Figure 79](#).



AF000095

Figure 79. Opening Processor Socket Lever

8. Push down on the rear tab of the load plate to swing the front of the load plate up slightly. Fully open the load plate. See [Figure 80](#).



AF000415

Figure 80. Opening Load Plate

9. Lift the processor from the socket. See [Figure 78](#).

Caution: Do not touch the contacts on either the processor or the processor socket.

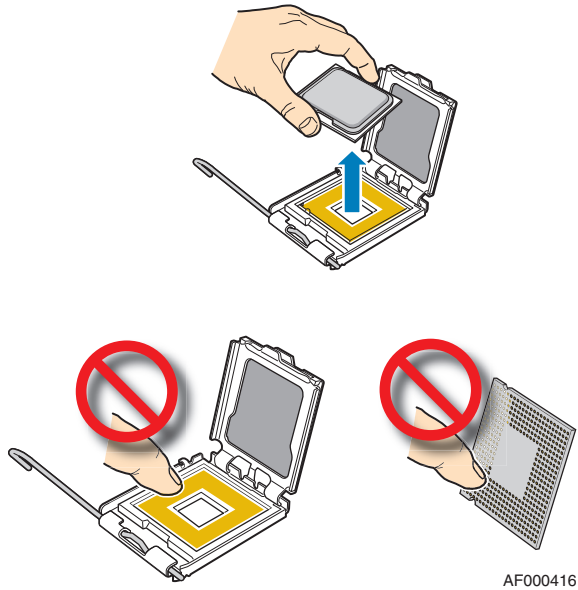


Figure 81. Removing Processor from Socket

10. Store the processor in the packaging materials in which it came.
11. Install the protective cover over the load plate if a replacement processor will not be installed.

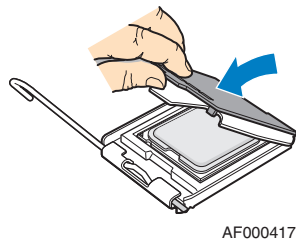


Figure 82. Installing Protective Cover onto Load Plate

12. Close the load plate.
13. Close the socket lever. Push downward on the socket lever while pushing it toward the center of the processor socket to engage it under the hook on the processor socket.
14. If installing a replacement processor, see [“Installing a Processor”](#) on page 70.
15. Reinstall and reconnect any parts you removed or disconnected to reach the processor sockets.
16. Install the chassis cover. For instructions, see [“Installing the Chassis Cover”](#) on page 25.

Installing or Removing a Heatsink

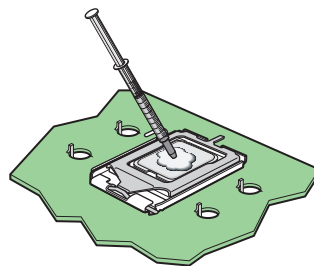
Installing a Heatsink

Caution:

- *If you have removed the processor from the socket, thoroughly clean the thermal grease from the underside of the heatsink before re-installing the heatsink over the processor socket. If you are installing a replacement processor, clean the thermal grease and reapply thermal grease.*
- *The server system must be operated with both heatsinks installed, even if only a single processor is installed.*
- *Use only the heatsinks that were shipped with the server system. Do not use the heatsink that shipped with the boxed processor in this server system.*

Use the following steps to install a heatsink.

1. Use the syringe to apply thermal grease to the top of the processor.



AF001487

Figure 83. Applying Thermal Grease

2. Set the heatsink over the processor socket, lining up the four captive screws with the four posts surrounding the processor socket.

3. Loosely screw in the captive screws on the heat sink corners in the order shown by Figure 84. Do not fully tighten one screw before loosely attaching the others.
4. In the same order, gradually and equally tighten each captive screw until each is firmly tightened. Do not fully tighten one screw at a time.

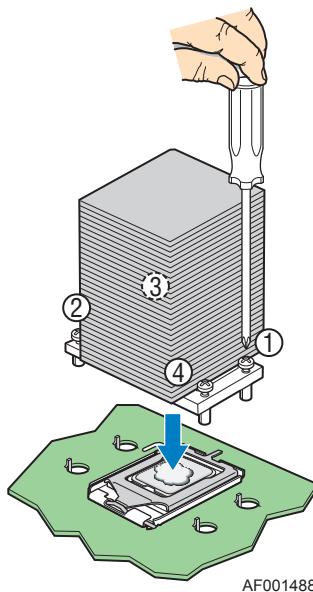


Figure 84. Installing a Heatsink

5. Install the processor air duct. For instructions, see [“Installing the Processor Air Duct”](#) on page 69.
6. Replace the chassis cover. For instructions, see [“Installing the Chassis Cover”](#) on page 25.
7. Reconnect the AC power cord.

Removing a Heatsink

Caution:

- *Do not attempt to operate your server system without a heatsink installed over each installed processor. Doing so will cause your server to overheat and may cause permanent damage.*
- *The server system must be operated with both heat sinks installed, regardless of whether one or two processors are installed.*

You will need to remove the heatsink under the following conditions:

- A processor is installed under the heatsink and you need to remove the processor.
- You are installing a processor in this processor socket for the first time. The system was shipped to you with the heatsinks installed over the empty processor sockets. The heatsinks must both be installed at all times during system operation.

Use the following steps to remove a heatsink:

1. Unscrew the captive screws on each corner of the heatsink.
2. If a processor is installed under the heatsink, twist the heat sink slightly to break the seal between the heat sink and the processor.
3. Lift the heat sink from the system. If it does not pull up easily, make sure the screws are fully loosened and twist the heat sink slightly again if a processor is installed beneath the heatsink. Do not force the heatsink from the processor. Doing so could damage the processor.

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

Installing the Intel® RMM and the Intel® RMM NIC

1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
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 chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
5. Open the back panel PCI add-in card retention device by pulling it open from the inside of the system. See letter “B”.
6. If a PCI slot cover is installed, remove it by pushing the cover out from the inside of the system. See letter “C”.

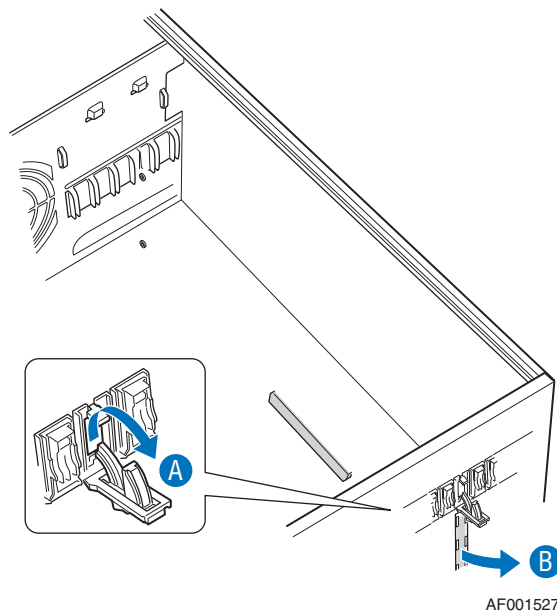
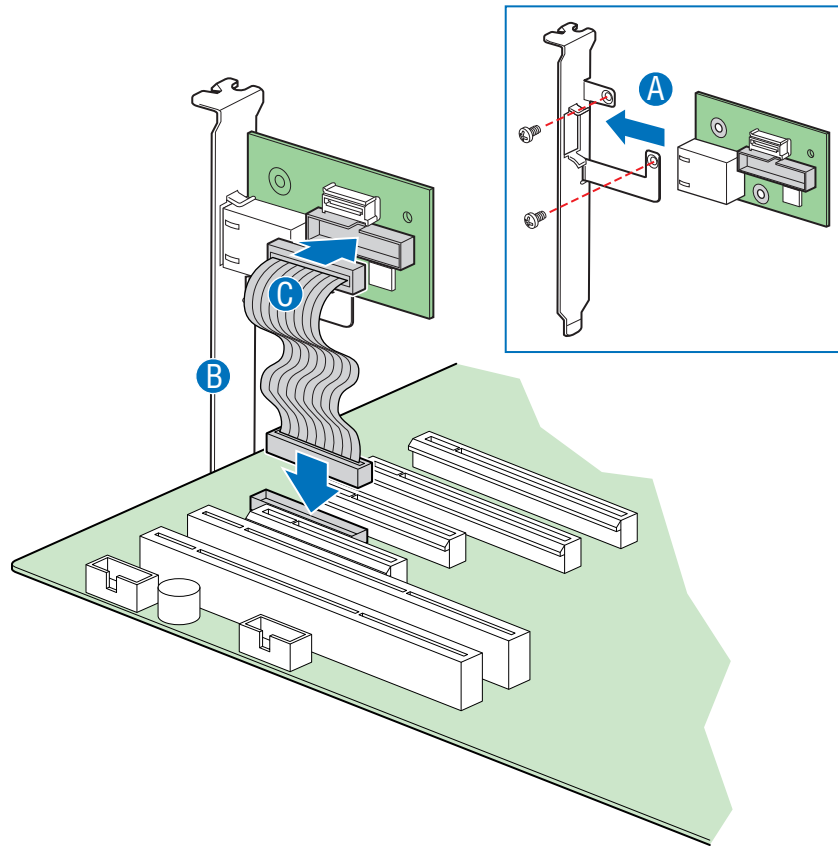


Figure 85. Preparing System for Addition of Intel® RMM NIC

7. Install the Intel® RMM NIC onto the PCI bracket that came with the kit. See letter “A” in the figure below.
8. Install the PCI bracket into the nearest available PCI slot opening. See letter “B” in the figure below.
9. Attach the RMM NIC cable between the RMM NIC connector on the server board and the connector on the RMM NIC. The server board connector is located between PCI Express slots 3 and 4. See letter “C” in the figure.



AF001526

Figure 86. Installing Intel® RMM NIC

10. Insert the standoff into the hole labeled TH4 on the Intel® RMM board. See letter “A” in the figure below. The standoff installs on the under side of the Intel® RMM board.
11. Attach the Intel® RMM board to the server board connector and snap the standoff into the matching hole on the server board. See letter “B” in the figure.

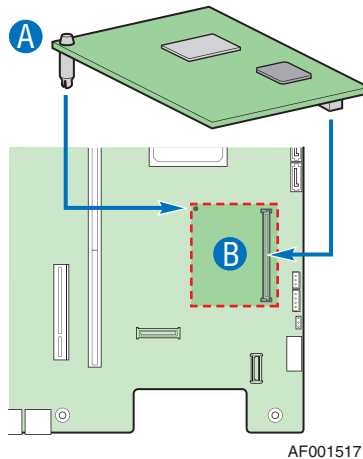
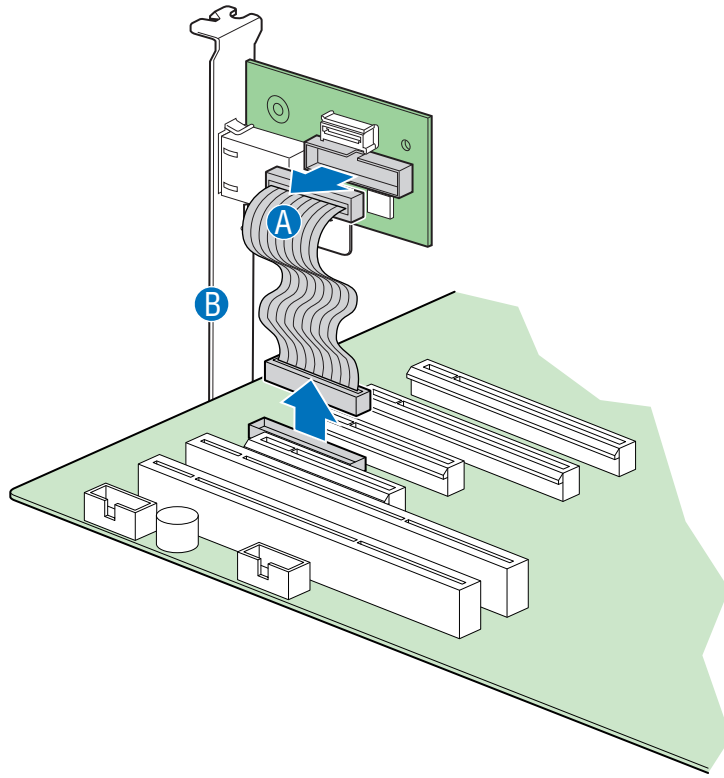


Figure 87. Installing the Intel® Remote Management Module

12. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
13. Plug all peripheral devices and the AC power cable into the server.
14. Power up the server.

Removing the Intel® RMM and the Intel® RMM NIC

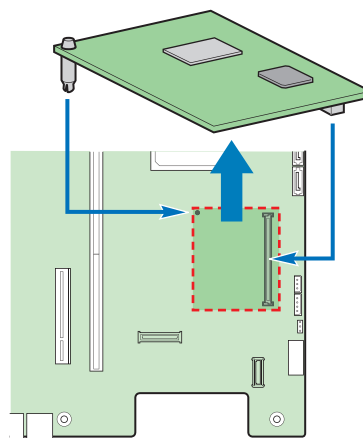
1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Disconnect the Intel® RMM NIC cable from the server board and from the RMM NIC. See letter “A” in the following figure.
6. Lift the bracket containing the RMM NIC from the server system. See letter “B” in the figure.



AF001526

Figure 88. Removing the Intel® RMM NIC

7. Lift the Intel® RMM board from the server system. See the figure below.



AF001511

Figure 89. Removing the Intel® Remote Management Module

8. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
9. Plug all peripheral devices and the AC power cable into the server.
10. Power up the server.

Replacing the Control Panel

The steps for replacing the front control panel and the Intel® Local Control Panel are nearly identical. Use the following steps for both varieties of the control panel. Where necessary, differences between the two control panels are noted.

Your server must be operated with a control panel installed.

Caution: *The control panel is NOT hot swappable. Before removing or replacing the control panel, 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.*

1. Observe the safety and ESD precautions in [“Safety Information” on page 129](#).
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 chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
5. Remove the front bezel if it is installed. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
6. Press the latch at the back of the control panel.
7. Slide the control panel out through the front of the server system far enough so that you can reach the front panel and USB cable connectors at the rear of the control panel.
8. Disconnect the front panel cable and the USB cable.
9. Slide the replacement control panel module into the server system.
10. Connect the USB cable and the front panel cable.
11. (Optional) Install the front bezel. For instructions, see [“Removing and Installing the Front Bezel” on page 26](#).
12. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
13. Plug all peripheral devices and the AC power cable into the server.
14. Power up the server.

Replacing a System Fan

1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
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 chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
5. Disconnect the fan power cable from the server board.
6. Lift the 92-mm fan (see letter “A” in the following figure) or the 120-mm fan (see letter “B”) from its snap-in bracket.

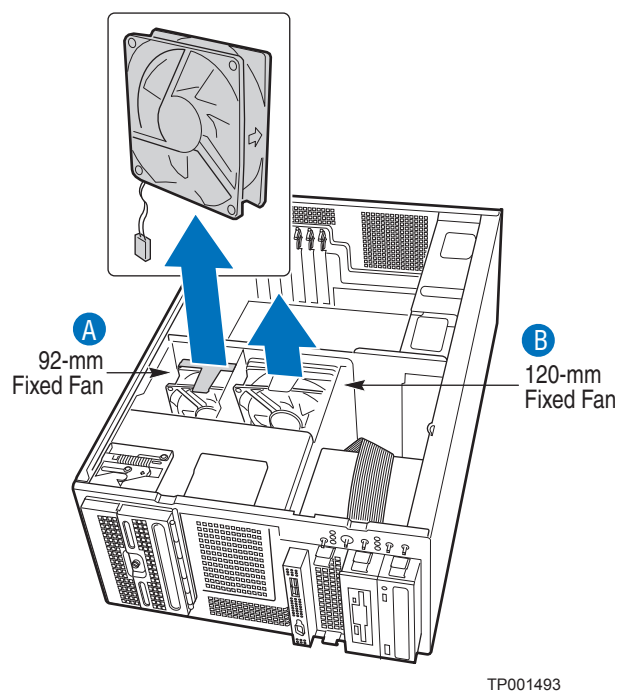


Figure 90. Removing a Fixed Fan

7. Set the replacement fan into place.
8. Connect the fan power cable to the server board.
9. Install the chassis cover. For instructions, see “[Installing the Chassis Cover](#)” on page 25.
10. Plug all peripheral devices and the AC power cable into the server.
11. Power up the server.

Installing an Additional Hot-swap Power Supply Module

1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
 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 chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
1. Remove the screws from the filler panel. See letter “A” in the following figure.
 2. Lift the power supply filler panel from the system. See letter “B”.

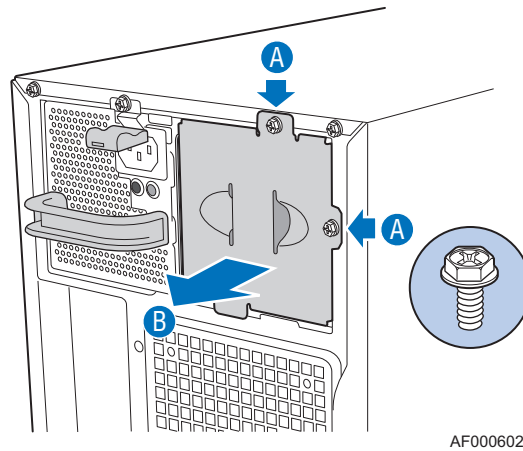


Figure 91. Removing the Power Supply Filler Panel

3. Slide the power supply module into the system until it clicks into place.
4. Secure the power supply with a screw if you plan to ship the system to another location. See letter “A” in the following figure.

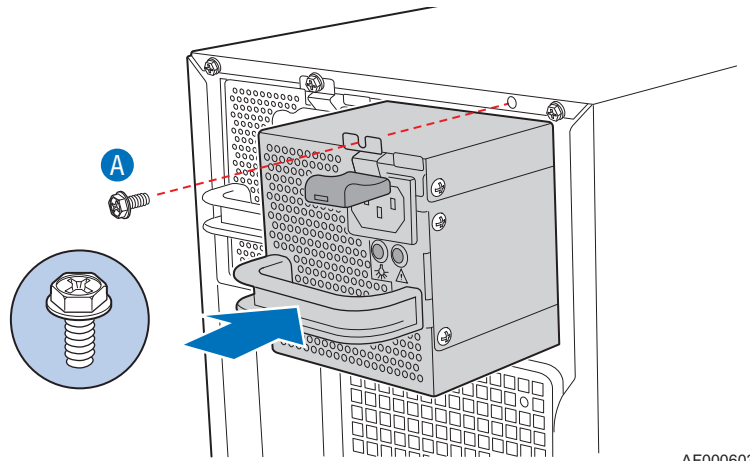


Figure 92. Installing an Additional Hot-swap Power Supply Module

Replacing a Hot-swap Power Supply

Warning: Hazardous voltage, current, and energy levels are present inside the power supply. There are no user-serviceable parts inside it; servicing should be done by technically qualified personnel.

1. Remove the power cable from the defective hot swap power supply.
2. If present, remove shipping screw that secures the power supply power supply to the server system. See letter “A” in the following figure.
3. Press on green latch while pulling on handle to remove power supply from the server system. See letter “B” in the figure.

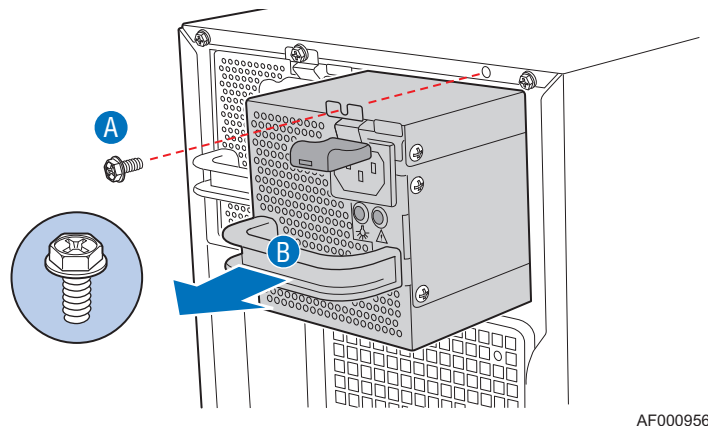
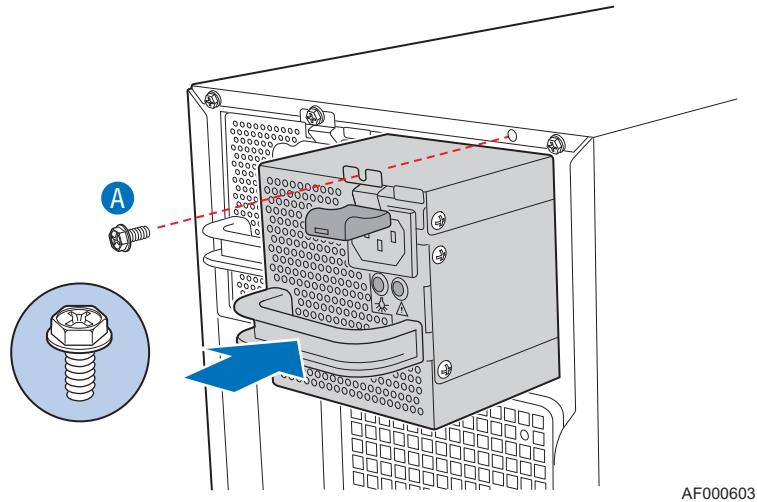


Figure 93. Removing a Hot-swap Power Supply

4. Slide the replacement hot-swap power supply into the system.
5. Replace the shipping screw if the system will be shipped to another location. See letter “A” in the following figure.



AF000603

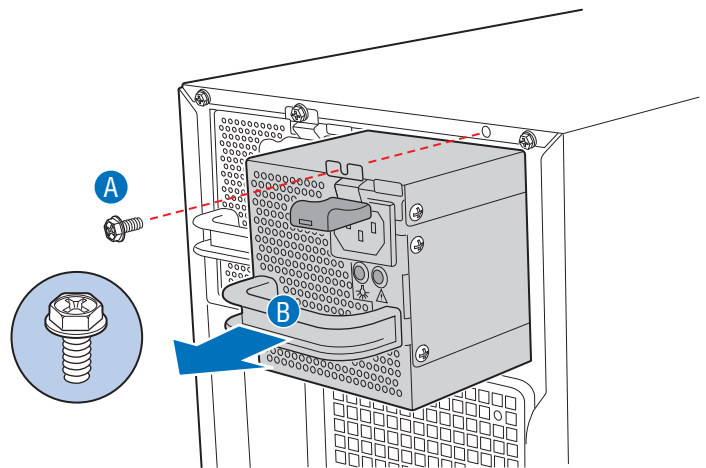
Figure 94. Installing Hot Swap Power Supply

6. Connect the power cable to the power supply.

Replacing the Power Distribution Board

Warning: Hazardous voltage, current, and energy levels are present inside the power supply. There are no user-serviceable parts inside it; servicing should be done by technically qualified personnel.

1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
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 chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
5. Remove the air duct. For instructions, see “[Removing the Processor Air Duct](#)” on page 68.
6. If present, remove the shipping screw that secures the hot swap power supply to the chassis. See letter “A” in the following figure.
7. Press on green latch while pulling on handle to remove power supply from the server system. See letter “B”.
8. Repeat steps 6 and 7 for the second hot swap power supply if one is installed.

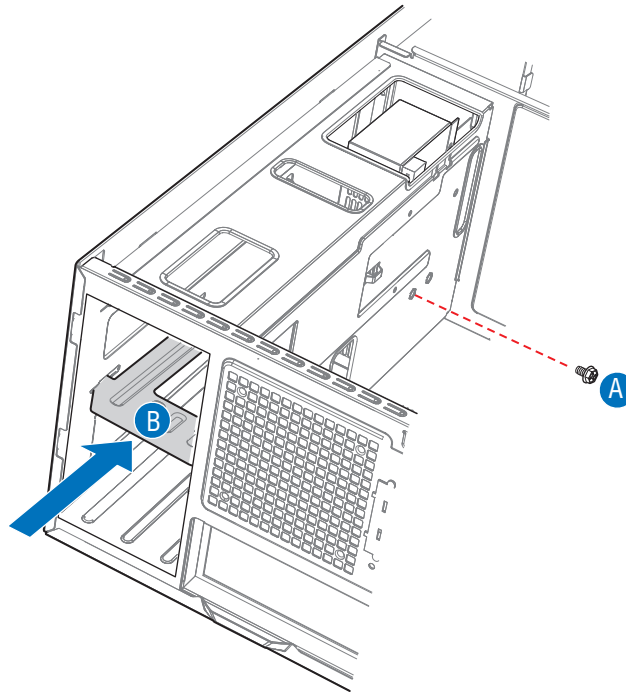


AF000956

Figure 95. Removing Hot Swap Power Supply

9. Disconnect all internal power cables from server system components and from the server board.

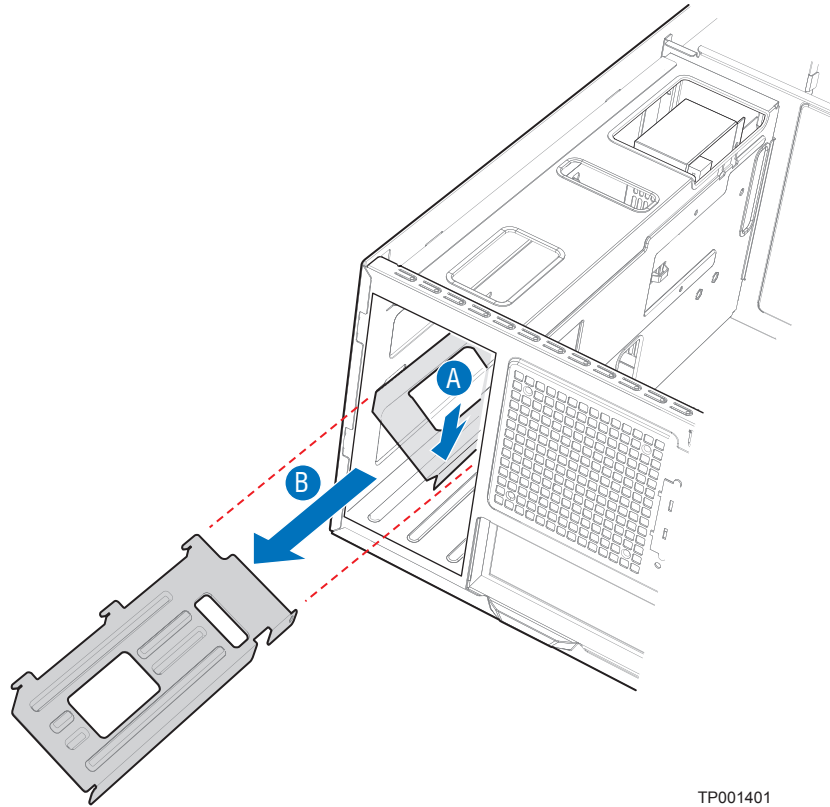
10. Remove the screw that secures the center divider to the power supply cage. See letter “A” in the following figure.
11. Push the center divider straight back to release tabs from chassis slots. See letter “B”.



TP001400

Figure 96. Detaching Center Divider

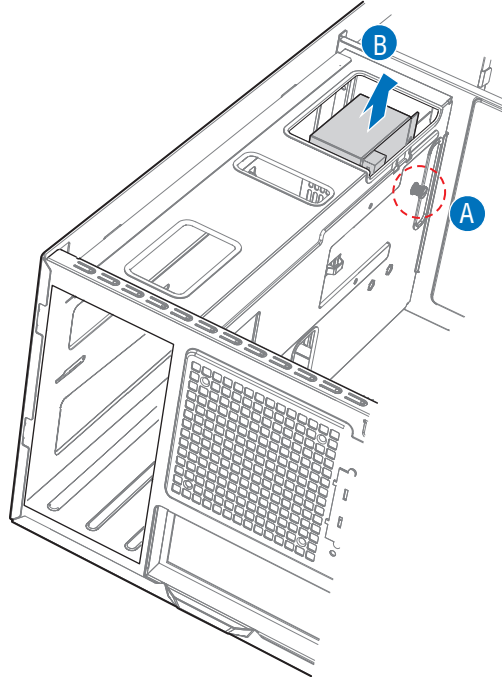
12. While holding the right edge of the center divider at a downward angle, disengage the tabs from chassis wall by pushing center divider up and sideways. See letter “A” in the figure below.
13. Remove the center divider from the power supply cage. See letter “B” in the figure.



TP001401

Figure 97. Removing Center Divider

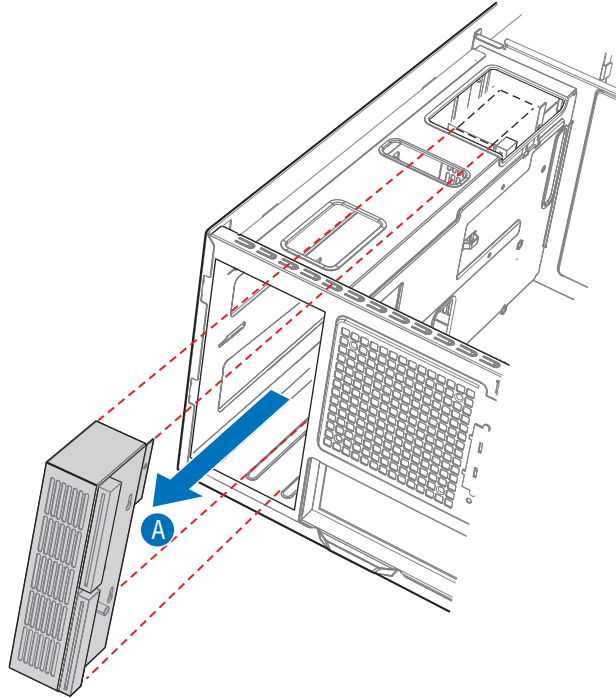
14. Loosen thumb screw securing the power distribution board to the server system.
See letter “A” in the following figure.
15. Lift the power distribution board from the standoffs. See letter “B”.



AF001402

Figure 98. Detaching Power Distribution Board

16. Pull the power distribution board out through the back of the power supply cage. See letter “A” in the figure below. You may need to feed the power cables through the power supply cage while removing the power distribution board.

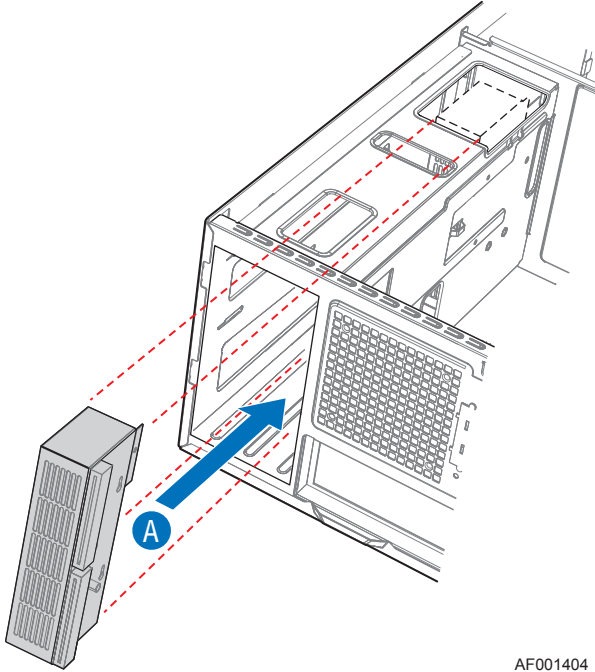


AF001403

Figure 99. Removing Power Distribution Board

Note: The cables on the back of the power distribution board are not shown.

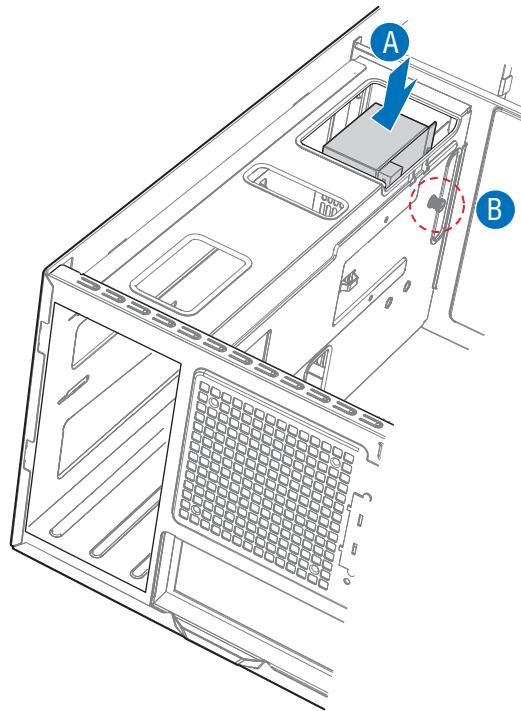
- Slide the replacement power distribution board in through the power supply cage. See letter “A” in the following figure. As you insert the board, route the power cables to the appropriate connection area.



AF001404

Figure 100. Inserting Power Distribution Board

18. Position the power distribution board onto the four standoffs inside the power supply cage.
19. Push down on the power distribution board to securely attach it to the standoffs. See letter “A” in the figure below. Tighten the thumb screw. See letter “B”.



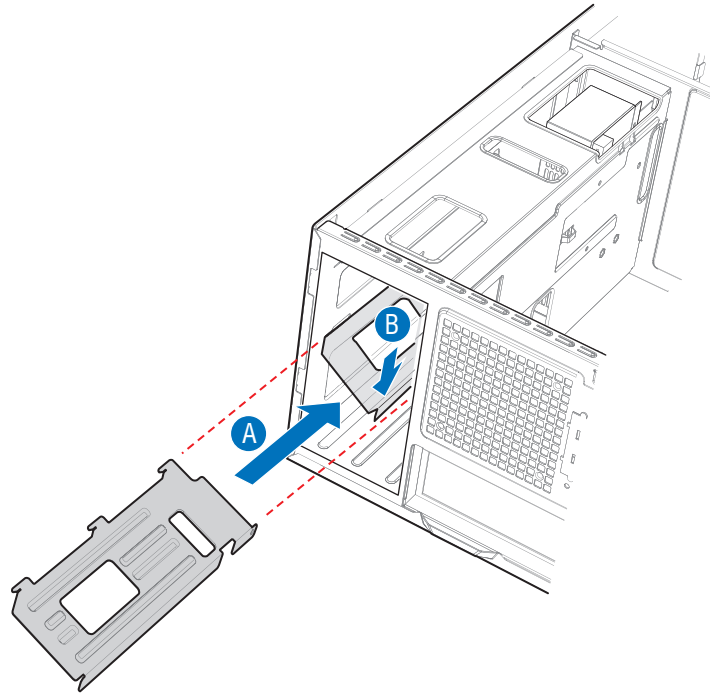
AF001405

Figure 101. Securing Power Distribution Board to Power Supply Cage

Note: The cables on the back of the power distribution board are not shown.

20. Connect the P1, P14, and P16 cables to the server board.
21. Reconnect power cables to other server system components as appropriate.

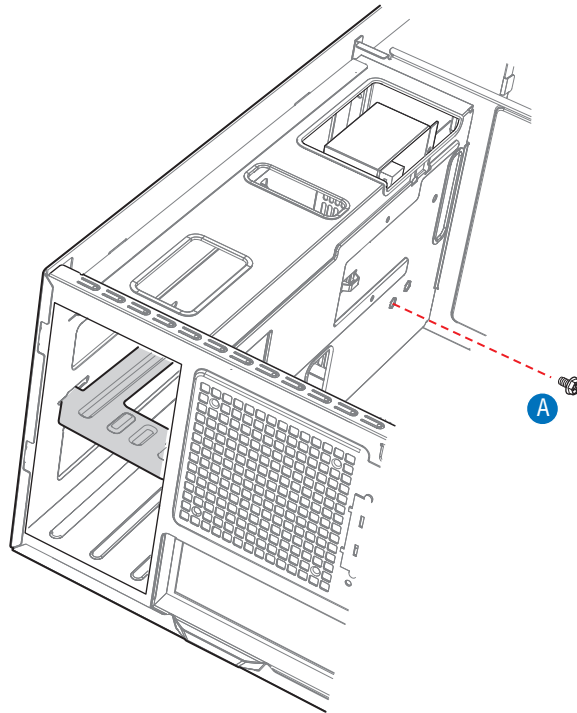
22. Slide center divider into the chassis through the power supply cage. See letter “A” in the figure below.
23. Straighten the center divider and engage it in the clips in the power supply cage. See letter “B” in the figure below.



TP001429

Figure 102. Re-installing Center Divider

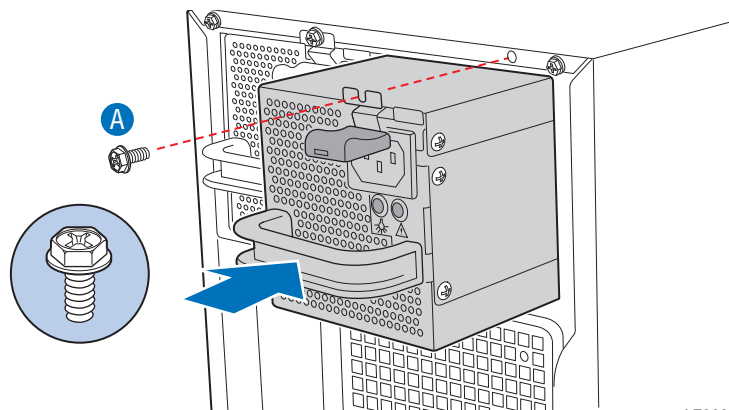
24. Secure the center divider to the chassis with one screw. See letter “A” in the figure below.



TP001430

Figure 103. Securing Center Divider

25. Insert hot swap power supply(s) into chassis. Replace shipping screw(s) if shipping the system to another location. See letter “A” in the following figure.



AF000603

Figure 104. Installing Hot Swap Power Supply

26. Install the processor air duct. For instructions, see [“Installing the Processor Air Duct” on page 69](#).
27. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
28. Plug all peripheral devices and the AC power cable into the server.
29. Power up the server.

Replacing the CMOS Battery

The lithium CMOS battery on the server board powers the RTC in the absence of power. When the battery starts to weaken, it loses voltage, and the system 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.*

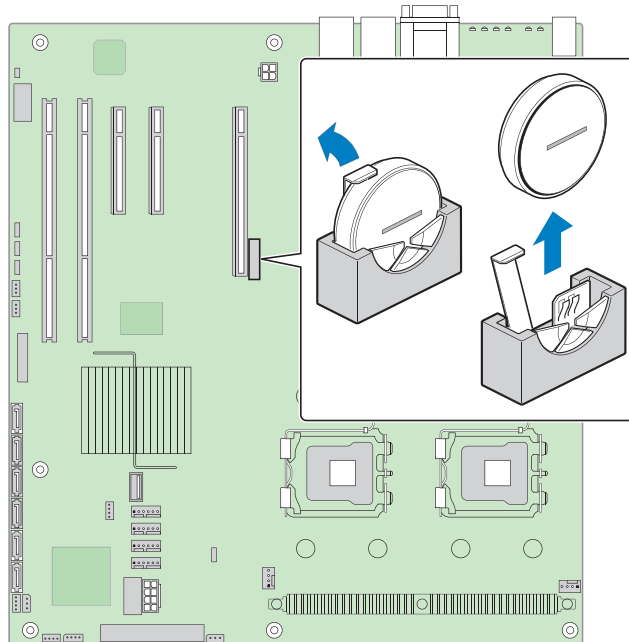
Advarsel: *Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.*

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 in [“Safety Information” on page 129](#).
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 chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).

5. Use a finger to pull the lever away from the top of the battery until it clears the battery. Use caution so you do not bend the lever. See the following figure.
6. Lift the battery from the socket.



AF001417

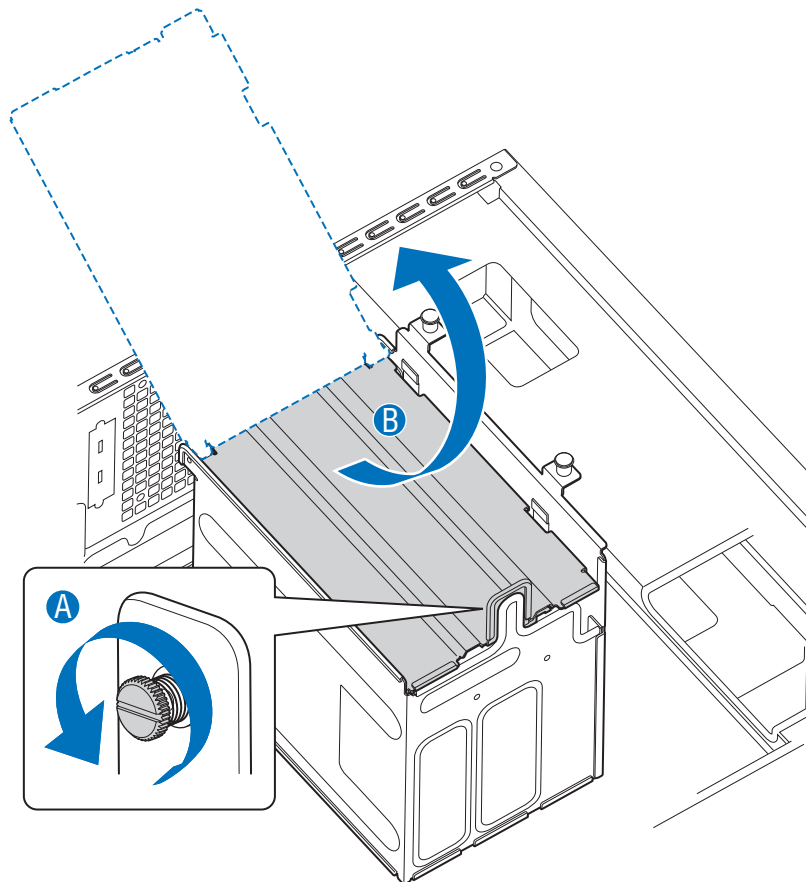
Figure 105. Locating and Removing the CMOS Battery

7. Dispose of the battery according to local ordinance.
8. Remove the new battery from its package.
9. Being careful to observe the correct polarity, insert the battery into the battery socket. The “+” side of the battery must face the lever side of the socketbattery socket, toward the add-in card slots.
10. Install the chassis cover
11. Reconnect the AC power cord and power up the system.
12. Run the BIOS Setup utility to restore the configuration settings to the real-time clock.

Replacing the Server Board

Removing the Server Board

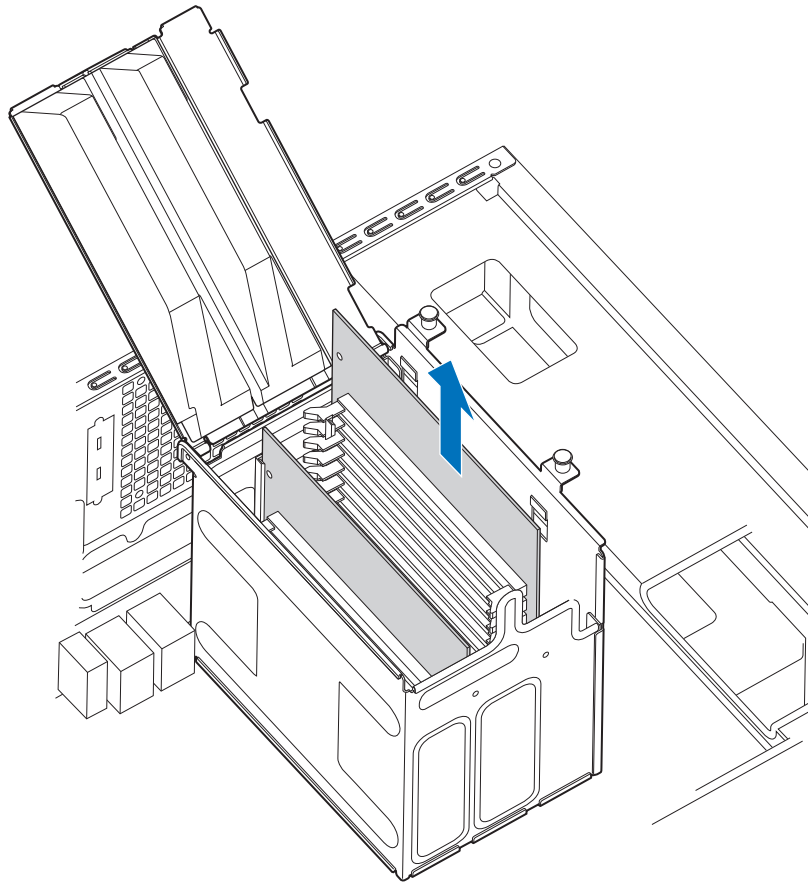
1. Observe the safety and ESD precautions in “[Safety Information](#)” on page 129.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Disconnect the AC power cord from the server.
4. Remove the chassis cover. For instructions, see “[Removing the Chassis Cover](#)” on page 24.
5. Remove the processor air duct. For instructions, see “[Removing the Processor Air Duct](#)” on page 68.
6. Loosen the thumbscrew on the memory riser cage to open the door on the cage. See the figure below.



AF001406

Figure 106. Opening Memory Riser Cage

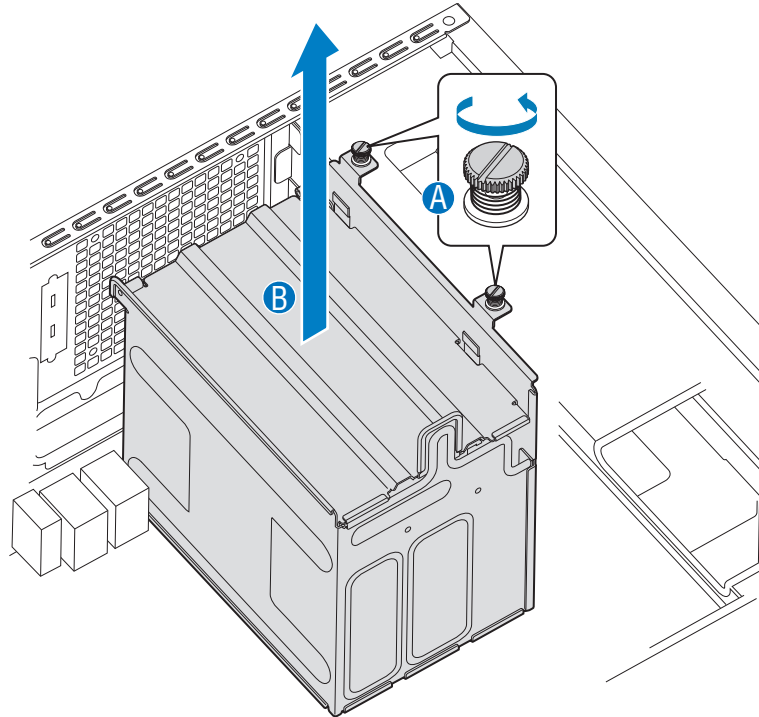
7. Pull the memory riser cards from the memory riser cage. See the figure below.



AF001407

Figure 107. Removing Memory Riser Cards

8. Reach in through the memory riser cage to disconnect the two power cables from the server board. If necessary, clip the wire tie that holds the two cables together. Use caution so you do not cut any of the cables.
9. Remove the two screws that secure the memory riser cage to the server system. See letter “A” in the figure below.
10. Lift the memory riser cage from the server system. See letter “B” in the figure below.



AF001409

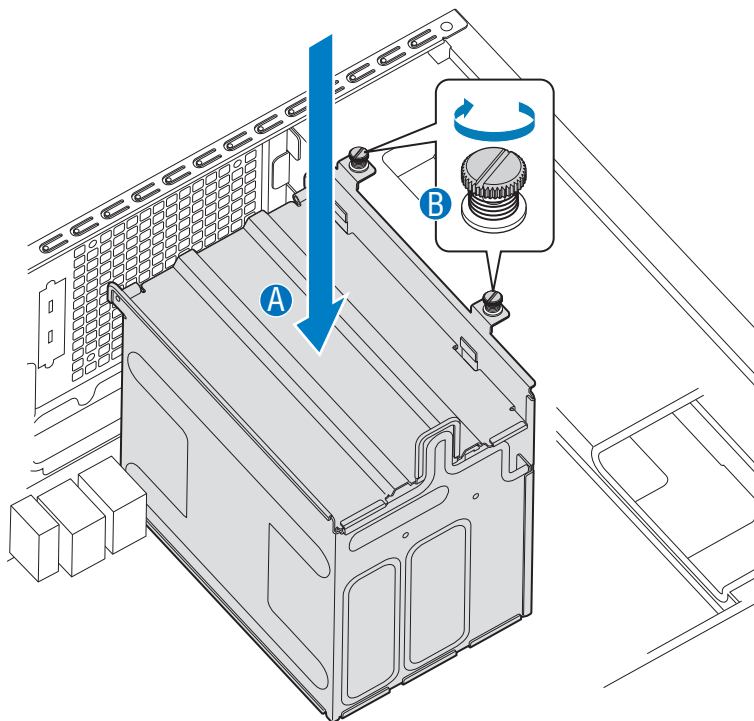
Figure 108. Removing Memory Riser Cage

11. Remove both processor heatsinks. For instructions, see [“Removing a Heatsink” on page 77](#).
12. Remove each processor. For instructions, see [“Removing a Processor” on page 74](#).
13. Remove each PCI add-in card.
14. Remove the Intel[®] Remote Management Module and the Intel[®] RMM NIC if they are installed. For instructions, see [“Removing the Intel[®] RMM and the Intel[®] RMM NIC” on page 81](#).
15. Disconnect all remaining power and data cables from the server board.
16. Remove the eight screws that secure the server board to the chassis.
17. Lift the server board from the chassis.

18. Install a replacement server board. For instructions, see [“Installing a Server Board”](#) on page 102.

Installing a Server Board

1. Set the server board into place in the server chassis, inserting the I/O connector side of the board first. Make sure the back panel I/O openings and the chassis standoff line up correctly and use caution to make sure you do not pinch any cables.
2. Attach the server board to the system with the eight screws you removed earlier.
3. Install the processor(s). For instructions, see [“Installing a Processor”](#) on page 70.
4. Install the heatsinks. For instructions, see [“Installing a Heatsink”](#) on page 76.
5. Set the memory cage into place. See letter “A” in the figure below.
6. Secure the memory cage with the two screws you removed earlier. See letter “B” in the figure.



AF001410

Figure 109. Installing Memory Riser Cage

7. Reach in through the memory riser cage to disconnect the two power cables from the server board. If necessary, clip the wire tie that holds the two cables together. Use caution so you do not cut any of the cables.
8. Install DIMMs, if necessary. For instructions, see [“Installing FBDIMMs” on page 60](#).
9. Seat the memory risers in the memory cage, pressing down firmly to seat the cards into the server board sockets.
10. Close the door on the memory board cage and tighten the thumbscrew to secure the door.
11. Install the Intel[®] Remote Management Module and the Intel[®] RMM NIC if necessary. For instructions, see [“Installing the Intel[®] RMM and the Intel[®] RMM NIC” on page 79](#).
12. Install any necessary PCI add-in cards. For instructions, see [“Installing PCI Add-in Card\(s\)” on page 54](#).
13. Connect all remaining power and data cables to the server board. For connection locations, see [Figure 8 on page 12](#). Route the cables as shown in [“Power Cable Routing to Fixed Drives” on page 113](#) and [“Data Cable Routing to Fixed Drives” on page 114](#).
14. Install the processor air duct. For instructions, see [“Installing the Processor Air Duct” on page 69](#). Use caution to make sure you do not pinch any cables.
15. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
16. Plug all peripheral devices and the AC power cable into the server.
17. Power up the server.

3 System Utilities

Using the BIOS Setup Utility

This section describes the BIOS Setup Utility options, which is used to change system configuration defaults. You can run BIOS Setup with or without an operating system being present. See [“Additional Information and Software” on page ix](#) for a link to the Technical Product Specification where you will find details about specific BIOS setup screens.

Starting Setup

You can enter and start BIOS Setup under several conditions:

- When you turn on the workstation, after POST completes the memory test.
- When you have moved the CMOS jumper on the workstation 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 has been corrupted, you will see warning prompts but not the <F2> prompt:

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

In this condition, the BIOS will load default values for CMOS and attempt to boot.

If You Cannot Access Setup

If you are not able to access BIOS Setup, you might need to clear the CMOS memory. For instructions on clearing the CMOS, see [“Clearing the CMOS” on page 112](#).

Setup Menus

The BIOS Setup utility provides multiple pages to allow you to view and change system settings. Some parameters are configured automatically and cannot be changed. If an administrator password has been set, administrator privileges are required to change most settings. If a value cannot be changed for any reason, the feature's value field is inaccessible.

The following table describes the keyboard commands you can use in the BIOS Setup menus.

Table 4. Setup Menu Key Use

Key to Press	Description
<F1>	Pressing <F1> on any menu invokes 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 affect 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 the <Enter> key 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 the <Enter> key activates the selected item.
<F5> or <->	Change Value - The minus key or the <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 the <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.

Table 4. Setup Menu Key Use

Key to Press	Description
<F9>	<p>Setup Defaults - Pressing <F9> causes the following to appear:</p> <pre>Setup Confirmation Load default configuration now? [Yes] [No]</pre> <p>If “Yes” is selected and the <Enter> key is pressed, all Setup fields are set to their default values. If “No” is selected and the <Enter> key is pressed, or if the <Esc> key is pressed, the user is returned to where they were before <F9> was pressed without affecting any existing field values.</p>
<F10>	<p>Save and Exit - Pressing <F10> causes the following message to appear:</p> <pre>Setup Confirmation Save Configuration changes and exit now? [Yes] [No]</pre> <p>If “Yes” is selected and the <Enter> key is pressed, all changes are saved and Setup is exited. If “No” is selected and the <Enter> key is pressed, or the <Esc> key 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 workstation board.
- OEM binary area
- Microcode
- A way to change the BIOS language

When you perform an upgrade to your BIOS, the upgrade is performed into a secondary BIOS partition on specialized workstation board hardware. When you boot your workstation, the system checks for an upgraded BIOS in this secondary partition. If it finds a BIOS upgrade has been installed, it attempts to boot with the new BIOS. If it encounters a problem with the upgraded BIOS, the system reverts to the BIOS that was in place before the upgrade was performed. This provides a safeguard against problems that might happen during the upgrade, such as a power outage during the upgrade process. This is called the rolling BIOS feature.

Preparing for the Upgrade

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

Note: *In the unlikely event that a BIOS error occurs during the BIOS update process, a recovery process may need to be followed to return the system to service. See “[Additional Information and Software](#)” on page ix for a link to necessary 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 will need these settings to configure your computer at the end of the procedure.*

Obtaining the Upgrade

Download the BIOS image file to a temporary folder on your hard drive. See “[Additional Information and Software](#)” on page ix for a link to the update software.

Note: *Review the instructions and release notes that are 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

Follow the instructions in the readme file that came with the BIOS upgrade. When the update completes, remove the bootable media from which you performed the upgrade.

Caution: *Do not power down the system during the BIOS update process!*

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.*

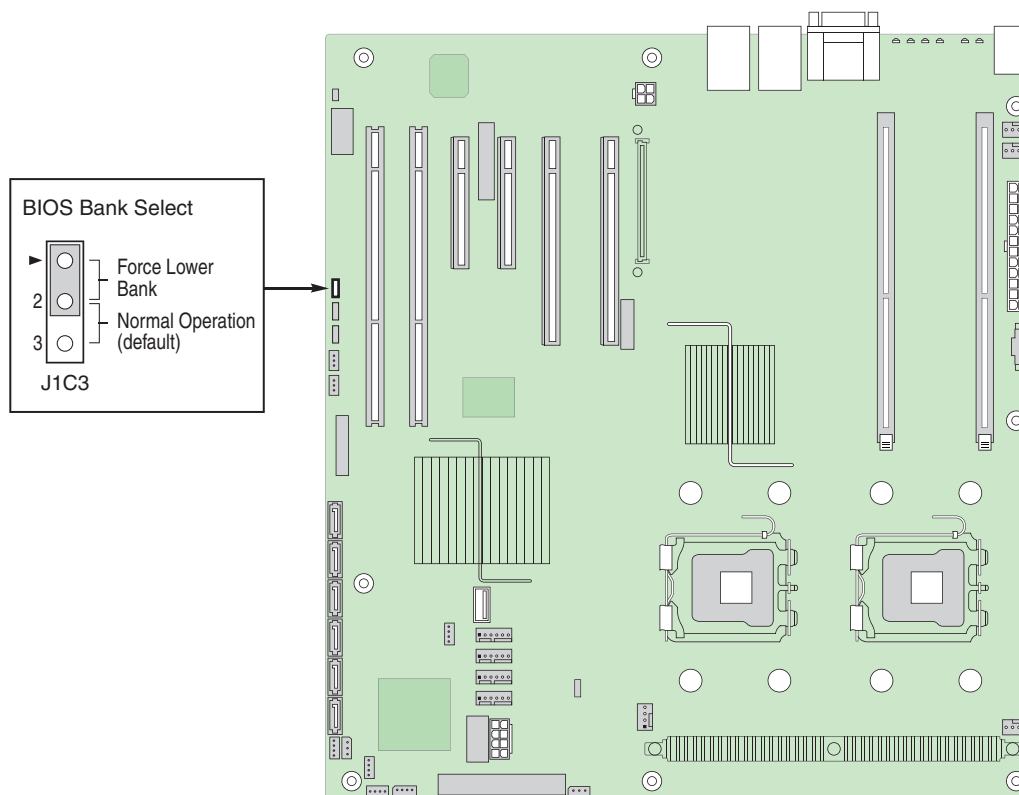
Reverting to the Previous BIOS

If you encounter a problem with your BIOS, you may want to revert to the previously installed BIOS. Because of the rolling BIOS feature, your workstation contains two versions of the BIOS: the current BIOS, and the BIOS that was previously installed.

Note: *If you upgrade the BIOS more than once with the same BIOS version, the two versions of the BIOS stored in your workstation will be identical.*

To revert to the previous BIOS:

1. Power down the workstation and disconnect the AC power.
2. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
3. Locate the BIOS Bank Select jumper at board position J1C3. See [Figure 110](#).
4. Move the jumper from the normal operation position, covering pins 2 and 3, to the Bank_0 position, covering pins 1 and 2, as shown by the diagram.



AF001426

Figure 110. BIOS Bank Select Jumper in Force Lower Bank Position

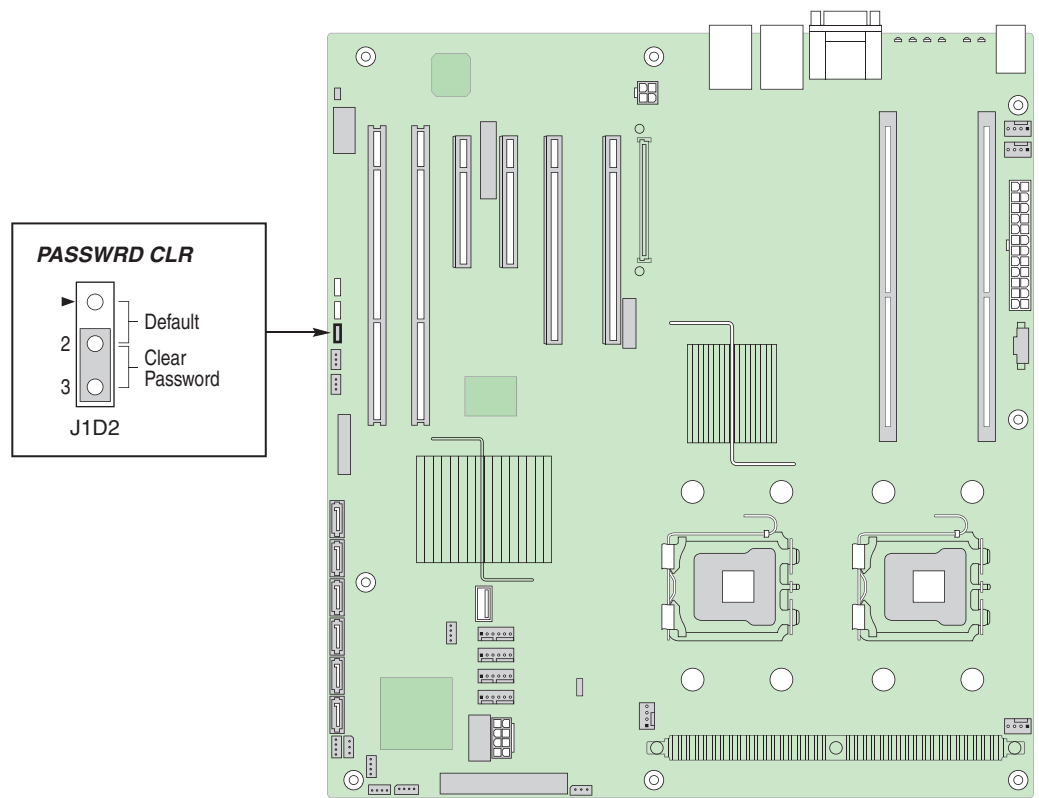
5. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
6. Reconnect the AC power and power up the server system.

The BIOS will boot to the previous BIOS until you either move the jumper again or until you perform another BIOS update.

Clearing the Password

If the user or administrator password(s) is lost or forgotten, moving the password clear jumper into the “clear” position clears both passwords. The password clear jumper must be restored to its original position before a new password(s) can be set.

1. Power down the system. Leave the AC power cord connected.
2. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
3. Locate the Password Clear jumper block at board position J1D2. See [Figure 111](#).
4. Move the jumper from the normal operation position, covering pins 1 and 2, to the Password Clear position, covering pins 2 and 3, as shown by the diagram.



AF001427

Figure 111. Password Clear Jumper in Clear Password Position

5. Power up the server system and wait 10 seconds.
6. Power down the server system.
7. Move the Passwrld Clear jumper back to the original position, covering pins 1 and 2.
8. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
9. Power up the server system.

Clearing the CMOS

If you are not able to access the BIOS setup screens, the CMOS Clear jumper will need to be used to reset the configuration RAM.

1. Power down the system. Leave the AC power cord connected.
2. Remove the chassis cover. For instructions, see [“Removing the Chassis Cover” on page 24](#).
3. Locate the CMOS Clr jumper block at board position J1D1. See [Figure 112](#).
4. Move the jumper from the normal operation position, covering pins 1 and 2, to the CMOS Clear position, covering pins 2 and 3, as shown by the diagram.

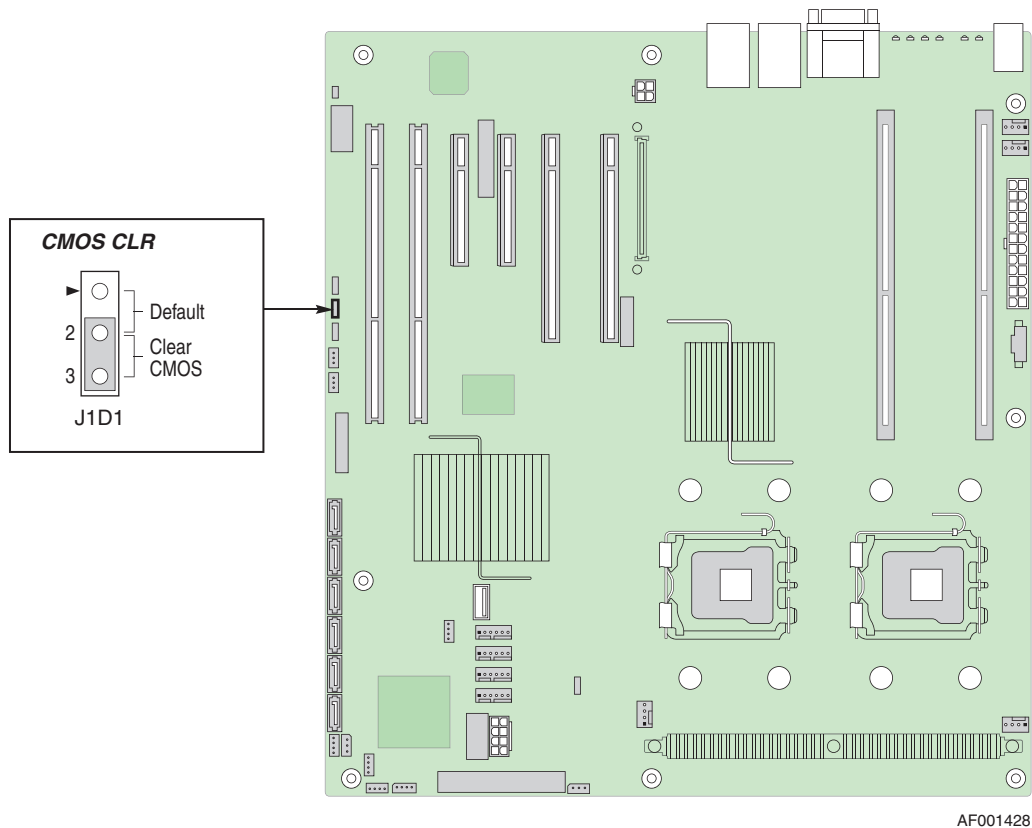


Figure 112. CMOS Clear Jumper in the Clear CMOS Position

5. Wait 10 seconds.
6. Move the CMOS Clear jumper back to the original position, covering pins 1 and 2.
7. Install the chassis cover. For instructions, see [“Installing the Chassis Cover” on page 25](#).
8. Power up the server system.

4 Technical Reference

Power Cable Routing to Fixed Drives

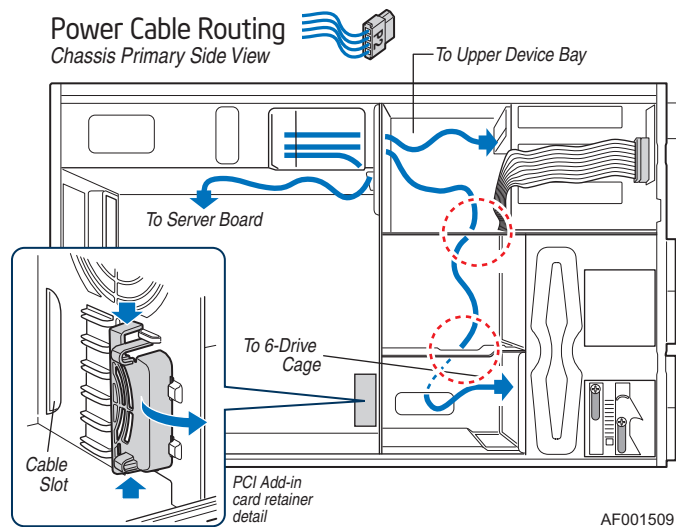


Figure 113. Routing Power Cables to Fixed Drives

Power Cable Routing Guidelines:

- P3, P4 and P5 power cables route to removable drives.
- P6, P7, P8, P9, P10, P11 power cables (standard SATA) to hard drives..

Data Cable Routing to Fixed Drives

- Route SATA data cables through the chassis openings located near the bottom of the drive cage.
- Connect data cables to the respective fixed drive and to the appropriate connector on the server board.

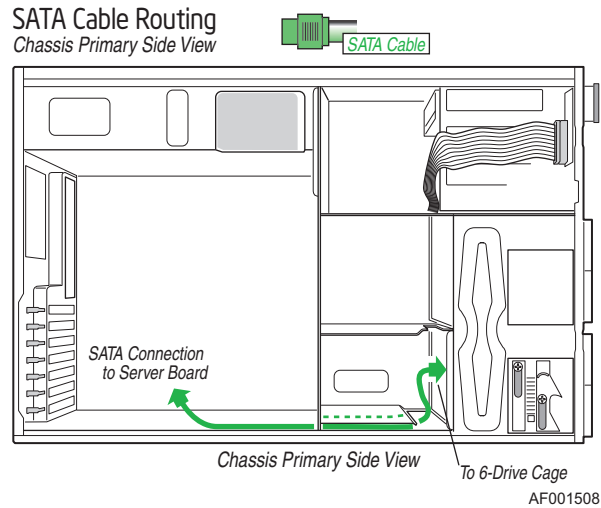


Figure 114. Routing SATA Data Cables

Power Supply Specifications

830-W Single Power Input Voltages

- 100-127 V~at 50/60 Hz; 14 A max.
- 200-240 V~at 50/60 Hz; 8 A max.

830-W Single Power Supply Output Voltages

The following table lists the total wattage available from the power subsystem for each voltage. If you configure your system heavily, ensure that your loads do not exceed the combined total wattage of 800 Watts.

Table 5. 830-W Power Supply Output Capability

Voltage	Maximum Current
+3.3 V	25 A
+5.0 V	33 A
+5 V Standby	3 A
+12.0	51 A
-12.0 V	0.5 A

Warning: Do not exceed a combined power output of 170 Watts for the +5 V and +3.3 V outputs. Exceeding a combined 170 Watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

The expansion slots on the server board are rated for no more than 25 Watts for any one slot. The average current usage per slot should not exceed 13 Watts.

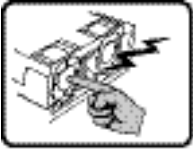
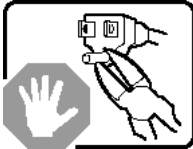


System Environmental Specifications

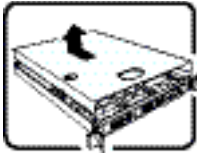
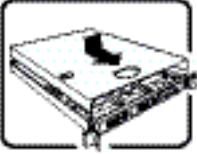
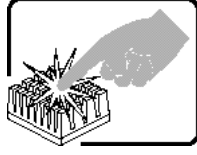
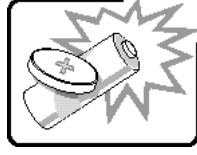
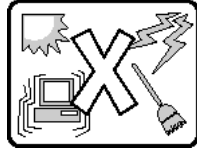
Table 6. Environmental Specifications

Temperature	Non-operating: -40 ° to 70 °C. Operating: 10 ° to 35 °C; derated 0.5 °C for every 1000 ft. (305 m) to a maximum of 10,000 ft.
Humidity	Non-operating: 90% relative humidity (non-condensing) at 30 °C.
Shock	Operating: 2.0 g, 11 msec, 1/2 sine Packaged: Operational after an 18" free fall.
Acoustic Noise	5.5 BA LWA idle; 6.3 BA LWA typical operating
Electrostatic discharge (ESD)	Tested to 15 kilovolts (kV); no component damage.

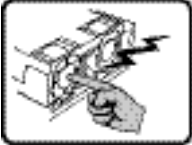
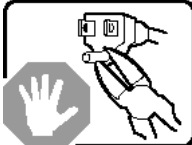
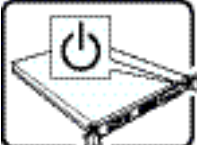

Appendix A: Installation/Assembly Safety Instructions

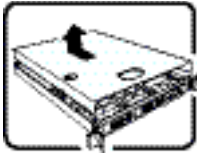

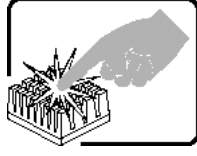

English

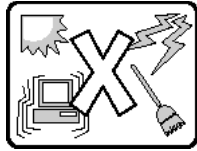
	<p>The power supply in this product contains no user-serviceable parts. Refer servicing only to qualified personnel.</p>
	<p>Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for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

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

Deutsch

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

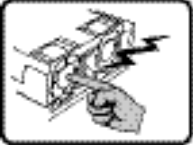
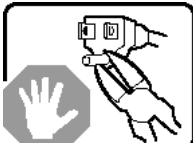


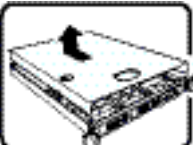
	<p>SICHERHEISSMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:</p> <ol style="list-style-type: none"> 1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus. 2. Schalten Sie das System mit dem Hauptschalter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

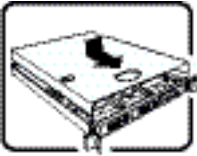
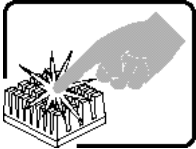

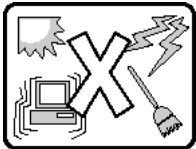


Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

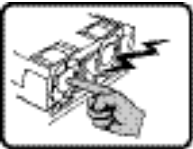
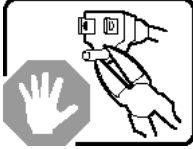
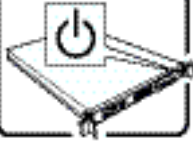

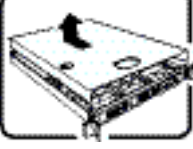
- "sauber und staubfrei sein (Hausstaub ausgenommen);
- "gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
- "keinen Erschütterungen ausgesetzt sein;
- "keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
- "in Regionen,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

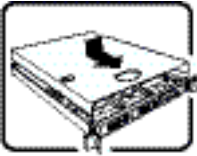
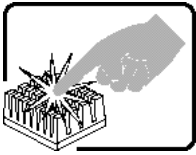
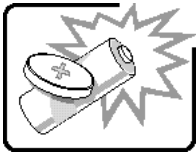
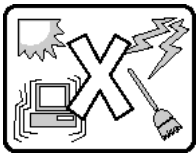
Français

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

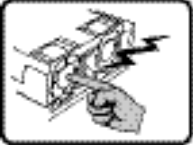
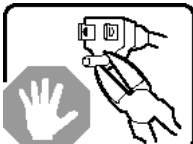


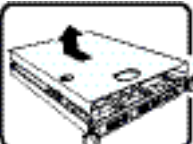
	<p>Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit:</p> <ol style="list-style-type: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

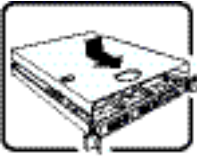
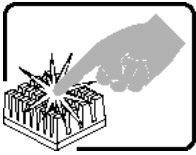
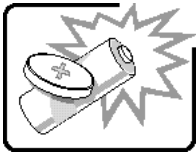
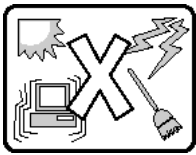
Español

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

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

Italiano

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

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

Appendix B: Safety Information

English

Server Safety Information

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



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





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

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

Safety Warnings and Cautions

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

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.

	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	Indicates to unplug all AC power cord(s) to disconnect AC power
	Please recycle battery

Intended Application Uses

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

Site Selection

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

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

Equipment Handling Practices

Reduce the risk of personal injury or equipment damage:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.

- To reduce the weight for easier handling, remove any easily detachable components.

Power and Electrical Warnings

Caution: *The power button, indicated by the stand-by power marking, DOES NOT completely turn off the system AC power, 5V standby power is active whenever the system is plugged in. To remove power from system, you must unplug the AC power cord from the wall outlet. Your system may use more than one AC power cord. Make sure all AC power cords are unplugged. Make sure the AC power cord(s) is/are unplugged before you open the chassis, or add or remove any non hot-plug components.*

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

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

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

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

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

Power Cord Warnings

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

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

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

System Access Warnings

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

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

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

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

Rack Mount Warnings

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

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

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

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

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

Electrostatic Discharge (ESD)

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

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Other Hazards

Battery Replacement

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

Dispose of batteries according to local ordinances and regulations.

Do not attempt to recharge a battery.

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

Cooling and Airflow

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

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

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

Laser Peripherals or Devices

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

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

Deutsch

Sicherheitshinweise für den Server

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




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




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

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

Sicherheitshinweise und Vorsichtsmaßnahmen

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

VORSICHT	Weist auf eine Gefahrenquelle hin, die bei Nichtbeachtung des VORSICHTSHINWEISES zu leichteren Verletzungen bzw. Sachbeschädigungen führen kann.
WARNUNG	Weist auf eine Gefahrenquelle hin, die bei Nichtbeachtung der WARNUNG zu ernstesten Verletzungen führen kann.
	Weist auf potentielle Gefahr bei Nichtbeachtung der angezeigten Informationen hin.
	Weist auf die Gefahr eines Stromschlags hin, der bei Nichtbeachtung der Sicherheitshinweise zu schweren oder tödlichen Verletzungen führen kann.
	Weist auf Verbrennungsgefahr an heißen Bauteilen bzw. Oberflächen hin.

	Weist darauf hin, daß das Anfassen des Gebläses zu Verletzungen führen kann.
	Bedeutet, alle Netzkabel abzuziehen und das Gerät von der Netzspannung zu trennen.
	Bereiten Sie bitte Batterie auf

Zielbenutzer der Anwendung

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

Standortauswahl

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

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

Handhabung von Geräten

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

- Halten Sie beim Transportieren und Anheben von Geräten die örtlichen Gesundheits- und Sicherheitsvorschriften ein.
- Verwenden Sie mechanische oder andere geeignete Hilfsmittel zum Transportieren oder Anheben von Geräten.

- Entfernen Sie alle Komponenten, die sich leicht abnehmen lassen, um das Gewicht zu reduzieren und die Handhabung zu erleichtern.

Warnungen zu Netzspannung und Elektrizität

Vorsicht: Durch Betätigen der mit dem Standby-Symbol gekennzeichneten 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

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

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

Warnhinweise für den Systemzugang

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

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

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

Einbauen von Hot-Plug-Komponenten sorgfältig vor, um nicht mit heißen Komponenten in Berührung zu kommen.

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

Warnhinweise für Racks

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

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

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

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

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

Elektrostatische Entladungen (ESD)

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

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

Andere Gefahren

Batterieaustausch

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

Beachten Sie bei der Entsorgung von Batterien die gültigen Bestimmungen.

Versuchen Sie nicht, eine Batterie aufzuladen.

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

Kühlung und Luftstrom

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

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

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

Laser-Peripheriegeräte oder -Komponenten

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

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

Français

Consignes de sécurité sur le serveur

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





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

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

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

Sécurité: avertissements et mises en garde

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

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



Indique de débrancher tous les cordons d'alimentation secteur pour déconnecter l'alimentation.



Veuillez 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 tapi 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 todos 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.

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、灼伤以及设备损坏的危险，请在安装或维护 Intel® 服务器产品之前阅读本文档并遵循本指南中的所有警告和预防措施。






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

服务器须由合格的技术人员进行集成和维护。

必须遵守本指南的规定和服务器手册的装配指导，以确保符合现有的产品认证和批准。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

为避免辐射暴露和 / 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

Appendix C: Regulatory and Compliance Information

Product Regulatory Compliance

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

To help ensure EMC compliance with your local regional rules and regulations, before computer integration, make sure that the 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.

Product Safety Compliance

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

Intended Application

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

Product 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 7. Product Regulatory Compliance Markings





Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Australia / New Zealand	AS/NZS 3548 (Emissions)	 N232
Argentina	IRAM Certification (Safety)	
Belarus	Belarus Certification	None Required
Canada / USA	CSA 60950 - UL 60950 (Safety)	
Canada / USA	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 any interference received, including interference that may cause undesired operation. Manufactured by Intel Corporation
China	CNCA - CB4943 (Safety) GB 9254 (Emissions) GB17625 (Harmonics)	

Table 7. Product Regulatory Compliance Markings






Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
CENELEC Europe	Low Voltage Directive 93/68/EEC; EMC Directive 89/336/EEC EN55022 (Emissions) EN55024 (Immunity) EN61000-3-2 (Harmonics) EN61000-3-3 (Voltage Flicker) CE Declaration of Conformity	
Germany	GS Certification - EN60950	
International	CB Certification - IEC60950 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>
Korea	RRL Certification MIC Notice No. 1997-41 (EMC) & 1997-42 (EMI)	 인증번호: CPU

Table 7. Product Regulatory Compliance Markings

Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Russia	GOST-R Certification GOST R 29216-91 (Emissions) GOST R 50628-95 (Immunity)	
Ukraine	Ukraine Certification	None Required
Taiwan	BSMI CNS13438	 R33025 <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 10px;"> <p>警告使用者： 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策</p> </div>

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

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

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

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

Industry Canada (ICES-003)

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

English translation of the notice above:

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

Europe (CE Declaration of Conformity)

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

VCCI (Japan)

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

English translation of the preceding notice:

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

BSMI (Taiwan)

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策

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

Korean Compliance (RRL)

Following is the RRL certification information for Korea.



1. 기기의 명칭(모델명) :
2. 인증번호 :
3. 인증받은 자의 상호 :
4. 제조년월일 :
5. 제조자/제조국가 :

English translation of the notice above:

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

CNCA (CCC-China)

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




声明



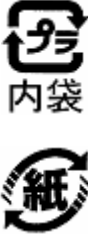
此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取可行的措施。

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 8. Product Ecology Compliance Markings

Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
California	California Code of Regulations, Title 22, Division 4.5; Chapter 33: Best Management Practices for Perchlorate Materials.	Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate . 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.
China	<p><u>China RoHS</u> Administrative Measures on the Control of Pollution Caused by Electronic Information Products" (EIP) #39. Referred to as China RoHS.</p> <p>Mark requires to be applied to retail products only. Mark used is the Environmental Friendly Use Period (EFUP). Number represents years.</p>	
	<p><u>China Recycling (GB18455-2001)</u> 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	All materials, parts and subassemblies must not contain restricted materials as defined in Intel's Environmental Product Content Specification of Suppliers and Outsourced Manufacturers - http://supplier.intel.com/ehs/environmental.htm	None Required
Europe	Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC - Mark applied to system level products only.	

Compliance Regional Description	Compliance Reference	Compliance Reference Marking Example
Europe	<p><u>European Directive 2002/95/EC -</u> Restriction of Hazardous Substances (RoHS). Threshold limits and banned substances are noted below.</p> <p>Quantity limit of 0.1% by mass (1000 PPM) for: Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls Diphenyl Ethers (PBB/PBDE)</p> <p>Quantity limit of 0.01% by mass (100 PPM) for: Cadmium</p>	None Required.
Germany	<p><u>German Green Dot</u> Applied to Retail Packaging Only for Boxed Boards</p>	
Intel Internal Specification	<p>All materials, parts and subassemblies must not contain restricted materials as defined in Intel's Environmental Product Content Specification of Suppliers and Outsourced Manufacturers - http://supplier.intel.com/ehs/environmental.htm.</p>	None Required
International	<p><u>ISO11469</u> - Plastic parts weighing >25gm are intended to be marked with per ISO11469.</p>	>PC/ABS<
	<p>Recycling Markings - Fiberboard (FB) and Cardboard (CB) are marked with international recycling marks. Applied to outer bulk packaging and single package.</p>	
Japan	<p><u>Japan Recycling</u> Applied to Retail Packaging Only for Boxed Boards</p>	

Other Markings

Table 9. Other Markings

Compliance Description	Compliance Reference	Compliance Reference Marking Example
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> <hr/> <p>Simplified Chinese</p> <p>注意： 本设备包括多条电源系统电缆。为避免遭受电击，在进行维修之前应断开两（2）条电源系统电缆</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> <hr/> <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>

Compliance Description	Compliance Reference	Compliance Reference Marking Example
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."

Regulated Specified Components

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

Updated product information for configurations can be found on the Intel Server Builder Web site at the following URL: <http://channel.intel.com/go/serverbuilder>

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

- **Server Chassis:** (base chassis is provided with power supply and fans) - UL listed.
- **Server board:** you must use an Intel server board - UL recognized.
- **Add-in boards:** must have a printed wiring board flammability rating of minimum UL94V-1. Add-in boards containing external power connectors and/or lithium batteries must be UL recognized or UL listed. Any add-in board containing modem telecommunication circuitry must be UL listed. In addition, the modem must have the appropriate telecommunications, safety, and EMC approvals for the region in which it is sold.
- **Peripheral Storage Devices:** must be a UL recognized or UL listed accessory and TUV or VDE licensed. 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 D: Getting Help

World Wide Web

<http://support.intel.com/support/motherboards/server/SC5400RA/>.

Telephone

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

Before calling the support hotline, fill out an Intel[®] Server Issue Report Form, available on the *Intel[®] Server Deployment Toolkit 2.0 CD*.

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

U.S. and Canada

1-800-404-2284

Europe

Belgium 02 714 3182
Denmark ... 38 487077
Finland 9 693 79297
France..... 01 41 918529
Germany ... 069 9509 6099
Holland 020 487 4562
Italy..... 02 696 33276
Norway 23 1620 50
Spain 91 377 8166
Sweden..... 08 445 1251
UK..... 870 6072439

In Asia-Pacific Region

Australia.... 1800 649931

Cambodia.. 63 2 636 9797 (via Philippines)

China 800 820 1100 (toll-free)
..... 8 621 33104691 (not toll-free)

Hong Kong 852 2 844 4456

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

Indonesia ... 803 65 7249

Korea 822 767 2595

Malaysia 1 800 80 1390

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

New Zealand 0800 444 365

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

Philippines 1 800 1 651 0117

Singapore .. 65 6213-1311

Taiwan 2 2545-1640

Thailand 1 800 631 0003

Vietnam 632 6368416 (IDD via Philippines)

Japan

Domestic.... 0120 868686

Outside country 81 298 47 0800

Latin America

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

Brazil 001-916 377 0180

Chile

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

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

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

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

Ecuador

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

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

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

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

Miami 1 800 621 8423

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

Paraguay ... 001 916 377 0114

Peru 001 916 377 0114

Uruguay..... 001 916 377 0114

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

Appendix E: Warranty

Limited Warranty for Intel® Server System 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.

