

Intel[®] Server System SR1640TH Service Guide

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

Intel Order Number E93698-002

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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 CD* and/or at <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Wichtige Sicherheitshinweise

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

Consignes de sécurité

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

Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea Intel Server Boards and Server Chassis Safety Information en el *Intel® Server Deployment Toolkit CD* y/o en <http://www.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 Intel[®] Server Deployment Toolkit CD 或 <http://www.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 ETL 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 SR1640TH.

This manual is written for system technicians responsible for troubleshooting, upgrading, and repairing this server system. This document provides reference information, feature information, and step-by-step instructions on how to add and replace components on the server system. For the latest version of this manual, see <http://www.intel.com/support/motherboards/server/SR1640TH/>.

Manual Organization

Chapter 1 provides a list of reference resources. In this chapter, you will find a list of technical documents that give additional details on the Intel® Server System SR1640TH, and the location where they can be found.

Chapter 2 provides a brief overview of the Intel® Server System SR1640TH. In this chapter, you will find a list of the server board features, photos and illustrations of the product, and product diagrams to help you identify components and their locations.

Chapter 3 provides instructions on adding and replacing components. Use this chapter for step-by-step instructions and diagrams for installing or replacing components such as the memory, processor, front panel board, and the battery, among other components. The rest of this manual provides technical specifications, regulatory information, “Getting Help” information, and the warranty.

Chapter 4 provides instructions on using the utilities that are shipped with the board or that may be required to update the system. This includes how to navigate through the BIOS Setup screens, how to perform a BIOS update, and how to reset the password or CMOS. Information about the specific BIOS settings and screens available in the Intel® Server System SR1640TH *Technical Product Specification*. See the “[Server System References](#)” chapter for more information.

Product Contents

The Intel® Server System SR1640TH ships with two dual-node system trays. For further information, see *Intel® Server System SR1640TH Technical Product Specification*

The contents of each server system are listed below.

Intel® Server System SR1640TH Contents

Your Intel® Server System SR1640TH ships with the following items:

- Two dual-node system trays, installed in the server system
- One standard 19-inch 1U system chassis
- Two 450 Watts high-efficiency power supply units, installed in the server system
- Six sets of system fan assemblies
- Rack handles
- Four passive processor heatsinks for 1U Chassis
- Two air ducts in chassis
- Four front control panels installed in chassis
- Four empty fixed HDD bays in chassis
- Cables (Front panel cable, USB cable, SATA cable, power cable for HDD, ID LED cable)
- Attention document
- Intel® Server Deployment Toolkit 3.5 CD

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

- Processors
- Memory DIMMs
- Hard disk drive
- Operating system

For information about which accessories, memory, processors, and third-party hardware were tested and can be used with your board, and for ordering information for Intel products, see <http://www.intel.com/support/motherboards/server/SR1640TH/compat.htm>.

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1 Server System References

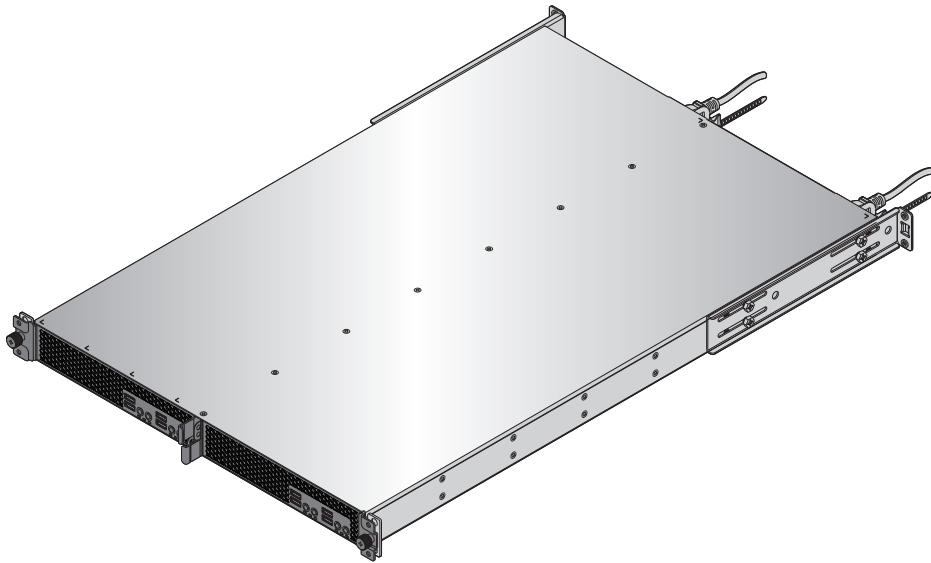
If you need more information about this product or information about the accessories that you can use with this server chassis, use the following resources.

Table 1. Server System References

For this Information or Software	Use this Document or Software
For in-depth technical information about the server system, including sub-system overviews and mechanical drawings	<i>Intel® Server System SR1640TH Technical Product Specification</i> can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
For basic BIOS settings and chipset information	<i>Intel® Server System SR1640TH Technical Product Specification</i> can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
Accessories or other Intel server products	<i>Spares/Parts List and Configuration Guide</i> can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
Hardware (peripheral boards, adapter cards) and operating systems that have been tested with this product	Tested Hardware and Operating System List can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
Processors that have been tested with this product	Supported processors can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
DIMMs that have been tested with this product	Supported memory can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
To make sure your system falls within the allowed power budget	Power Budget Tool can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
For software to manage your Intel® server	Intel® Server Management software can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/
For drivers	Driver (for an extensive list of drivers available) Operating System Driver (for operating system drivers) http://www.intel.com/support/motherboards/server/SR1640TH/
For firmware and BIOS updates	Firmware updates can be found at: http://www.intel.com/support/motherboards/server/SR1640TH/

2 Server System Features

This chapter briefly describes the main features of the Intel® Server System SR1640TH. This chapter provides illustrations of the product, a list of the server system features, and diagrams showing the location of important components and connections on the server system.



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Figure 1. Intel® Server System SR1640TH

Table 2 provides summary of the features of the server system.

Table 2. Intel® Server System SR1640TH Feature Summary

Feature	Description
Internal Drive Bays	Four fixed internal drive bays
Hard Disk Drive Supported	3.5-inch SATA/SAS HDD
Processor	<p>Support for one Intel® Xeon® Processor 3400 series and Core™ i3 processors in FC-LGA 1156 Socket B package with up to 95 W Thermal Design Power (TDP).</p> <p>VRD 11.1 is supported.</p>
Memory Capacity	Expandable to 16 GB maximum with Quad-rank RDIMM.
Memory Type	<p>240-pin keyed support for 800/1066/1333 MT/s Registered (RDIMM) or Unbuffered (UDIMM) DDR3 ECC or non-ECC memory. With UDIMMs, mixing of non-ECC and ECC UDIMM configurations are supported.</p> <p>4 DIMMs per processor across two memory channels, total 8 DIMMs per board.</p>
DIMM Slots	Eight DIMM slots per board
Chipset	<p>Intel® Chipset which includes the following components:</p> <p>Intel® 3420 chipset Platform Controller Hub (PCH)</p> <p>ServerEngines* Pilot II controller (integrated BMC), supports the following functions:</p> <ul style="list-style-type: none"> • Integrated 2D video controller on PCI-E x1 • Super IO on LPC • Baseboard Management Controller (BMC) based on ARM946E-S

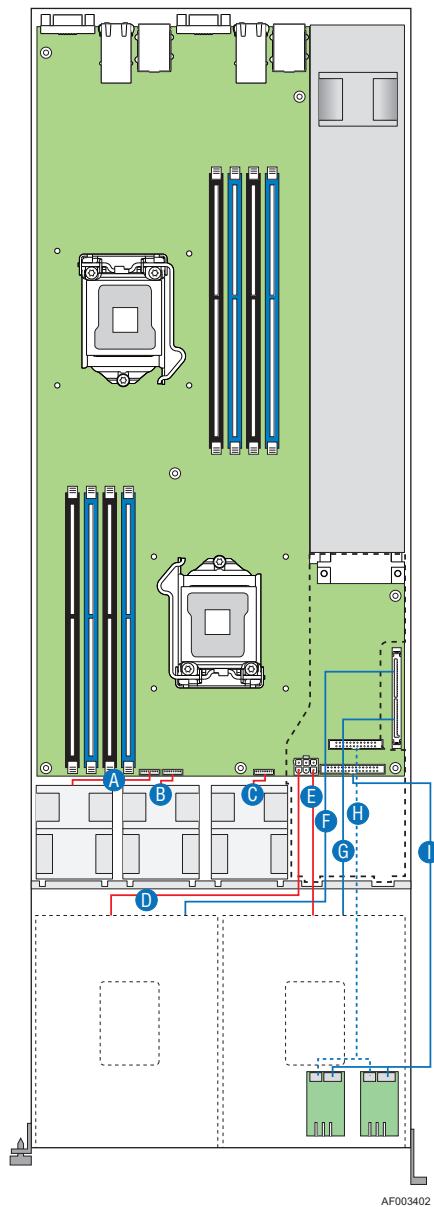
Table 2. Intel® Server System SR1640TH Feature Summary

Feature	Description
System Connectors/ Headers	<p>External I/O connectors per node:</p> <ul style="list-style-type: none"> • One DB-15 Video connectors • Two RJ-45 connectors for 10/100/1000 LAN • Two USB 2.0 connectors • One RJ-45 10/100 LAN port dedicated for management <p>Internal connectors/headers per node:</p> <ul style="list-style-type: none"> • Two USB 2.0 ports with headers on motherboard • One USB 2.0 port with headers dedicated for internal USB flash • Two SATA II connectors with 300MB/s bandwidth • One RMM3 Lite connector to support optional Intel® Remote Management Module 3 Lite module • One SAS 4i connector for SATAII ports (shared by two nodes and two SATAII ports from each node) • Three 8-pin system FAN headers per board • One power supply connector with PMBus enabled, shared by two nodes
System Fan Support	<p>Three sets of FANs per board.</p> <p>Total six sets of system FANs in chassis.</p>
Add-in Adapter Support	<p>No support for add-in card</p>
On-board Video	<p>On-board Server Engines* Pilot II Controller:</p> <ul style="list-style-type: none"> • ServerEngine iBMC • External 16MB DDR3 667MHz Memory
LAN Support	<p>Two 10/100/1000 ports provided by Intel® 82574L connected to PCI-E x1 interface from PCH.</p> <ul style="list-style-type: none"> • One Gigabit Ethernet connects to iBMC through NC-SI interface (shared mode) • Two 10/100/1000 Base-TX interfaces through RJ45 connectors with integrated magnetic <p>One 10/100M PHY (KSZ8041NL) connected to iBMC through RMII interface as dedicated management port.</p>
System Power	<p>Dual 450-W power supply, 80 plus silver with PFC, configured as one power supply for one board.</p>
System Management	<p>On-board Server Engines* Pilot II Controller.</p> <p>Integrated Baseboard Management Controller (Integrated BMC), IPMI 2.0 compliant</p> <ul style="list-style-type: none"> • Processor on die temperature monitoring thru PECI interface to iBMC • Board temperature measurement • Fan speed monitoring & control • Voltage monitoring • IPMI2.0 based server management

Cable Routing

There are two system trays inside chassis, each module contains two independent computing nodes on one board. System cables are fixed in each module.

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



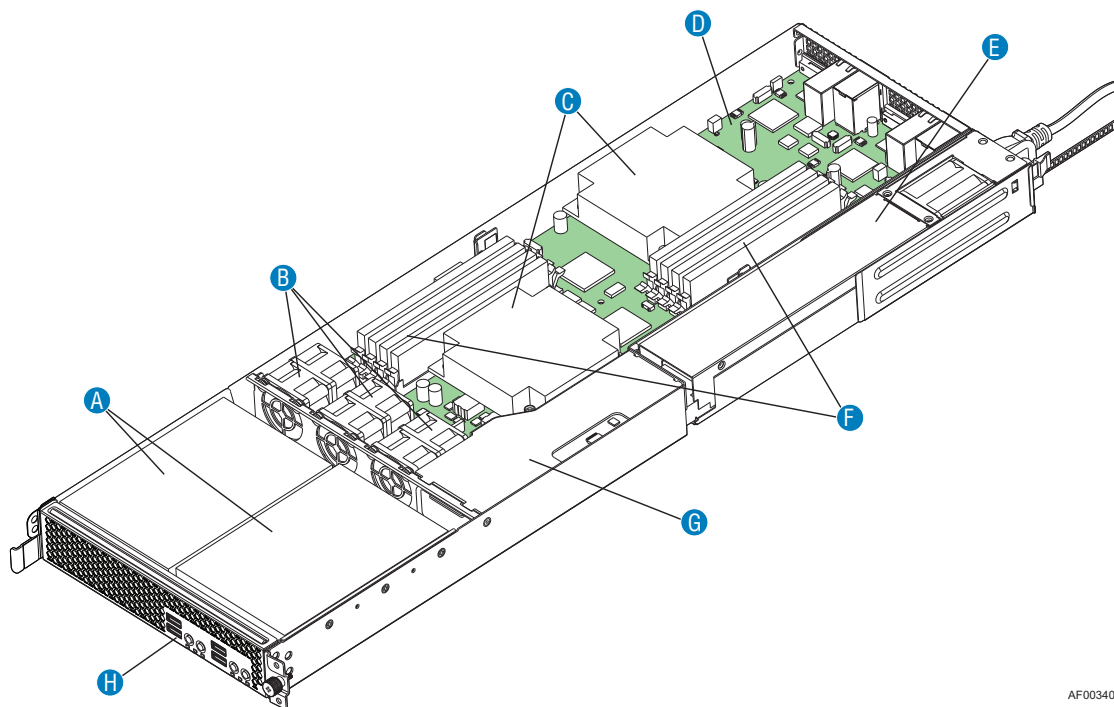
A. System Fan 1 cable connection	F. SATA Cable for Node 2
B. System Fan 2 cable connection	G. SATA Cable for Node 1
C. System Fan 3 cable connection	H. Front Panel USB cable for both Node1 and Node 2
D. SATA Power cable for Node 2	I. Front Panel Control cable for both Node 1 and Node 2
E. SATA Power cable for Node 1	

Figure 2. Cable Routing

Chassis Component Identification

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

Internal Components

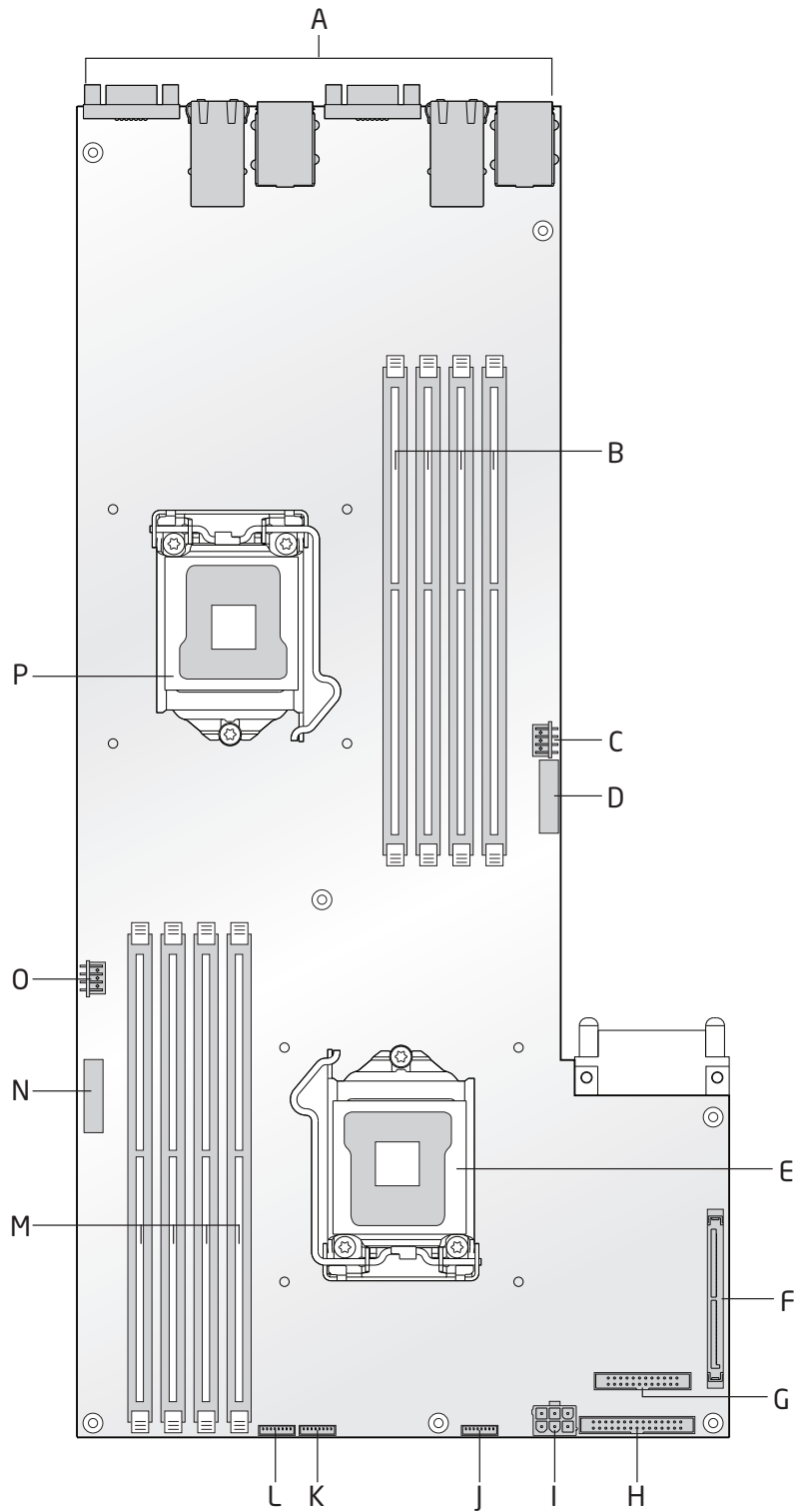


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A. Hard Disk Drives	E. Power Supply Unit
B. System Fans	F. Memory DIMMs
C. Heatsinks	G. Air Duct
D. System Board	H. Front Control Panel

Figure 3. System Components

Server Board Connector and Component Locations

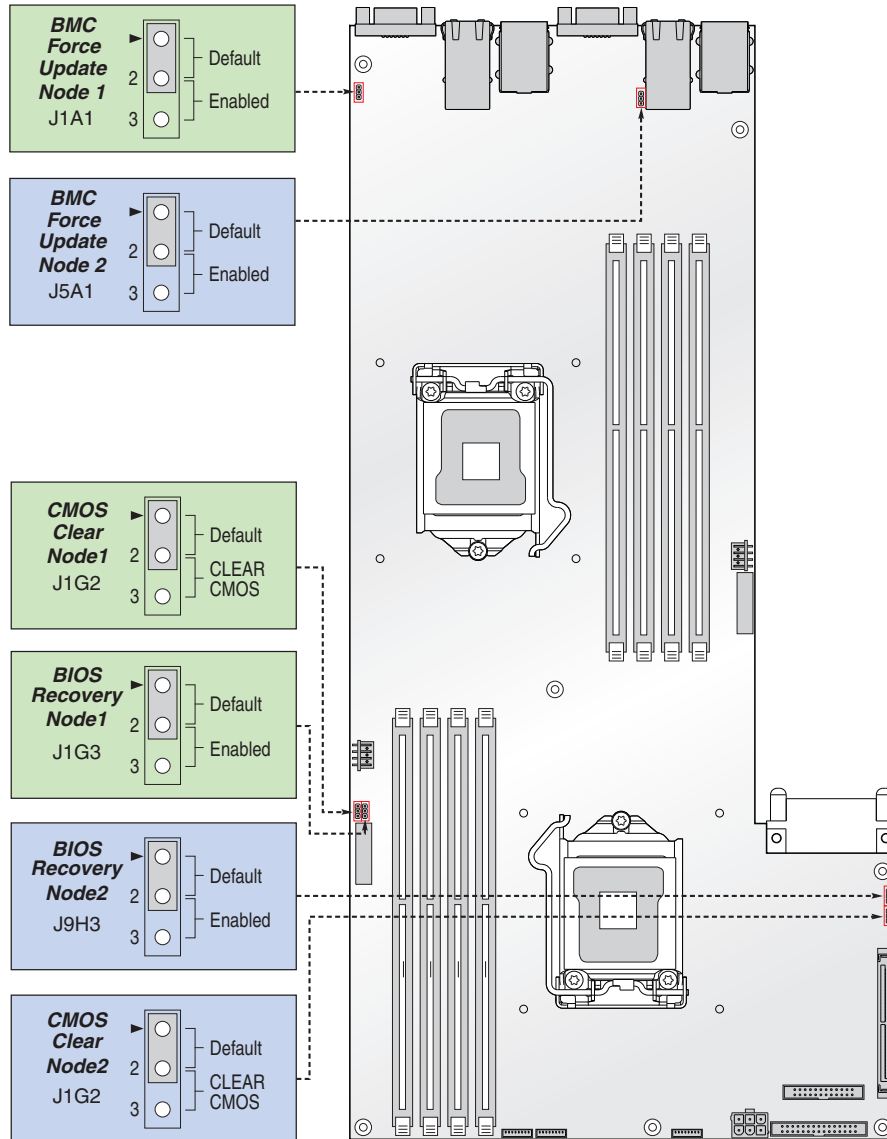


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	Description		Description
A.	Rear Panel for 2 nodes	I.	SATA HDD Power Cable Connector
B.	DIMM slots for Node 1	J.	Fan 3 Port
C.	RMM3 Lite-V connector for Node 1	K.	Fan 2 Port
D.	CMOS battery for Node 1	L.	Fan 1 Port
E.	CPU 2	M.	DIMM slots for Node 2
F.	HDD SATA Ports	N.	CMOS battery for Node 2
G.	Front Panel USB Port	O.	RMM3 Lite-V connector for Node 2
H.	Front Control Panel Connector	P.	CPU 1

Figure 4. Server Board Connector and Component Locations

Configuration Jumpers



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Jumper Name	Pins	What happens at system reset...
BMC Force Update	1-2	Normal Operation
	2-3	For BMC Update

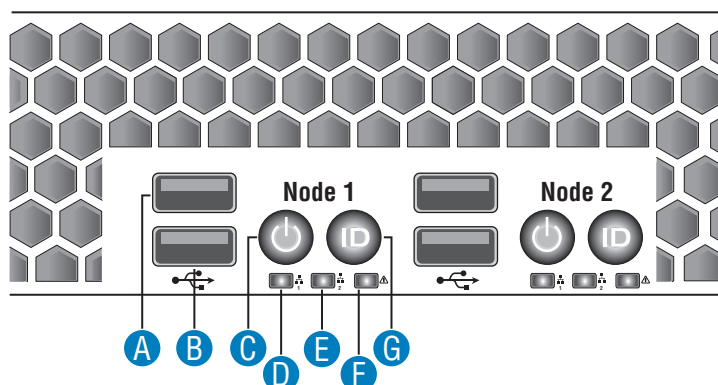
Jumper Name	Pins	What happens at system reset...
CMOS Clear	1-2	Normal Operation
	2-3	Reset CMOS settings to factory default
BIOS Recovery	1-2	Normal Operation
	2-3	Reload BIOS image

Figure 5. Configuration Jumper Location

System LEDs

The server system contains proper LEDs providing the following functions:

- The System Status LED on the front panel (see [Figure 6](#)) shows the overall health of the system (green, blinking green, blinking amber, and off).
- The System Identification LED on the back panel (see [Figure 7](#)) helps identify the server from among several servers. By default, the ID LED is off, and blue when activated by button or software.
- Each tray contains one ID LED, sharing by two nodes inside.
- POST Code Diagnostic LEDs on the server board change color or state (off, green, red, amber) according to the POST sequence.
- The 5-V STBY LED on the server board is illuminated (green) when AC power is applied.

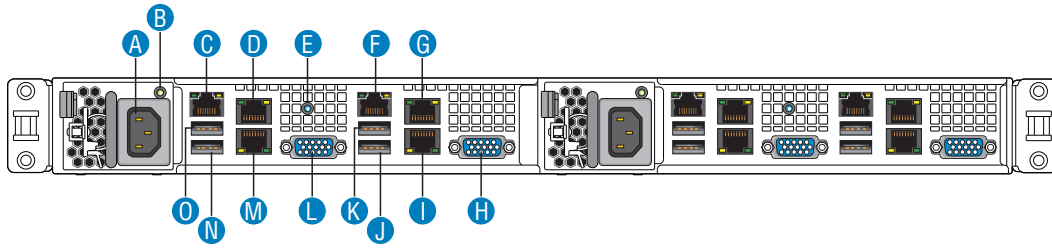


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A. USB Port 1	E. Network 2 LED
B. USB Port 2	F. System Status LED
C. Power Button/Power LED	G. Node ID Button/Node ID LED
D. Network 1 LED	

Figure 6. Single node front control panel

Back Panel Connectors



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	Node 1	Node 2
Tray AC Power Receptacle	A	
RMM3 Lite-V Management Port	F	C
USB ports	K, J	O, N
NIC1 port	I	M
NIC2 port	G	D
Video output	H	L
Tray ID LED	E	

Figure 7. Back Panel Connectors

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

Table 3. NIC LED Descriptions

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

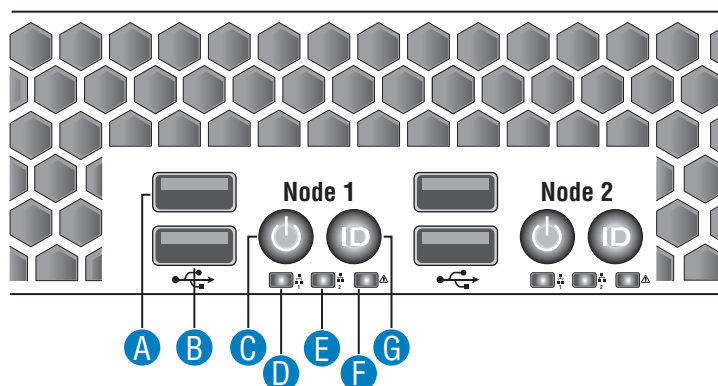
Important Note:

The **Intel® Server System SR1640TH** requires the use of shielded LAN cable to comply with Emission/Immunity regulatory requirements. Use of non shield cables **may result** in the product non-compliance.

Front Panel of Server System

Standard Node Control Panel

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



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	Node 1
Power Button/Power LED	C
Node ID Button/Node ID LED	G
Node USB ports	A and B
LAN 1 Activity LED	D
LAN 2 Activity LED	E
Node status LED	F

Figure 8. .Front Control Panel - Intel® Server System SR1640TH

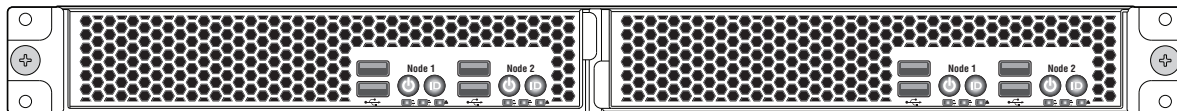
Table 4. Control Panel LED Functions

LED	Color	State	Description
Power/ Sleep	Green	On	Power On/ACPI S0 state
	Green	Blink	Sleep /ACPI S1 state
	-	Off	Power Off /ACPI S5 state

Table 4. Control Panel LED Functions

LED	Color	State	Description
LAN 1 and LAN 2	Green	On	LAN Link no Access
	Green	Blink	LAN Activity
	-	Off	No Link
System ID	Blue	On	Identify Active via command or button
		Off	No Identification
System Status	Green	On	System Ready/No Alarm
	Green	Blink	System ready, but degraded: redundancy lost such as the power supply or fan failure; non-critical temp/voltage threshold; battery failure; or predictive power supply failure.
	Amber	On	Critical Alarm: Critical power trays failure, critical fans failure, voltage (power supply), critical temperature and voltage
	Amber	Blink	Non-Critical Alarm: Redundant fan failure, redundant power module failure, non-critical temperature and voltage
	-	Off	AC power off: System unplugged AC power on: System powered off and in standby, no prior degraded/non-critical/critical state

System Front View



AF003440

Figure 9. System Front View

Hard Disk Drives

The server system ships with four fixed drive carriers for installing four Serial ATA (SATA) fixed drives.

For instructions on installing hard drives, see [“Installing and Removing a Fixed Hard Drive”](#).

Rack-Mounted Systems

Intel® Server System SR1640TH is shipped with rack rail for installation into standard 19 inch rack. For rack mount installation, please refer to “Installing the system into rack”

Hardware Requirements

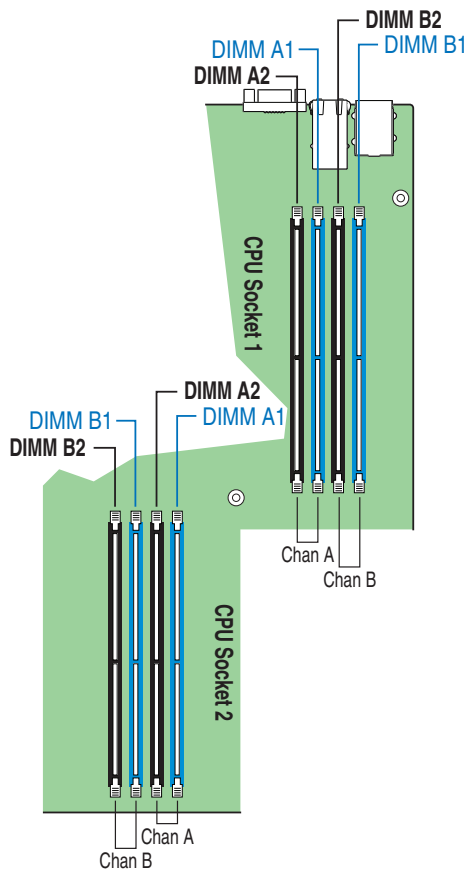
To avoid integration difficulties and possible board damage, your system must meet the requirements outlined below. For a list of qualified components, see the links under “[Server System References](#)”.

Processor

The Intel® Server System SR1640TH supports four computing nodes, each node supports one Intel® Xeon® Processor 3400 or Intel® Core™ i3 series processors with 95W Thermal Design Power (TDP) or less and with a max data transfer rate of 2.5 GT/s point-to-point DMI interface. For a complete list of supported processors, see the links under “[Server System References](#)”.

Memory

Each node of the Intel® Server System SR1640TH supports a DDR3-based memory subsystem. It supports two DIMMs per channel. The silkscreen on the board for the DIMMs displays CPUx_DIMM_A1, CPUx_DIMM_A2, CPUx_DIMM_B1, CPUx_DIMM_B2. The minimal memory population possible is DIMM_A1.



AF003408

Figure 10. DIMM Configuration Diagram

For memory DIMM population rule, please refer to below table:

Table 5. Memory Configuration Table

	Channel A		Channel B	
	A1	A2	B1	B2
RDIMM	X			
	X	X		
	X		X	
	X	X	X	
	X	X	X	X

	Channel A		Channel B	
	A1	A2	B1	B2
UDIMM	X			
	X	X		
	X		X	
	X	X	X	
	X	X	X	X

This table defines half of the valid memory configurations. You can exchange Channel A DIMMs with the DIMMs on Channel B to get another half.

Power Supply

A minimum of 450 Watts is required. Your power supply must provide a minimum of 3.0 A of 5V standby current or the board will not boot.

Optional Hardware

Hard Disk Drives

The server board provides two SATA ports near the front right side of the server board.

See the documentation included with your server chassis for additional drive information and drive installation instructions.

3 Hardware Installations and Upgrades

Before You Begin

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

Tools and Supplies Needed

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

System References

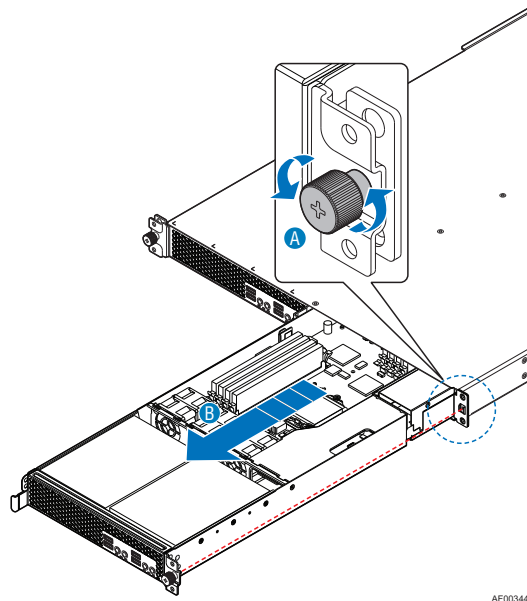
All references to the left, right, front, top, and bottom assume the reader is facing the front of the server system as it would be positioned for normal operation.

Plugging out and Plugging in System Trays

System trays can only be installed from chassis front, while power supply units can only be installed from system rear.

Plugging out System Tray

To plug-out the system tray, press the latch and pull out the tray.

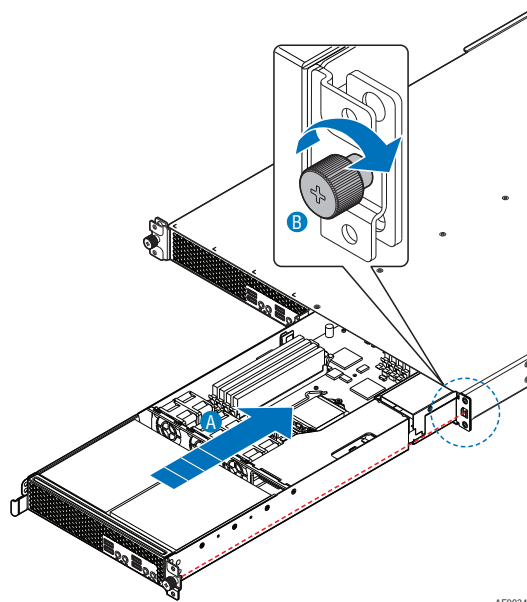


AF003447

Figure 11. Plugging out the System Tray

Plugging in the System Tray

To plug-in the system tray, slide in the tray until the latch is locked.

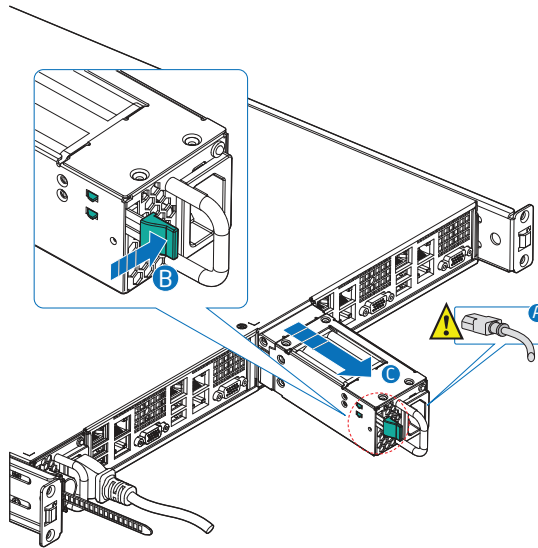


AF003446

Figure 12. Plugging in the System Tray

Plugging out the Power Supply Unit

To plug-out the Power Supply Unit (PSU), hold the handle of PSU and pull out.

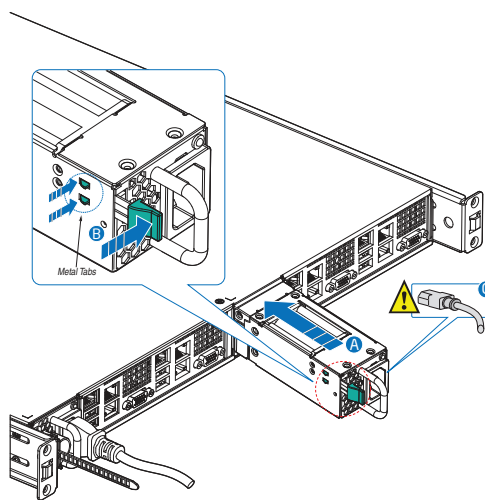


AF003433

Figure 13. Plugging out the Power Supply Unit

Plugging in the Power Supply Unit

To plug-in the PSU, push the PSU along with the rail until PSU is locked.



AF003434

Figure 14. Plugging in the Power Supply Unit

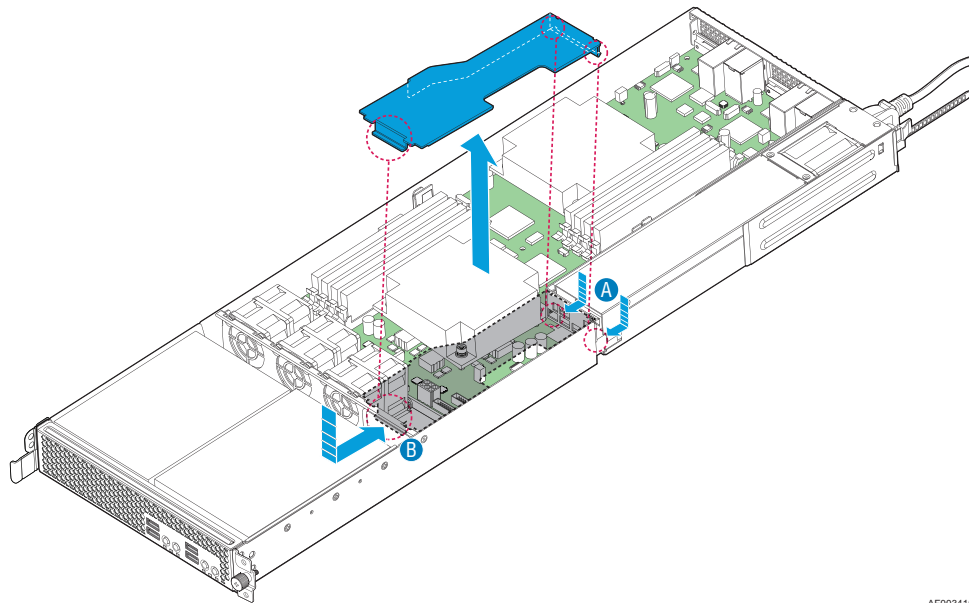
Removing and Installing the System Air Duct

The system requires the use of a system air duct and power supply/electronics bay isolation air baffle to direct airflow and sustain appropriate air pressure. An air baffle isolates the air flow of the two power supply fans from that of the system fan module. The baffle is mounted into three stand-offs with one end fitting under the back edge of the hard drive bay.

Always operate your server system with the system air duct in place. The air duct is required for proper airflow within the server system.

Removing the System Air Duct

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

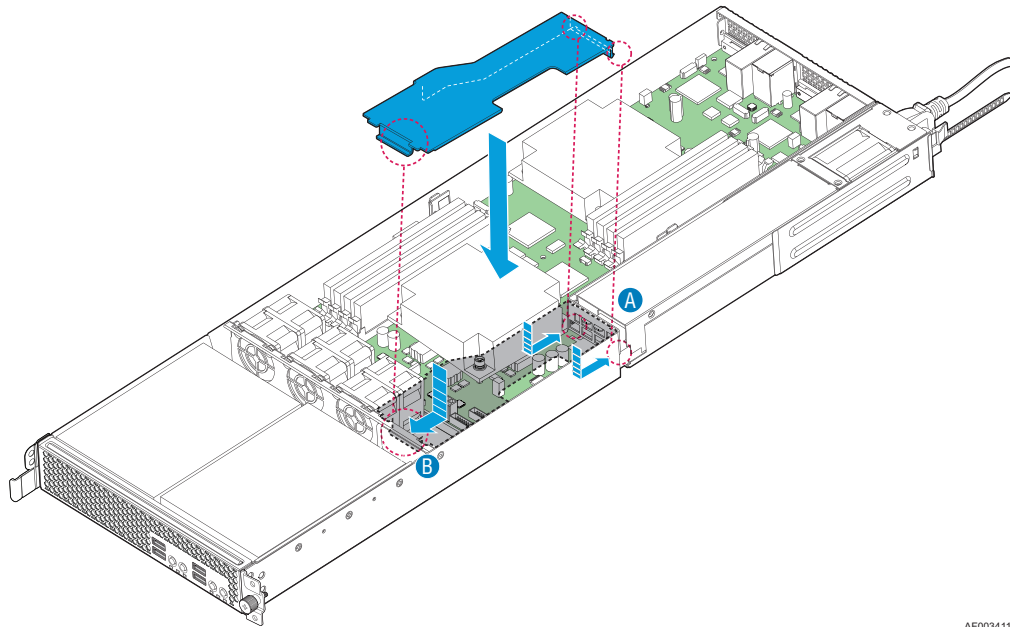


AF003410

Figure 15. Removing the System Air Duct

Installing the System Air Duct

1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)”.
2. Power down the server and unplug all peripheral devices and the AC power cable.
3. Lower the air duct into place; insert the two hooks at the front of the processor air duct into the corresponding slots on the bracket behind the two system blower fans. Use caution not to pinch or disengage cables that may be near or under the air duct.



AF003411

Figure 16. Installing the System Air Duct

Installing and Removing Memory

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

processor. The DIMM farthest from the processor per channel is in blue on boards.

Installing DIMMs

To install DIMMs, follow these steps:

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server.
3. Turn off the server.
4. Disconnect the AC power cord from the server.
5. Pull-out the tray from the chassis and locate the DIMM sockets (see “Installing and Removing Memory”).

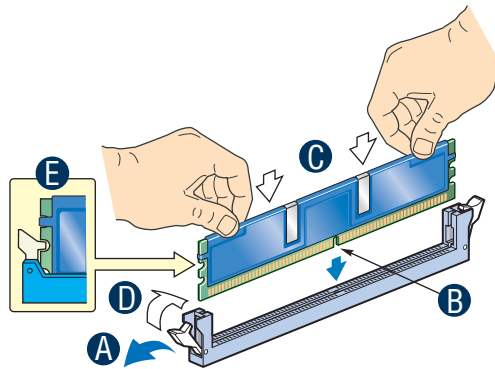


Figure 17. Installing the Memory

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

Removing DIMMs

To remove a DIMM, follow these steps:

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Remove the AC power cord from the server.
4. Pull-out the tray from the server.
5. Gently spread the retaining clips at each end of the socket. The DIMM lifts from the socket.

6. Holding the DIMM by the edges, lift it from the socket, and store it in an anti-static package.
7. Reinstall and reconnect any parts you removed or disconnected to reach the DIMM sockets.
8. Replace the server's cover and reconnect the AC power cord.

Installing or Replacing the Processor

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

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

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 Processor

To install a processor, follow these instructions:

1. Observe the safety and ESD precautions at the beginning of this book. See “[Safety Information](#)” for more information.
2. Turn off all peripheral devices connected to the server and turn off the server.
3. Disconnect the AC power cord from the server.
4. Locate the processor socket and open the socket lever (see [Figure 19](#)).

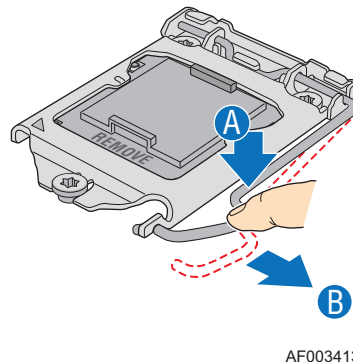
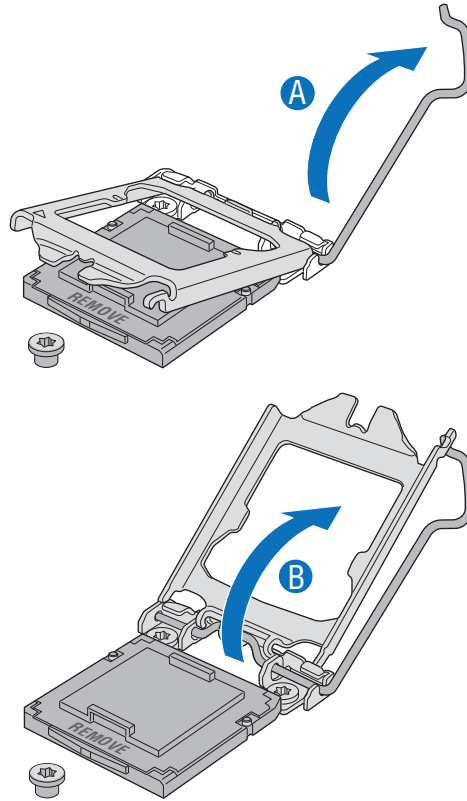


Figure 18. Lifting the Load Lever

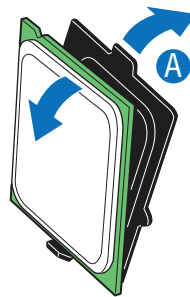
5. Open the load plate (see letter “A” and letter “B” in [Figure 19](#)).



AF003414

Figure 19. Opening the Load Plate

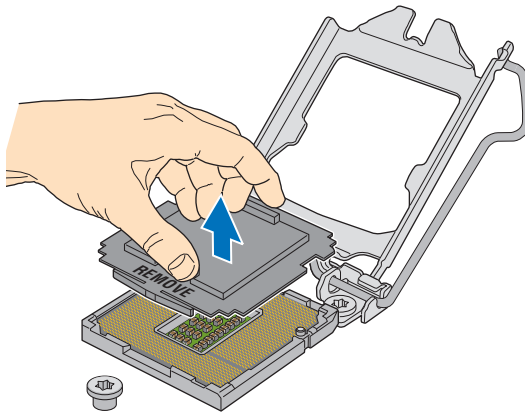
6. Remove the socket protective cover (see [Figure 20](#)).



AF003415

Figure 20. Removing the Socket Protective Cover

7. Take the processor out of the box and remove the protective shipping cover (see [Figure 21](#)).

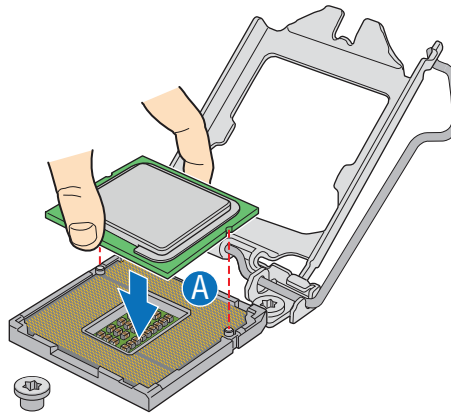


AF003416

Figure 21. Removing the Processor Protective Cover

Note: Make sure the alignment triangle mark and the alignment triangle cutout align correctly.

8. Align the processor cutouts to match the two socket pins, and then insert the processor into the socket as shown in [Figure 22](#).

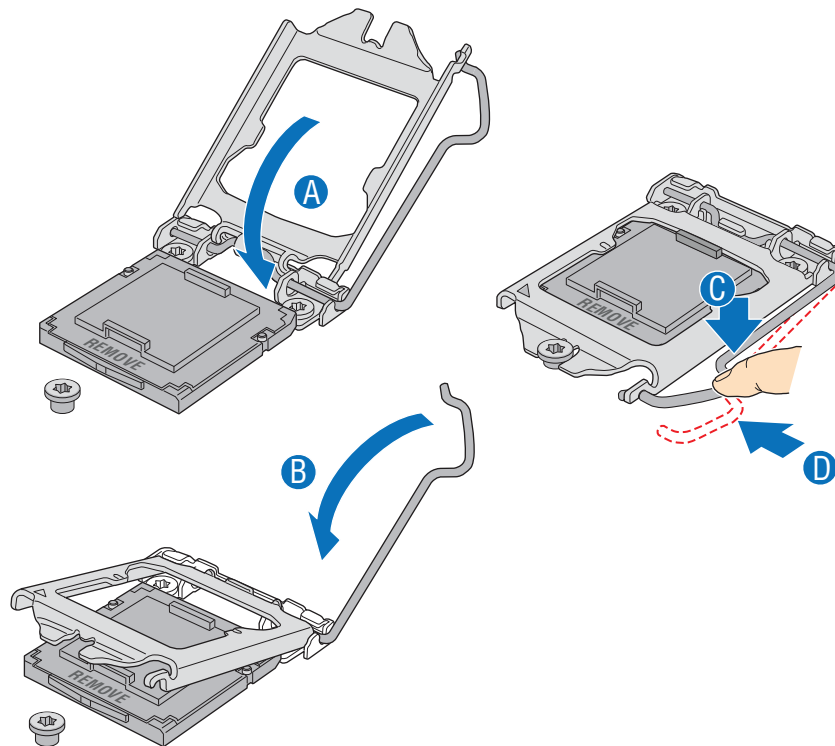


AF003417

Figure 22. Installing the Processor

Note: Retain the protective socket cover for use when removing a processor that will not be replaced.

9. Close the load plate (see the letter “A” in [Figure 23](#)), close the socket lever and ensure the load plate tab engages under the socket lever when fully closed. (See letter “B”, “C”, and “D” in [Figure 23](#))



AF003418

Figure 23. Closing the Load Plate and Socket Lever

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

Installing the Heat Sink(s)

1. If a protective film covers the thermal interface material (TIM) on the underside of the heat sink, remove the protective film.
2. Align heat sink fans to the front and back of the chassis for correct airflow. Airflow goes from front-to-back of chassis.
3. Each heat sink has four captive fasteners and should be tightened as shown.
4. Using a #2 Phillips* screwdriver, finger-tighten each fastener diagonally according to the white-circled numbers (see [Figure 24](#)).
5. Securely re-tighten each fastener again in the same order as performed in Step 4.
6. Attach fan power cable to server board as shown.

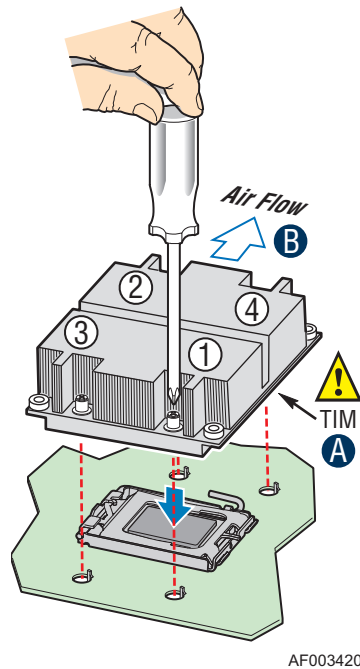


Figure 24. IU Reference Heat sink Assembly

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

Replacing a Processor

1. Observe the safety and ESD precautions at the beginning of this book.
2. Turn off all peripheral devices connected to the server. Turn off the server.
3. Remove the AC power cord from the server.
4. Remove the server's cover.
5. Unplug the processor fan cable from the server board.
6. Loosen the four captive screws on the corners of the heat sink.
7. Twist the heat sink slightly to break the seal between the heat sink and the processor.
8. Lift the heat sink from the processor. If it does not pull up easily, twist the heat sink again. Do not force the heat sink from the processor. Doing so could damage the processor.
9. Lift the processor lever.

10. Raise the CPU load plate.

Caution: *Do not over-tighten fasteners.*

11. Remove the processor.
12. If installing a replacement processor, see “Installing the Processor”. Otherwise, install the protective socket cover over the empty processor socket and reinstall the chassis cover.

Installing and Removing a Fixed Hard Drive

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

You can install up to four fixed SATA drives in the Intel® Server System SR1640TH Service Guide. See “Server System References” for a link to a list of supported hardware.

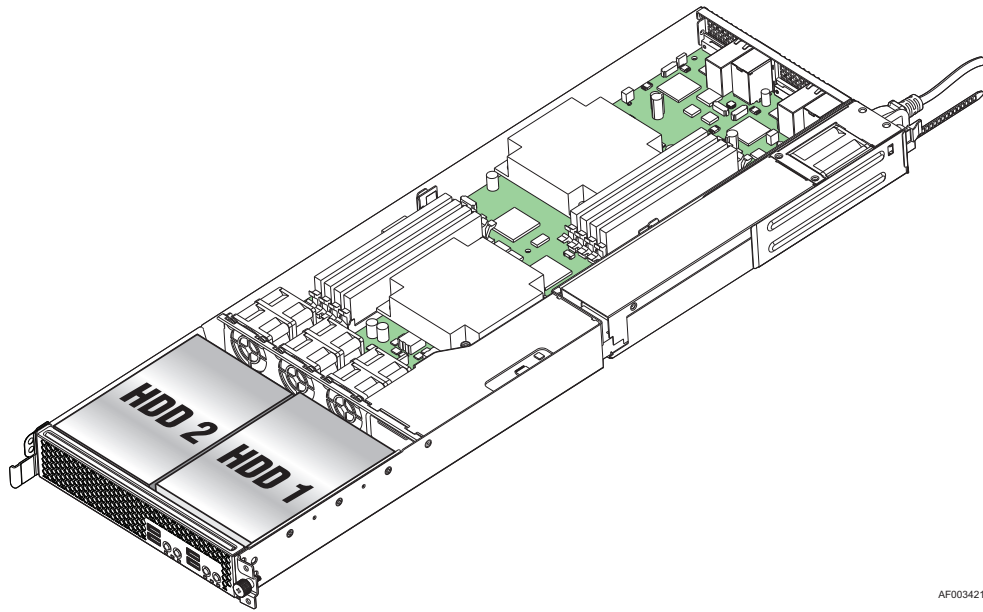
Note: *The server system does not support all hard drives. See “[Server System References](#)” for an Internet link to a list of supported hardware.*

Installing and Removing a Hard Disk Drive

Caution: *The hard drives are NOT hot swappable. Before removing or replacing a hard drive, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet. You can install up to two SATA drives.*

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

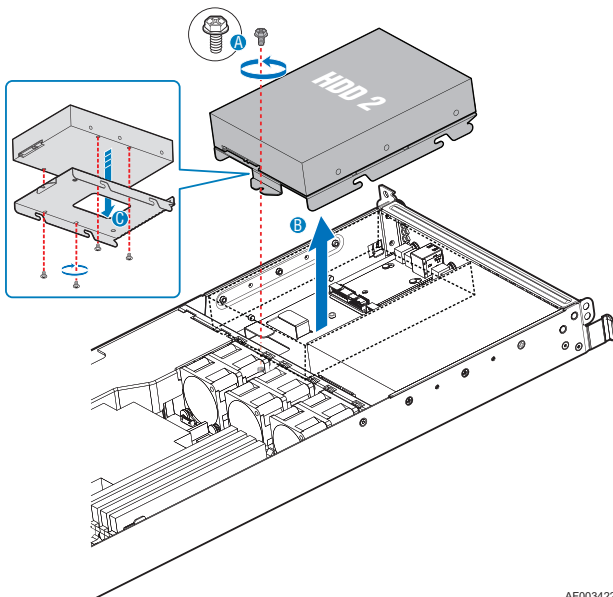
1. Locate the drive position you want to use.



AF003421

Figure 25. Locating Drive Positions

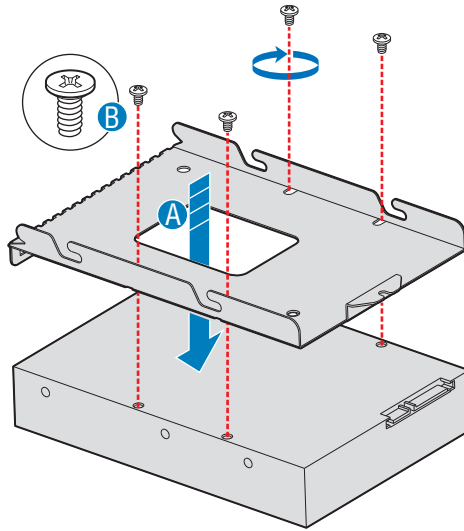
2. HDD1 location only: Slide the power cables from the cable clip that is located on the top of the hard drive carrier.
3. Remove the screw that secures the hard drive bracket to the chassis (see letter "A" in the following figure). Save this screw. You will use it later to reinstall the drive assembly. Lift the drive carrier from the chassis (see letter "B").



AF003422

Figure 26. Removing Drive Carrier from Server System

4. Position the drive with the drive connectors facing up, as shown in the following figure (Figure 30). Set the drive carrier over the drive (see letter "A"). The data and power connectors must be positioned so they are accessible through the cut-out, as shown by letter "B". Use the four screws provided to attach the drive to the carrier (see letter "C").

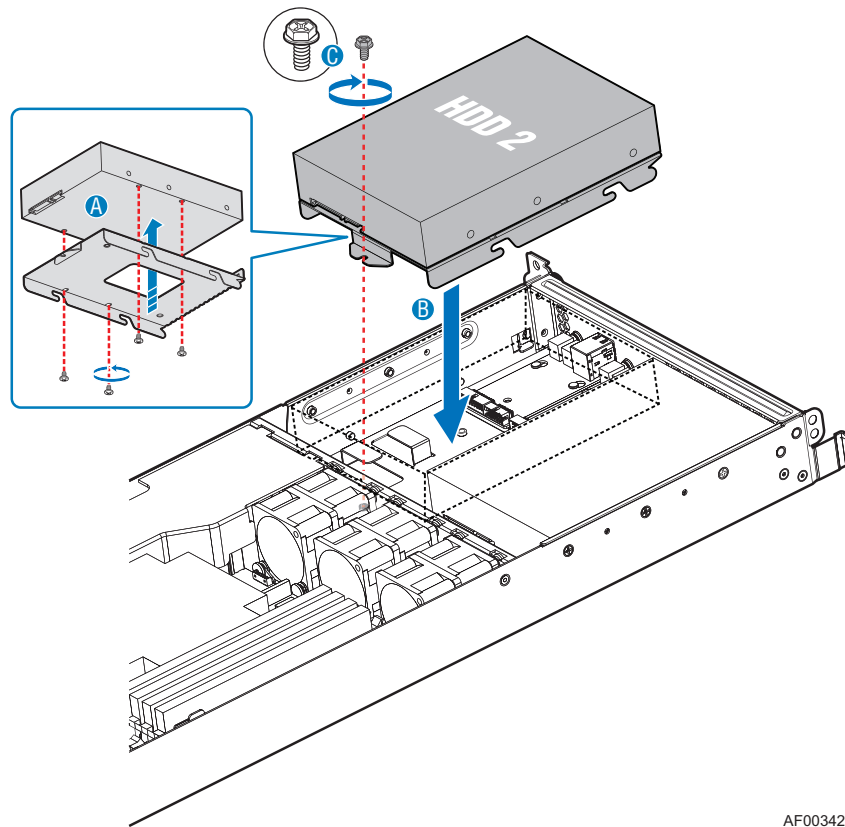


AF003423

Figure 27. Installing Drive into the Drive Carrier

5. Set the drive assembly into place in the chassis. See letter "A" in the following figure (Figure 31).
6. Attach the drive assembly to the chassis with the screw you removed previously in step 3 (see letter "B").

Note: You must install the assembly that contains the optical drive bracket on the left side of the system.



AF003424

Figure 28. Installing Drive Assembly into the Server System

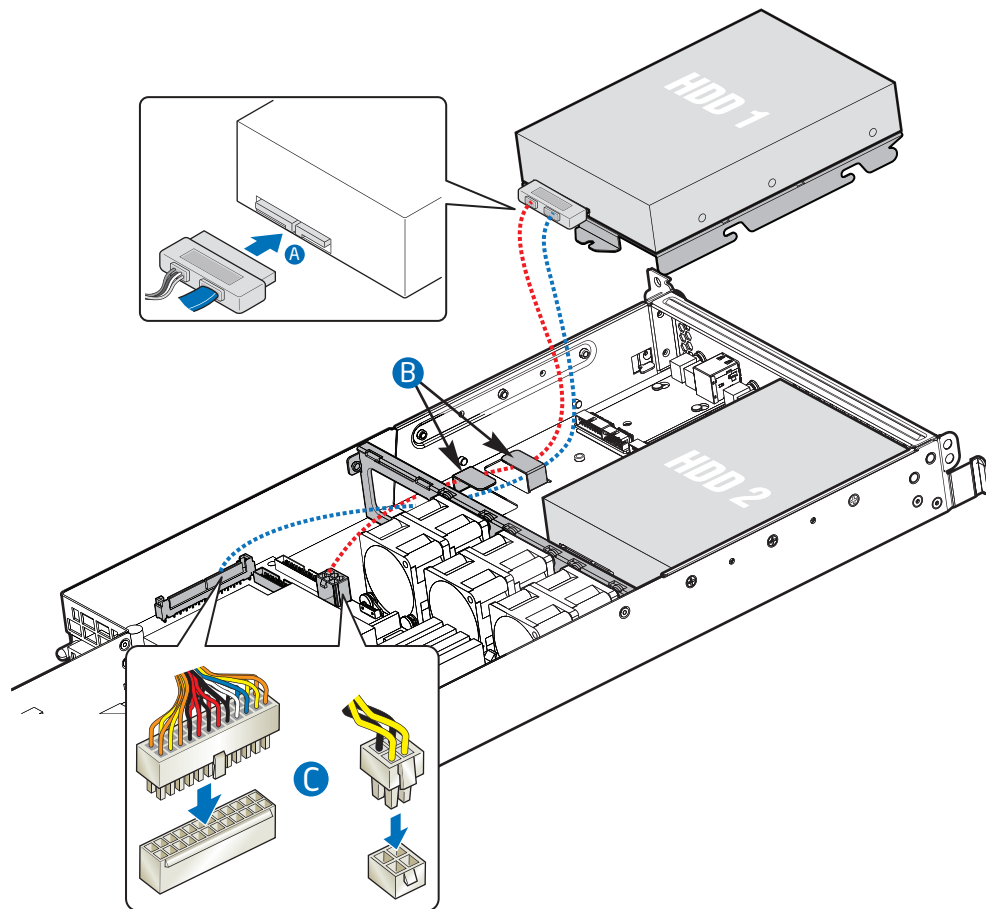
7. HDD1 only: Route the power cable into the cable clip on the top of the hard drive bracket.
8. Connect the data cables to the drive(s):
 - a. If a drive is installed in the HDD 1 carrier, connect the HDD 1 data cable to the SATA 1 connector on the server board. See letter "A" in Figure 29.
 - b. If a drive is installed in the HDD 2 carrier, connect the HDD 2 data cable to the SATA 2 connector on the server board. See letter "B" in Figure 29.

Note: The data cables are factory routed underneath the fan module. Use caution to make sure you connect the cables between the server board and the hard drives. The cables are labeled at each end.

9. Connect the power cables to the drive(s):

If a drive is installed in the HDD2 carrier, attach the connector on the daisy chain power cable that is closest to the power supply to the HDD2 connector.

- a. If a drive is installed in the HDD1 carrier, attach the middle connector on the daisy chain power cable to the HDD1 power connector.

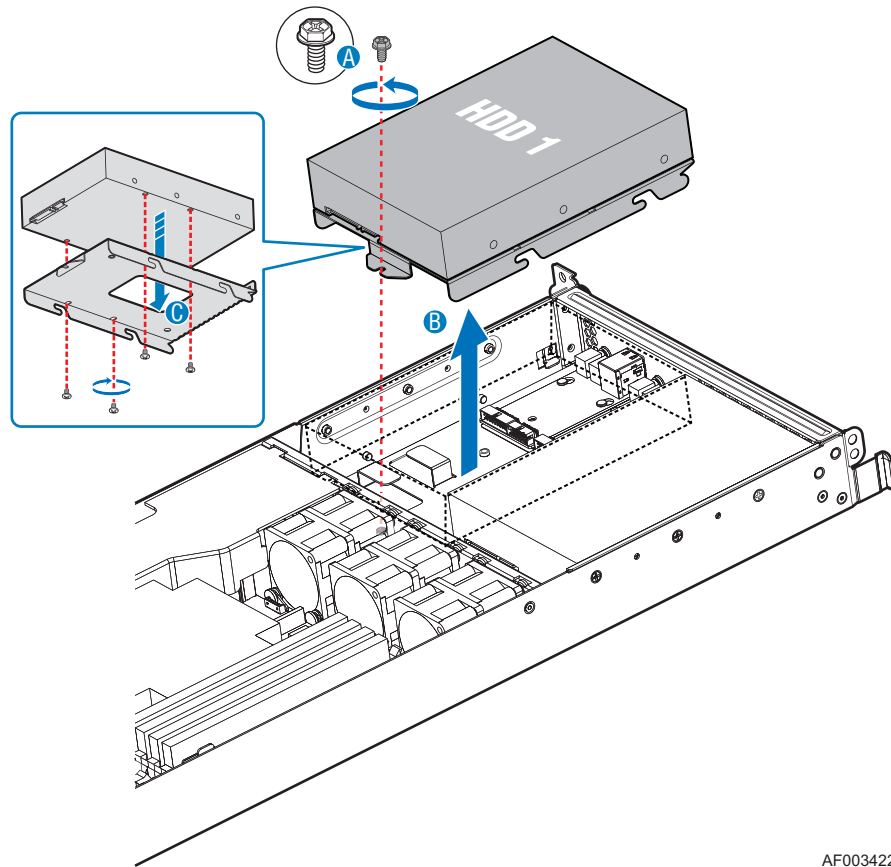


AF003425

Figure 29. Connecting Hard Drive Power and Data Cables

Removing a Fixed Hard Disk Drive

1. Disconnect the power and data cables from the drive.
2. HDD location only: Slide the power cable from the cable clip that is located on the top of the hard drive carrier.
3. Remove the screw that holds the hard drive bracket to the chassis (see letter "A" in the following figure). Save this screw. You will use it later to reinstall the drive assembly. Lift the drive carrier from the chassis (see letter "B").



AF003422

Figure 30. Removing Drive Carrier from the Server System

4. Remove the four screws that attach the hard drive to the drive carrier. Lift the drive from the carrier. Store the drive in an anti-static bag.
5. If you are installing a new drive, skip the rest of these steps and instead see “Installing and Removing a Fixed Hard Drive”.
6. Insert the screws that held the drive in the carrier into the screw locations on the carrier for future use.
7. Set the drive assembly into place in the chassis (see letter "A" in the following figure). Attach the drive assembly to the chassis with the screw that you removed previously in step 4(see letter "B").

Note: You must install the assembly that contains the optical drive bracket on the left side of the system.

Removing and Installing the System Fans

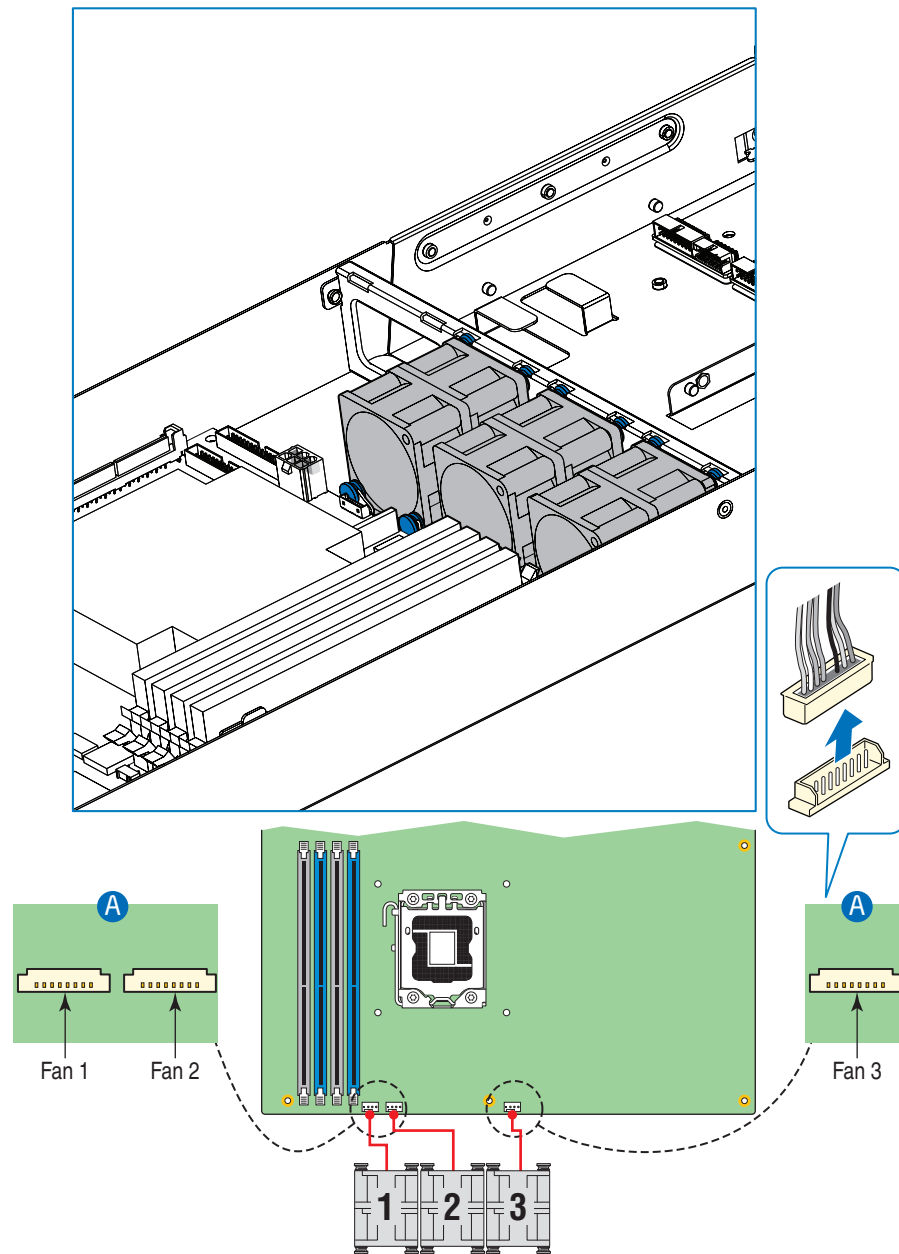
Caution: *The system fans are NOT hot-swappable. Before removing or replacing, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.*

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

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

Replacing the System Fans

1. Remove the processor air duct. For instructions, see “Removing the Processor Air Duct”.
2. Disconnect the two system blower cables from the server board. See letters "A" and "B" in the following figure:

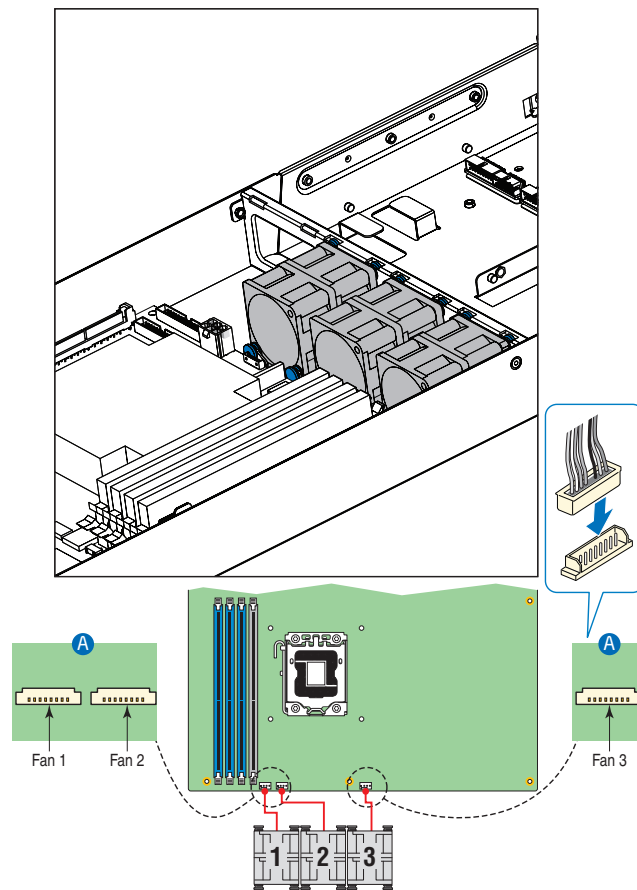


AF003426

Figure 31. Disconnecting the System Fan Cables

3. Remove the two screws that secure the fan bracket in place. Save these screws. You will re-install them later (see letter "A" in the following figure).
4. Remove the fan cable from beneath the clip at the front of the fan bracket (see letter "B").
5. Lift the fan bracket from the server. Lift the bracket at an angle, with the front of the bracket first, to clear the hard disk drive brackets (see letter "C").

6. Turn the bracket over and remove the two screws that attach the failed fan to the fan bracket. Save these screws. You will reinstall them later. See letter "A" in the following figure). Lift the fan from the bracket (see letter "B").
7. Install the replacement blower onto the bracket, using the two screws you removed previously in step 3.
8. Set the blower assembly into the system. Insert the rear edge first and push the assembly slightly rearward to clear the hard disk drive brackets. Use caution to make sure you do not pinch any cables.
9. Route the cable from the blower at the right around the right side of the assembly and under the clip at the front of the blower bracket.
10. Secure the blower assembly to the system using the two screws you removed previously.
11. Connect the blower cables to the server board. See letters "A" and "B" in the following figure.



AF003441

Figure 32. Connecting the System Fan Cables

Installing and removing Intel® Remote Management Module

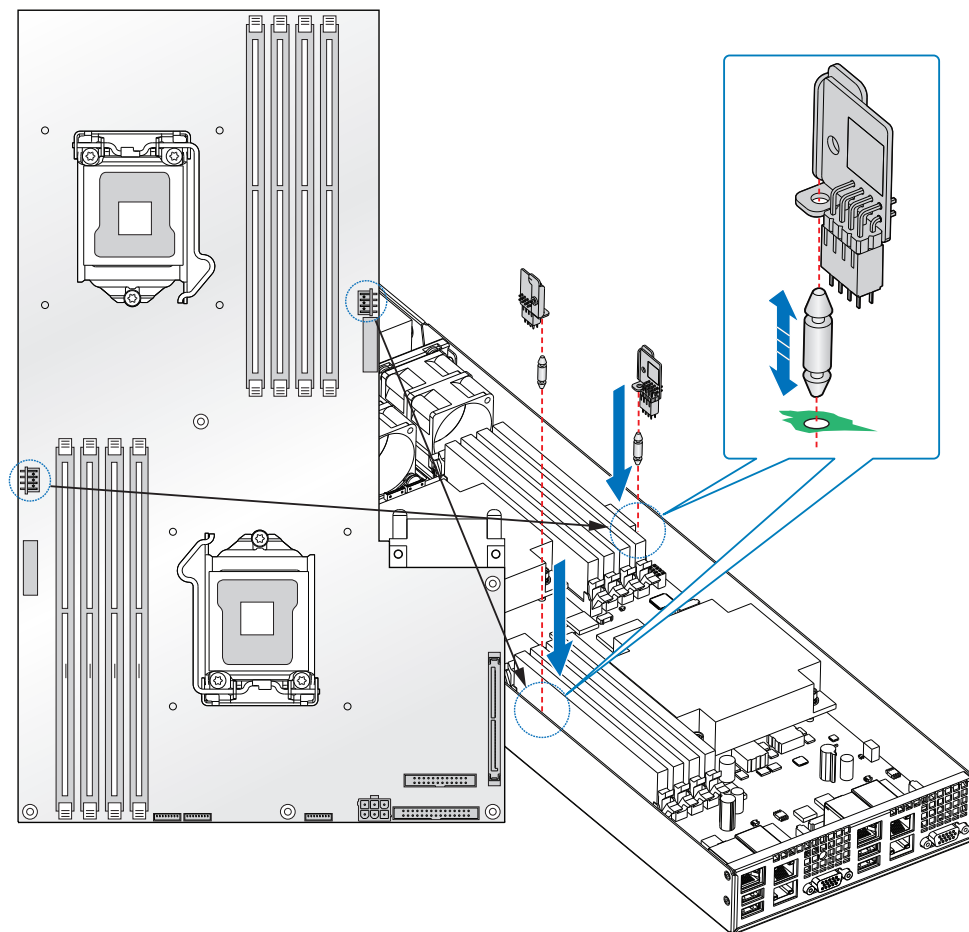
Caution: Intel® Remote Management Module is NOT hot-swappable. Before removing or replacing it, you must first take the server out of service, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.

You can install up to four management modules in the Intel® Server System SR1640TH to support 4 nodes respectively.

Note: The Intel® Server System SR1640TH supports Intel® RMM3 Lite-V only.

Installing Intel® Remote Management Module

1. Plug out the system tray out of the chassis.
2. Locate the position of node RMM3 connector on the server board.
3. Plug in the RMM3 Lite-V module to the connector.
4. Insert the tray back to chassis.

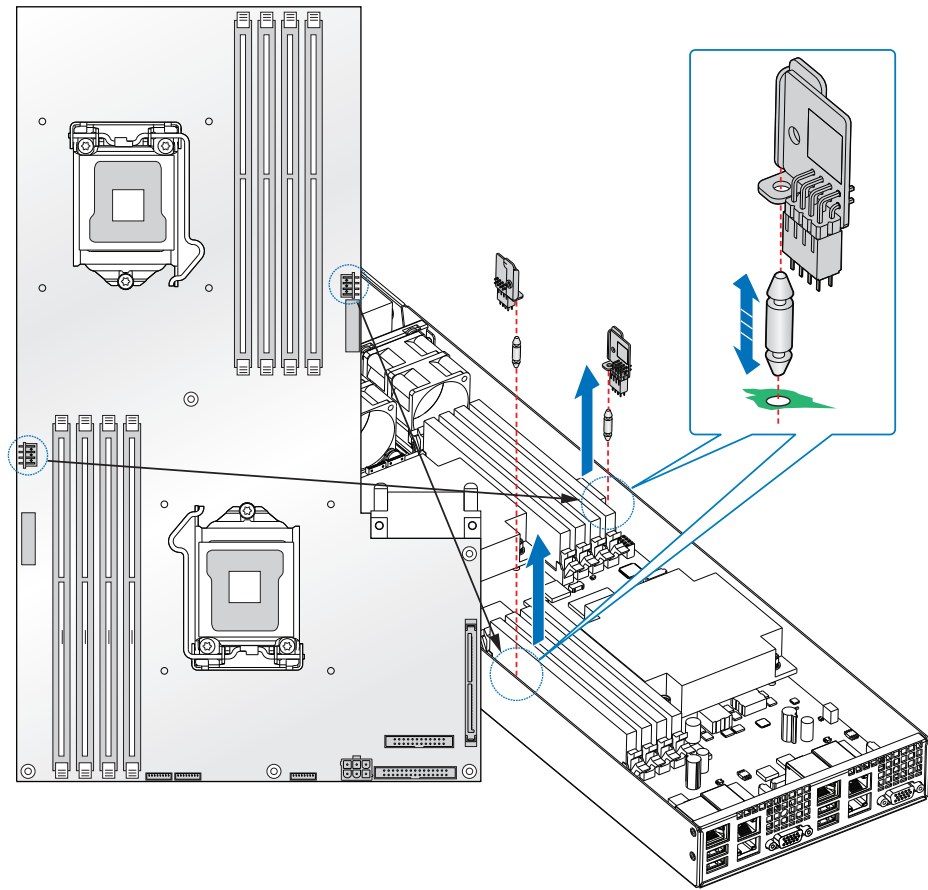


AF003444

Figure 33. RMM3 installing direction

Removing Intel® Remote Management Module

1. Plug out the system tray out of the chassis.
2. Locate the position of node RMM3 Lite-V modules on the server board.
3. Pull out the RMM3 Lite-V module from the server board.
4. Insert the tray back to chassis.



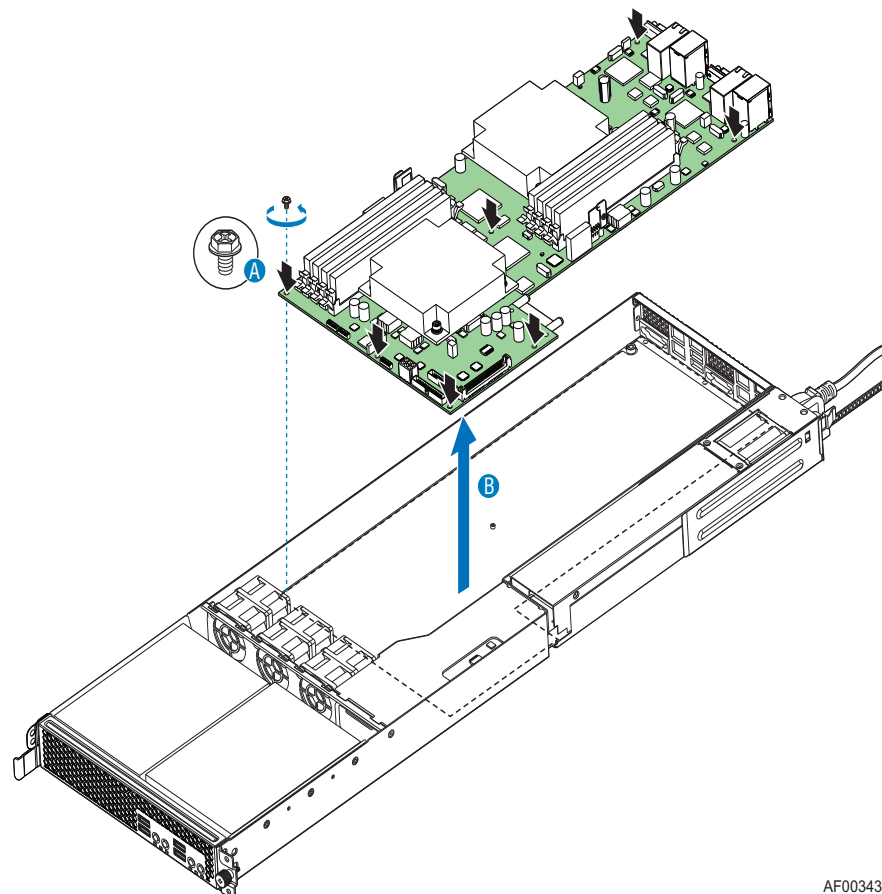
AF003443

Figure 34. RMM3 removing direction

Replacing the Server Board

Removing the Server Board

1. Remove the system air duct.
2. If installed, remove the memory, processor heat sinks, and processors from the server.
3. If installed, disconnect all SATA cables from the server board.
4. Remove the system fan cables.
5. Plug-out system power supply.
6. Remove the seven screws from the server board (see letter "A") and lift the server board from the server system (see letter "B").



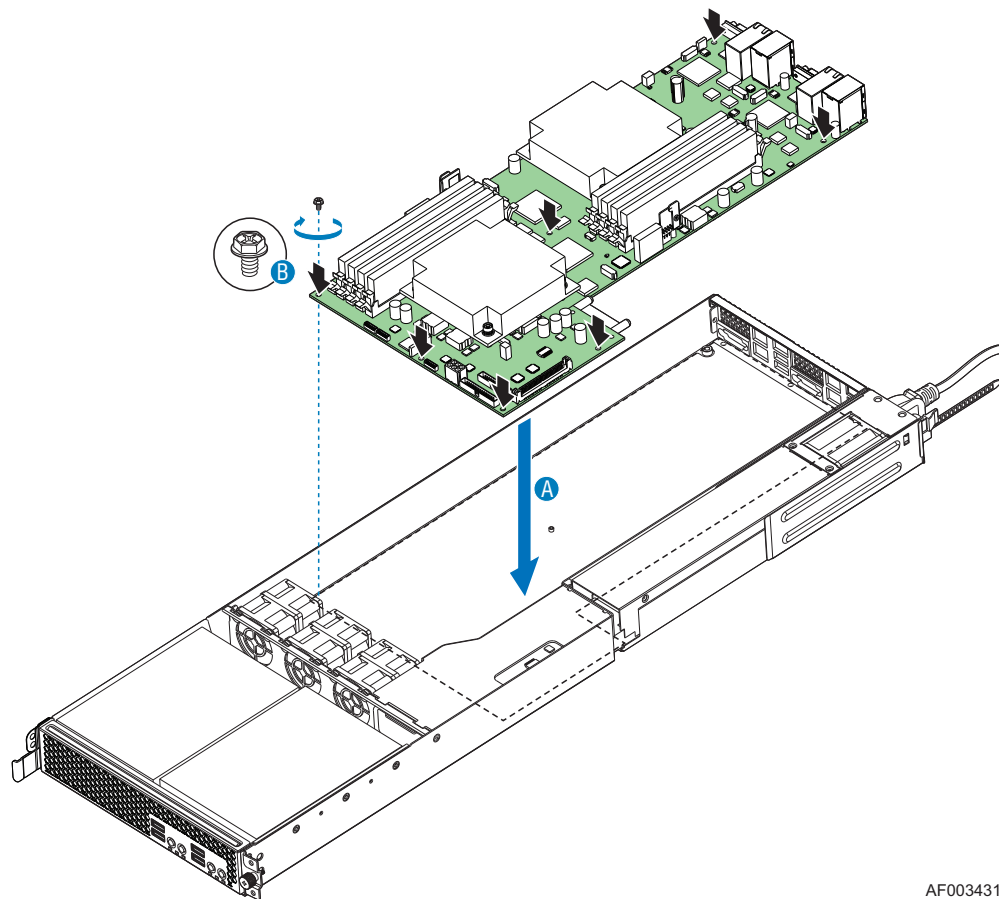
AF003430

Figure 35. Removing the Server Board

7. Install the replacement server board. See “Installing the Server Board” on page 45.

Installing the Server Board

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



AF003431

Figure 36. Installing the Server Board

3. Plug-in power supply unit.
4. Re-connect the fan cables.
5. Re-connect all SATA cables to the server board.
6. Install the memory, processor heat sinks, and processors.
7. Install the CPU air duct and air baffle.

Replacing the Backup Battery

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

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

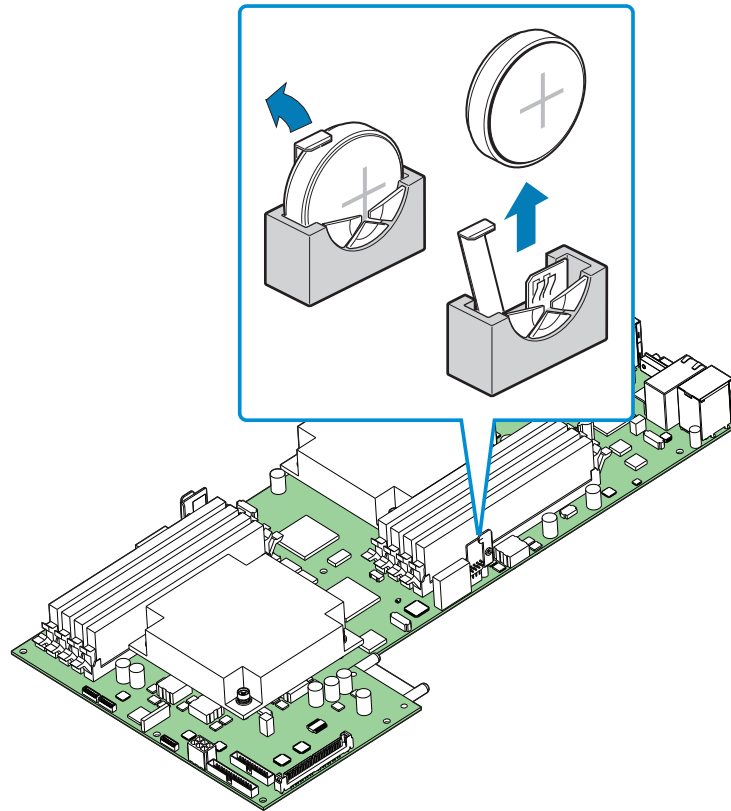
Advarsel: Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

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

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

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

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



AF003432

Figure 37. Replacing the Backup Battery

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

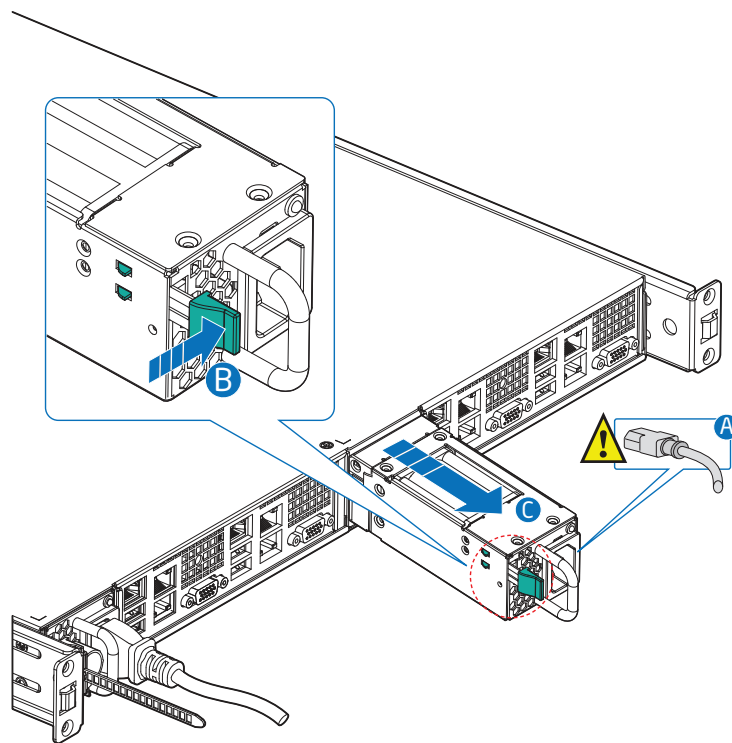
Replacing the Power Supply

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

Removing the Power Supply

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

1. Disconnect all power supply cables including power at rear of chassis (see letter “A”).
2. Remove the two screws securing the power supply to the back panel (see letter “B”).
3. Lift the power supply up to clear the chassis tab (see letter “C”) and remove the power supply by sliding it out (see letter “D”).

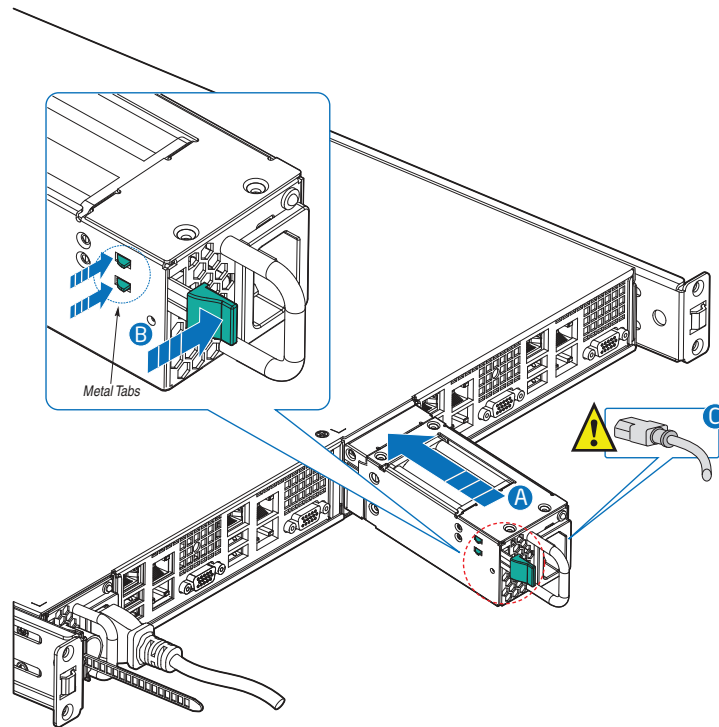


AF003433

Figure 38. Removing the Power Supply from the Server System

Installing the Power Supply

1. Insert the replacement power supply by first engaging the back panel (see letter “A”).
2. Lower the front of the power supply into place behind the chassis tab (see letter “B”).



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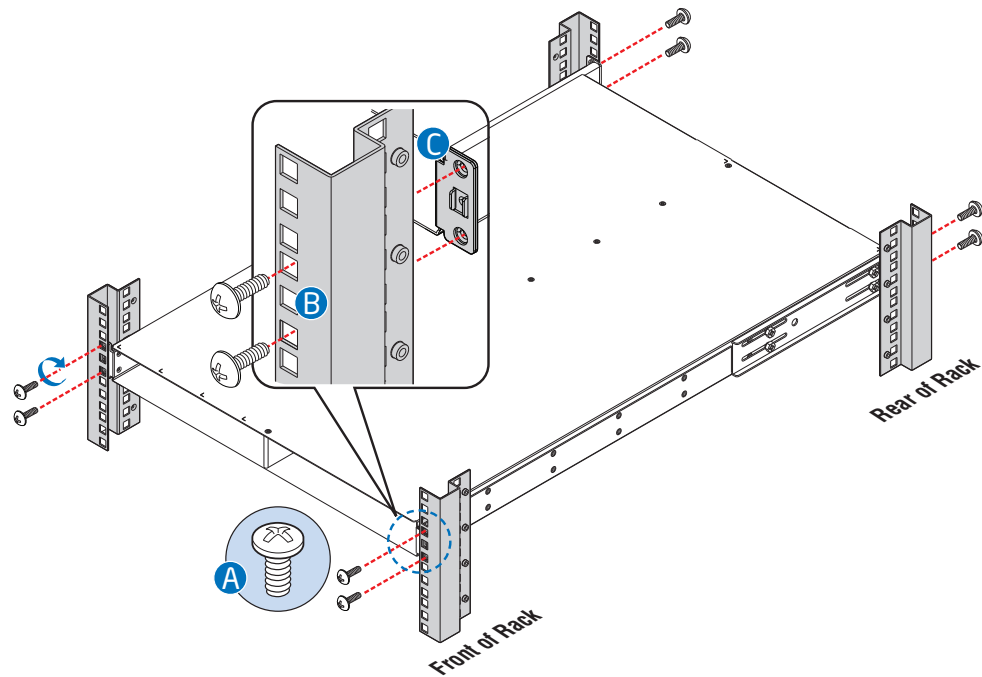
Figure 39. Installing the Power Supply into the Server System

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

Installing and Removing the Chassis

Installing the Chassis into the Rack

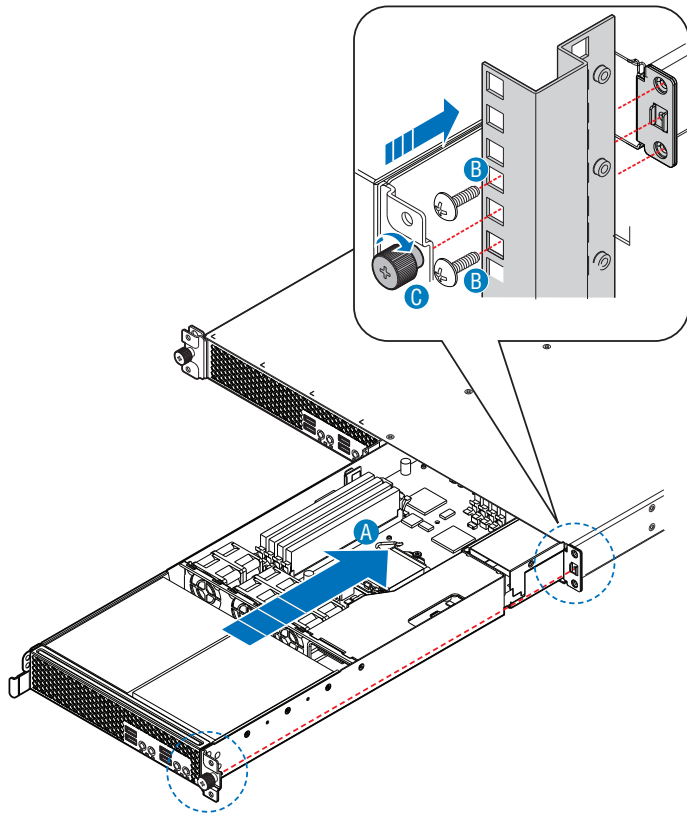
1. Align the rack handle with the holes on the side of the latch of the server system and attach the rack handle with the two screws.



AF003435

Figure 40. Installing the Chassis into the Rack

2. Repeat step 1 on the opposite side of the server.
3. Insert two server nodes into the Chassis and tighten the thumb screws on the left side of the left node and on the right side of the right node.
4. Make sure that, the thumb screw passes through the rack hole and fixes on the latch on the Chassis.



AF003436

Figure 41. Installing tray into the Chassis

Removing the Chassis from the Rack

1. Disconnect all the power cable from the Chassis.
2. Remove two server nodes from the Chassis by removing the thumb screws on the left side of the left node and on the right side of the right node.
3. Remove two server nodes from the front of the Chassis and two PSUs from the back of the Chassis.
4. Remove the two screws holding the rack handle in place, and remove the rack handle from the latch of the server system.
5. Repeat step 4 on the opposite side of the Chassis.

4 Server Utilities

Using the BIOS Setup Utility

This section describes the BIOS Setup Utility options, which is used to change server configuration defaults. You can run the BIOS Setup with or without an operating system being present. See “Server System References” for a link to the Intel® Server Board S1630BC Technical Product Specification where you can find details about specific BIOS setup screens.

Starting Setup

You can enter and start BIOS Setup under several conditions:

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

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

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

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

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

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

If You Cannot Access Setup

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

Setup Menus

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

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

Table 6. Setup Menu Key Use

Key to Press	Description
<F1>	Pressing the <F1> key on any menu launches the general help window.
Left and right arrows	The left and right arrow keys are used to move between the major menu pages. The keys have no effect if a submenu or pick list is displayed.
Up arrow	Select Item up - The up arrow is used to select the previous value in a menu item's option list, or a value field pick list. Pressing <Enter> activates the selected item.
Down arrow	Select Item down - The down arrow is used to select the next value in a menu item's option list, or a value field pick list. Pressing <Enter> activates the selected item.
<F5> or <->	Change Value - The minus key or 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, pressing <Enter> 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 <Esc> is pressed while editing any field or selecting features of a menu, the parent menu is re-entered. When <Esc> is pressed in any submenu, the parent menu is re-entered. When <Esc> is pressed in any major menu, the exit confirmation window displays and the user is asked whether they want to discard their changes.
<F9>	<p>Setup Defaults - Pressing <F9> causes the following to display:</p> <pre style="text-align: center;"> Setup Confirmation Load default configuration now? [Yes] [No] </pre> <p>If “Yes” is selected and <Enter> is pressed, all Setup fields are set to their default values. If “No” is selected and <Enter> is pressed, or <Esc> is pressed, the user is returned to where they were before <F9> was pressed without affecting any existing field values.</p>

Table 6. Setup Menu Key Use

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

Upgrading the BIOS

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

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

Preparing for the Upgrade

The following steps explain how to prepare to upgrade the BIOS, including how to record the current BIOS settings and how to obtain the upgrade utility. In the unlikely event a BIOS error occurs during the BIOS upgrade process, you may need to follow a recovery process to return the system to service. For additional information, see “Server System References” for a link to the necessary firmware and BIOS updates software and instructions.

Recording the Current BIOS Settings

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

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

Please refer to [Table 6, “Setup Menu Key Use”](#).

Obtaining the Upgrade

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

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

Upgrading the BIOS

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

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

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

Clearing the CMOS

If you cannot access the BIOS setup screens, you must use the CMOS Clear jumper to reset the configuration RAM. The CMOS Clear jumper is located on jumper block at J2D2 on the server board.

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

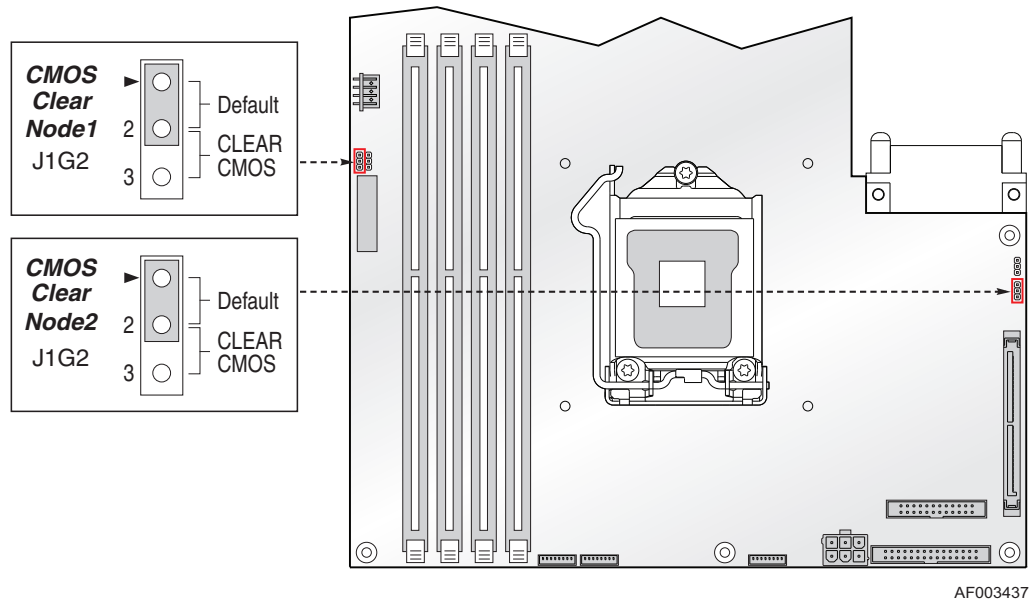


Figure 42. CMOS Clear Jumper

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

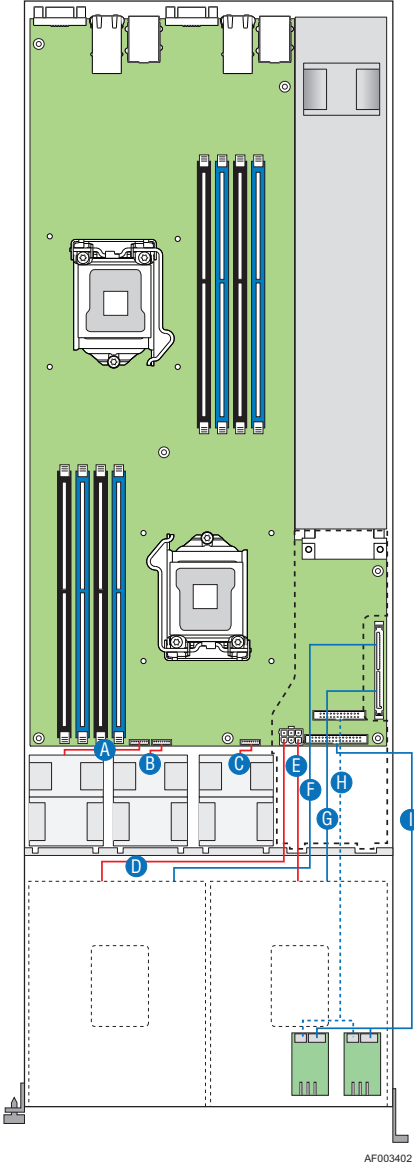
Appendix A: Technical Reference

Cable Routing

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

For readability, separate figures for power cable routing and data cable routing are included. Make sure all necessary power and data cables are connected and routed as shown. Dashed lines in the drawings indicate a location where a cable is routed beneath a component and each connector end is labeled with the same letter. For example, the PCI cooling fan cable is labeled with the letter “C” both where it connects to the server board and at the PCI cooling fan itself.

Cable Routing (SR1640TH)



A. System Fan 1 cable connection	F. SATA Cable for Node 2
B. System Fan 2 cable connection	G. SATA Cable for Node 1
C. System Fan 3 cable connection	H. Front Panel USB cable for both Node1 and Node 2
D. SATA Power cable for Node 2	I. Front Panel Control cable for both Node 1 and Node 2
E. SATA Power cable for Node 1	

Figure 43. Power Cable Routing (SR1640TH)

450-W Single Power Supply Input Voltages

- 90 - 132 V at 47/63 Hz
- 180 - 264 V at 47/63 Hz

450-W Single Power Supply Output Voltages

The following table lists the total wattage available from the power subsystem for each voltage. Ensure your loads do not exceed the combined total wattage of 450 W. For information about calculating the power usage for your configuration, see “Power Budget Tool.”

Table 7. 450-W Single Power Supply Output Voltages

Voltage	Maximum Continuous
+12 V	37 A
+5 VSB	3 A

1. Maximum continuous total DC output power should not exceed 450 W.
2. Peak total DC output power should not exceed 570W.

System Environmental Specifications

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

Table 8. System Environmental Specifications

Temperature	
Non-operating	-40 ° to 70 ° C
Operating	10 ° to 35 °C, with the maximum rate of change not to exceed 10 ° C per hour
Humidity	
Non-operating	90% relative humidity, non-condensing at 35 °C
Shock	
Operating	2.0 g, 11 msec, 1/2 sine
Unpackaged	Trapezoidal, 25 g, velocity change 136 inches/sec (40 lbs to > 80 lbs)
Packaged	Non-palletized free fall at a height of 24 inches (40 lbs to > 80 lbs)
Acoustic noise	Sound Pressure: 55 dBA (rack mount) in an idle state at typical office ambient temperature. (23 +/- degrees C) Sound Power: 7.0 BA in an idle state at typical office ambient temperature. (23 +/- 2 degrees C).
Electrostatic discharge (ESD)	T+/-15 kV except I/O port +/-8 KV, per Intel Environmental Test Specification

Appendix B: Intel® Server Issue Report Form

Issue Report Form

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

=====
Date Submitted: _____

Company Name: _____

Contact Name: _____

Email Address: _____

Intel Server Product: _____

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

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

Board/Chassis Information

Baseboard Revision - PBA#: _____

Baseboard Serial Number: _____

CPU1 Speed/Stepping/Spec: _____

CPU2 Speed/Stepping/Spec: _____

System BIOS Version: _____

HSC Firmware Version: _____

Chassis Model: _____

Intel® Server Chassis SR1640TH: _____

Intel® Server System SR1640TH: _____

Other (Vendor/Model): _____

DIMM Configuration

DIMM A1 MB and Vendor/part number: _____

DIMM A2 MB and Vendor/part number: _____

DIMM B1 MB and Vendor/part number: _____

DIMM B2 MB and Vendor/part number: _____

DIMM D1 MB and Vendor/part number: _____

DIMM D2 MB and Vendor/part number: _____

DIMM E1 MB and Vendor/part number: _____

DIMM E2 MB and Vendor/part number: _____

Operating System Information

Operating System: _____

Version: _____

Service Pack: _____

Hard Drive Information

Management Information

On-Board Platform Instrumentation only _____

Intel® Remote Management Module _____

Complete Problem Description

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

Drive Type (SATA/ SAS)	Make/Model	IRQ	FW Revision #
SATA 0			
SATA 1			
SATA 2			
SATA 3			

Appendix C: LED Decoder

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

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

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

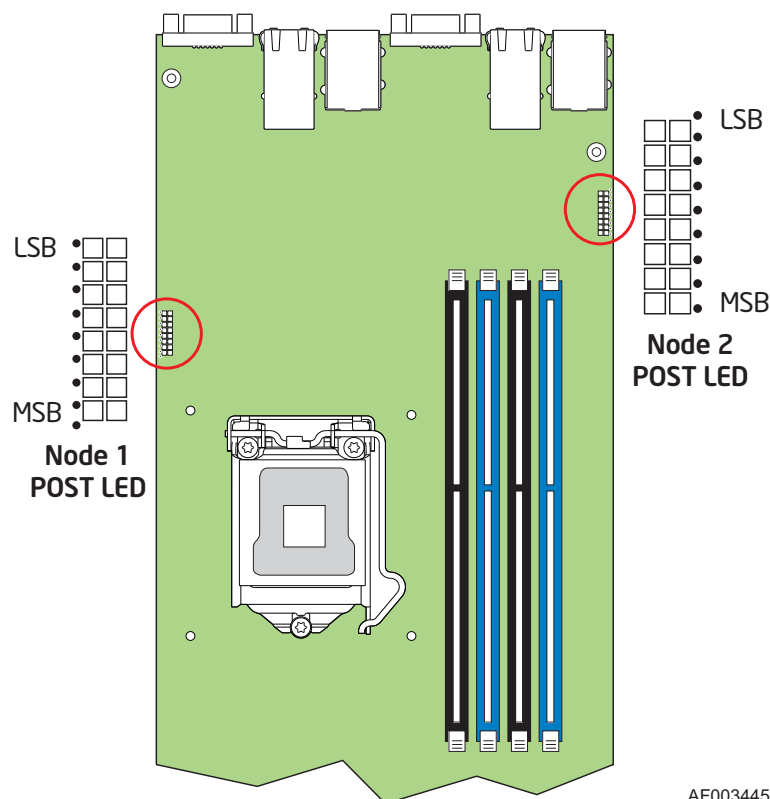


Figure 44. Diagnostic LED Placement Diagram

In the following example, the BIOS sends a value of ACh to the diagnostic LED decoder. The LEDs are decoded as follows:

Table 9. POST Progress Code LED Example

LEDs	Upper Nibble LEDs				Lower Nibble LEDs			
LEDs	MSB							
	LED #7	LED #6	LED #5	LED #4	LED #3	LED #2	LED #1	LED #0
	8h	4h	2h	1h	8h	4h	2h	1h
Status	ON	OFF	ON	OFF	ON	ON	OFF	OFF
Results	1	0	1	0	1	1	0	0
	Ah				Ch			

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

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
Host Processor									
0x04h	X	X	X	X	X	O	X	X	Early processor initialization (flat32.asm) where system BSP is selected
0x10h	X	X	X	O	X	X	X	X	Power-on initialization of the host processor (bootstrap processor)
0x11h	X	X	X	O	X	X	X	O	Host processor cache initialization (including AP)

Table 10. Diagnostic LED POST Code Decoder

	Diagnostic LED Decoder								
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
0x12h	X	X	X	O	X	X	O	X	Starting application processor initialization
0x13h	X	X	X	O	X	X	O	O	SMM initialization
Chipset									
0x21h	X	X	O	X	X	X	X	O	Initializing a chipset component
Memory									
0x22h	X	X	O	X	X	X	O	X	Reading configuration data from memory (SPD on FBDIMM)
0x23h	X	X	O	X	X	X	O	O	Detecting presence of memory
0x24h	X	X	O	X	X	O	X	X	Programming timing parameters in the memory controller
0x25h	X	X	O	X	X	O	X	O	Configuring memory parameters in the memory controller
0x26h	X	X	O	X	X	O	O	X	Optimizing memory controller settings
0x27h	X	X	O	X	X	O	O	O	Initializing memory, such as ECC init
0x28h	X	X	O	X	X	X	X	X	Testing memory

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
PCI Bus									
0x50h	X	O	X	O	X	X	X	X	Enumerating PCI buses
0x51h	X	O	X	O	X	X	X	O	Allocating resources to PCI buses
0x52h	X	O	X	O	X	X	O	X	Hot Plug PCI controller initialization
0x53h	X	O	X	O	X	X	O	O	Reserved for PCI bus
0x54h	X	O	X	O	X	O	X	X	Reserved for PCI bus
0x55h	X	O	X	O	X	O	X	O	Reserved for PCI bus
0x56h	X	O	X	O	X	O	O	X	Reserved for PCI bus
0x57h	X	O	X	O	X	O	O	O	Reserved for PCI bus
USB									
0x58h	X	O	X	O	O	X	X	X	Resetting USB bus
0x59h	X	O	X	O	O	X	X	O	Reserved for USB devices
ATA/ATAPI/SATA									
0x5A	X	O	X	O	O	X	O	X	Resetting SATA bus and all devices
0x5B	X	O	X	O	O	X	O	O	Reserved for ATA
0x5C	X	O	X	O	O	O	X	X	Enable SMART if supported by ATA device
0x5D	X	O	X	O	O	O	X	O	Reserved for ATA
SMBUS									
0x5E	X	O	X	O	O	O	O	X	Resetting SMBUS
0x5F	X	O	X	O	O	O	O	O	Reserved for SMBUS
Local Console									

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
0x70h	X	O	O	O	X	X	X	X	Resetting the video controller (VGA)
0x71h	X	O	O	O	X	X	X	O	Disabling the video controller (VGA)
0x72h	X	O	O	O	X	X	O	X	Enabling the video controller (VGA)
Remote Console									
0x78	X	O	O	O	O	X	X	X	Resetting the console controller
0x79	X	O	O	O	O	X	X	O	Disabling the console controller
0x7A	X	O	O	O	O	X	O	X	Enabling the console controller
Keyboard (only USB)/Keyboard (PS/2 or USB)									
0x90	O	X	X	O	X	X	X	X	Resetting the keyboard
0x91	O	X	X	O	X	X	X	O	Disabling the keyboard
0x92	O	X	X	O	X	X	O	X	Detecting the presence of the keyboard
0x93	O	X	X	O	X	X	O	O	Enabling the keyboard
0x94	O	X	X	O	X	O	X	X	Clearing keyboard input buffer
0x95	O	X	X	O	X	O	X	O	Instructing keyboard to run Self Test (PS/2 only)
Mouse (only USB)									
0x98	O	X	X	O	O	X	X	X	Resetting the mouse
0x99	O	X	X	O	O	X	X	O	Detecting the mouse
0x9A	O	X	X	O	O	X	O	X	Detecting the presence of mouse
0x9B	O	X	X	O	O	X	O	O	Enabling the mouse

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
Fixed Media									
0xB0	O	X	O	O	X	X	X	X	Resetting fixed media device
0xB1	O	X	O	O	X	X	X	O	Disabling fixed media device
0xB2	O	X	O	O	X	X	O	X	Detecting the presence of a fixed media device (SATA Hard drive detection, etc.)
0xB3	O	X	O	O	X	X	O	O	Enabling/configuring a fixed media device
Removable Media									
0xB8	O	X	O	O	O	X	X	X	Resetting the removable media device
0xB9	O	X	O	O	O	X	X	O	Disabling the removable media device
0xBA	O	X	O	O	O	X	O	X	Detecting the presence of a removable media device (SATA CD-ROM detection, etc.)
0xBC	O	X	O	O	O	O	X	X	Enabling/configuring a removable media device
Boot Device Selection (BDS)									
0xD0	O	O	X	O	X	X	X	X	Entered the Boot Device Selection phase (BDS)
0xD1	O	O	X	O	X	X	X	O	Return to last good boot device
0xD2	O	O	X	O	X	X	O	X	Setup boot device selection policy
0xD3	O	O	X	O	X	X	O	O	Connect boot device controller

Table 10. Diagnostic LED POST Code Decoder

	Diagnostic LED Decoder								
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
0xD4	O	O	X	O	X	O	X	X	Attempt flash update boot mode
0xD5	O	O	X	O	X	O	X	O	Transfer control to EFI boot
0xD6	O	O	X	O	X	O	O	X	Trying to boot device selection
0xDF	O	O	X	O	O	O	O	O	Reserved for boot device selection
Pre-EFI Initialization (PEI) Core									
0xE0h	O	O	O	X	O	X	X	X	Entered Pre-EFI Initialization phase (PEI)
0xE1h	O	O	O	X	X	X	X	O	Started dispatching early initialization modules (PEIM)
0xE2h	O	O	O	X	X	X	O	X	Initial memory found, configured, and installed correctly
0xE3h	O	O	O	X	X	X	O	O	Transfer control to the DXE Core
Driver Execution Environment (DXE) Core									
0xE4h	O	O	O	X	O	X	X	X	Entered EFI driver execution phase (DXE)
0xE5h	O	O	O	X	O	X	X	O	Started dispatching drivers
0xE6h	O	O	O	X	O	X	O	X	Started connecting drivers
DXE Drivers									
0xE7	O	O	O	X	X	O	O	O	Waiting for user input
0xE8	O	O	O	X	O	X	X	X	Checking password
0xE9	O	O	O	X	O	X	X	O	Entering BIOS setup
0xEA	O	O	O	X	O	X	O	X	Flash Update

Table 10. Diagnostic LED POST Code Decoder

Diagnostic LED Decoder									
Checkpoint	0 = On, X = Off								Description
	Upper Nibble				Lower Nibble				
	MSB							LSB	
	8h	4h	2h	1h	8h	4h	2h	1h	
LED	#7	#6	#5	#4	#3	#2	#1	#0	
0xEE	O	O	O	X	O	O	O	X	Calling Int 19. One beep unless silent boot is enabled.
0xEF	O	O	O	X	O	O	O	O	Unrecoverable boot failure
Pre-EFI Initialization Module (PEIM)/Recovery									
0x30h	X	X	O	O	X	X	X	X	Crisis recovery has been initiated because of a user request
0x31h	X	X	O	O	X	X	X	O	Crisis recovery has been initiated by software (corrupt flash)
0x34h	X	X	O	O	X	O	X	X	Loading crisis recovery capsule
0x35h	X	X	O	O	X	O	X	O	Handing off control to the crisis recovery capsule
0x3Fh	X	X	O	O	O	O	O	O	Crisis recovery capsule failed integrity check of capsule descriptors
Runtime Phase/EFI Operating System Boot									
0xF2h	O	O	O	O	X	X	O	X	Signal that the operating system has switched to virtual memory mode.
0xF4h	O	O	O	O	X	O	X	X	Entering Sleep state
0xF5h	O	O	O	O	X	O	X	O	Exiting Sleep state
0xF8h	O	O	O	O	O	X	X	X	Operating system has requested EFI to close boot services has been cancelled
Progress Code									
0xF9h	O	X	X	X	O	X	X	X	Resetting the keyboard
0xFAh	O	X	X	X	O	X	X	O	Disabling the keyboard

Appendix D: Getting Help

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

1. Visit the following Intel support web page:

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

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

Latest BIOS, firmware, drivers and utilities

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

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

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

3. Lastly, you can contact an Intel support representative using one of the support phone numbers available at <http://support.intel.com/support/9089.htm> (charges may apply). Intel customer support suggests filling out the issue report

form available at “Intel[®] Server Issue Report Form” to better service the issue. Intel also offers Channel Program members around-the-clock 24x7 technical phone support on Intel[®] server boards, server chassis, server RAID controller cards, and Intel[®] Server Management at <http://www.intel.com/reseller/>.

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

Warranty Information

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

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

Appendix E: Regulatory and Compliance Information

Product Regulatory Compliance

Warning: *To ensure regulatory compliance, you must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products/components will void the ETL 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 trays 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 regulations.

Intended Application

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

Product Safety Compliance

The server chassis product complies with the following product safety requirements:

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

- BSMI (Taiwan)
- IRAM (Argentina)
- GS (Germany)
- GOST (Russia)
- Ukraine (Ukraine)

Product EMC Compliance - Class A Compliance

The Intel® Server System SR1640TH was tested and verified to comply with the following electromagnetic compatibility (EMC) regulations when installed a compatible Intel® host system. For information on compatible host system(s), refer to Intel's Server Builder Web site or contact your local Intel representative.

- CE EMC (Europe)
- CISPR (International)
- BSMI (Taiwan)
- KCC (Korea)
- Ukraine (Ukraine)
- FCC (USA/Canada)
- VCCI (Japan)
- GOST (Russia)

Important Note:

*The Intel® Server System SR1640TH requires the use of shielded LAN cable to comply with Emission/Immunity regulatory requirements. Use of non shield cables **may result** in the product non-compliance.*

Certifications/Registrations/Declarations

- ETL Certification (US/Canada)
- CE Declaration of Conformity (CENELEC Europe)
- FCC/ICES-003 Class A Attestation (USA/Canada)
- C-Tick Declaration of Conformity (Australia/New Zealand)
- BSMI Certification (Taiwan)
- KCC Certification (Korea)
- GOST License (Russia)
- Ecology Declaration (International)
- VCCI certification (Japan)
- CB certification (International)

- GS certification (Germany)
- IRAM certification (Argentina)

Product Regulatory Compliance Markings


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



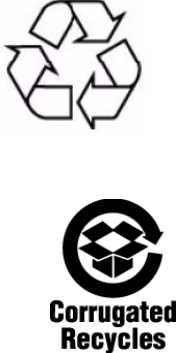
Note: Certifications Emissions requirements are to Class A.


Table 11. .Product Regulatory Compliance Markings

Regulatory Compliance	Region	Marking
IRAM Mark	Argentina	
Ctick Mark	Australia/NZ	 N232
EMC Marking	Canada	CANADA ICES-003 CLASS A
CE Mark	Europe	
GS Mark	Germany	
VCCI Mark	Japan	この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI-A

KCC Mark	Korea	 <p>인증번호: CPU-SR1640 (A)</p>
GOST Mark	Russia	 <p>MO04</p>
BSMI Mark	Taiwan	 <p>R33025</p>
		<div style="border: 1px solid black; padding: 5px;"> <p>警告使用者： 這是甲類的資訊產品，在居住的環境中使用時， 可能會造成射頻干擾，在這種情況下，使用者會 被要求採取某些適當的對策</p> </div>
ETL Mark	USA/Canada	 <p>3178574</p>
FCC Mark	USA (FCC Mark)	<p>This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept interference receive, including interference that may cause undesired operation.</p>

Country of Origin Mark	Country of Origin Mark	Made in China
Nordic Ground Marking	Nordic Ground Marking	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.”
Multiple Power Cord	Multiple Power Cord	English: This unit has more than one power supply cord. To reduce the risk of electrical shock, disconnect (2) two power supply cords before servicing. Simplified Chinese: 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。 Traditional Chinese: 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。 German: Dieses Geräte hat mehr als ein Stromkabel. Um eine Gefahr des elektrischen Schlages zu verringern trennen sie beide (2) Stromkabeln bevor Instandhaltung.
WEEE Marking	WEEE Marking	

China RoHS	China RoHS	
China Recycling Package Marks	China Recycling Package Marks	 <p>Will be added on Package label.</p>
Other Recycling Package Marks		 <p>Will be added on Package label.</p>
Lithium Perchlorate insert	CA	<p>Perchlorate Material – Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate</p> <p>This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials.</p> <p>This product/part includes a battery which contains Perchlorate material.</p>

<p>Standard icon for Power button</p>		 <p>Should be attached on power button</p>
---------------------------------------	--	---

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

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 (KCC)

Following is the RRL certification information for Korea.



인증번호: CPU-SR1640 (A)



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



Product Ecology Compliance

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

Table 12. Product Ecology Compliance

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

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

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

Other Markings

Table 13. Other Markings


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

Table 13. Other Markings

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

Regulated Specified Components

To maintain the ETL 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 ETL 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) - ETL listed.
- **Server board:** you must use an Intel server board - ETL 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 ETL recognized or ETL listed. Any add-in board containing modem telecommunication circuitry must be ETL 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 ETL recognized or ETL 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. Any lithium metal or lithium ion batteries in the configuration must be disposed of in conjunction with established local battery recycling laws.

Appendix F: Warranty

Limited Warranty for Intel® Chassis Subassembly Products

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

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

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

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

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

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

Extent of Limited Warranty

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

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

Warranty Limitations and Exclusions

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

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

Limitations of Liability

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

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

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

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

How to Obtain Warranty Service

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

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

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

Telephone Support

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

Returning a Defective Product

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

Appendix G: Installation/Assembly Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See also Intel Server Boards and Server Chassis Safety Information on the Resource CD and/or at: <http://www.intel.com/support/motherboards/server/SR1640TH/>.

English



SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:

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. 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.

Deutsch

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

<http://www.intel.com/support/motherboards/server/SR1640TH/>



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

1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.
2. Schalten Sie das System mit dem Hauptschalter aus.
3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.
4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.
5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.
6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein. Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.

Français

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez Intel Server Boards and Server Chassis Safety Information sur le CD Resource CD ou bien rendez-vous sur le site:

<http://www.intel.com/support/motherboards/server/SR1640TH/>



CONSIGNES DE SÉCURITÉ -Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes:

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. 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.

Español

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

<http://www.intel.com/support/motherboards/server/SR1640TH/>



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

1. Apague todos los dispositivos periféricos conectados al sistema.
2. Apague el sistema presionando el interruptor encendido/apagado.
3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.
4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.
5. Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujeta a la toma de tierra del chasis - o a cualquier tipo de superficie de metal sin pintar.
6. No ponga en marcha el sistema si se han extraído las tapas del chasis. Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.

Italiano



PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:

1. Spegnere tutti i dispositivi periferici collegati al sistema.
2. Spegnere 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. 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.

Appendix H: Safety Information

English

Server Safety Information

This document applies to Intel® server boards, Intel® server chassis 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 ETL 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 compute module 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 compute module 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.

Caution: *TESD 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.

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 ETL-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.
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	Weist auf potentielle Gefahr bei Nichtbeachtung der angezeigten Informationen hin.
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	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.
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	Weist darauf hin, daß das Anfassen des Gebläses zu Verletzungen führen kann.
---	--

	Bedeutet, alle Netzkabel abzuziehen und das Gerät von der Netzspannung zu trennen.
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	Bereiten Sie bitte Batterie auf
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Zielbenutzer der Anwendung

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

Standortauswahl

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

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

Handhabung von Geräten

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

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

Warnungen zu Netzspannung und Elektrizität

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

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

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

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

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

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

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.

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.
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AVERTISSEMENT	Indique la présence d'un risque pouvant entraîner des blessures corporelles graves si l'avertissement n'est pas pris en compte.
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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 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.

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

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

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

Debe ceñirse a las directrices de esta guía y a las instrucciones de montaje de los manuales del servidor para asegurar y mantener el cumplimiento con las certificaciones y homologaciones existentes de los productos. Utilice sólo los componentes descritos y homologados que se especifican en esta guía. El uso de otros productos o componentes anulará la homologación ETL 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 le gabinete, agregar o extraer cualquier componente que no es de conexión en funcionamiento.**

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

trabajar con las fuentes de alimentación que utilizan el polo neutral de fuselaje.

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

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

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

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

Advertencias 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.*
- *Guardé 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.*

Descarga electrostática (ESD)

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

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

Otros peligros

Sustitución de la batería

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

Deseche las baterías respetando la normativa local.

No intente recargar la batería.

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

Enfriamiento y circulación de aire

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

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

- *Compruebe primero que no ha dejado herramientas o piezas sueltas dentro del sistema.*
- *Compruebe que los cables, tarjetas adicionales y otros componentes están instalados correctamente.*

- *Sujete las cubiertas a la carcasa siguiendo las instrucciones del producto.*

Periféricos o dispositivos láser

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

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

简体中文

服务器安全信息

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






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

服务器须由合格的技术人员进行集成和维护。

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

安全警告与注意事项

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

注意	表示如果无视此“注意事项”，存在可能引起轻微人身伤害或财产损失的危险。
警告	表示如果无视此“警告”，存在可能引起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：

1. 首先检查并确保系统内没有遗留的未固定工具或部件。
2. 检查线缆、内插板和其他组件已正确安装。
3. 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