

Intel® Server Chassis SR1350-E Subassembly Product Guide

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

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Important Safety Instructions

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Read all caution and safety statements in this document before performing any of the instructions. See *Intel Server Boards and Server Chassis Safety Information* at <http://support.intel.com/support/motherboards/server/safecert.htm>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen unter <http://support.intel.com/support/motherboards/server/safecert.htm>.

重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。和/或 <http://support.intel.com/support/motherboards/server/safecert.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》）。

Important Safety Instructions 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* rendez-vous sur le site <http://support.intel.com/support/motherboards/server/safecert.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 <http://support.intel.com/support/motherboards/server/safecert.htm>.

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1 Chassis Description

Your Intel® Server Chassis SR1350-E kit comes with the front panel board and two drive carriers installed. The fan module, power supply, and air duct are installed for shipment, but you must remove and reinstall them in the proper sequence during system assembly.

To complete the system, you must purchase some items separately (see below). Before you make your purchase, decide if you want an ATA-100-based system, a SCSI-based system, or a Serial ATA-based system. Select and purchase your components accordingly.

What Your Kit Includes

Your kit includes the following components:

- 1U rack-mount chassis with two hard disk drive brackets
- One 350 W SSI PFC nonredundant power supply
- One front fan module consisting of five 40-mm fans for system cooling
- Two rear 40-mm fans
- One processor air dam
- One processor air duct
- One processor retention mechanism
- Mounting screws

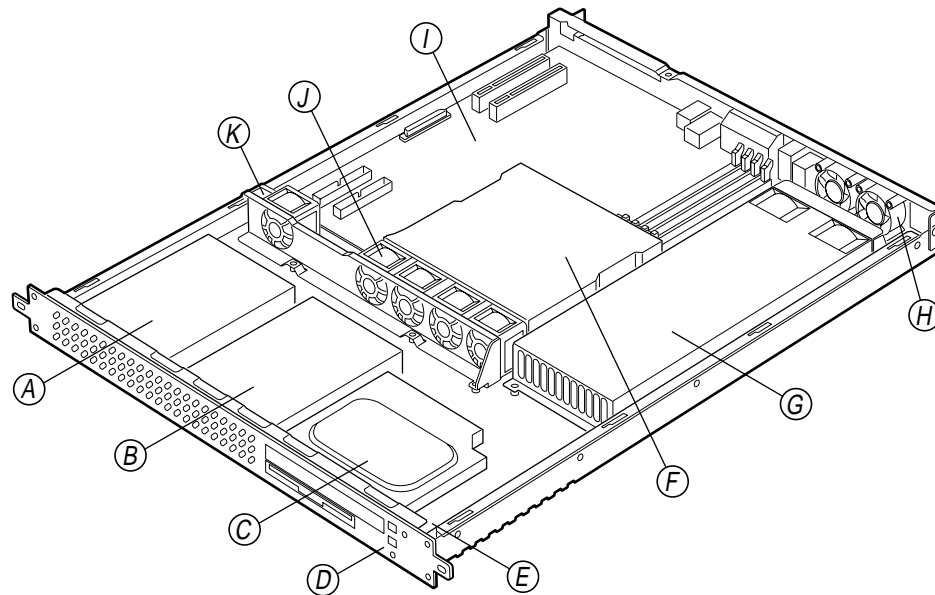
Items You Must Purchase Separately

The following components must be purchased separately:

- Intel Server Board
- Minimum of one Intel® Xeon™ processor with 512 KB L2 cache
- DDR memory DIMMs
- Floppy / CD-ROM / DVD-ROM Backplane kit (AKACDFLOPPY)
- SCSI cable kit (AKASCSICABLE)
- Hard disk drives (HDDs)
- Floppy disk drive
- CD-ROM / DVD-ROM drive
- PCI add-in cards
- Other peripheral devices
- Rack mount kit
- Power cord (If not included in the kit. This kit ships with a power cord in North America only.)

Feature Summary

System Components



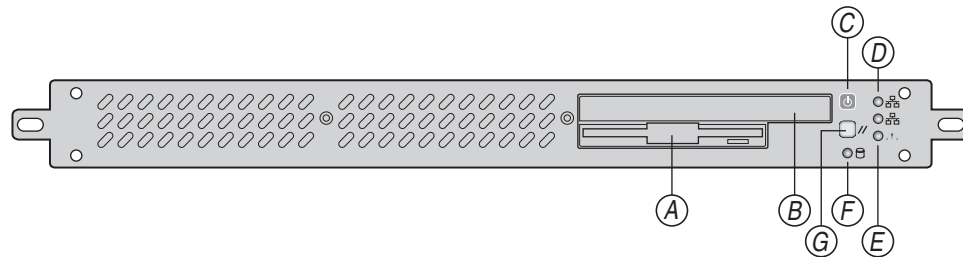
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- A. Hard disk drive
- B. Hard disk drive
- C. Floppy / CD-ROM / DVD-ROM drive cage
- D. Front panel controls and LEDs
- E. Front panel board
- F. Processor duct (processors installed underneath)
- G. Power supply
- H. Rear fans (2)
- I. System board
- J. Front fan module
- K. Chassis intrusion switch

Figure 1. System Components

Front Panel and Peripheral Bays

Shown with optional floppy drive and CD-ROM drive installed.



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- A. Floppy drive
- B. CD-ROM / DVD-ROM drive
- C. Power button and power LED
- D. Network activity LEDs (NIC1 top, NIC2 bottom)
- E. System fault LED
- F. Hard drive activity LED
- G. Reset button

Figure 2. Chassis Front

Table 1. Control Button Functions

Power/Sleep button	Toggles the system power on/off. Sleep button for ACPI-compatible operating systems.
Reset button	Reboots and initializes the system.

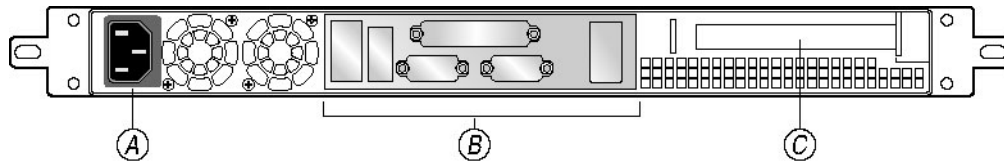
Table 2. LED Indicator Status

NIC 1 activity LED NIC 2 activity LED	Continuous green light indicates a link between the system and the network to which it is connected. Blinking green light indicates network activity.
Power/Sleep LED	Continuous green light indicates the system has power applied to it. Blinking green light (Note 1) indicates the system is sleeping. No light indicates the system does not have power applied to it (other than 5 V standby power).
Hard disk drive status LED	Random blinking green light indicates hard disk drive activity (SCSI or IDE). Continuous amber light (Note 2) indicates hard disk drive fault (SCSI or IDE). No light (Note 3) indicates no hard disk drive activity nor fault (SCSI or IDE).
System Fault LED	LED illuminates if a system fault is detected.

Notes:

- 1 The power LED sleep indication is maintained on standby by the chipset. If the system is powered down without going through BIOS, the LED state in effect at the time of power off will be restored when the system is powered on until the BIOS clears it. If the system is not powered down normally, it is possible that the power LED will be blinking at the same time that the system status LED is off due to a failure or configuration change that prevents the BIOS from running.
- 2 In order for a hard disk fault indication to occur, an Intelligent Platform Management Interface (IPMI)-based satellite management controller must send a Set Fault Indication command to the Baseboard Management Controller (BMC).
- 3 Off when the system is powered off or in a sleep state.
- 4 The amber status takes precedence over the green status. When the amber LED is on or blinking, the green LED is off.

Back Panel Features



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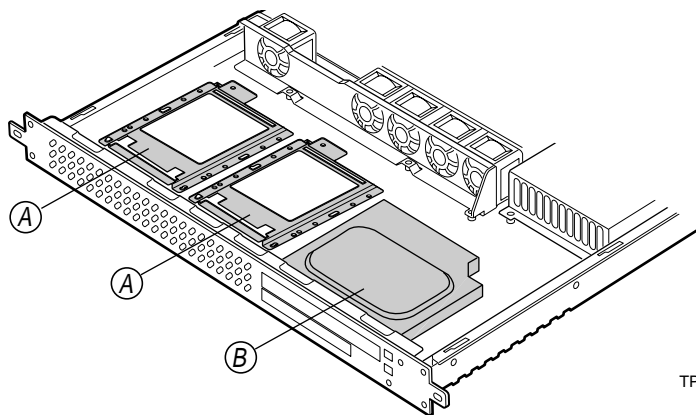
- A. AC Power Connector
- B. I/O Ports (see note)
- C. PCI card bracket (full height)

Note: I/O connectors will vary, depending on the server board installed.
See your server board documentation for port identification.

Figure 3. Chassis Back

Peripherals

The chassis provides for a variety of peripherals that can be purchased separately and added to the system. The following describes the available options.



- A. Hard drive bays (2)
- B. Slim-line floppy drive / DVD / CD-ROM drive cage

Figure 4. Optional Peripherals

Hard Disk Drives

The chassis ships with two drive brackets for mounting HDDs into the chassis. These drives can be SCSI, ATA, or Serial ATA, depending on the server board and add-in components that are installed. The hard drives are NOT hot swappable. Before 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.

For information on how to install these drives, see “Installing a Hard Drive”.

NOTE

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



CAUTION

The Intel Server Chassis SR1350-E does not support all SCSI, ATA, or Serial ATA hard drives. To see a list of validated hard drive manufacturers and hard drive types, go to the following Web site:

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

Floppy / CD-ROM / DVD-ROM Slimline Bay

The slimline drive cage can be used only with the optional floppy drive / CD-ROM /DVD-ROM drive backplane. If the backplane kit is not purchased, the slimline cage is left empty.

The floppy drive / CD-ROM / DVD-ROM cage can be inserted or removed only when system power is turned off. Drives in the slimline cage are NOT hot swappable. For installation instructions, refer to the documentation that came with your backplane kit.

Power Supply

The power supply is rated for 350 watts of power at the following voltages:

- 100–127 volts (V) ~ at 50/60 Hertz (Hz); 5.11 amperes (A) maximum (max)
- 200–240 V ~ at 50/60 Hz; 2.55 A maximum

The power subsystem supports implementation of remote management features including remote enable that permits power to be activated from a variety of sources.

System Cooling

The chassis includes seven fans for cooling the processor(s), hard drives, and PCI cards. Five of these fans are located in a fan module at the front of the chassis. The other two fans are located at the rear of the chassis, behind the power supply. These fans are not hot-swappable. To replace either the front fan module or either of the rear fans, 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.

The power supply contains an additional two built-in fans. These fans cannot be replaced without replacing the power supply.

Chassis Security

The chassis includes a preinstalled intrusion switch that can be monitored by server management software. The switch is installed at the top left side of the front fan module. When the chassis cover is opened, the switch transmits a signal to the Baseboard Management Controller (BMC) on the server board, where server management software processes the signal. Server management software can be programmed to respond to an intrusion by powering down the server, by locking the keyboard, or to respond in a number of other ways.

System Management

System management features depend on the server board that is installed in your chassis. Some server boards require that you run the FRUSDR utility to gain full management capability. See your server board documentation for information.

2 Assembling the System

Before the Intel® Server Chassis SR1350-E can be used, you must assemble the hardware components add any desired peripherals and add-in cards purchased for the system. The following procedures help to guide you through this assembly process to create your desired system configuration.

NOTE

To maintain and ensure regulation compliance, the fully integrated system should be tested, certified, and/or documented to illustrate compliance to the regional regulations and laws for where the product will be sold. The peripherals and add-in cards chosen for integration should have individual regulatory approvals.

CAUTION

System components must be installed in the order presented in the assembly instructions. If installed in a different order, component damage may occur.

Supplies Needed

Before beginning your work, make sure you have the following supplies available:

- Antistatic wrist strap (recommended)
- Phillips* screwdriver
- Server Chassis SR1350-E kit
- Intel® server board kit
- Processors and memory
- Power cord (power cords are supplied only with chassis shipped to North America)
- Optional floppy / CD-ROM / DVD-ROM backplane kit (AKACDFLOPPY)
- Optional SCSI cable kit (AKASCSICABLE)
- Other optional peripherals and add-in cards you want to include in the system

Installation/Assembly Safety Instructions

Before you begin the assembly process, you will need to make sure you follow certain basic safety precautions.

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* at <http://support.intel.com/support/motherboards/server/safecert.htm>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen unter <http://support.intel.com/support/motherboards/server/safecert.htm>.

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Instrucciones de seguridad importantes

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CAUTION

Integration/servicing of this chassis subassembly shall be performed only by technically qualified persons.

Follow these guidelines to meet and maintain safety and product regulatory requirements when integrating this chassis subassembly.

Read and adhere to all of these instructions and the instructions supplied with this assembly. If you do not follow these instructions, the UL listing and other regulatory approvals will be void, and the product will most likely be noncompliant with regional product laws and regulations.

Use Only for Intended Applications

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

When you integrate this subassembly, observe all warnings and cautions in this installation guide.

To avoid injury, be careful of the following:

- Sharp pins on connectors
- Sharp pins on printed circuit assemblies
- Rough edges and sharp corners on the chassis
- Hot components (like processors, voltage regulators, and heat sinks)
- Damage to wires that could cause a short circuit

Checking the Power Cord



WARNING

If an AC power cord is supplied (North American systems only) do not attempt to modify or use it if it is not the exact type required.

The power supply cord is the main disconnect to AC power. The socket outlet must be installed near the equipment and readily accessible.

Power cords are supplied with chassis only in North America. If a power cord is supplied with the system and it is not compatible with the AC wall outlet in your region, get one that meets the following criteria:

- The cord must be rated for the available AC voltage and have a current rating that is at least 125 percent of the current rating of the server.
- The plug on the power cord that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency acceptable in your region.
- The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13–type female connector.
- In Europe, the cord must be less than 4.5 meters (14.76 feet) long, and it must be flexible <HAR> (harmonized) or VDE certified cordage to comply with the chassis' safety certifications.

Warnings and Cautions

These warnings and cautions apply whenever you remove the chassis cover to access components inside the server. Only a technically qualified person should integrate and configure the server.



WARNING / BEFORE YOU REMOVE THE ACCESS COVER

Before removing the access cover for any reason, observe these safety guidelines:

1. Turn off all peripheral devices connected to the server.
2. Turn off the server by pressing the power button on the front of the chassis. Then unplug the AC power cord from the chassis or wall outlet.
3. Label and disconnect all peripheral cables and all telecommunication lines connected to I/O connectors or ports on the back of the chassis.
4. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—when handling components.



WARNING / AC POWER ALERT

The power button on the front panel **DOES NOT** turn off the AC power. To remove power from server, you must unplug the AC power cord from the wall outlet or the chassis.



WARNING / ELECTRICAL CONDITIONS

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.



WARNING / POWER SUPPLY

Do not open the power supply. Hazardous voltage, current, and energy levels are present inside the power supply. Refer servicing of the power supply to qualified technical service personnel.

Installing System Components

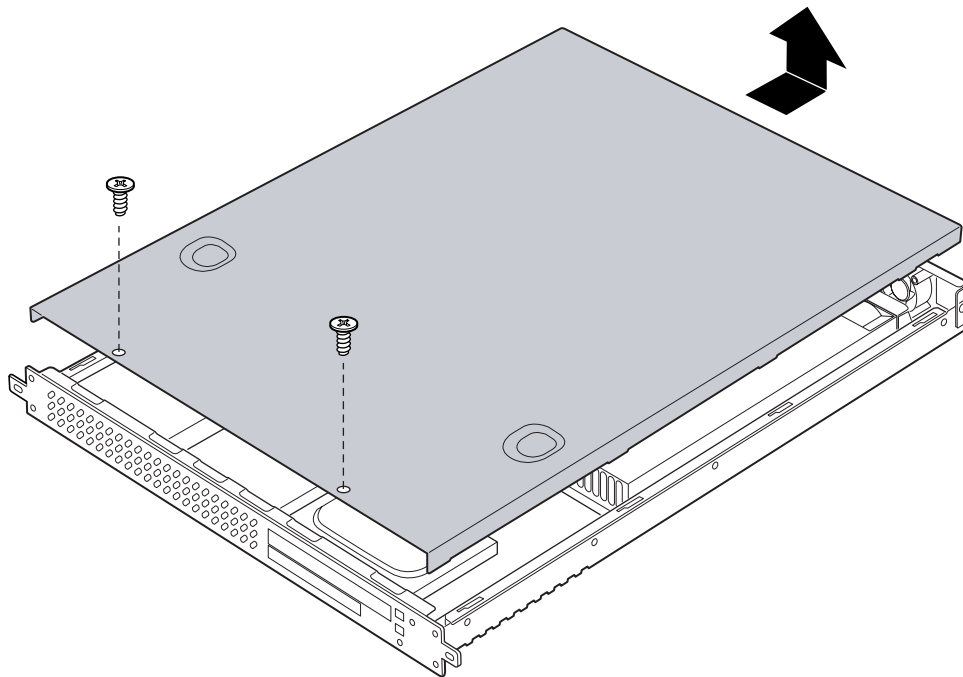
All references to left, right, front, and are based on the reader facing the front of the chassis.

Removing the Cover

⇒ NOTE

A nonskid surface or a stop behind the chassis may be needed to prevent the chassis from sliding on your work surface.

1. Remove the two access screws from the top cover.
2. Slide the top cover back until it stops.
3. Lift the cover straight up to remove it from the chassis.



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Figure 5. Removing the Cover

Installing a Hard Drive

Up to two SCSI, ATA, or Serial ATA drives can be installed into your chassis. The drive type allowed depends on the Intel® Server Board and the add-in components that you are installing. To determine whether you need to install SCSI, ATA, or Serial ATA drives, refer to your server board or Serial ATA add-in card documentation. Drives installed into the Server Chassis SR1350-E are not hot-swappable.



CAUTION

The Intel Server Chassis SR1350-E does not support all hard drives. To see a list of validated manufacturers and hard drive types, go to:

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

1. Remove the hard drive bracket from the chassis, retaining the screw.

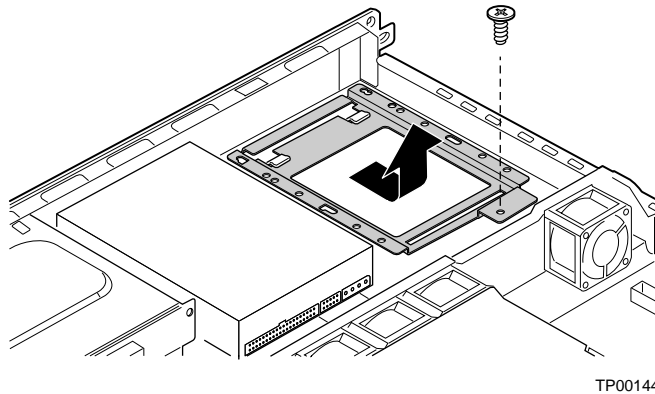
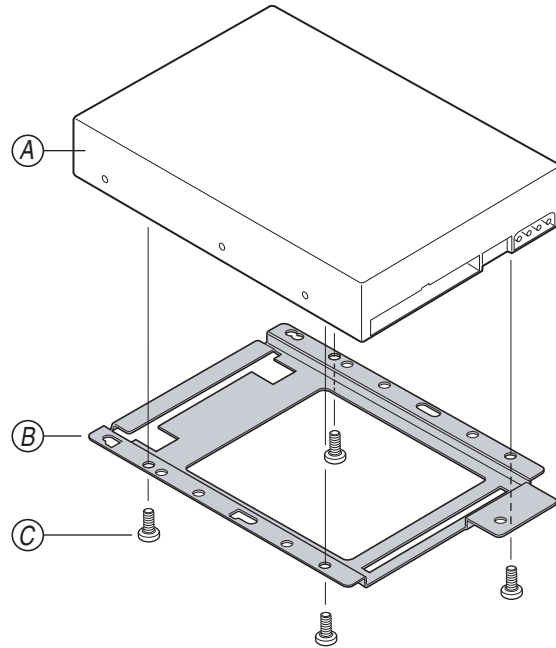


Figure 6. Removing Hard Drive Bracket from Chassis

2. Remove the hard drive from its wrapper and place it on an antistatic surface.
3. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
4. With the drive circuit-side down (Letter "A" in the figure below), position the connector end of the drive so that it is facing the back of the bracket (Letter "B" in the figure).
5. Align the holes in the drive to the holes in the drive bracket and insert four screws from the bag marked "A" to secure the drive to the bracket (Letter "C" in the figure).



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Figure 7. Attaching a Hard Disk Drive to a Bracket

6. Set the drive assembly on the bottom of the chassis, slightly behind the sheet metal tabs, and slide the drive assembly forward to engage the tabs on the hard drive carrier to the sheet metal at the bottom of the chassis.

7. Reinsert the screw removed in step 1 to attach the drive assembly to the chassis.

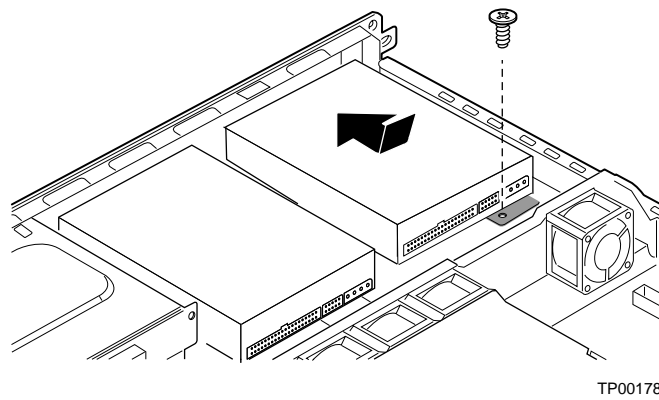
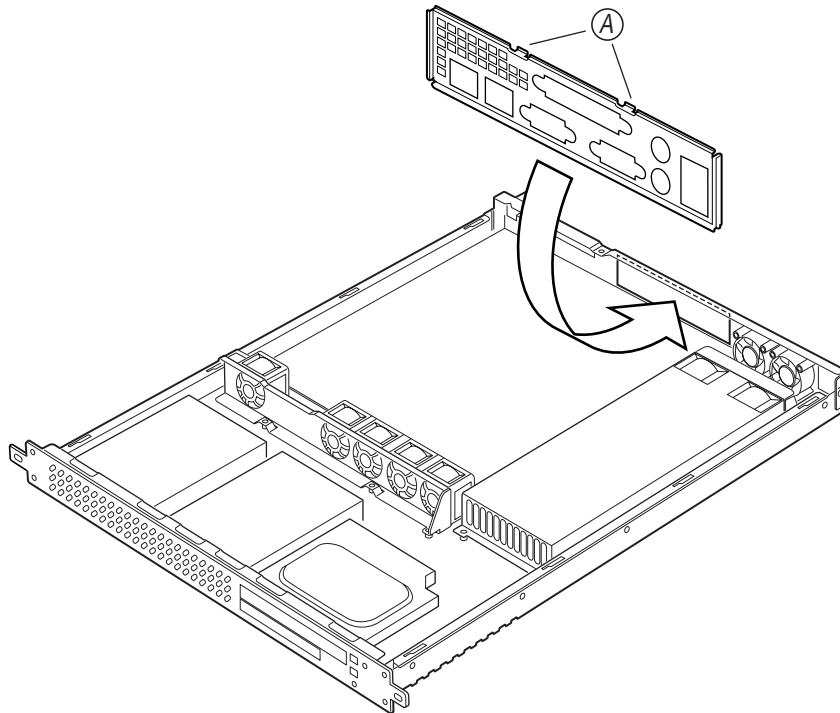


Figure 8. Attaching Hard Disk Drive and Bracket to Chassis

Installing the I/O Shield

Two I/O shields were included with your server chassis. Line the I/O shield up to the I/O ports on the server board to determine the correct shield to install.

1. Insert the top edge of the I/O shield from the inside of the chassis.
2. Engage the two tabs at the top of the I/O shield to the top edge of the I/O shield opening at the outside of the chassis. See letter “A” in the figure below.
3. Rotate the shield downward and press it firmly into the opening.



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Figure 9. Installing the I/O Shield

Installing the Server Board

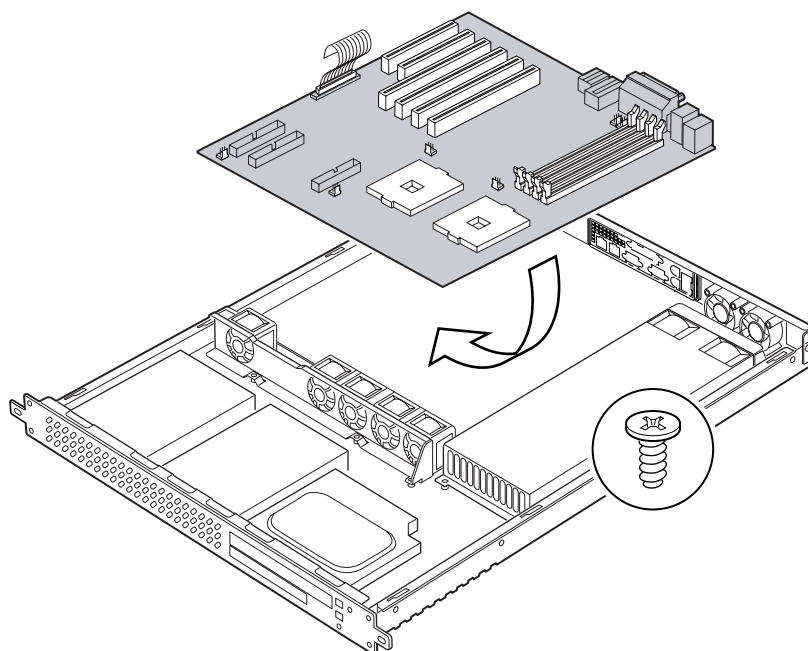


CAUTION

Do not install any server board support bumpers into the Server Chassis SR1350-E.

System components must be installed in the order presented below. If installed in a different order, component damage may occur.

1. Ensure that the Mylar insulator sheet is seated securely over the standoffs, and is laying flat on the chassis floor.
2. Connections at the left edge of the board will not be accessible after the server board is installed. Examples may include the front panel cable, SCSI cable, or chassis intrusion cable. Make these connections to the left side of the server board.
3. Insert the left edge of the board under the lip at the left side.
4. While placing the server board on the chassis standoffs, carefully align the board I/O connectors in the rear chassis I/O openings.
5. Adjust the server board's position so that the mounting holes rest securely on the corresponding shouldered standoffs.
6. Attach the board to the chassis using the screws from the bag labeled A that shipped in the chassis accessory kit.



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Figure 10. Mounting the Server Board

Installing the Processor Retention Mechanisms

One set of retention mechanisms is included with your server chassis to facilitate installing the processor air dam that is required for a single processor installation. Because retention mechanisms are also included with each boxed processor, you will have an extra set of retention mechanisms if you install two processors.

Attach a set of retention mechanisms around each processor socket as shown. Fasten the screws to the server board with screws from the bag that came with the retention mechanisms.

⇒ NOTE

Install retention mechanisms around each processor, regardless of whether one or two processors will be installed.

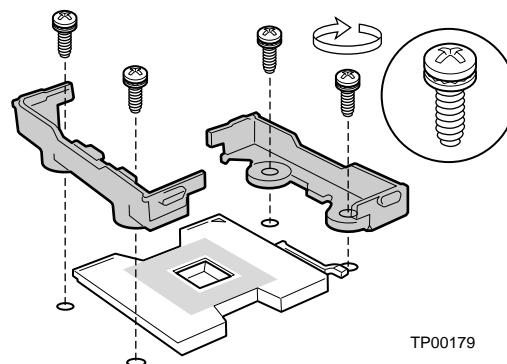


Figure 11. Attaching Retention Mechanisms

Installing the Processor(s)

⇒ NOTE

If only one processor is to be used, it must be installed into processor socket 1. See your server board documentation for the location of this socket.



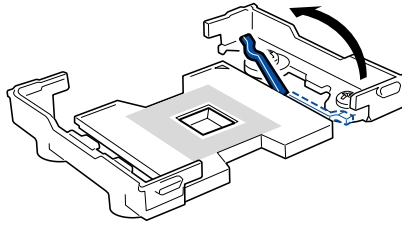
CAUTIONS

Do not mix processors of different types or frequencies

Hold processors only by the edges to avoid touching the pins.

Intel Server Boards have “zero-insertion force” sockets. If a processor does not drop easily into the socket holes, make sure the lever is in the fully opened position.

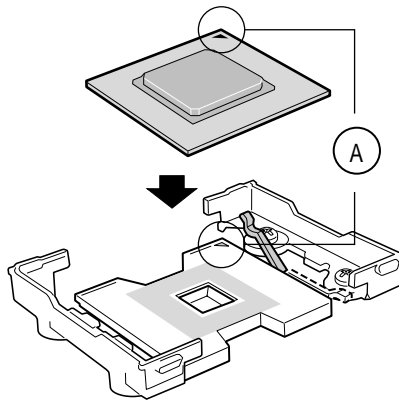
1. Open the socket lever all the way, as shown below.



TP00164

Figure 12. Opening Processor Socket Lever

2. Set the processor into place with the corner triangle mark on the processor matching the corner triangle mark on the server board.



TP00163

Figure 13. Setting Processor into Place

3. Close the socket lever.

Installing the Processor Heat Sink(s)

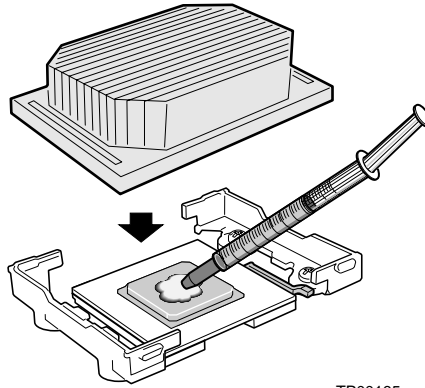
➡ NOTES

Heat sink styles may vary. Your heat sink may look slightly different than the one pictured below. See your processor documentation for further information.

Some processor heat sinks come with a thermal coating on the bottom of the heat sink and therefore do not require thermal grease. See your processor documentation for further information.

Install a heat sink over each processor. Install two processor retention clips for each processor / heat sink combination.

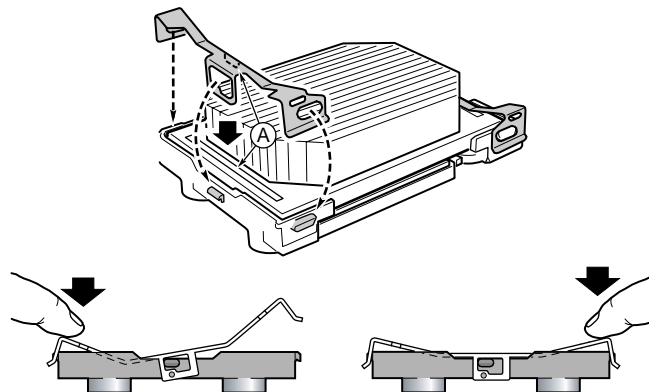
1. Apply thermal grease to the top of the processor as required.
2. Set the heat sink onto the processor.



TP00165

Figure 14. Setting Heat Sink into Place

3. Two retention clips are included with your processor. Insert the center slot of the retention clip over the tab on the retention device. A tab on the retention clip will fit into a slot in the heat sink. See letter “A” in the figure below
4. Press down firmly on each side of the retention clip to engage the slots at each side of the retention clip over the tabs at the sides of the retention mechanism. The slot at the center of the retention clip allows for side-to-side movement while you position the clip over the retention mechanism.



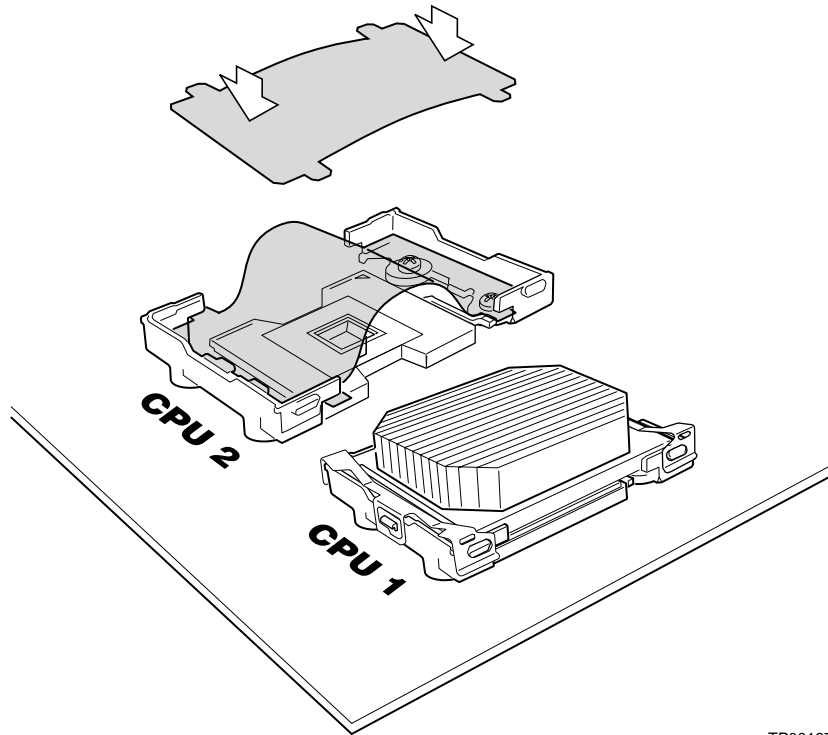
TP00166

Figure 15. Installing Heat Sink Retention Clips

Installing the Processor Air Dam (if required)

If you only install one processor, you must install the processor air dam in the location for processor 2. If you install two processors, do not install the processor air dam.

To install the air dam, insert the tabs on the air dam under the sides of the retention mechanism as shown. When correctly inserted, the air dam bends upward at the center. Figure 16 shows the installation of the air dam and the air dam installed next to an installed processor.



TP00167

Figure 16. Installing the Processor Air Dam

Installing Memory

⇒ NOTE

The DIMM requirements and installation sequence will vary, depending on the server board you have installed. See your server board documentation for memory requirements and the order in which you need to install the DIMMs.



CAUTION

Avoid touching the gold contacts when handling or installing DIMMs.

1. Open the DIMM socket levers at both sides of the socket.
2. Insert the DIMM into the socket, making sure the cut-out in the bottom of the DIMM matches the key in the socket.
3. Push down firmly on the top of the DIMM. The levers on each side of the socket will raise and lock into place.
4. Make sure the levers are firmly latched.

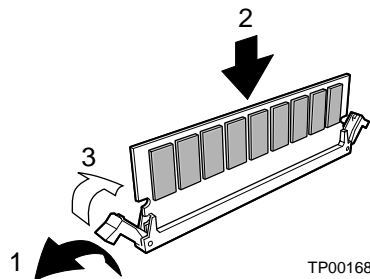


Figure 17. Installing Memory DIMMs

Installing a Floppy / CD-ROM and / or DVD-ROM Drive (optional)

Your server chassis does not come with the backplane board and cable that is required for installing a floppy drive, CD-ROM drive, or DVD-ROM drive. If you want to install one of these drives, you need to purchase the following items separately:

- Floppy / CD-ROM / DVD-ROM Drive Kit
- Floppy, CD-ROM or DVD-ROM drive

You can install one of the following drive combinations:

- Floppy drive alone
- CD-ROM drive alone
- DVD-ROM drive alone
- Floppy drive and CD-ROM drive
- Floppy drive and DVD-ROM drive

Follow the installation instructions that are included with the drive kit to install these drives. The instruction document is titled “Intel® Server Chassis SR1350-E: Backplane Kit Installation Guide for Floppy Drive / CD-ROM Drive or DVD-ROM Drive” and can also be found at

<http://support.intel.com/support/motherboards/server/chassis/sr1350-e/>

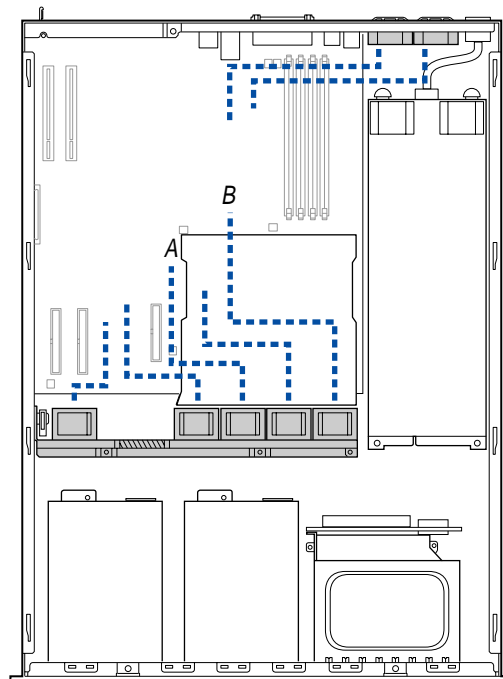
Connecting Fans

Refer to your server board documentation for the location of the fan headers for your board. The diagram below is a representation of the header locations only.

NOTE

The fans on the front fan module are numbered from 1 – 5 from right to left (Fan #1 is located at the far right).

1. Connect Fan 1 to the CPU 1 fan header. See letter “B” in the figure below.
2. Connect Fan 3 to the CPU2 fan header. See letter “A” in the figure below.
3. Connect the remaining front fans to the nearest system fan headers.
4. Connect each pack panel fan to the nearest fan header on the server board.



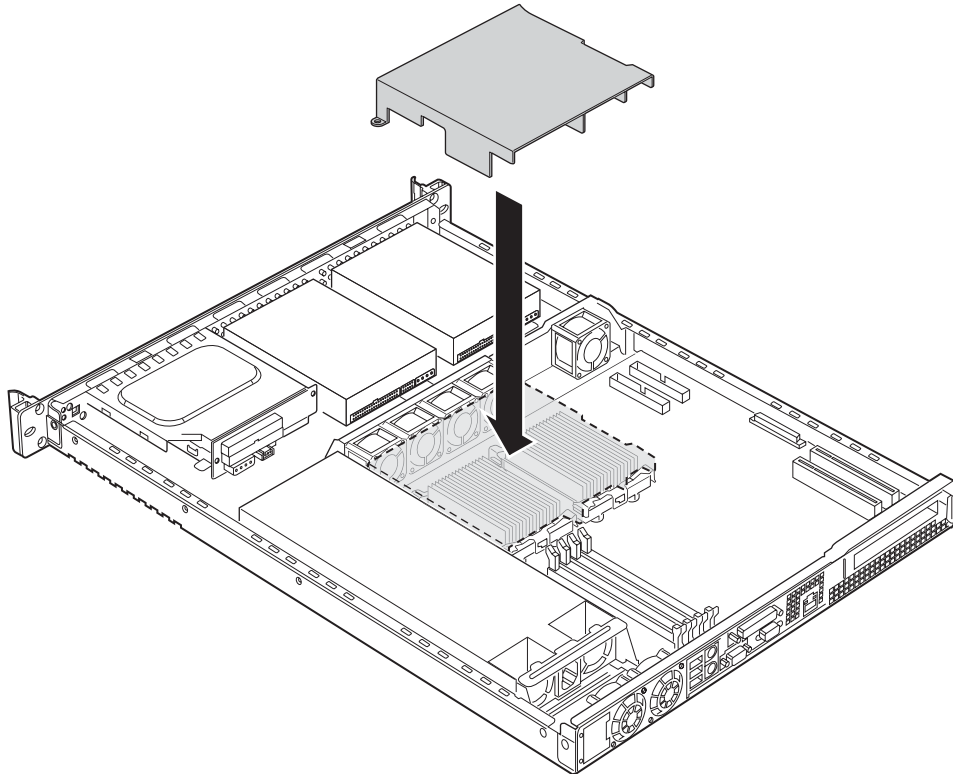
TP00169

Figure 18. Routing the Fan Cables

Installing the Processor Air Duct

The processor air duct is required for proper airflow within the chassis.

Place the processor air duct over the two processor sockets, regardless of whether one or two processors is installed. The front edge of the air duct should contact the front fan module and the top of the installed air duct should be flush with the top surface of the power supply.



TP00146

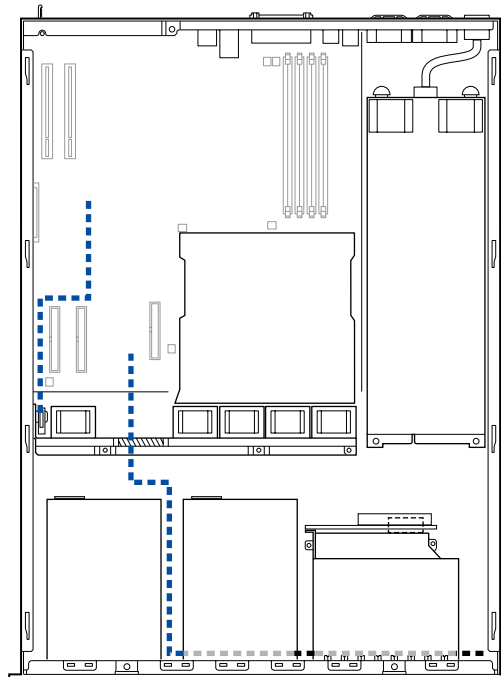
Figure 19. Installing Processor Air Duct

Connecting Chassis Intrusion Cable and Front Panel Cable

1. Connect the chassis intrusion switch cable from the left side of the front fan module to the 2-pin chassis intrusion connector on the server board.
2. Route the front panel cable from the front panel board to the server board and attach it to the matching connector. See your server board documentation for the connection location. The front panel cable should be routed underneath the floppy / CD-ROM / DVD-ROM cage and beneath the right hard disk drive.

⇒ NOTE

Make sure the front panel cable is properly seated in the board connector. The cable is keyed to fit the connector in only one direction. When installed correctly, the connector should be parallel to the board, not cocked to one side. If in doubt, remove it, reinsert it, and then recheck it.



TP00175

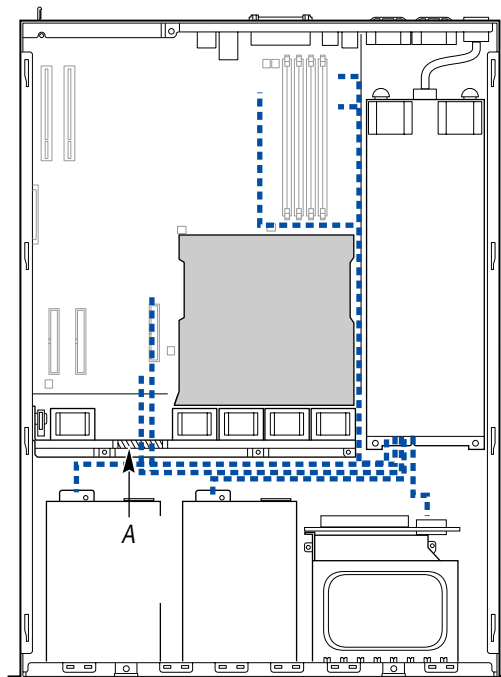
Figure 20. Routing for Chassis Intrusion and Front Panel Cables

Connecting Power Cables

⇒ NOTE

See your server board documentation for connection locations. Cables routed to the left side of the chassis to connection points on the server board must be positioned so that they go over the cutout area of the front fan module. See letter “A” in the figure below.

1. Connect the processor power cable from the power supply to the white 6-pin 12V CPU power connector on the server board.
2. Connect the main power cable from the power supply to the 24-pin connector on the server board.
3. Connect a power cable from the power supply to each installed hard disk drive.
4. Connect a power cable from the power supply to the floppy / CD-ROM / DVD-ROM backplane board if you have installed the optional accessory kit.

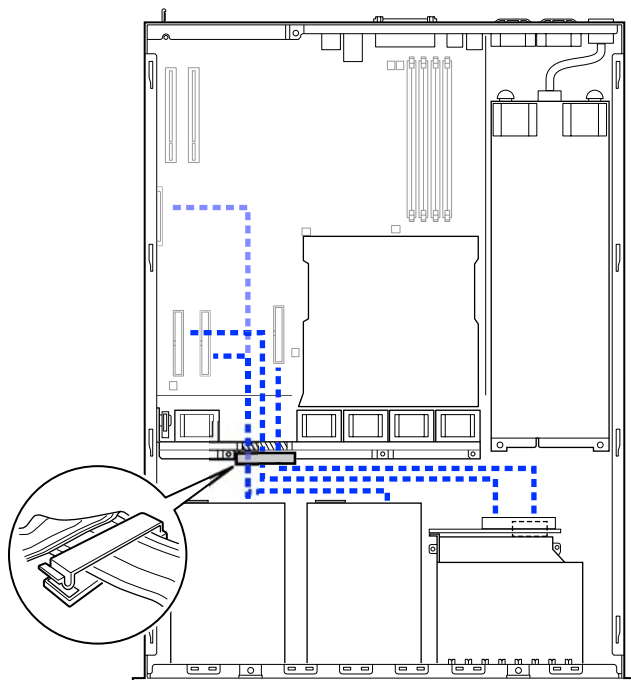


TP00170

Figure 21. Routing for Power Cables

Connecting Data Cables

1. Depending on your system configuration, do **one** of the following:
 - For SCSI-based systems: The SCSI cable kit accessory is required (AKASCSICABLE). On the SCSI ribbon cable, locate the end that is labeled *server board*. Connect that end to the SCSI connector on the server board. Attach the cable connector to the connector on the SCSI drive.
 - For ATA-100-based systems: The primary IDE connector on your server board is blue and the secondary IDE connector is white. When connecting a single ATA-100 drive, connect the drive to the blue primary connector. When connecting two drives, set the drive jumpers appropriately as master and slave drives and connect the slave drive to the white, secondary connector.
 - For systems in which you have added a Serial ATA PCI card: For each drive installed, connect one end of the SATA cable to the SATA connector on the add-in card. Connect the other end of the SATA drive.
2. Bundle all cables that are routed through the cut-out in the sheet metal, directly behind the hard drives.
3. Clip the plastic cable retention device over the bundle to hold all cables in place. This includes data cables, power cables and any other signal cables that are routed over the cutout in the front fan module.



TP00171

Figure 22. Routing for Data Cables

Installing a PCI Card

⇒ NOTE

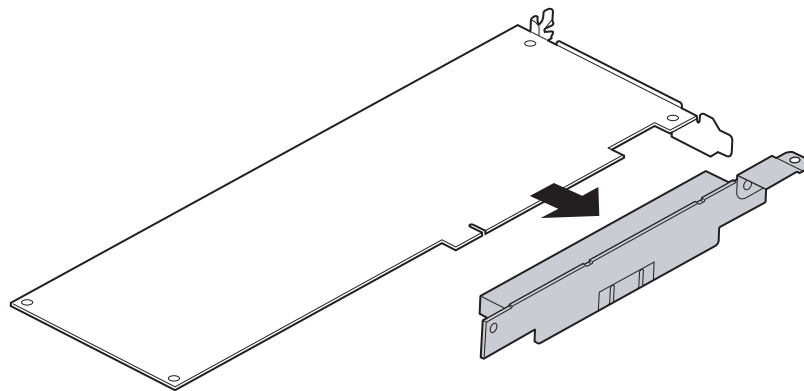
Before using your PCI riser card, you first need to update the BIOS on your server board for it to recognize the card. See your server board documentation for instructions on performing a BIOS update.

Peripherals and add-in cards are not included in your system and must be purchased separately. The riser card at the center of the chassis supports a single full-height add-in card or a single low profile PCI add-in card. If a low profile card is installed in the standard full-height riser card, it must be equipped with a standard full-height PCI mounting bracket.

⇒ NOTES

Add-in cards must be attached to a riser card when the riser card is removed from the chassis.

1. Remove the screw that attaches the PCI bracket shield to the rear of the chassis to remove the shield. Retain the screw.
2. Insert the PCI card edge connector in the slot on the PCI riser.



TP00149

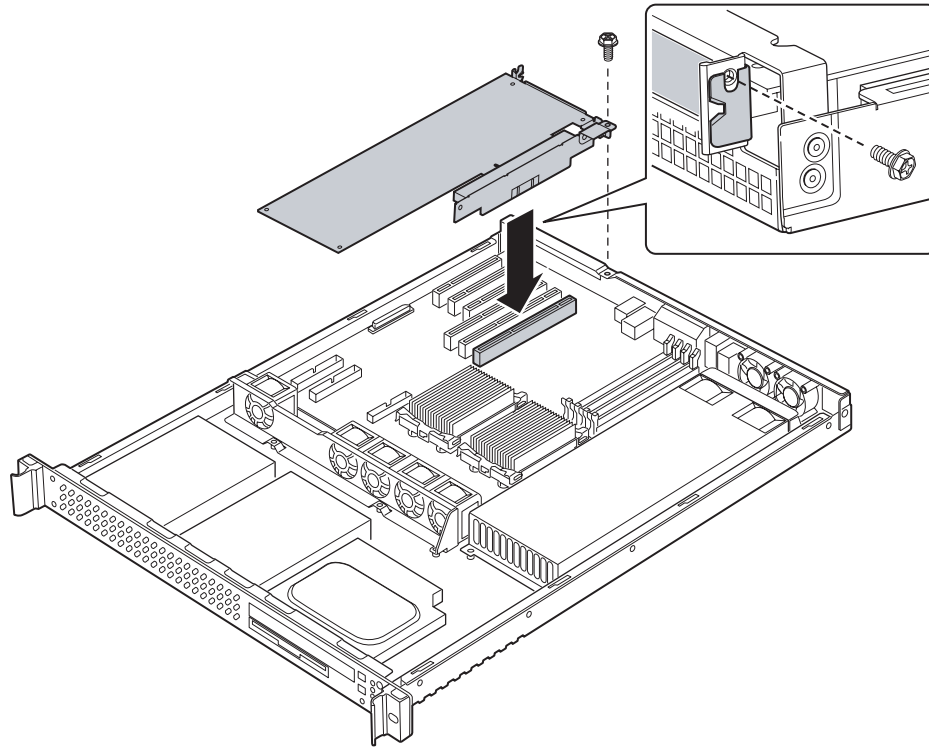
Figure 23. Installing a PCI Card in a Riser Card

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



CAUTION

- Press the riser card straight down into the slot. Tipping it in the slot while installing it may damage the riser card or slot.
4. Use the screw removed in step 1 to secure the riser card assembly to the chassis.



TP00154

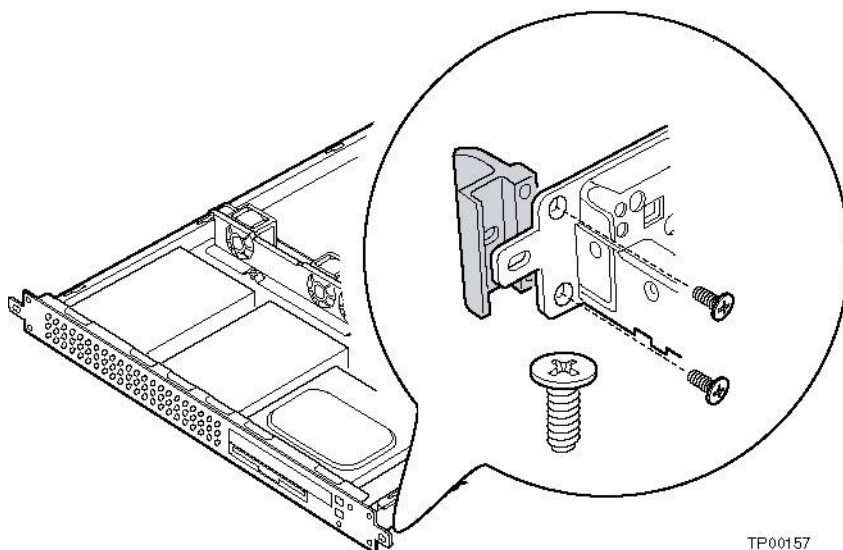
Figure 24. Installing a Riser Card on the Server Board

Finishing Up

Installing the Rackmount Handles

The screws for the rackmount handles were shipped to you in the bag with the handles.

1. Line up the handles with the screw locations at the left and right front edges of the chassis. When correctly positioned, the handles bend toward the outside of the chassis.
2. Insert the rackmount handle screws from the sheetmetal on the chassis and into the handles.



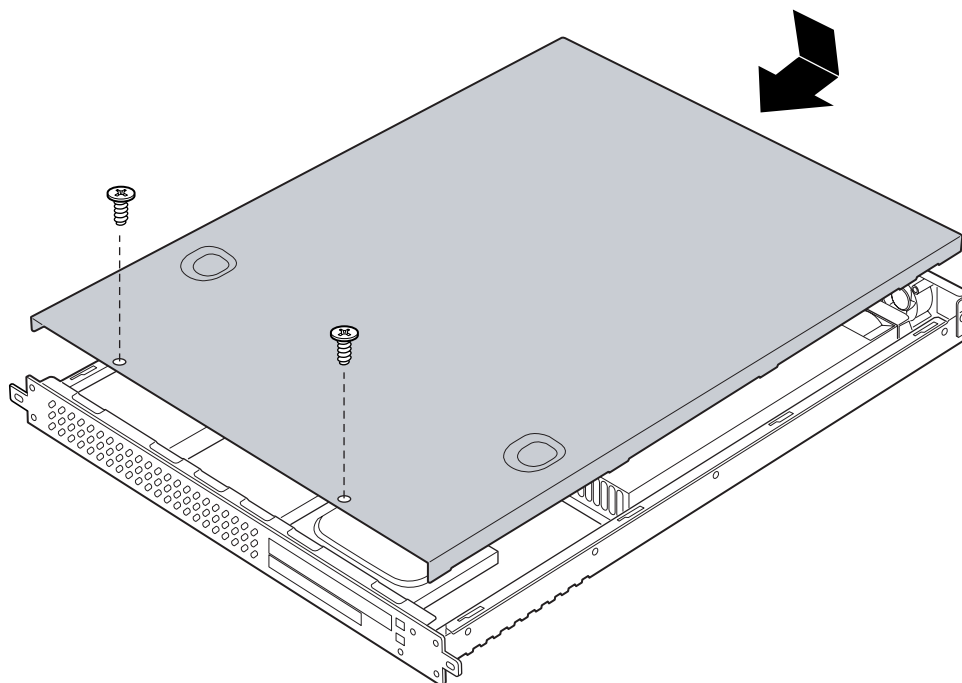
TP00157

Figure 25. Installing Rackmount Handles

Installing the Cover

Place the cover over the chassis so that the side edges of the cover sit just inside the chassis sidewalls. Slide the cover toward the front of the chassis until it fits in place.

Replace the two screws that secure the cover to the chassis.



TP00291

Figure 26. Installing Chassis Cover

Installing the Power Cord

➡ NOTE

If you will be placing your server in a rack, wait to install the power cord until after the server is in the rack.
Plug the power cord into the power supply.

3 Installing the System in a Rack

Installation instructions for the standard bracket kit and the optional rail kit are included with each kit. These instructions can also be found at

<http://support.intel.com/support/motherboards/server/chassis/SR1300/>:

- Intel® Server Chassis SR1200, SR1300, SR2200, and SR2300 Rail Kit Installation Guide
- Intel® Server Chassis SR1200, SR1300, SR2200, and SR2300 Bracket Kit Installation Guide

NOTE

Although these documents do not refer specifically to the Server Chassis SR1350-E, the instructions in these documents are correct for this chassis.

Equipment Rack Precautions

CAUTION

ANCHOR THE EQUIPMENT RACK: The equipment rack must be anchored to an unmovable support to prevent it from falling over when one or more servers are extended in front of it on slide assemblies. The equipment rack must be installed according to the manufacturer's instructions. You must also consider the weight of any other device installed in the rack.

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

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

OVERCURRENT PROTECTION: The server is designed for an AC line voltage source with up to 20 amperes of overcurrent protection. If the power system for the equipment rack is installed on a branch circuit with more than 20 amperes of protection, you must provide supplemental protection for the server. If more than one server is installed in the rack, the power source for each server must be from a separate branch circuit.



CAUTION

Temperature: The operating temperature of the server, when installed in an equipment rack, must not go below 5 °C (41 °F) or rise above 35 °C (95 °F). Extreme fluctuations in temperature can cause a variety of problems in your server. In a 3GHz system, the temperature cannot rise above 30°C (86 °F)

Ventilation: The equipment rack must provide sufficient airflow to the front of the server to maintain proper cooling. It must also include ventilation sufficient to exhaust a maximum of 1200 Btu per hour for a fully loaded server system using the Server Chassis SR1350-E.

It is important to note that this measurement is the maximum, and a minimum or typical system could be much less. You may want to calculate the Btu/hr measurement more accurately for your configuration. An extra 500 Btu/hr over many systems would translate into a large error calculating air conditioning capacity.

4 Working Inside Your Server

This chapter describes how to replace components in your server after it has been set up. All references to left, right, front, and rear are based on the reader facing the front of the chassis.

Tools and Supplies Needed

- Antistatic wrist strap (recommended)
- Phillips screwdriver

Safety: Before You Remove the Cover

Before removing the system cover to work inside the system, observe these safety guidelines:

1. Turn off all peripheral devices connected to the system.
2. Turn off the system by pressing the power button on the front of the system. Then unplug the AC power cord from the system or wall outlet.
3. Label and disconnect all peripheral cables and all telecommunication lines connected to I/O connectors or ports on the back of the system.
4. Attach a wrist strap to a chassis ground of the system—any unpainted metal surface—before handling components.

Warnings and cautions apply whenever you remove the chassis cover to access components inside the server. Only a technically qualified person should integrate and configure the server.

Important Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See *Intel Server Boards and Server Chassis Safety Information* at <http://support.intel.com/support/motherboards/server/safecert.htm>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warn- und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und -Servergehäusen unter <http://support.intel.com/support/motherboards/server/safecert.htm>.

重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。和/或 <http://support.intel.com/support/motherboards/server/safecert.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》）。

Important Safety InstructionsConsignes 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* rendez-vous sur le site <http://support.intel.com/support/motherboards/server/safecert.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 <http://support.intel.com/support/motherboards/server/safecert.htm>.

Replacing the Lithium Battery



CAUTION

Refer to technically qualified persons only for replacing the battery.

The following warning is provided on the server board configuration label, which is provided with the Intel server board boxed product. There is insufficient space on the server board to place this label. Therefore, the label must be placed permanently on the inside of the chassis, as close to the battery as possible.



WARNING

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



ADVARSEL!

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



ADVARSEL!

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



VARNING

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

VAROITUS

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

Replacing a Hard Drive

CAUTION

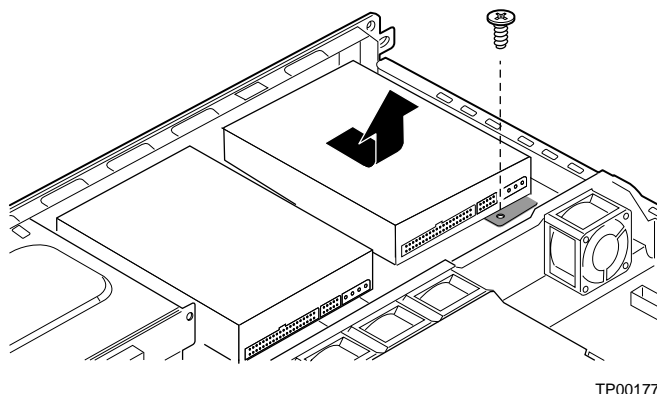
The Intel Server Chassis SR1350-E does not support all hard drives. To see a list of validated manufacturers and hard drive types, go to the following Web site:

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

CAUTION

Hard drives in this chassis are NOT hot swappable.

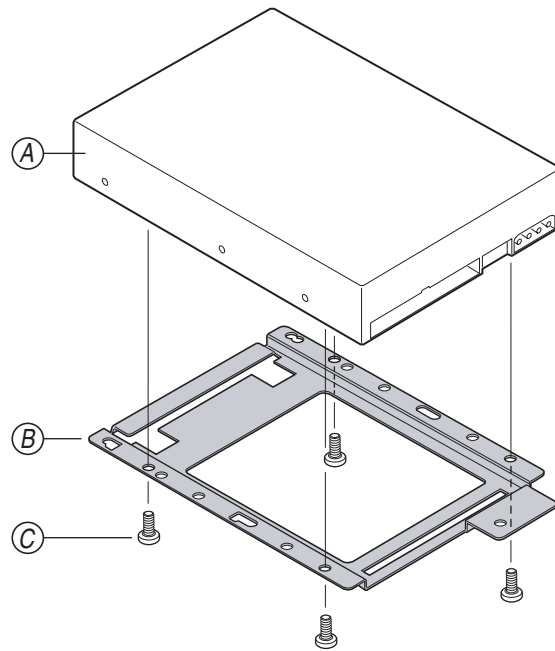
1. Remove the cover from the chassis.
2. Remove the hard drive and the attached bracket from the chassis, retaining the screw.



TP00177

Figure 27. Removing Hard Drive from Chassis

3. Remove the four screws that secure the hard drive to the bracket to remove the hard drive from the bracket. (Letter “C” in the figure below). Retain the screws to attach the new drive to the bracket.
4. Remove the new hard drive from its wrapper and place it on an antistatic surface.
5. Set any jumpers and/or switches on the drive according to the drive manufacturer’s instructions.
6. With the drive circuit-side down (Letter “A” in the figure below), position the connector end of the drive so that it is facing the back of the bracket (Letter “B” in the figure).
7. Align the holes in the drive to the holes in the drive bracket and insert the four screws that you removed in step 3.



TP00142

Figure 28. Removing Drive from and attaching Drive to Bracket

8. Set the drive assembly on the bottom of the chassis, slightly behind the sheet metal tabs, and slide the drive assembly forward to engage the tabs on the hard drive bracket to the sheet metal at the bottom of the chassis.
9. Reinsert the screw removed in step 2 to attach the drive assembly to the chassis.

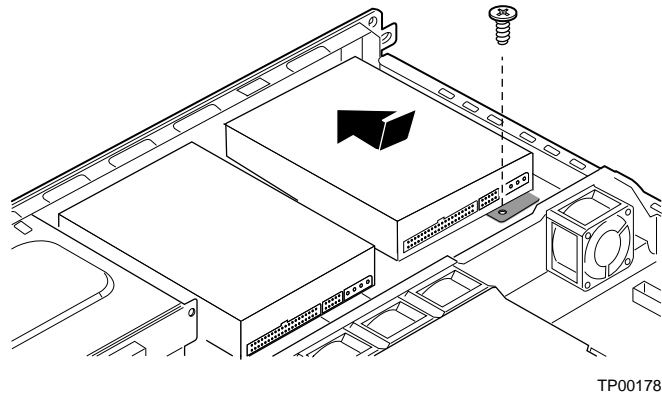


Figure 29. Attaching Drive and Bracket to Chassis

10. Install the top cover if you have no additional work to do inside the chassis.

Replacing a Floppy Drive, CD-ROM Drive / DVD-ROM Drive

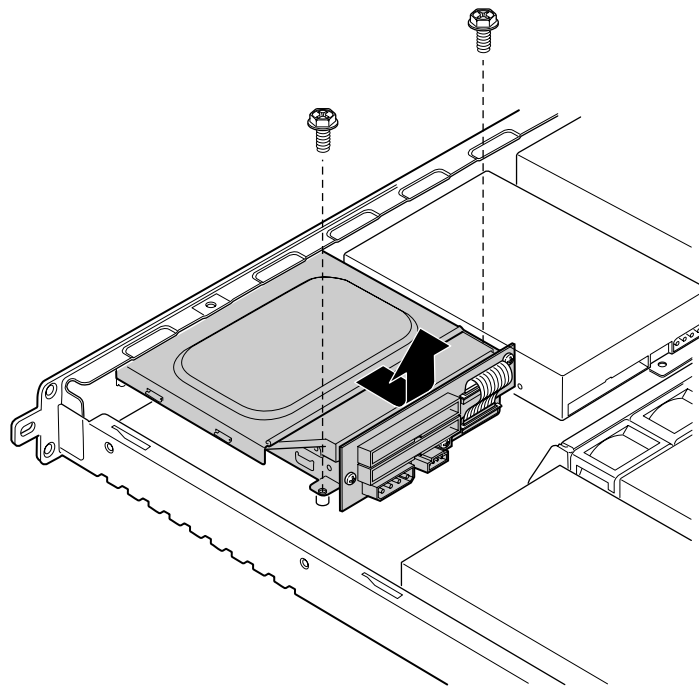


CAUTION

A floppy drive, CD-ROM / DVD-ROM drive is NOT hot swappable. Before replacing it, 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 Drive Cage from Chassis

1. Before removing the cover to work inside the system, observe the safety guidelines on page 45.
2. Remove the top cover from the chassis.
3. Remove the power and data cables from the rear of the floppy drive / CD-ROM / DVD-ROM drive backplane.
4. Remove the two screws that attach the drive cage to the chassis.
5. Tilt up the rear of the drive cage, then pull it back to lift it up and out of the chassis. See the figure below.



TP00292

Figure 30. Removing Drive Cage

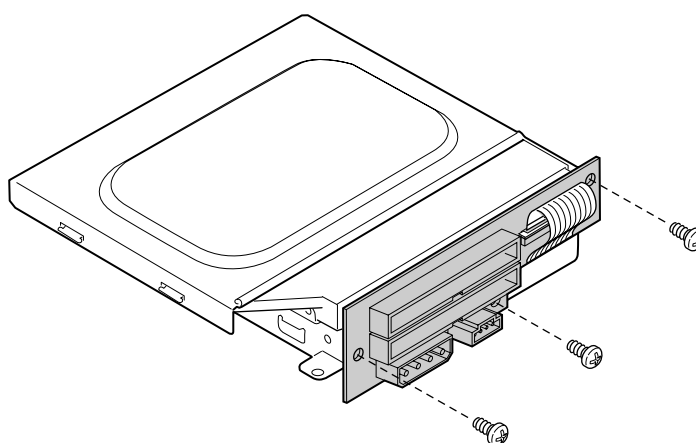
Removing Backplane Board and Cage Cover

1. Remove the three screws that attach the backplane board to the cage. Retain the screws.
2. Pull out gently on the backplane to disengage the connection to an installed CD-ROM or DVD-ROM drive.



CAUTION

If a floppy drive is installed in your drive cage, a Flat Flex Cable will be attached between the backplane board and the floppy drive. Be careful not to bend or twist the Flat Flex Cable.



TP00148A

Figure 31. Removing the Backplane

3. Facing the front of the drives, pull out slightly on the rolled lip at the left side of the drive cage top to disengage the top from the tabs at the left side.
4. Lift the left side of the cage top, and then disengage the tabs on the right side to remove the top.

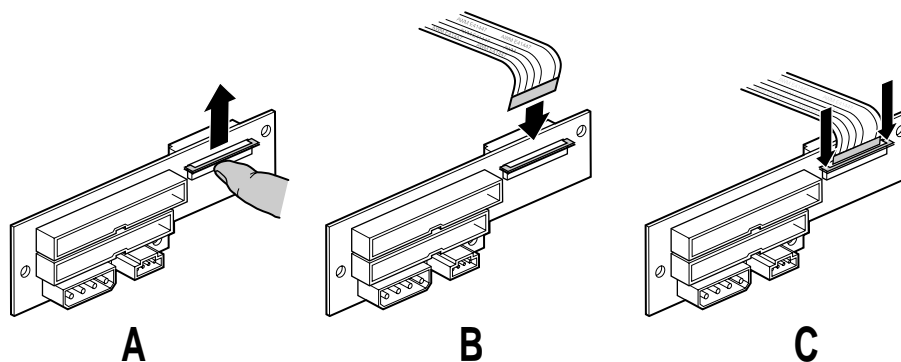
Removing the Drives

1. Remove the four screws that attach the CD-ROM or DVD-ROM drive to the cage. Two screws are on each side of the drive. Retain the screws.
2. Lift the CD-ROM or DVD-ROM from the cage.
3. If you are replacing a floppy drive:
 - a. Remove the four screws that attach the floppy drive to the cage. Two screws are on each side of the drive. Retain the screws.
 - b. Lift the floppy drive from the cage.
 - c. Lift the brown locking mechanism at the front of the FCC connector to disengage the FFC from the floppy drive. See letter “A” in Figure 32. Leave the FFC attached to the backplane board.

Reattaching Flat Flex Cable to Backplane Board

The Flat Flex Cable is used only when a floppy drive is installed into the slimline drive cage. Use these steps if your flat flex cable becomes loosened or disengaged from the backplane board. Attach the Flat Flex Cable to the backplane board before attaching the cable to the floppy drive.

1. Lift the brown locking mechanism at the front of the connector to disengage the FFC. See letter “A” in the figure below.
2. Position the Flat Flex Cable so the printed side is facing you. See letter “B” in the figure.
3. Insert the FFC into the connector.
4. Hold the FFC in place while you push down on each side of the locking mechanism. See letter “C” in the figure.
5. Tug gently on the cable to ensure the locking mechanism is firmly latched down at both sides. When firmly latched, the cable will be tightly secure.
6. When correctly installed, you will see a narrow strip of blue ribbon extending up from the connector. If this strip of blue is not parallel to the connector, repeat these steps to reposition / re-install the FFC.

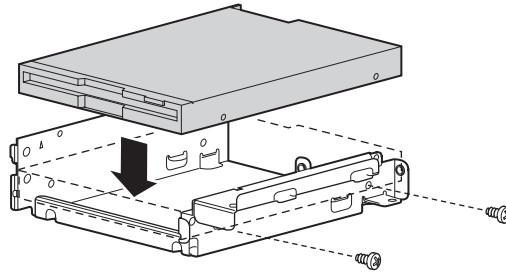


TP00143A

Figure 32. Reattaching Flat Flex Cable to Backplane Board

Inserting Replacement Floppy Drive

1. Turn the cage so that the metal flange at the side of the drive extends to the right.
2. Lay the floppy drive on the bottom of the cage, with the back of the drive facing you.
3. Line up the screw holes on the left and right sides of the drive and the cage. The front of the drive will extend slightly from the front of the cage.
4. Insert the four screws removed from the old drive to attach the replacement drive to the cage.



TP00143B

Figure 33. Installing the Floppy Drive

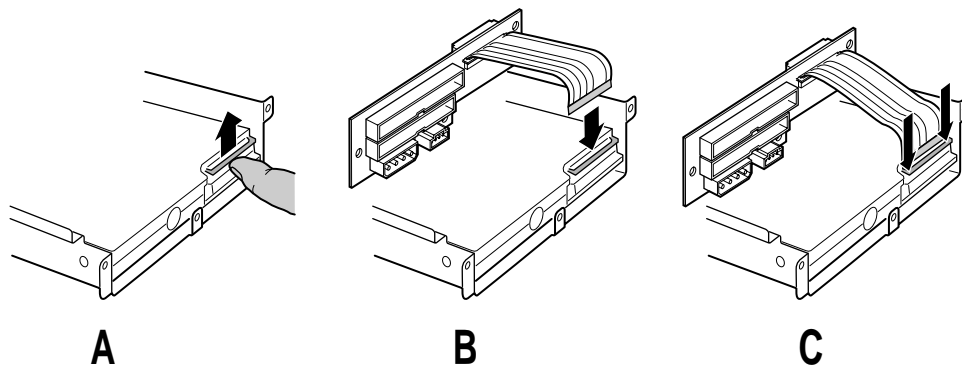
5. Lift the brown locking mechanism at the front of the FCC connector on the floppy drive. See Figure 34, A below.
6. Hold the backplane board with the attached FFC above the floppy drive. Hold the backplane board so that the silkscreen label “IDE CONN” is at the top left and the FFC is at the right. See Figure 34, B.

⇒ NOTE

If the FFC is not attached to the backplane board, see “Reattaching Flat Flex Cable to Backplane Board” for instructions on reinstalling it. Install the FFC into the backplane board before attaching it to the floppy drive.

7. Pull down gently on the FFC that is attached to the backplane board. Insert the blue edge of the FFC cable into the connector on the floppy drive. See Figure 34, B.
8. Holding the FFC in place, push down on each side of the locking bar on the floppy drive connector to lock the FFC into place. See Figure 34, C.
9. Ensure the FFC is correctly installed by verifying the following:
 - A small line of blue ribbon shows above the floppy drive connector
 - The side of the cable facing you is solid gray (not printed).

If line of blue ribbon is not parallel to the top of the connector, or if the printed side of the FFC is facing you, disengage the locking bar and re-insert the FFC as described in the steps above.



TP00143C

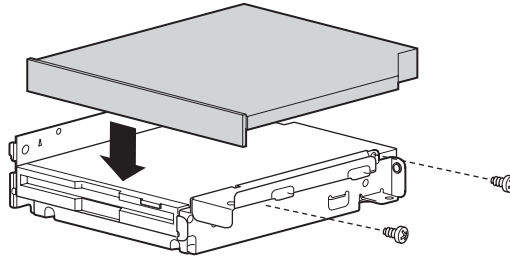
Figure 34. Attaching the FFC to the Floppy Drive

⇒ NOTE

The backplane board will hang loose from the floppy drive while you move to your next steps. Use caution to avoid twisting or bending the FFC.

Inserting Replacement CD-ROM / DVD-ROM Drive

1. Turn the cage so that the metal flange at the side of the drive extends to the right.
2. Lay the CD-ROM drive or the DVD-ROM drive into the cage, with the back of the drive facing you. If you have installed a floppy drive, the CD-ROM drive / DVD-ROM drive lies on top of it.
3. Line up the screw holes on the left and right sides of the drive and the cage. The front of the drive will extend slightly from the front of the cage.
4. Use the four screws removed from the old drive to attach the replacement drive to each side of the cage (two screws on each side).

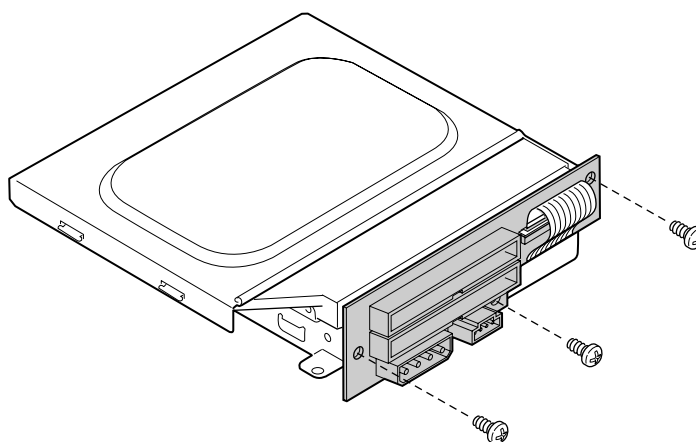


TP00143D

Figure 35. Installing Replacement CD-ROM or DVD-ROM Drive

Attach Backplane to Cage

1. If a floppy drive is installed, hold the backplane board so the silkscreen label “IDE CONN” is at the top left. If you are looking at the printed side of the FFC instead of the solid gray side of it, roll the bottom of the backplane board up and over until you are looking at the solid gray surface of the FFC. When correctly positioned, the ribbon will go underneath the backplane board, not over the top of the board.
2. If a CD-ROM drive or DVD-ROM drive is installed, attach the connector at the back of the backplane board to the matching connector at the back of the CD-ROM drive or DVD-ROM drive.
3. Use the three screws you removed from the backplane board earlier to reattach the backplane board to the cage.

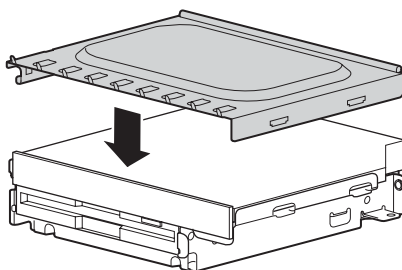


TP00148A

Figure 36. Attaching the Backplane

Install Cage Top

1. Facing the front of the cage, engage the slots at the right side of the cage top to the tabs at cage base.
2. Rotate the top downward at the left side to engage the left tabs.

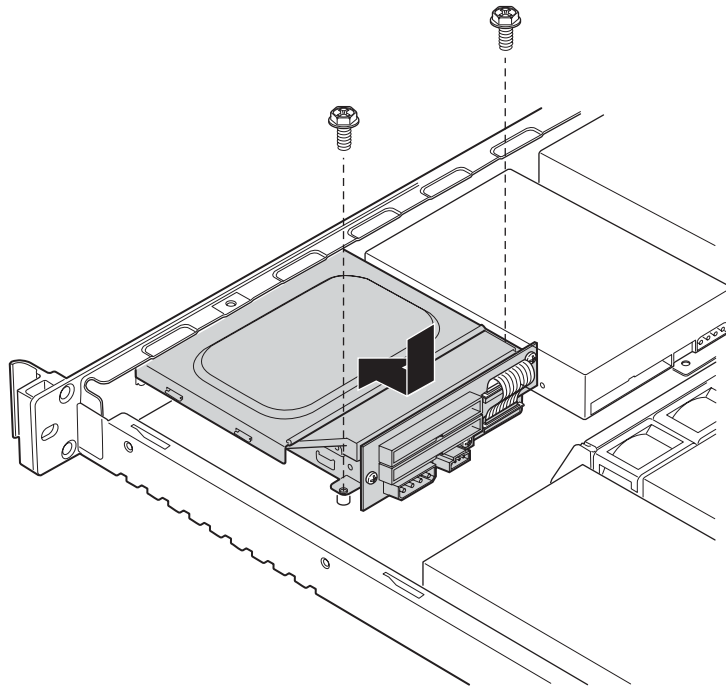


TP00143E

Figure 37. Installing the Cage Top

Re-insert Drive Cage into Chassis

1. Insert the front of the drive cage into the chassis, then lower the back of the cage. When properly positioned, the front of the cage will be flush with the front of the chassis, and the screw holes in the drive cage will match the screw holes in the bottom of the chassis.
2. Replace the screws to secure the drive cage to the chassis.
3. Reattach the drive and power cables.



TP00143F

Figure 38. Inserting the Cage

4. Reinstall the top cover if you have no additional work to do inside the chassis.

Replacing a PCI Add-in Card

NOTE

Add-in cards must be replaced while the riser card is removed from the chassis.

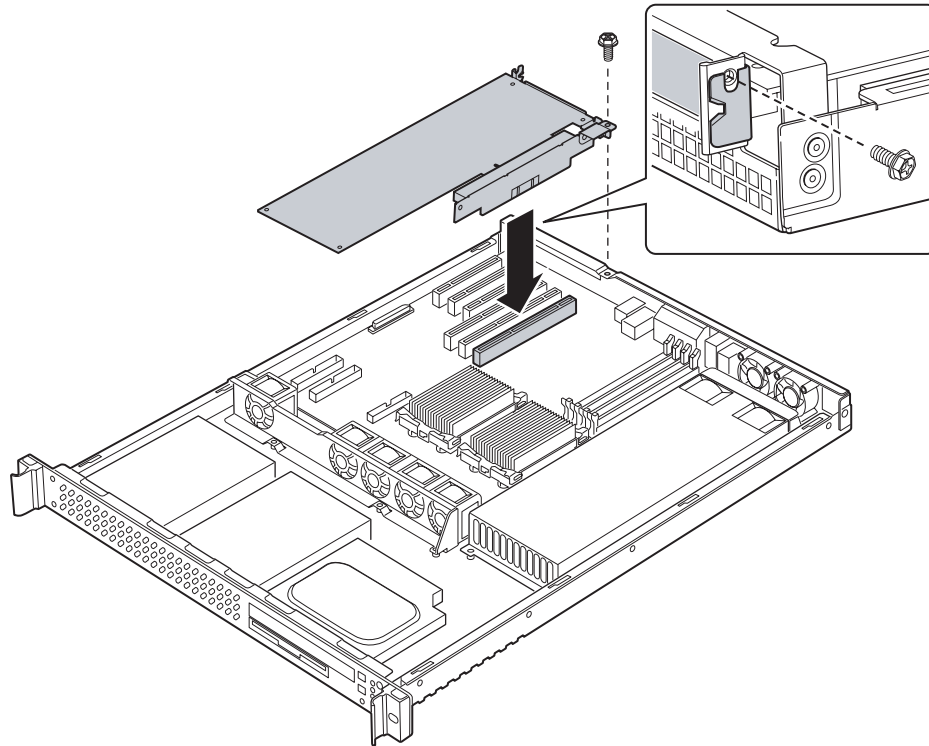
1. Before removing the cover to work inside the system, observe the safety guidelines on page 45.
2. Remove the chassis cover.
3. Remove the screw that holds the PCI card and the riser to the rear of the chassis.
4. Pull straight up on the riser to remove the riser card assembly from the chassis.
5. Pull the PCI card out of the riser card slot.
6. Install the new PCI add-in card on the riser.
7. Insert the riser card connector in the server board slot while aligning the tabs on the rear retention bracket with the holes in the chassis.



CAUTION

Press the riser card straight down into the slot. Press down on the riser card, not on the PCI card. Tipping it in the slot while installing it or pressing on the PCI card may damage the riser card, board slot, or the PCI card.

8. Firmly press the riser card straight down until it is seated in the server board slot.
9. Replace the screw that attaches the riser assembly to the chassis.
10. Replace the chassis cover if you have no additional work to do inside the chassis.



TP00154

Figure 39. Replacing a Riser Card

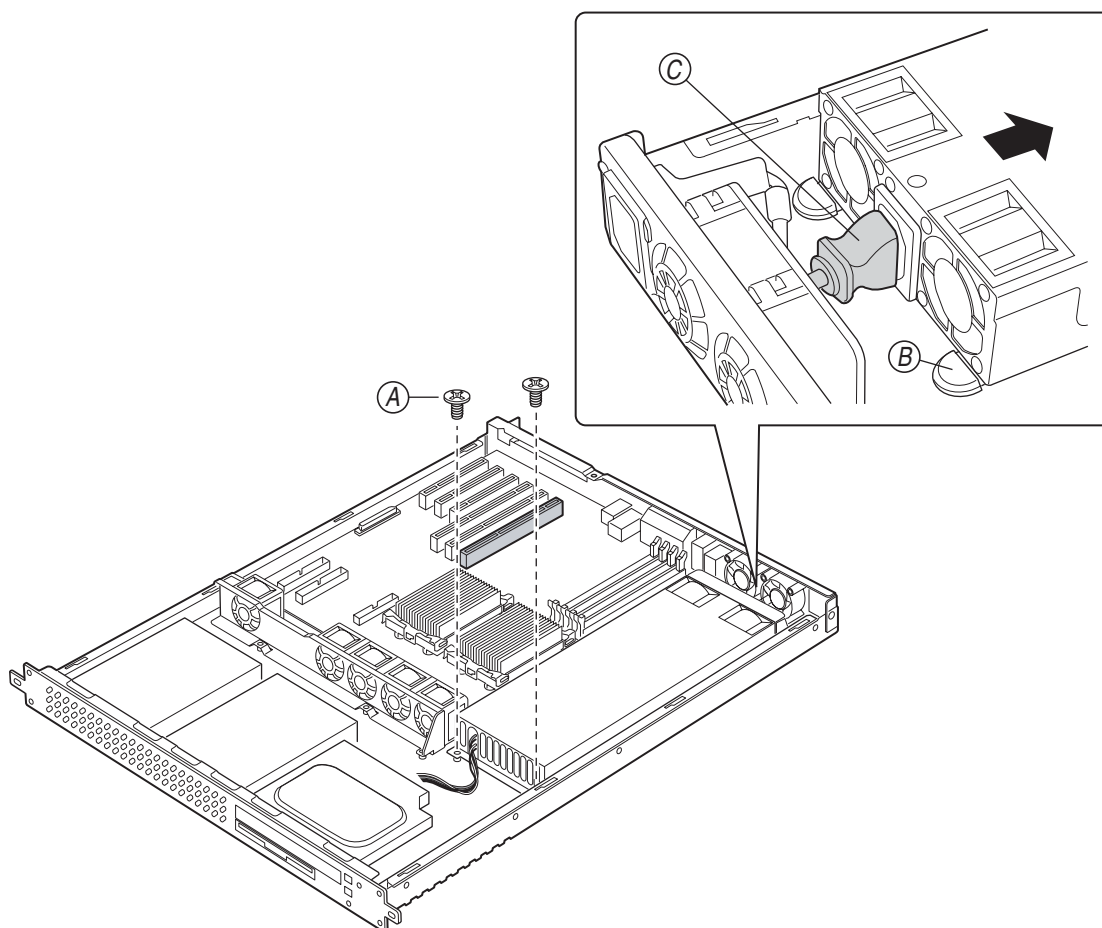
Replacing the Power Supply



CAUTION

Your server does not have a redundant power supply. Before replacing the power supply, you must take the server out of service.

1. Before removing the cover to work inside the system, observe the safety guidelines on page 45.
2. Unplug the power cord from the power source and the power supply.
3. Remove the chassis cover.
4. Remove the two screws from the power supply. See letter “A” in Figure 40.
5. Slide the power supply slightly forward to disengage it from the tabs that attach it to the bottom of the chassis. See letter “B” in the figure.
6. Disengage the power connector at the rear of the power supply. See letter “C” in the figure below.
7. Lift the power supply out of the chassis.
8. Set the replacement power supply onto the chassis floor
9. Connect the power connector at the rear of the power supply. See letter “C” in the figure below.
10. Slide the power supply toward the rear of the chassis to engage the tab. See letter “B” in the figure.
11. Replace the two screws at the front of the power supply. See letter “A” in the figure.
12. Replace the chassis cover.
13. Plug the power cord back into the power supply and the power source.

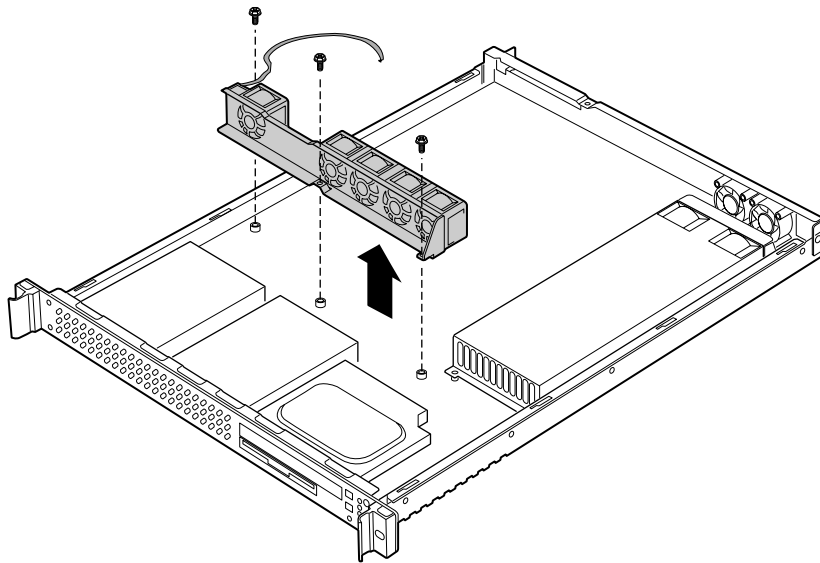


TP00154A

Figure 40. Removing the Power Supply

Replacing the Front Fan Module

1. Unplug all power and peripheral cables from the chassis.
2. Remove the two screws from the top of the chassis.
3. Facing the rear of the chassis, pull the top cover toward you and then lift it up to remove it.
4. Note where the chassis intrusion cable is plugged into your server board and then disconnect the chassis intrusion cable.
5. Disconnect the front fan cables from the server board.
6. Remove the three screws that attach the front fan module to the chassis.
7. Lift the fan module from the chassis. See Figure 41.



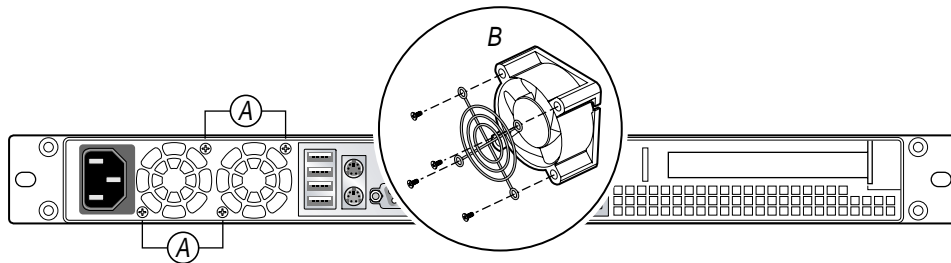
TP00153

Figure 41. Installing the Front Fan Module

8. Install the fan module into the chassis with the three screws that held the standard fan module in place.
9. Reconnect the cable from each fan at the appropriate location on the server board. Refer to your server board documentation as necessary to locate the fan connection points.

Replacing the Rear Fans

1. Unplug all power and peripheral cables from the chassis.
2. Remove the two screws from the top of the chassis.
3. Facing the rear of the chassis, pull the top cover toward you and then lift it up to remove it.
4. Note the position of the fans and the fan cables in the chassis. **The replacement fans will need to be inserted in this same configuration, with the fan cables extending from the fans in the same directions as the fans you are replacing.**
5. Disconnect each rear fan cable from the server board.
6. Facing the rear of the chassis, remove the four screws that hold the rear fans in place (two screws for each fan). See “A” in the figure below.
7. Lift the fans from the chassis.
8. Remove the finger guard from the front of each fan by removing the four screws that hold each finger guard in place. See “B” in the figure below.
9. Attach the finger guards to the fans. The finger guards must be attached to the side of the fan that does not have a label attached to it.



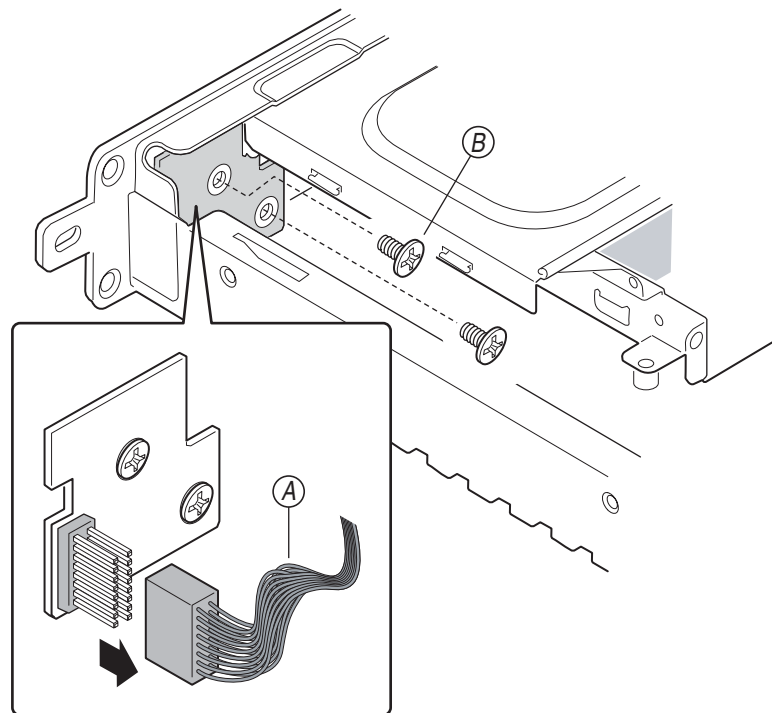
TP00140A

Figure 42. Removing Rear Fans

10. When facing the rear of the chassis, install the left fan first for easiest access. Attach each fan to the chassis. Before inserting the screws at the rear of the chassis, **make sure each fan is positioned correctly**. The fan labels must face the rear of the chassis and the fans must be positioned with the cables extending from the fans in the same manner as the fans that were removed.
11. Connect each fan to the nearest system fan header on the server board. Refer to your server board documentation as necessary to locate the system fan headers.

Replacing a Front Panel Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 45.
2. Remove the cover from the chassis.
3. Unplug the cable on the front panel that leads to the connection on the server board. See Figure 43, letter “A”. Leave the cable attached to the server board.
4. Remove the two screws that attach the front panel board to the chassis.
5. Remove the front panel board from the chassis by removing the two screws that hold it in place. See letter “B” in the figure below.
6. Attach the replacement front panel board to the chassis with the two screws removed from the old front panel board.
7. Plug the cable from the server board back into the front panel board.
8. Replace the chassis cover.



TP00143H

Figure 43. Replacing the Front Panel Board

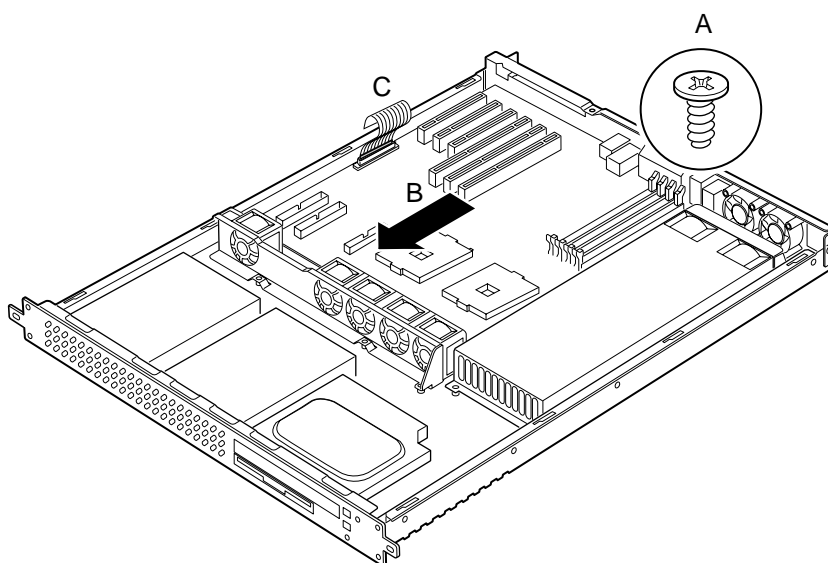
Replacing a Server Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 45.
2. Remove the cover from the chassis.
3. Remove the riser card/PCI card assembly.
4. Remove the air duct.
5. Disconnect the ribbon cable that comes from the front panel board.
6. Remove the processor air duct.
7. Disconnect the fan cable from the server board and remove the fan module.
8. Disconnect all remaining cables from the server board.

➡ NOTE

Cables at the left side of the board may not be accessible. These will be removed after the board is lifted from the chassis.

9. Remove the heat sink, processor air dam, and any processors and memory DIMMs that you wish to use with the new board.
10. Remove the eight screws that secure the processor retention mechanisms and the all screws that secure the server board to the chassis (see Figure 44, letter “A”).
11. Slide the board toward the front of the chassis until the I/O connectors are clear of the chassis I/O openings and lift the server board from the chassis (see letter “B” in the figure).
12. Remove any previously inaccessible connections at the left edge of the server board (see letter “C” in the figure)
13. Place the server board in an antistatic bag.
14. Remove the replacement server board from its packaging and antistatic bag.
15. See “Chapter 2 Assembling the System” to complete the installation.



TP00294

Figure 44. Removing the Server Board

A Regulatory and Certification Information



WARNING

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

Product Regulatory Compliance

The Server Chassis SR1350-E subassembly, when correctly integrated per this guide, complies with the following safety and electromagnetic compatibility (EMC) regulations.

Product Safety Compliance







- UL 1950 - CSA 950 (US/Canada)
- EN 60 950 (European Union)
- IEC60 950 (International)
- CE – Low Voltage Directive (73/23/EEC) (European Union)
- EMKO-TSE (74-SEC) 207/94 (Nordics)
- GOST R 50377-92 (Russia)
- IRAM Type Certification (Argentina)

Product EMC Compliance

- FCC /ICES-003, Class A Emissions (USA/Canada) Verification
- CISPR 22, 3rd Edition, Class A Emissions (International)
- EN55022, Class A Emissions (CENELEC Europe)
- EN55024: 1998, Immunity (CENELEC Europe)
- EN61000-3-2, Harmonics (CENELEC Europe)
- EN61000-3-3, Voltage Flicker (CENELEC Europe)
- CE – EMC Directive 89/336/EEC (CENELEC Europe)
- VCCI, Class A Emissions (Japan)
- AS/NZS 3548 Class A Emissions (Australia / New Zealand)
- BSMI CNS13438 Class A Emissions (Taiwan)
- GOST R 29216-91, Class A Emissions (Russia)
- GOST R 50628-95, Immunity (Russia)
- RRL, MIC Notice No. 1997-41 (EMC) & 1997-42 (EMI) (Korea)

Product Regulatory Compliance Markings

The Server Chassis SR1350-E will be marked with the following regulatory compliance markings.

Regulatory Compliance	Country	Marking
cULus Listing Marks	USA/Canada	
GS Mark	Germany	
CE Mark	Europe	
FCC Marking (Class A)	USA	<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 any interference received, including interference that may cause undesired operation. Manufactured by Intel Corporation</p>
EMC Marking (Class A)	Canada	<p>CANADA ICES-003 CLASS A CANADA NMB-003 CLASSE A</p>
VCCI Marking (Class A)	Japan	<p>この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI-A</p>
BSMI Certification Number & Class A Warning	Taiwan	<div style="border: 1px solid black; padding: 5px;"> <p>警告使用者：檢磁 3912I900 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策</p> </div>
GOST R Marking	Russia	
RRL MIC Mark	Korea	
China Compulsary Certification Mark	China	

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

Product Type: SR1350-E

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.

Intel Corporation
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124-6497
Phone: 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 into an outlet on a circuit different from that 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.

ICES-003 (Canada)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe Aprescrites dans la norme sur le matériel brouilleur: “Appareils Numériques”, NMB-003 édictée par le Ministre Canadian 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 too, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.

VCCI (Japan)

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

English translation of the notice above:

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

BSMI (Taiwan)

The BSMI ID certification number and EMC warning is located on the outside rear area of the product.

警告使用者：檢磁 3912I900
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

RRL (Korea)

Following is the RRL certification information for Korea.



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

English translation of the notice above:

1. Type of Equipment (Model Name): SR1350-E
2. Certification No.: On RRL certificate. Obtain certificate from local Intel representative
3. Name of Certification Recipient: Intel Corporation
4. Date of Manufacturer: Refer to date code on product
5. Manufacturer/Nation: Intel Corporation/Refer to country of origin marked on product

Regulated Specified Components

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

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

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

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

- **Server Chassis SR1350-E** (base chassis is provided with power supply and fans)—UL listed.
- **Server board**—you must use an Intel server board—UL recognized.
- **Add-in boards**—must have a printed wiring board flammability rating of minimum UL94V-1. Add-in boards containing external power connectors and/or lithium batteries must be UL recognized or UL listed. Any add-in board containing modem telecommunication circuitry must be UL listed. In addition, the modem must have the appropriate telecommunications, safety, and EMC approvals for the region in which it is sold.
- **Peripheral storage devices**—must be UL recognized or UL listed accessory and TUV or VDE licensed. Maximum power rating of any one device is 19 watts. Total server configuration is not to exceed the maximum loading conditions of the power supply.

B Equipment Log and Worksheets

Equipment Log

Use the blank equipment log provided here to record information about your system. You will need some of this information when you run the Server Setup Utility (SSU).

Item	Manufacturer Name and Model Number	Serial Number	Date Installed
Chassis			
Server Board			
Processor Speed and Cache			
Video Display			
Video Controller			
Keyboard			
Mouse			
Floppy Disk Drive			
DVD or CD-ROM Drive			
Hard Disk Drive 1			
Hard Disk Drive 2			

continued

Equipment Log (continued)

[illegible]

Current Usage

Calculating Power Usage

The total combined power consumption for your configuration **must be less than 350 watts**, with any combination of loads not to exceed the maximum current on any one channel as defined in Table 3. Use the two worksheets in this section to calculate the total used by your configuration. For current and voltage requirements of add-in boards and peripherals, see your vendor documents.

Worksheet: Calculating DC Power Usage

1. List the current for each board and device in the appropriate voltage level column.
2. Add the current in each column and then go to the next worksheet.

Table 3. Power Usage Worksheet 1

Device	Current (maximum) at voltage level:				
	+5 Vsb	+3.3 V	+5 V	+12 V	–12 V
Boards, processors, and memory (get totals from your board manual)					
SCSI backplane and front panel	0.08				
Floppy disk drive			0.30		
CD-ROM drive or DVD-ROM drive			0.60		
1st hard drive			0.80	1.10	
2nd hard drive			0.80	1.10	
Cooling fan 7 x, 40 mm				1.75	
Total Current					
Maximum Ratings (for comparison)	2.0 A	16.0 A	12.0 A	28.0 A	0.5 A

Worksheet: Total Combined Power Used by the System

1. From the previous worksheet, enter the total current for each column.
2. Multiply the voltage by the total current to get the total wattage for each voltage level.
3. Add the total wattage for each voltage level to arrive at a total combined power usage on the power supply.

Table 4. Power Usage Worksheet 2

Voltage level and total current (V X A = W)	Total Watts for each voltage level
(+5 Vsb) X (_____ A)	_____ W
(+3.3 V) X (_____ A)	_____ W
(+5 V) X (_____ A)	_____ W
(+12 V) X (_____ A)	_____ W
(-12 V) X (_____ A)	_____ W
Total Combined Wattage	_____ W



CAUTION

Do not overload: as an overall current usage limitation on the power supply, do not exceed a combined power output of 350 watts for all DC outputs.

C 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.

Country	Customer Support Telephone Number	Hours (Monday-Friday)	Billing
United States & Canada	1-800-404-2284	7:00–17:00 PST	Credit card calls \$25.00/incident
UK France Germany Italy Spain Finland Denmark Norway Sweden Holland	0870 6072439 01 41 918529 069 9509 6099 02 696 33276 91 377 8166 9 693 79297 38 487077 23 1620 50 08 445 1251 020 487 4562	UK time 8:00–17:00 (M, Th, F) 8:00–16:00 (Tu–W)	Credit Card Calls \$25.00/incident Levied in local currency at the applicable credit card exchange rate plus applicable VAT
Asia-Pacific Australia Hong Kong Korea Philippines PRC Singapore Taiwan Malaysia New Zealand Indonesia Thailand Vietnam India Pakistan	+1-800-649-931 +852-2-844-4456 +822-767-2595 1800-1-651-0117 (800)8201100 (65)2131311 2 27189915 1800-801390 0800-444365 803-65-7249 800-6310003 IDD call +63(2)6368416 (0006517) 830-3634 Manual toll free. From India, you need an IDD-equipped phone. IDD call +63(2)6368415	Singapore local time Oct–April: 6:00–16:00 April–Oct: 5:00–16:00	

Returning a Defective Product

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