Intel® SR1200
Chassis Subassembly Product Guide

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

Order Number: A55875-003

Disclaimer

Contents

D Warranty

Figures

Tables

1 Chassis Description

Your SR1200 server chassis kit is designed to support the Intel® Server Board SCB2 and comes with the front panel board and two drive carriers installed. The fan module, power supply, and power distribution board 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 purchase, decide if you want an ATA-100 based system or a SCSI based system and select components accordingly.

What Your Kit Includes

Your kit includes the following components:

- 1U rack-mount chassis featuring:
  - Two hard drive bays with carriers and drive blanks (baffles)
  - One flex bay with blank filler panel and plug
- One 250W SSI PFC non-redundant power supply
- Two PCI riser cards for use with the Intel Server Board SCB2
- One fan module consisting of five 40-mm fans for system cooling
- One power distribution board
- One power cord (U.S. version)
- One internal USB cable, (connecting server board to front panel board)
- One internal flex circuit cable, 100-pin (connecting server board to backplane board)
- One internal front panel cable, 34-pin (connecting front panel board to backplane board)
- One CD-ROM containing documentation for your SR1200 chassis
- Mounting screws (server and backplane boards)
- Bracket mounting kit

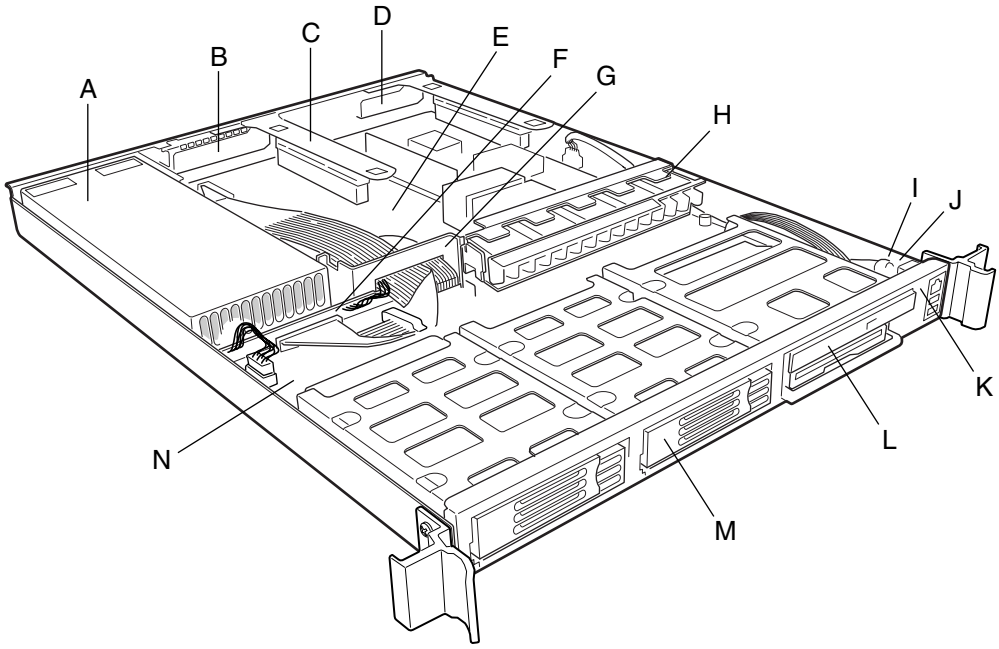
Items You Must Purchase Separately

The following components must be purchased separately:

- Front bezel (optional)
- Intel Server Board SCB2 (SCSI or ATA)
- Minimum of one Intel® Pentium® III processor with 512K cache support (FC-PGA2)
- PC-133 SDRAM memory DIMMs
- Backplane board (SCSI or ATA)
- Hard disk drives (HDD)
- Slimline CD-ROM drive/floppy disk drive module (optional)
- PCI add-in cards
- Other peripheral devices
- Rack Mount Rail Kit

Feature Summary

System Components

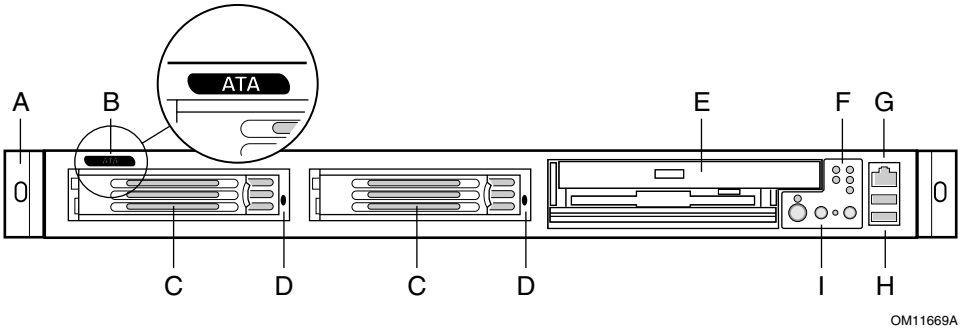


A. Power supply
B. PCI card bracket (full-length)
C. Riser card assembly
D. PCI card bracket (low-profile)
E. Server board (accessory to system)
F. Power distribution board
G. Air baffle
H. Fan module
I. Front panel board
J. Intrusion switch
K. Control panel
L. Flex bay (optional CD-ROM drive/FDD module shown)
M. Hard drive bay (one of two)
N. Backplane board

Figure 1. System Components

Chassis Front Panel and Peripheral Bays

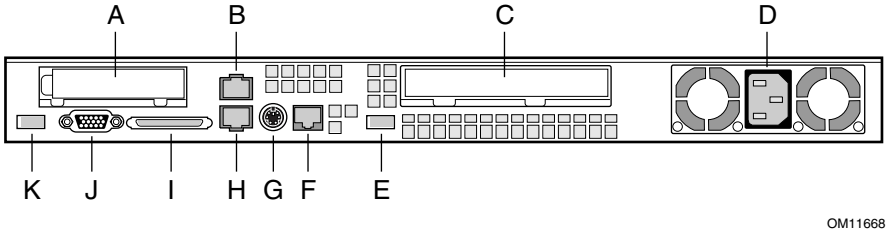
To access the system controls and peripherals when a front bezel is installed, grasp the bezel and gently pull it towards you until it unsnaps from the chassis.



A. Chassis handles (2)
B. Drive-type designator (ATA system only)
C. Drive bay (1-inch)
D. HDD activity/fault Indicator
E. Flex bay (optional CD-ROM drive/FDD module shown)
F. Front panel indicator lights
G. RJ-45 serial port
H. USB connectors 1 and 2
I. System controls

Figure 2. Chassis Front

Chassis Back I/O Ports and Features

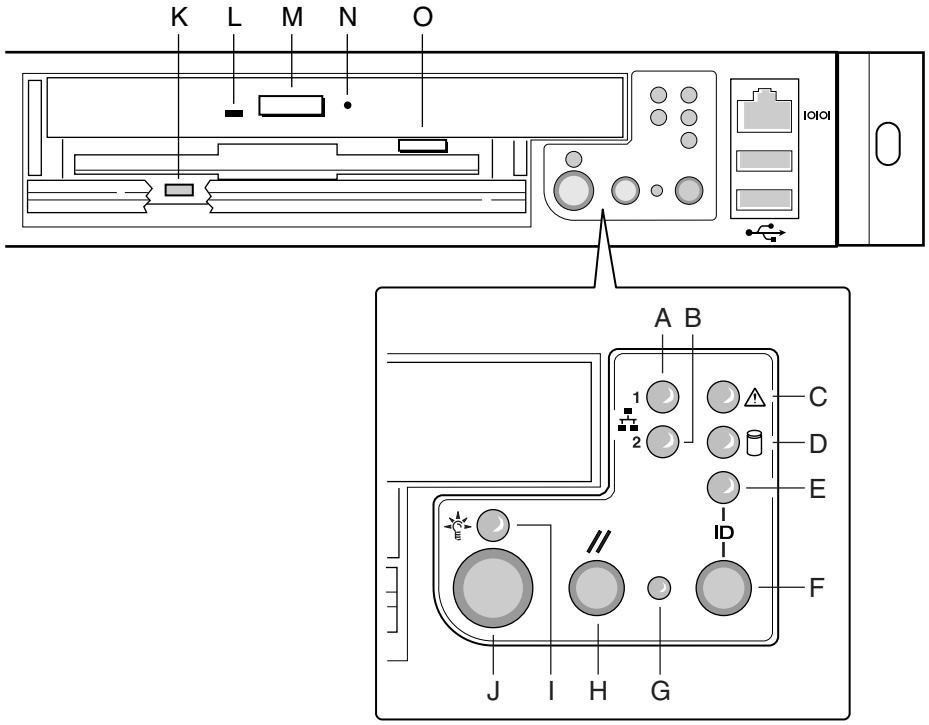


A. PCI card bracket (low profile)
B. RJ-45 NIC 2 connector
   Green Status LED
   Yellow Status LED
C. PCI card bracket (full-height)
D. Power supply
E. USB connector
F. RJ-45 serial port
G. PS/2† mouse/keyboard connector
H. RJ-45 NIC 1 connector
   Green Status LED
   Yellow Status LED
I. SCSI connector (SCSI version only; shown with chassis knockout removed)
J. Video connector
K. USB connector

Figure 3. Chassis Back

Front Panel Controls and Indicators

Shown with optional CD-ROM drive/floppy disk drive installed.



A. NIC 1 activity LED
B. NIC 2 activity LED
C. System status LED
D. Fixed disk drive status LED
E. ID LED
F. ID button
G. NMI button (tool assisted)
H. Reset button
I. Power/sleep LED
J. Power/sleep button
K. FDD activity LED
L. CD-ROM activity LED
M. CD-ROM drive eject button
N. (Tool assisted) Manual CDROM drive eject button
O. FDD eject button

Figure 4. Controls and Indicators

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.
NMI button	Pressing the recessed button with a paper clip or pin issues a non-maskable interrupt and puts the server into a halt state for diagnostic purposes.
ID button	Toggles the front panel ID LED and the baseboard ID LED on/off. The baseboard ID LED is visible through the rear of the chassis and allows you to locate the server you're working on from behind a rack of servers.

Table 2. LED Indicator Status

Power/sleep LED	*Continuous green light* indicates the system has power applied to it. *Blinking green light* (Note 4) indicates the system is sleeping. *No light* indicates the system does not have power applied to it (other than 5 V standby power).
NIC 1 activity LED **NIC 2 activity LED**	*Continuous green light* indicates activity between the system and the network to which it is connected.
System status LED	*Continuous green light* indicates the system is operating normally. *Blinking green light* indicates the system is operating in a degraded condition. *Continuous amber light* (Note 1) indicates the system is in a critical or nonrecoverable condition. *Blinking amber light* (Note 1) indicates the system is in a non-critical condition. *No light* indicates POST/system stop.
Fixed disk drive status LED	*Random blinking green light* indicates fixed disk drive activity (SCSI or IDE). *Continuous amber light* (Note 2) indicates fixed disk drive fault (SCSI or IDE). *No light* (Note 3) indicates no fixed disk drive activity nor fault (SCSI or IDE).
ID LED	*Continuous blue light* indicates ID button is depressed or light is turned on by software. *No light* indicates ID button is not depressed.

Notes:

1 The Amber status takes precedence over the Green status. When the Amber LED is on or blinking, the Green LED is off.

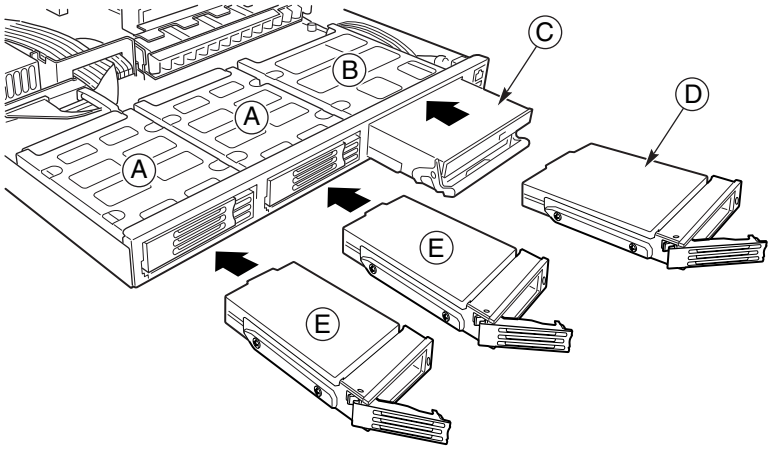
2 In order for a hard disk fault indication to occur, either an Intelligent Platform Management Interface (IPMI) based satellite management controller must send a Set Fault Indication command to the Baseboard Management Controller (BMC), or the system board must be used with the 1U SR1200 hot swappable backplane.

3 Also off when the system is powered off or in a sleep state.

4 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.

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
B. Flex bay
C. Slimline CD-ROM drive/floppy disk drive module
D. Hard disk drive
E. Hard disk drive

Figure 5. Optional Peripherals

Hard Disk Drives

The chassis ships with two drive carriers for mounting HDD in the hard drive bays. These can be either SCSI or ATA, depending on what type of system was configured. For information on how to install these drives, see “Installing a Hard Drive” on 37.

NOTE

Drives can consume up to 17 watts of power each. Drives must be specified to run at a maximum ambient temperature of 50 °C.

Hot Swappable SCSI Hard Drives

In a SCSI system, the SCSI hard drives are hot swappable. When a drive fails, the SCSI backplane detects the failure, reports it, and powers down the failed drive. The drive fault LED becomes a continuous amber light. After the failed drive is removed and a new drive is inserted, there is a short wait before power is applied to the drive and the drive fault LED becomes a random blinking green light.

ATA Hard Drives

In an ATA system, the hard drives are NOT hot swappable.

⚠ CAUTION

ATA hard drives are NOT hot swappable. Before replacing an ATA 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.

⚠ CAUTION

Not all ATA hard drives are supported by the Intel® SR1200 server. Unsupported drives are mechanically unable to mate with the drive connector in the drive bay. To see a list of validated hard drive manufacturers and hard drive types, go to:

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

Flex Bay

In an ATA based system, the flex bay can only be used with the optional CD-ROM/FDD module. If the CD-ROM/FDD module is not used, the flex bay is left empty. In a SCSI based system, the flex bay can be used with either the optional CD-ROM/FDD module or a third hot swappable SCSI HDD.

The CDROM/FDD module may only be inserted or removed from the flex bay when system power is turned off. The CDROM/FDD module is NOT hot swappable. For information on installation, see "Installing a CD-ROM Drive/FDD Module" on page 39.

Power Supply

The power supply is rated for 250 watts of power at the following voltages:

- 100-127 Volts (V) ~ at 50/60 Hertz (Hz); 3.6 Ampere (A) maximum (max)
- 200-240 V~ at 50/60 Hz; 1.8 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 a non-hot-swappable fan module with five fans for cooling the processor(s), hard drives, and PCI cards. The fan system is located in the middle of the chassis to pull cooling air through the chassis. The power supply contains two built-in fans for cooling.

Chassis Security

To help prevent unauthorized access to the system's peripherals and control panel, a key locks the optional bezel to the front panel. The chassis also includes a preinstalled intrusion switch for the access cover that can be monitored by server management software. When the cover is opened, the switch, located on the front panel board, transmits a signal to the Baseboard Management Controller (BMC) on the server board, where server management software processes the signal. For example, the system can be programmed to respond to an intrusion by powering down or by locking the keyboard.

Locking and Unlocking the Bezel

To unlock the bezel, insert the key in the lock and turn the lock counterclockwise until it stops (about a quarter turn). The bezel is now unlocked and can be opened again.

To lock the bezel, insert the key in the lock. Turn the lock clockwise until it stops (about a quarter turn). The bezel is now locked and cannot be opened.

2 Assembling the System

Before the SR1200 can be installed for use, you must assemble the hardware components that make up your particular system. Additionally, you will want to add any peripherals and add-in cards purchased for the system. The following procedures help guide you through this assembly process and 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.

Before You Begin

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:

- Anti-static wrist strap (recommended)
- SR1200 accessory kit
- SCB2 ATA server board kit or SCB2 SCSI server board kit
- Backplane board (ATA or SCSI)
- Processors and memory you purchased separately to add to the server board
- Optional peripherals and add-in cards you want to include in the system

Installation/Assembly Safety Instructions

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

CAUTION

Integration/servicing of this chassis sub-assembly 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 non-compliant 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 the Installation Guide.

To avoid injury, be careful of:

- 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

Do not attempt to modify or use the supplied AC power cord 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.

If the power cord supplied with the system 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% 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

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

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.

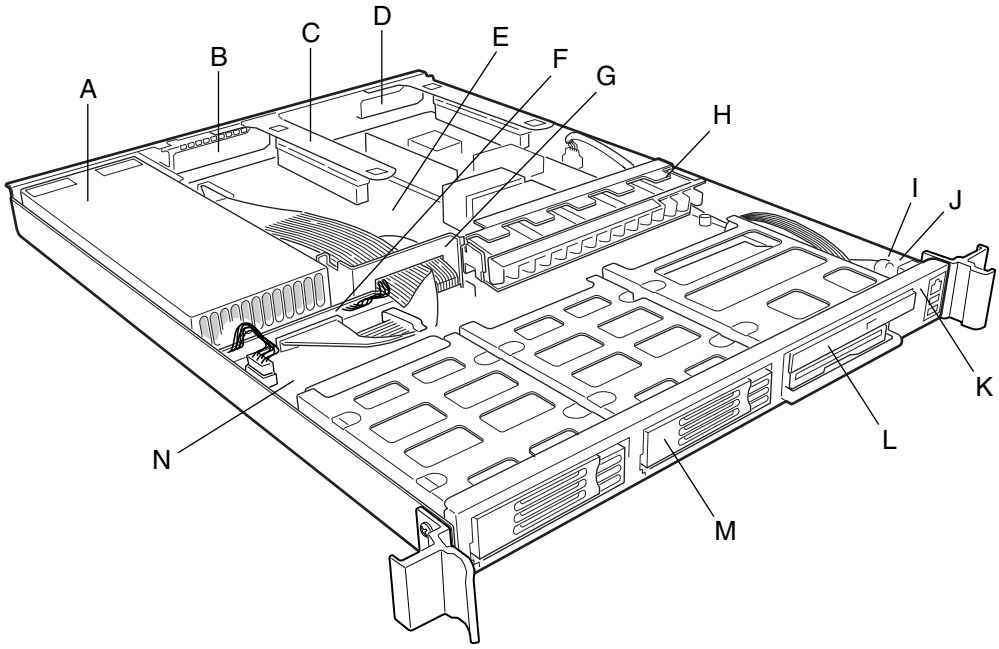
⚠ WARNING

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

Overview of System Components

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



A. Power supply
B. PCI card bracket (full-length)
C. Riser card assembly
D. PCI card bracket (low-profile)
E. Server board (accessory to system)
F. Power distribution board
G. Air baffle
H. Fan module
I. Front panel board
J. Intrusion switch
K. Control panel
L. Flex bay (optional CD-ROM drive/FDD module shown)
M. Hard drive bay (one of two)
N. Backplane board

Figure 6. Overview of System Components

Preparing the Chassis

Removing the Cover

1. While pressing the blue latch button (A) with your left thumb, slide the top cover back using the heal of your right hand on the blue pad.

NOTE

A non-skid surface or a stop behind the chassis may be needed if attempting to remove the top cover on a flat surface.

2. Set the cover aside and away from the immediate work area.

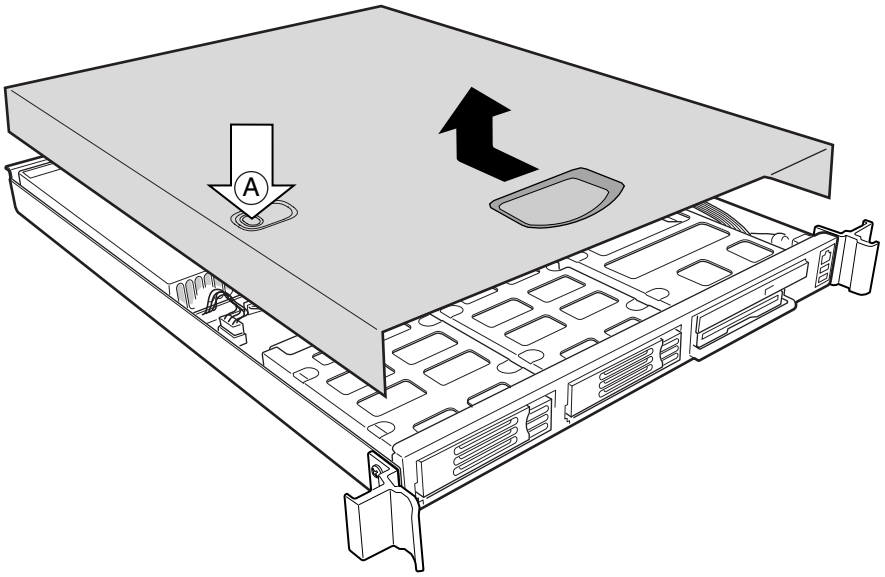


Figure 7. Removing the Cover

Removing the Riser Cards

1. Insert your finger in the plastic loop.
2. Pull straight up and remove the riser card from the chassis.
3. Remove the other riser card in the same manner.
4. Discard the protective foam blocks.

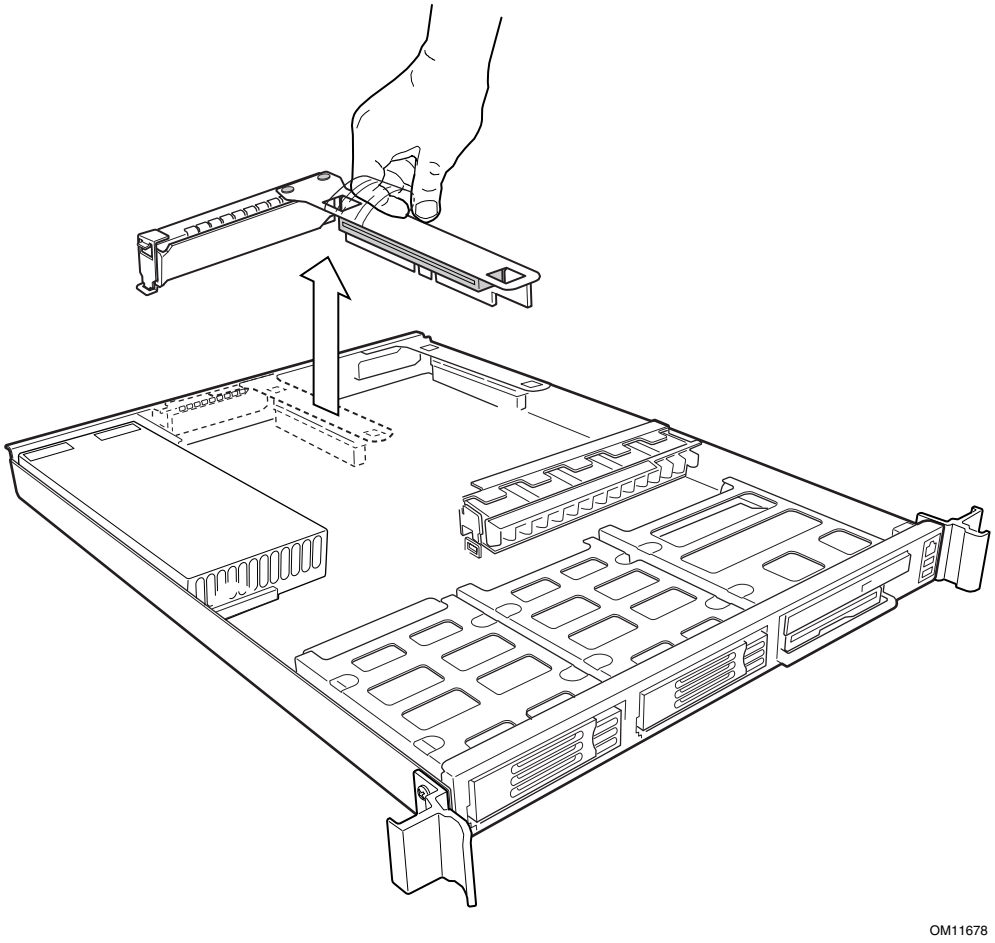


Figure 8. Removing a Riser Card

Removing the Fan Module

At the left end of the module, press at (A) to release tab (B) from chassis slot (C) and lift up until the module releases from the chassis.

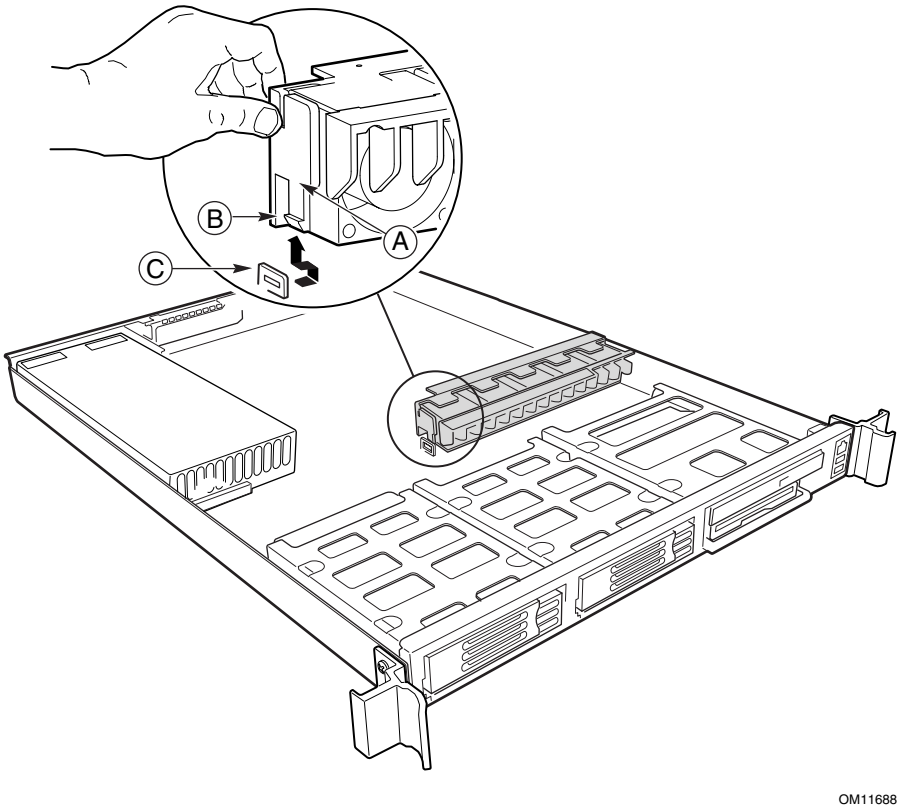


Figure 9. Removing the Fan Module

Removing the Power Supply

Grasp both ends of the power supply and lift it out of the chassis.

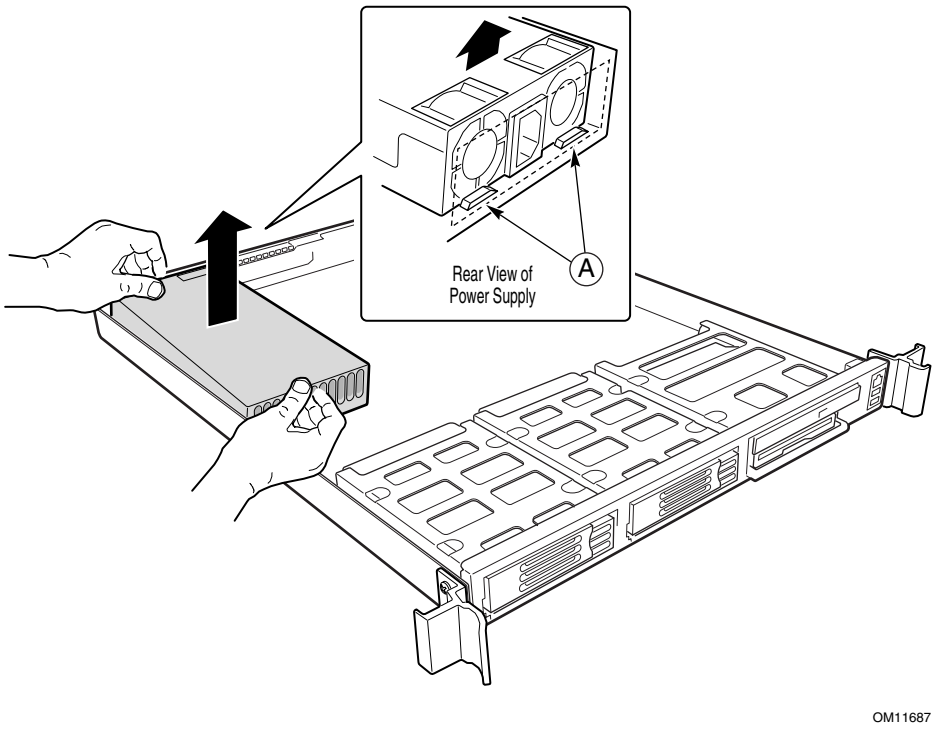


Figure 10. Removing the Power Supply

Removing the Drive Carriers

1. Pull the retention lever (A) toward you until the tab end (B) of the lever is free of the housing slot (C).
2. Pull the drive carrier forward and out of the drive bay.

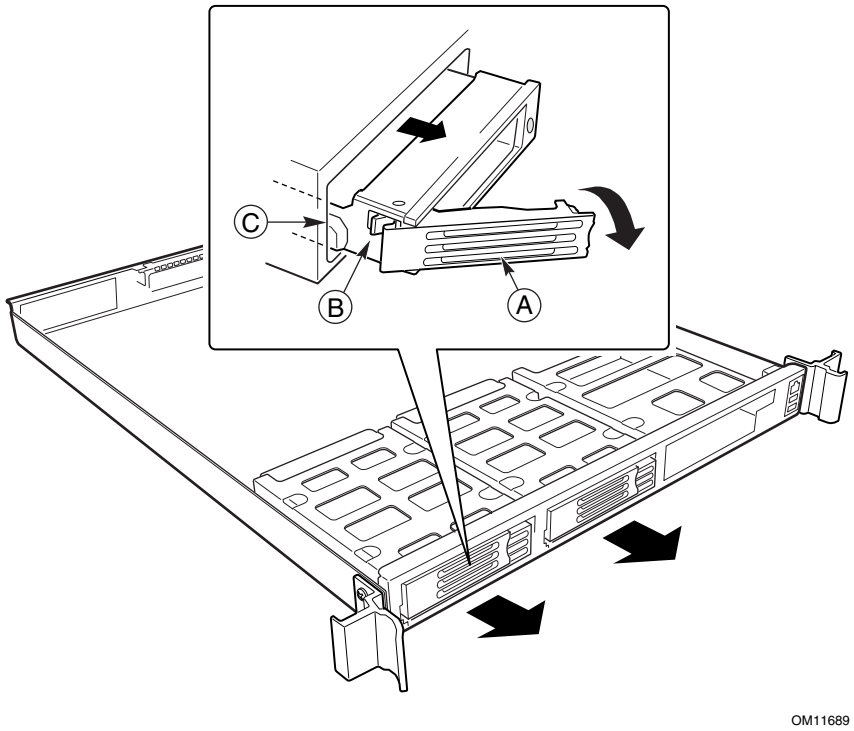


Figure 11. Removing a Drive Carrier from a Drive Bay

Installing System Components

⚠ CAUTION

Do not install any server board support bumpers in the SR1200 chassis.

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

Installing the Server Board

1. If you are installing a SCSI server board, remove the SCSI knockout at the I/O ports at the back of the chassis (see Chassis Back I/O Ports and Features, page 9).
2. Ensure that the Mylar insulator sheet is seated securely over the standoffs, is laying flat on the chassis floor, and that the edge of the sheet is seated below the studs in the rear chassis wall.
3. Remove the server board from its packaging and antistatic bag.
4. While placing the board on the chassis standoffs, carefully position the board I/O connectors in the rear chassis I/O openings.
5. Adjust board position so that the two mounting holes near the board edges rest securely on the corresponding two shouldered standoffs.

✎ NOTE

The SCB2 uses three holes to mount the board to the chassis stand-offs. Each hole is designated with a white circle around them.

6. Attach the board to the chassis using the three thumbscrews shipped in the chassis accessory kit.

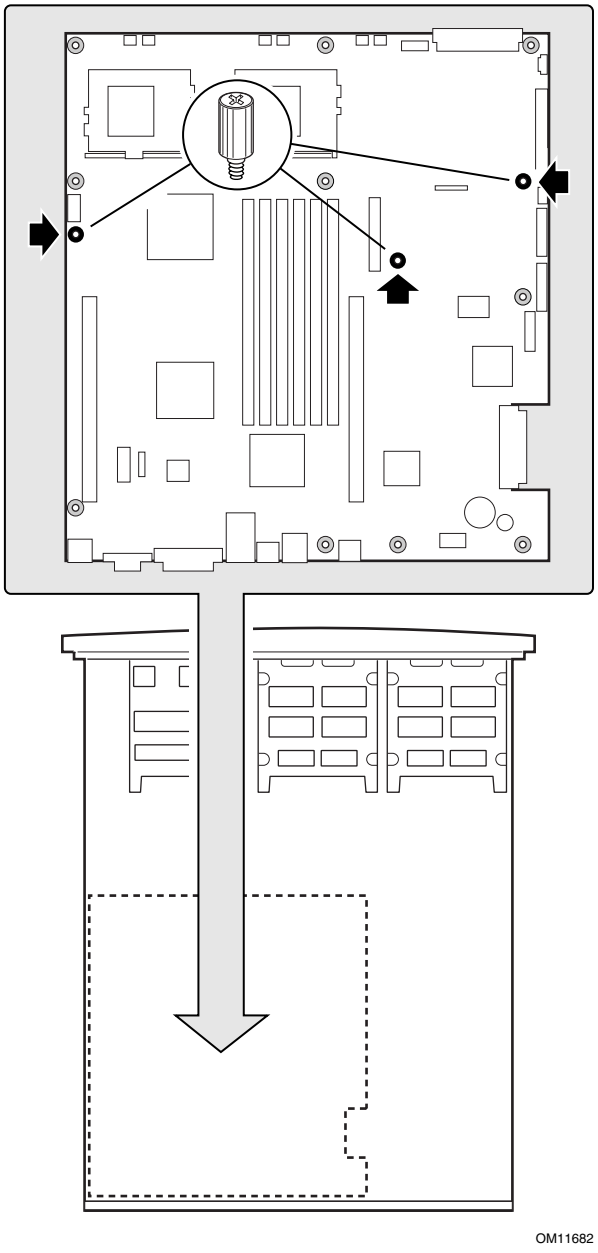


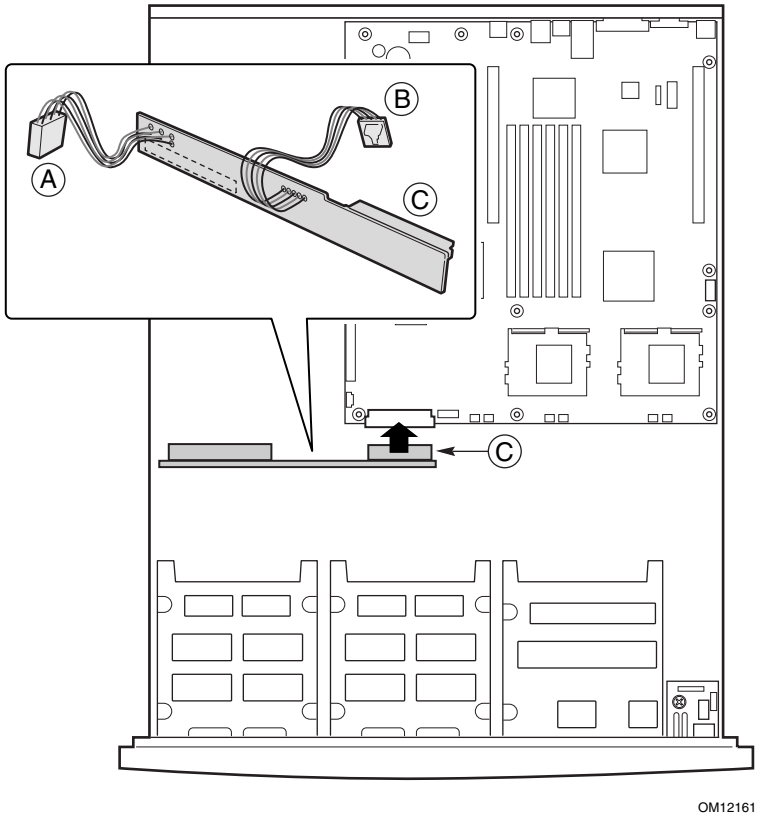
Figure 12. Mounting the Server Board SCB2

Installing the Power Distribution Board

1. Orient the board as shown in Figure 13 so that the white 24-pin power connector (C) is on the right and facing toward the rear of the chassis.
2. Plug connector (C) in the white power connector on the server board and press the two firmly together until they are fully seated.

NOTE

Do not connect cable (A) and (B) at this time.



A. Backplane power connector (6-pin)
B. Auxiliary signal connector (4-pin)
C. White power connector (24-pin)

Figure 13. Installing the Power Distribution Board

Installing the Backplane Board

1. Place the backplane board on the chassis standoffs (A) so that each of the seven mounting holes fit over a standoff.

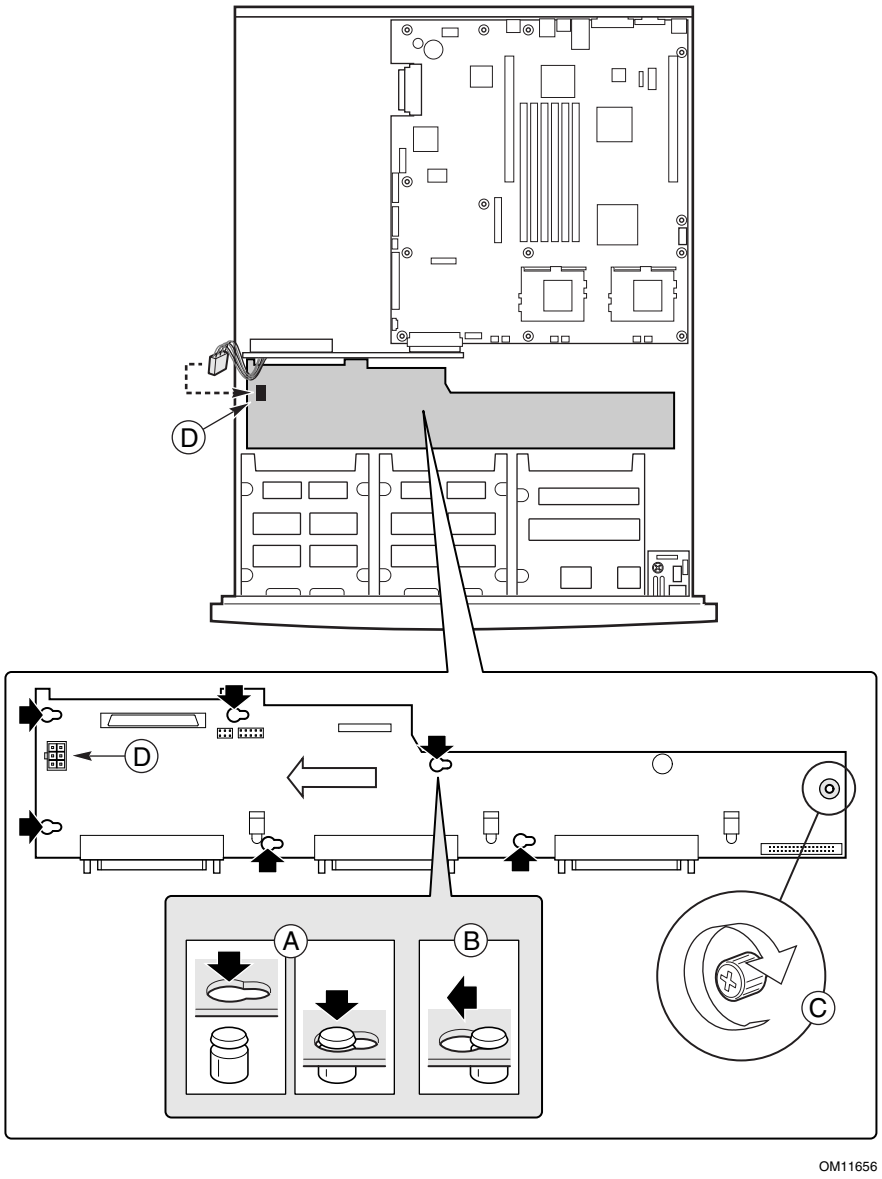


Figure 14. Installing the Backplane Board

2. While gently pushing the board down, slide it to the left (B) until it snaps in place.
3. Install the thumbscrew (C) that secures the board to the chassis.
4. Insert the 6-pin connector from the power distribution board in the backplane power connector (D).
5. If the backplane board is SCSI, set the SCSI cable aside for installation later.

Installing the Power Supply Module

1. Place the edge connector end of the power supply on the chassis floor and slide it towards the front of the chassis (A) until the edge connector is fully inserted in the power distribution board connector.
2. Make sure that the rear of the power supply (B) is fully seated on the chassis floor and in front of the raised guides (C).

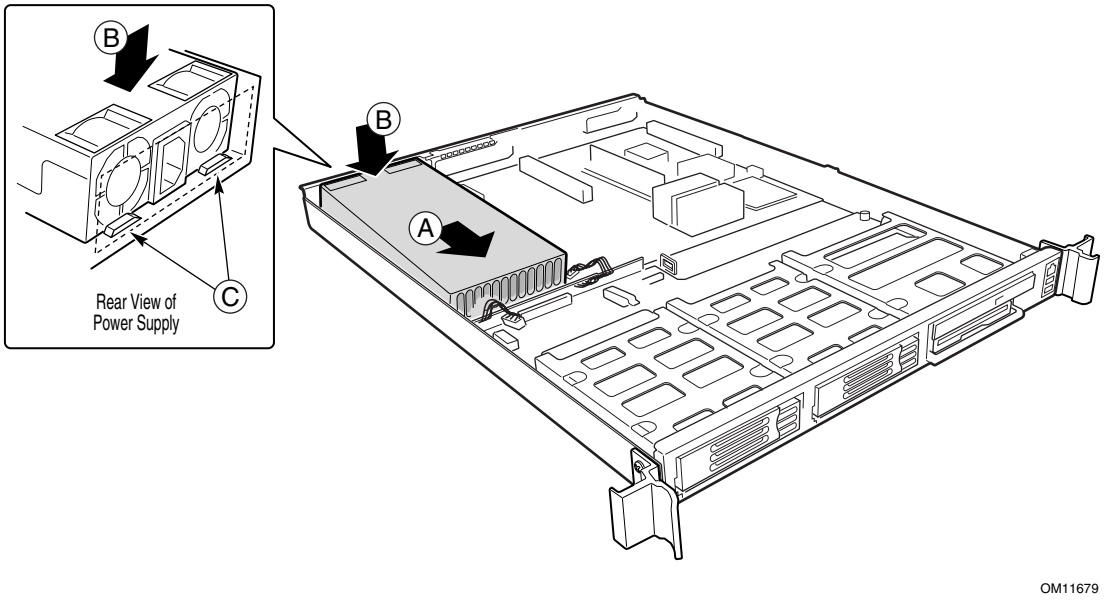


Figure 15. Installing the Power Supply

Cable Routing

SCSI System Cable Routing

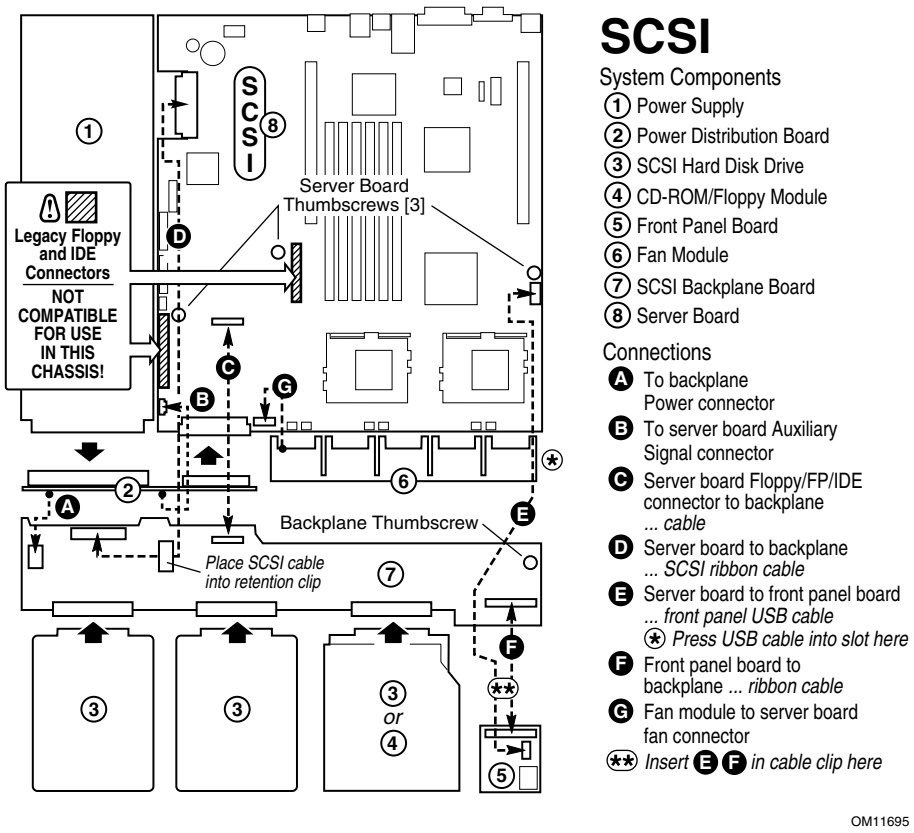
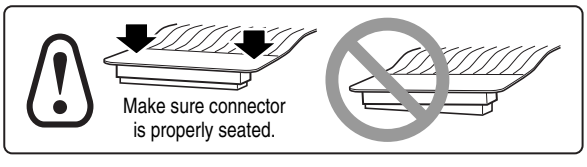


Figure 16. Cable Routing—SCSI System

1. Attach one end of the flex circuit cable (C) to the floppy/front panel/IDE connector on the server board. Route the cable to the backplane board and attach the opposite cable end to the matching connector on the backplane.

⚠ CAUTION

After connection of cable (C) in step 1, ensure that each cable connector is properly seated in the board connector. The connector should be parallel to its board connector and not cocked to one side. If in doubt, remove, reinsert, and recheck.



2. On the SCSI ribbon cable (D), locate the end that is labeled baseboard. Connect that end to the SCSI connector on the server board. Route the cable to the backplane board. Place the cable under the cable clip and attach the cable connector to the connector on the backplane board.
3. Route the auxiliary signal cable (B) from the power distribution board over the SCSI cable and connect it to the 5-pin auxiliary signal connector on the server board.
4. Route the power cable (A) from the power distribution board to the backplane board and insert it in the white 6-pin connector.
5. Connect the fan module cable (G) to the white 7-pin fan module connector on the server board.
6. Connect the front panel cable (F) to the front panel board. Insert the cable in the cable clip (**), route it to the backplane, and attach it to the matching connector.
7. Connect the USB cable (E) to the USB connector on the front panel board. Insert the cable into the cable clip (**) located on the chassis floor.
8. Proceed to "Installing the Fan Module" on page 32 where you will complete the routing and connection of the USB cable.

ATA System Cable Routing

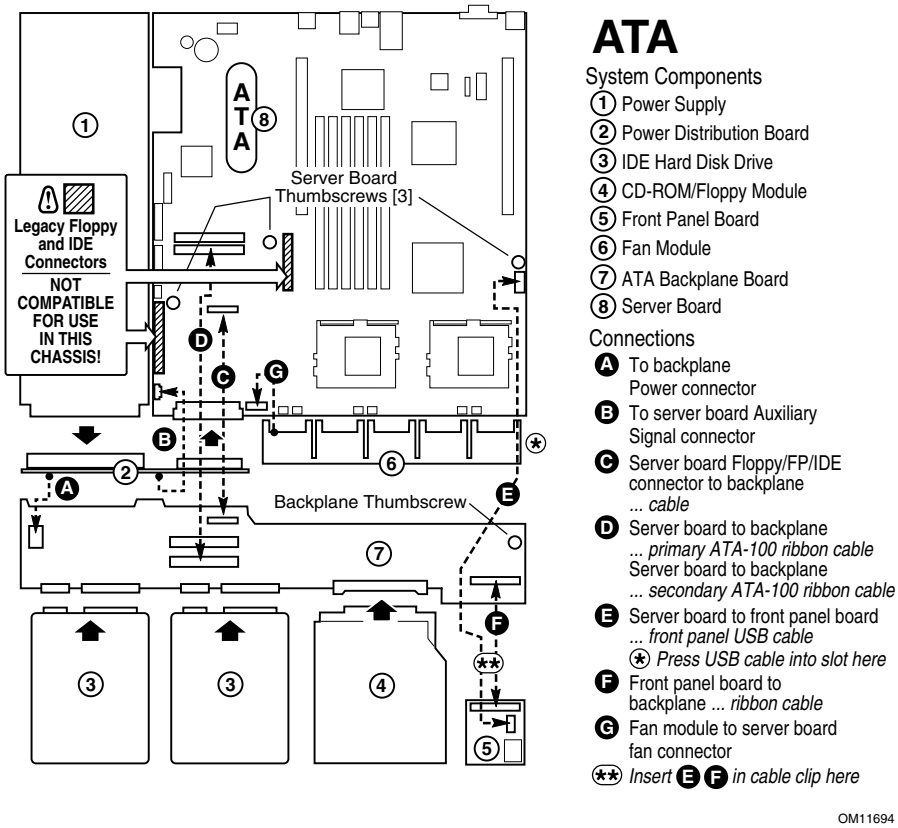
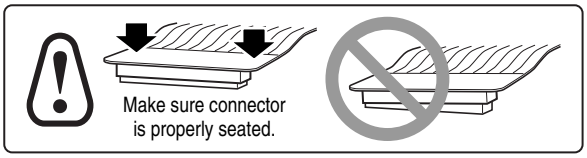


Figure 17. Cable Routing—ATA System

1. Attach one end of the flex circuit cable (C) to the floppy/front panel/IDE connector on the server board. Route the cable to the backplane board and attach the opposite cable end to the matching connector on the backplane.

⚠ CAUTION

After connection of cable (C) in step 1, ensure that each cable connector is properly seated in the board connector. The connector should be parallel to its board connector and not cocked to one side. If in doubt, remove, reinsert, and recheck.



OM11700

2. Connect one end of the shorter ATA-100 ribbon cable (D) to the secondary ATA-100 connector on the server board (the one closer to the front of the chassis). Route the cable to the backplane board and connect the other end of the cable to the secondary ATA-100 connector on the backplane. Connect one end of the longer ATA-100 ribbon cable (D) to the primary ATA-100 connector on the server board. Route the primary ATA cable over the top of the secondary ATA cable to the backplane board and connect the other end to the primary ATA-100 connector on the backplane.
3. Route the auxiliary signal cable (B) from the power distribution board over the top of the ATA-100 cables. Connect it to 5-pin auxiliary signal connector on the server board.
4. Route the power cable (A) from the power distribution board to the backplane board and insert it into the white 6-pin connector.
5. Connect the fan module cable (G) to the white 7-pin fan module connector on the server board.
6. Connect the front panel cable (F) to the front panel board. Insert the cable in the cable clip (**), route it to the backplane, and attach it to the matching connector.
7. Connect the USB cable (E) to the USB connector on the front panel board. Insert the cable into the cable clip (**) located on the chassis floor.
8. Proceed to “Installing the Fan Module” on page 32 where you will complete the routing and connection of the USB cable.

Installing the Fan Module

1. Position the fan module so that the power cable is located closest to the center of the chassis.
2. Insert the USB cable in slot (A) located on the chassis sidewall end of the module.
3. Slide the “L” shaped foot on the chassis sidewall end of the fan module under the chassis tab.
4. Lower the module onto the chassis floor. Ensure that it is situated between the raised guides, not on top of them.
5. Press down on the left end of the module until tab (B) snaps into chassis slot (C).
6. Plug the power cable in the system fan connector (G of Figure 16 or Figure 17) on the server board.
7. Plug the USB cable into to the 10-pin USB connector on the server board (E of Figure 16 or Figure 17).

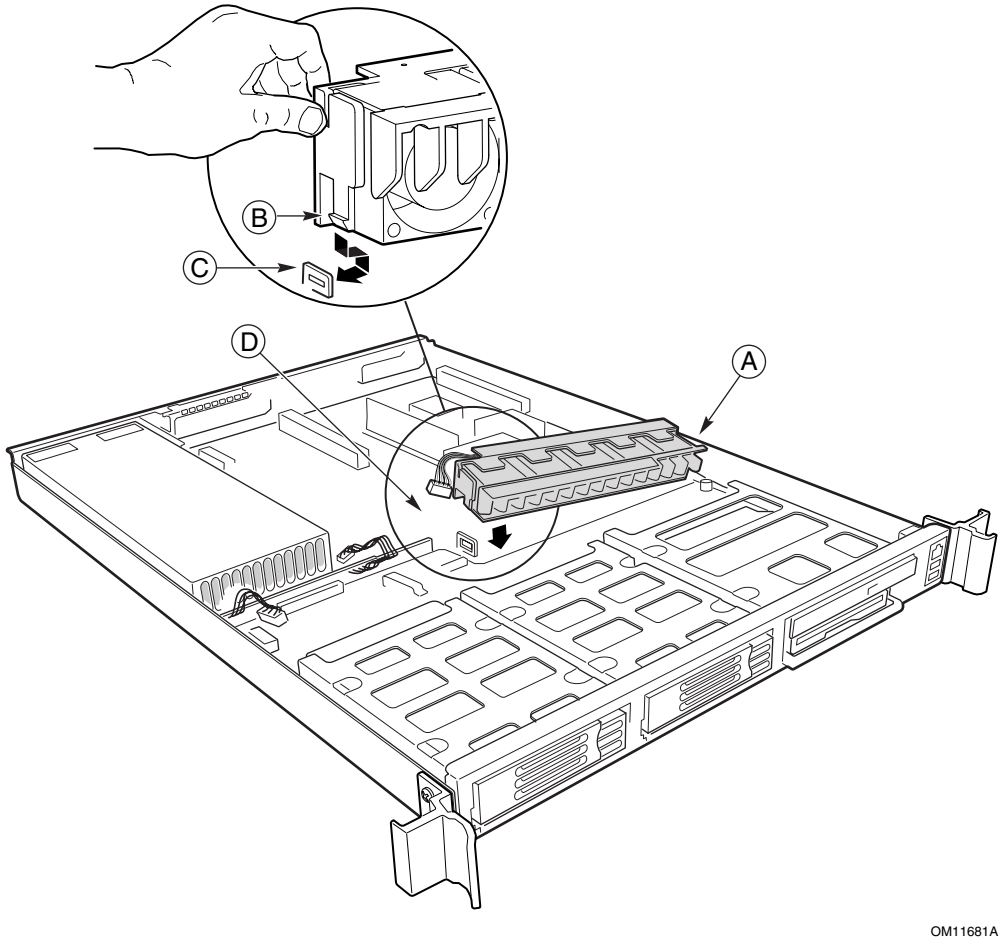


Figure 18. Installing the Fan Module

Installing the Air Baffle

1. Ensure the flex cable, aux power cable, and SCSI or ATA (depending on board type) cables are routed under where you will be installing the air baffle.
2. Aligning pin (A) with the board mounting hole, position the air baffle over the white server board power connector.
3. Lower the baffle into position and press it down against the chassis floor.
4. Ensure tabs (B) and (C) are under the edge of the server board.

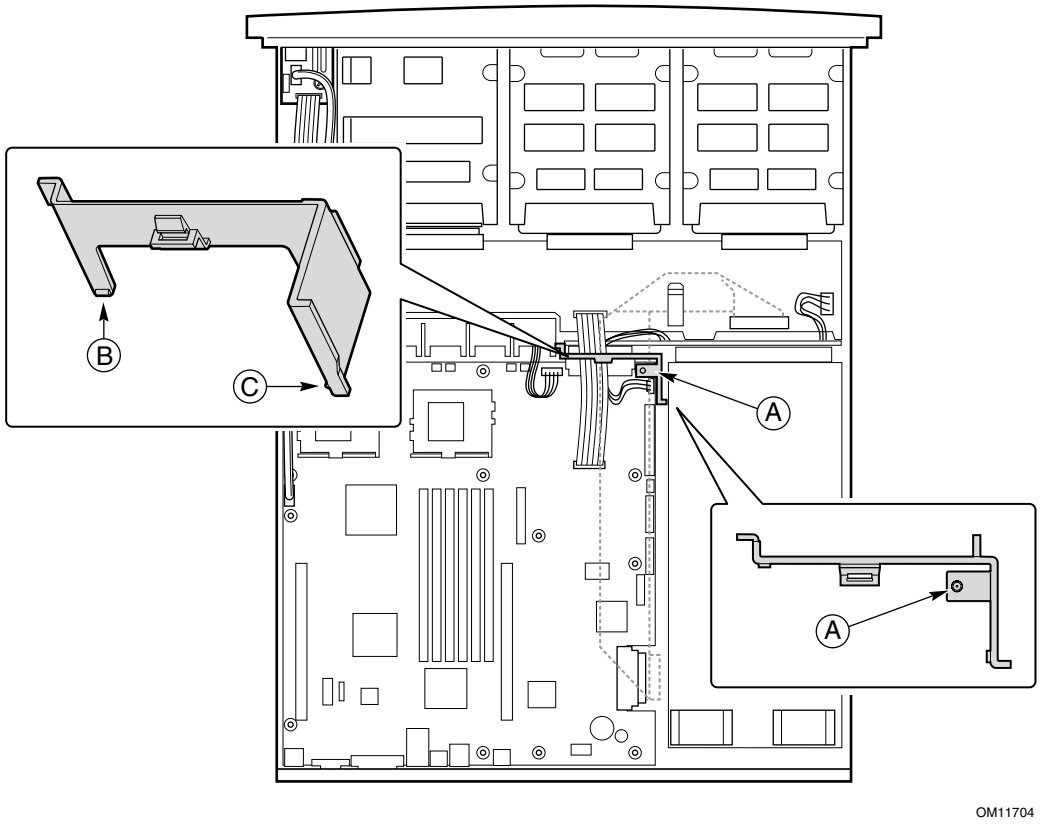


Figure 19. Installing the Air Baffle

Installing the Power Cord and Strain Relief Strap

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.

1. Insert the expansion nipple (A) of the strain relief strap into the chassis hole.
2. Plug the power cord into the power supply but not into the power source.
3. Insert the power cord into the plastic loop (B) of the strain relief.
4. Pull the plastic band (C) until it tightens around the power cord.

To release the plastic loop and free the cord, squeeze the release lever (D).

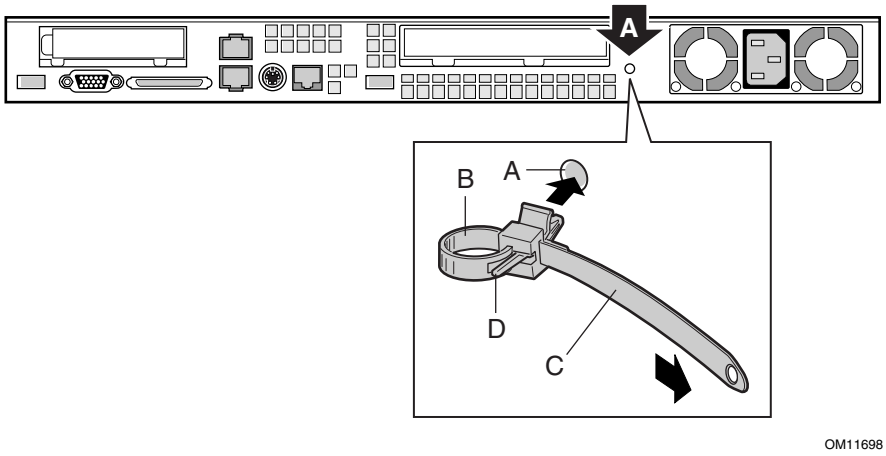


Figure 20. Installing the Power Cord and Strain Relief Strap

Adding Components to the Server Board

After installing the server board, you must add the desired number of processors and memory DIMMs. For instructions, see the Intel Server Board SBC2 Quick Start Guide that shipped with your server board.

NOTE

Once the server board and its components are installed, you are done assembling the system unless you have optional peripherals or add-in cards you wish to install. If you need to install these components, continue on to the next section. Otherwise, install the cover and bezel and continue on to Chapter 4, which describes how to install the system in a cabinet.

Installing Optional Peripherals

Peripherals and add-in cards are not included in your system and must be purchased separately. The following sections describe how to install various peripherals.

Installing a PCI Card on a Riser Card

The riser card nearest the sidewall of the chassis supports a single Low Profile (LP) PCI add-in card. The riser card at the centerline of the chassis supports a single full-length, full-height add-in card or an LP card. If an LP card is installed in the standard full-height riser card, it must be equipped with a standard full-height PCI mounting bracket.

NOTE

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

1. Open the retainer clip (A) and remove the filler panel from the rear retention bracket (B) of the riser card.
2. Insert the PCI card edge connector in the riser PCI slot (D) while aligning the end of the PCI card bracket in opening (C).
3. Firmly push the PCI card connector into the riser card slot until it is fully seated.
4. Close the retainer clip (A). Ensure the clip is latched.

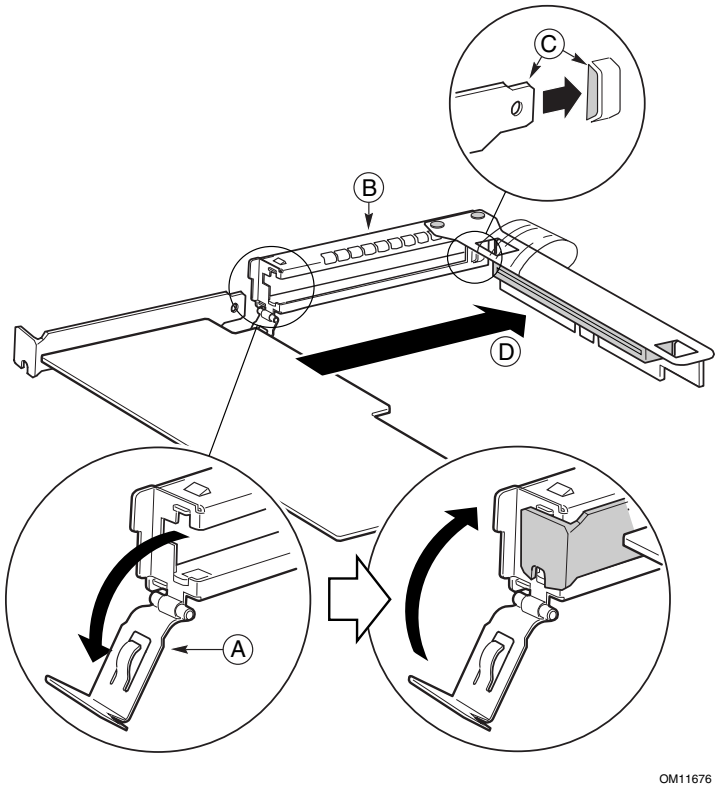


Figure 21. Installing a PCI Card in a Riser Card

Installing a Riser Card on the Server Board

1. Insert the riser card connector into 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. Tipping it in the slot while installing it may damage the riser card or slot.

2. Firmly press the riser card straight down until it is fully seated in the server board slot.

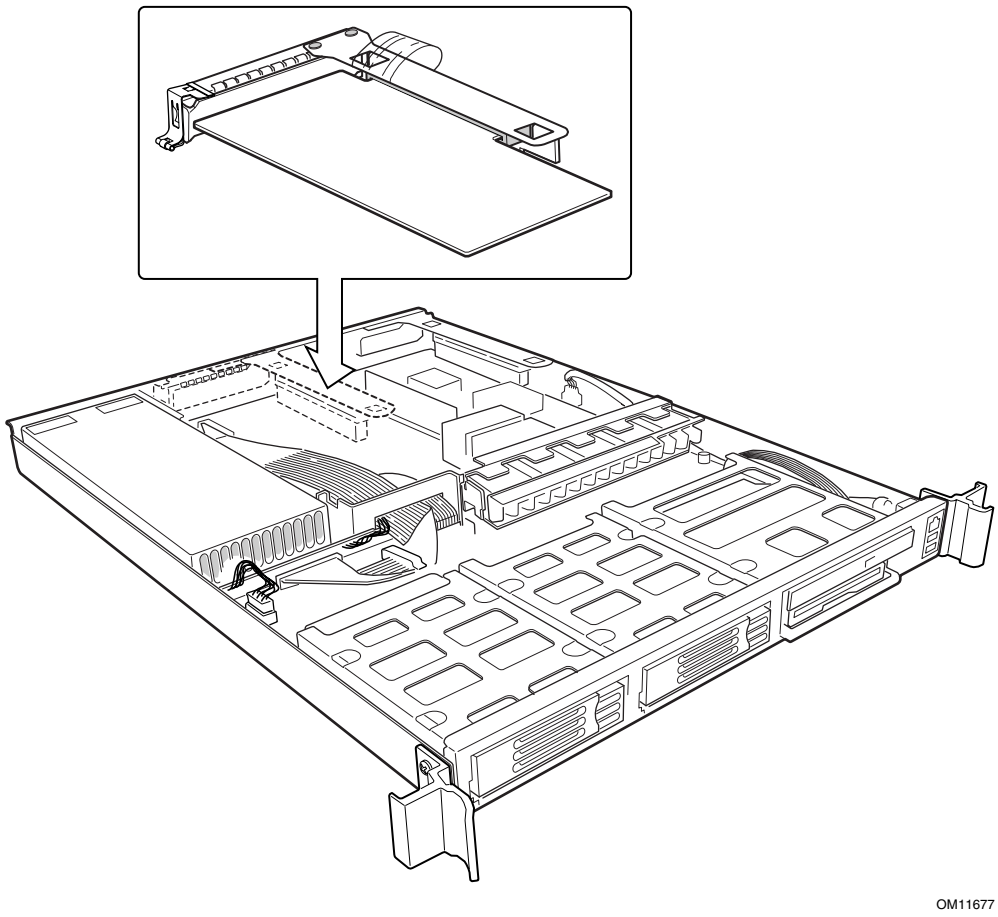


Figure 22. Installing a Riser Card on the Server Board

Installing a Hard Drive

A SCSI system can support two hot swappable hard drives in the drive bays, plus one in the flex bay. An ATA system can support two non-hot swappable hard drives in the drive bays.

⚠ CAUTION

Not all ATA hard drives are supported by the Intel SR1200 server. Unsupported drives will mechanically not mate with the connector in the drive bay. To see a list of validated manufacturers and hard drive types, go to:

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

⚠ CAUTION

To allow proper airflow and server cooling, all drive bays must contain either a carrier with a hard drive installed or a carrier with an air baffle installed.

1. If the drive carrier is installed in the drive bay, remove it.
2. Remove the air baffle (Figure 23, A) from the drive carrier by removing the four screws (B) from the slide track (C).
3. Store the air baffle for future reinstallation in the event you must operate your server without a drive in one of the bays.

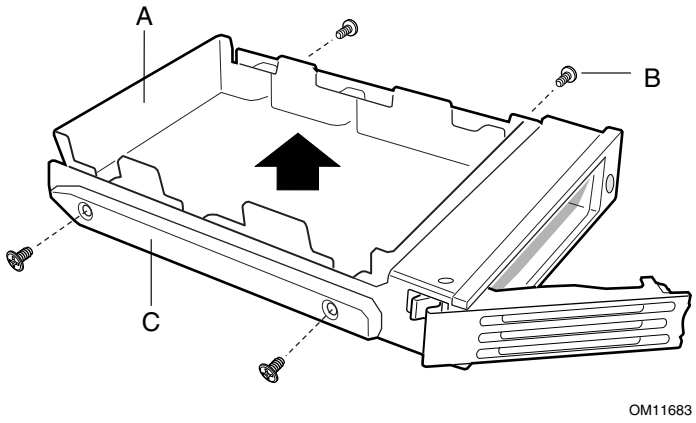


Figure 23. Removing an Air Baffle from a Drive Carrier

4. Remove the hard drive from its wrapper and place it on an anti-static surface.
5. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
5. With the drive circuit-side-down (Figure 24, A), position the connector end (E) so that it is facing the back of the carrier (B).
6. Align the holes in the drive to the holes in the drive carrier slide track (C), insert the screws (D) that you previously removed, and attach the carrier to the drive.

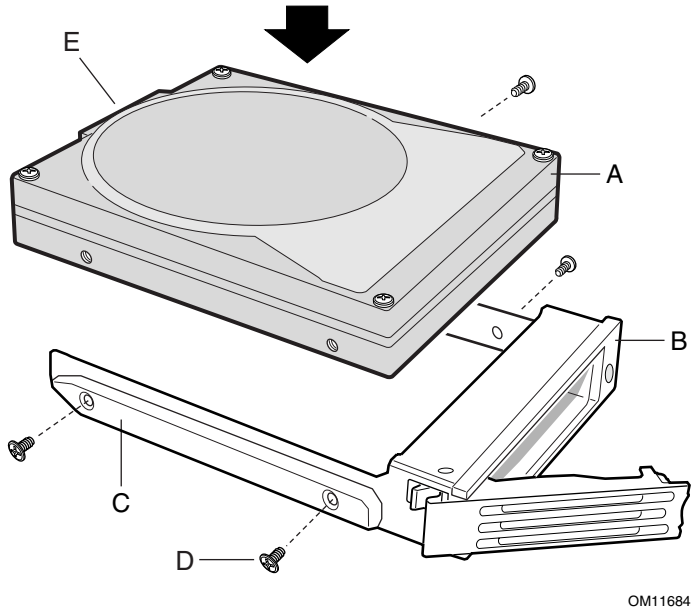


Figure 24. Attaching a Drive to a Carrier

7. Slide the carrier/drive all the way into the drive bay with the retention lever in the fully open position.
8. Push the retention lever closed to secure the carrier/drive in the bay.
9. Reinstall a carrier/air baffle in any bays where you are not installing a carrier/drive.

Installing a CD-ROM Drive/FDD Module

Your server does not come with a CD-ROM drive or floppy disk drive. As an accessory, Intel offers a slim-line CD-ROM drive/FDD module that you may purchase and install in the flex bay.

1. Remove the filler panel and plug from the front of the chassis.
2. Slide the module into the flex bay until you feel the connectors touch.
3. Push the module in about 3/16 of an inch (5mm) more to fully engage the connectors.
4. Push the handle bar down (A).
5. If you have finished your work in the peripheral bays, install the bezel.

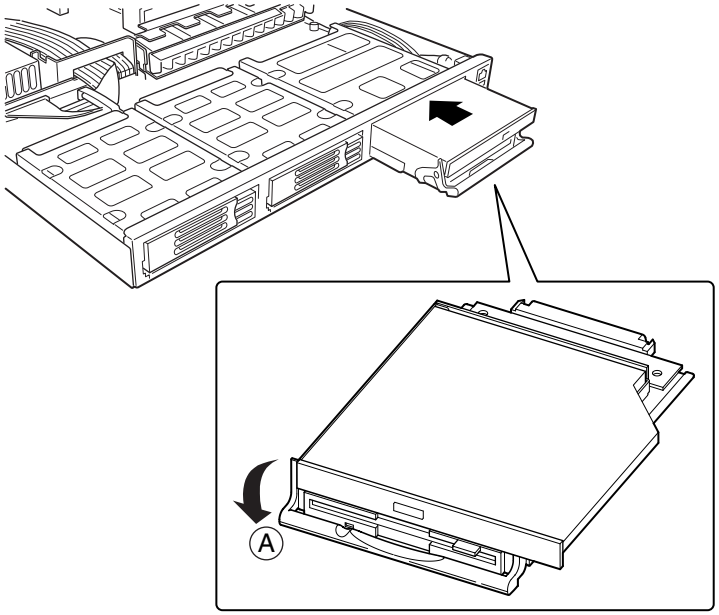


Figure 25. Installing a CD-ROM Drive/FDD Module

Installing a Bezel

Place the bezel between the chassis handles and push it toward the front of the chassis until it snaps into place.

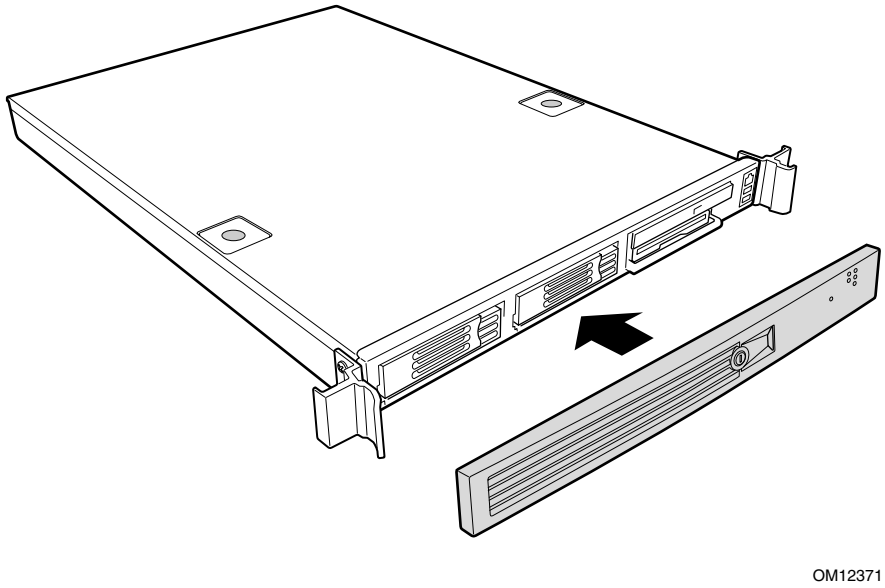


Figure 26. Installing the Bezel

3 Installing the System in a Rack

Installation instructions for the standard bracket kit and the optional rail kit are included with each kit. If you need additional copies, the order numbers are:

- SR1200 and SR2200 Rail Kit Installation Guide—A61347-002
- SR1200 and SR2200 Bracket Kit Installation Guide—A61346-002

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.

OVER CURRENT PROTECTION: The server is designed for an AC line voltage source with up to 20 amperes of over current 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.

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's per hour for a fully loaded SR1200 server.

It is important to note that this is the maximum, and a minimum or typical system could be much less. You may want to calculate the BTU/hr 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)

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

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.

Lithium Battery Replacement

⚠ CAUTION

Refer to technically qualified persons only for replacement of 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.

Air Baffle

The air baffle must be removed before you can replace any of the following components: fan module, power distribution board, backplane board, and server board.

Removal

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the chassis cover.
3. Gently spread the air baffle walls at (B) and (C) and lift up until pin (A) is free of the board mounting hole. Remove the baffle from of the chassis.

Installation

1. Ensure the flex cable, aux power cable, and SCSI or ATA (depending on board type) cables are routed under where you will be installing the air baffle.
2. Aligning pin (A) with the board mounting hole, position the air baffle over the white server board power connector.
3. Lower the baffle into position and press it down against the chassis floor.
4. Ensure tabs (B) and (C) are under the edge of the server board.

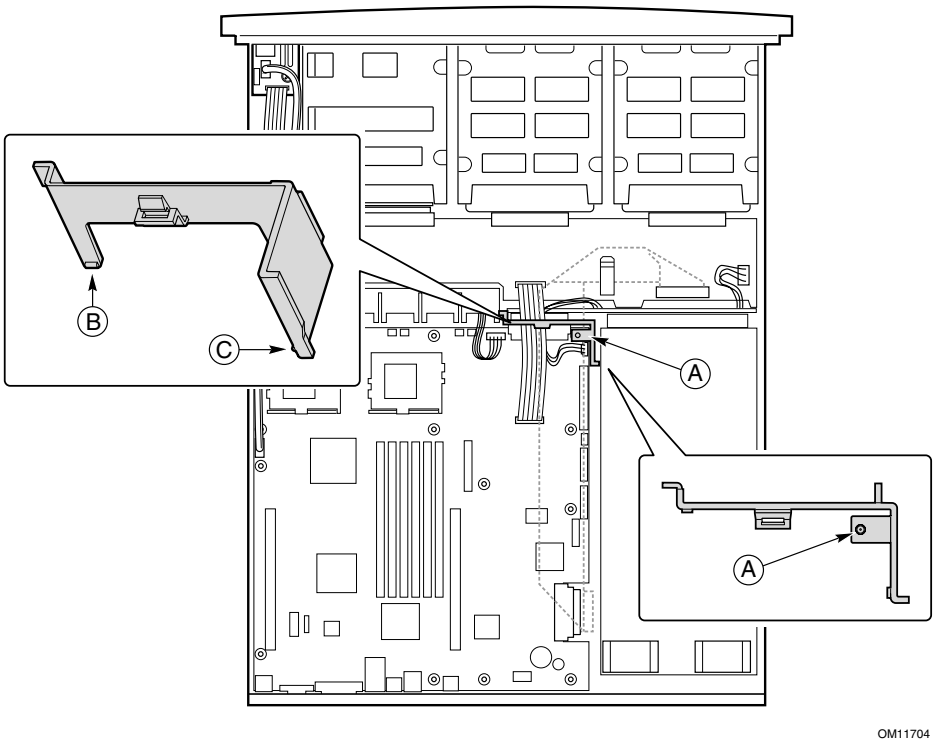


Figure 27. Removing the Air Baffle

Replacing a Hard Drive

CAUTION

Not all ATA hard drives are supported by the Intel SR1200 server. Unsupported drives will not mate mechanically with the connector on the inside of the drive bay. To see a list of validated manufacturers and hard drive types, go to:

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

CAUTION

ATA hard drives are NOT hot swappable. SCSI hard drives are hot swappable. The two types are not interchangeable. In a SCSI system, the hard drive in the flex bay can be hot swapped. The badge on your server's bezel identifies the type of system you have.

CAUTION

To allow proper airflow and cooling during operation, all drive bays must contain either a carrier/drive or a carrier with air baffle installed.

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the bezel from the front of the chassis.
3. Pull the retention lever (A) toward you until the tab end (B) of the lever is free of the housing slot (C).
4. Pull the carrier/drive forward and out of the drive bay.

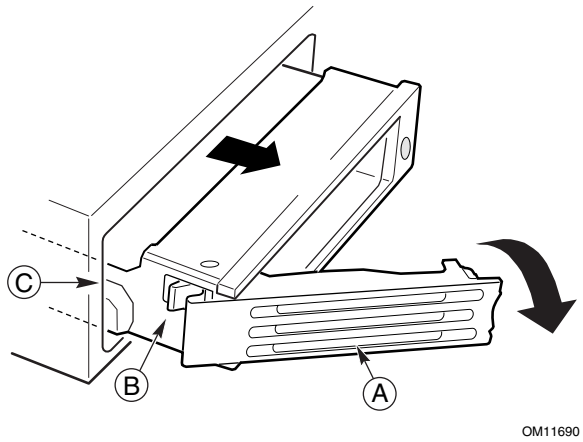


Figure 28. Removing a Carrier and Hard Drive from a Drive Bay

5. Remove the hard drive from the carrier (A) by removing the four screws (D) from the slide track (C). Lift the drive out of the carrier (B).
6. Remove the new hard drive from its wrapper and place it on an anti-static surface.
7. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.

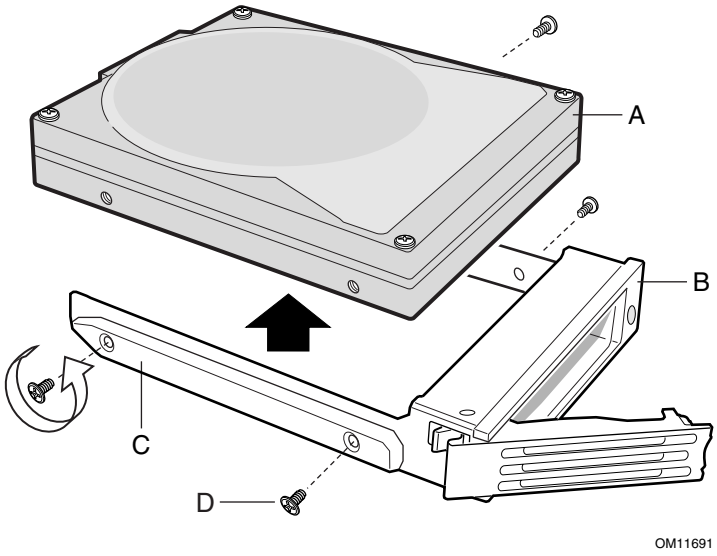


Figure 29. Removing a Hard Drive from a Carrier

8. Install the new drive in the carrier and the carrier/drive into the drive bay (see steps 5 through 8 of "Installing a Hard Drive" on page 37).
9. Reinstall a carrier/air baffle in any bays where you are not reinstalling a carrier/drive.

Replacing a CD-ROM Drive/FDD Module

CAUTION

A CD-ROM drive/FDD module 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.

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the bezel from the front of the chassis.
3. Rotate the module's handle bar up (A) and pull the module out of the flex bay.
4. Slide a new module into the flex bay until you feel the connectors touch.
5. Push the module in about 3/16 of an inch (5mm) more to fully engage the connectors.
6. Rotate the handle bar down.
7. Reinstall the bezel.

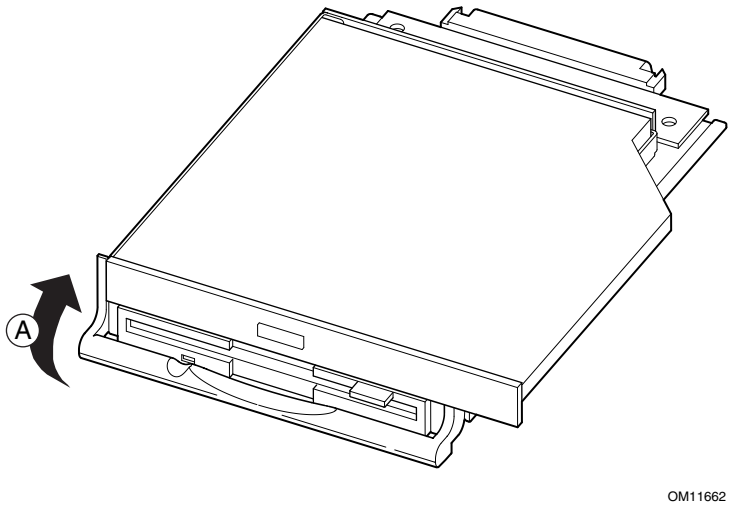


Figure 30. Removing a CD-ROM Drive/FDD Module

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 43.
2. Remove the chassis cover.
3. Insert your finger in the plastic loop (A).
4. Pull straight up and remove the riser card assembly from the chassis.
5. Open the retainer clip (B) on the riser card retention bracket.

6. Pull the PCI card out of the riser card slot (C).
7. Install the new PCI add-in card on the riser.
8. 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. Tipping it in the slot while installing it may damage the riser card or board slot.

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

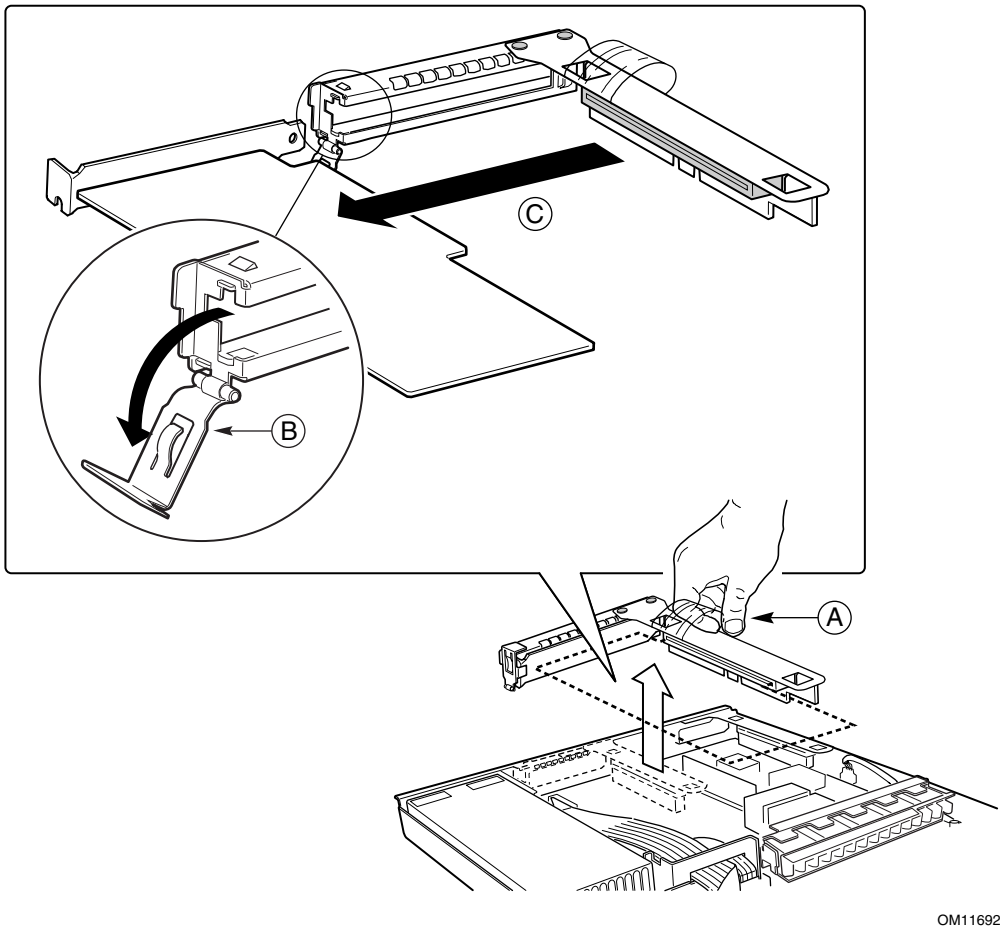


Figure 31. Removing a Riser Card

Replacing the Power Supply Module

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 43.
2. Unplug the power cord from the power source and the power supply module.
3. Remove the chassis cover.

CAUTION

Lift the rear of the module up only enough to clear the raised guides. Lifting higher may damage the edge connector and power distribution board.

4. Lift the rear of the module up (A) only enough to clear the raised guides (C) on the chassis floor.
5. Push the module to the rear of the chassis (B) until it disengages from the power distribution board.
6. Lift the module out of the chassis.
7. Place the edge connector end of the replacement module onto the chassis floor and slide it toward the front of the chassis until the edge connector is fully inserted in the power distribution board connector.
8. Make sure that the rear of the power supply is fully seated on the chassis floor and in front of the raised guides (C).
9. Replace the chassis cover.

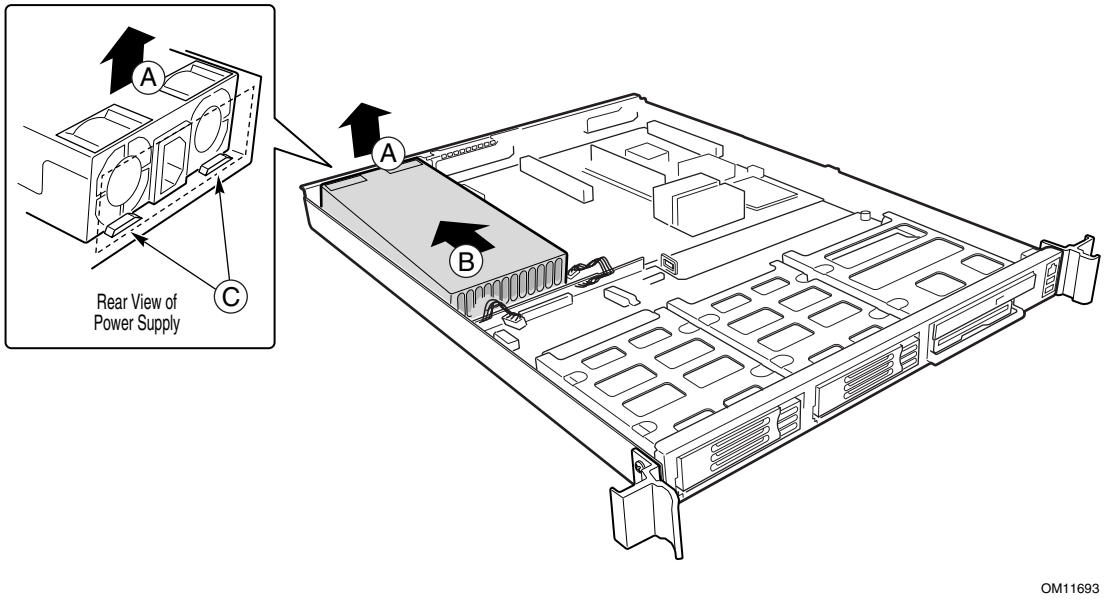


Figure 32. Removing the Power Supply Module

Replacing the Fan Module

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the cover from the chassis.
3. Remove the air baffle.
4. Unplug the fan cable from the server board (D).
5. At the left end of the module, press on tab (B) to release it from chassis slot (C).
6. Lift the module from the chassis. When the right end is free, detach the USB cable.
7. Attach the USB cable to the replacement module.
8. Slide the "L" shaped foot on the right end of the module under the chassis tab near the chassis sidewall.
9. Lower the module to the chassis floor. Ensure it is situated between the raised guides, not on top of them.
10. Press down on the left end of the module until tab (B) fits into chassis slot (C).
11. Plug the power cable into the system fan connector on the server board.
12. Install the air baffle.
13. Replace the chassis cover.

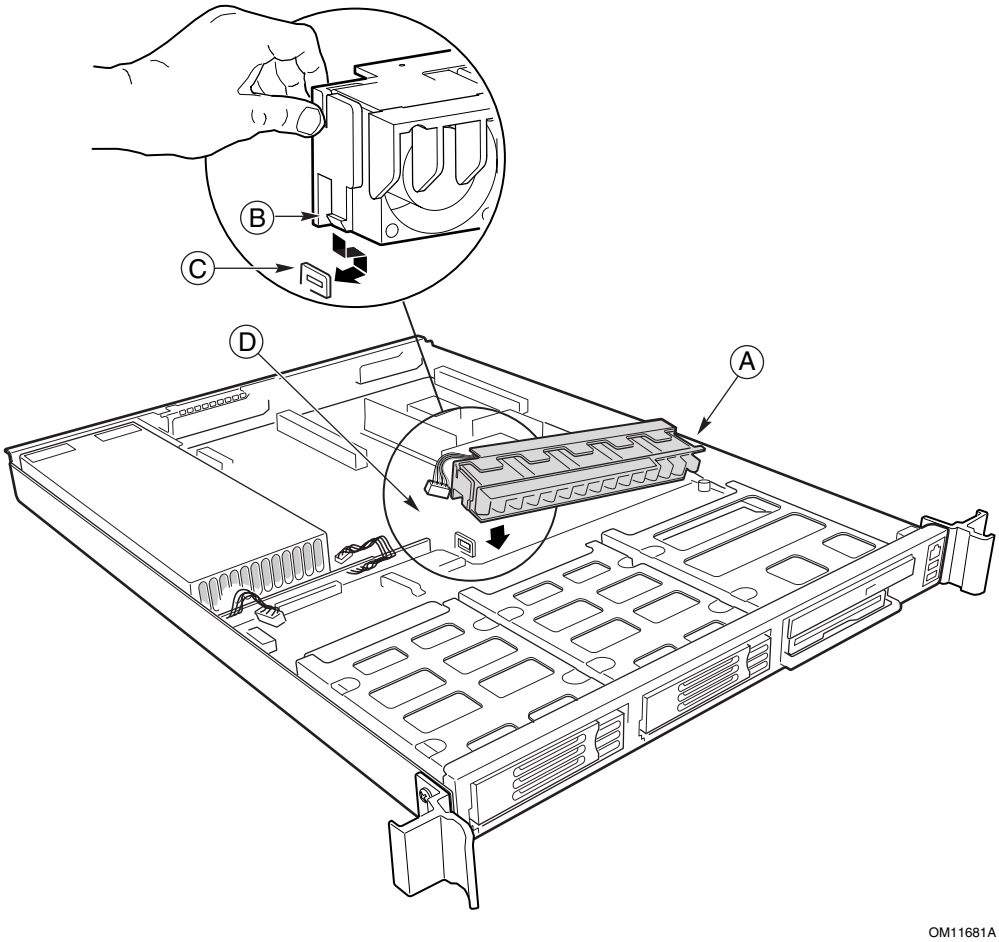


Figure 33. Replacing the Fan Module

Replacing a Backplane Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the cover from the chassis.
3. Remove all drives from the drive bays and flex bay.
4. Remove the air baffle.
5. Unplug all cables connected to the backplane board.
6. Remove and save the thumbscrew (A) that secures the board to the chassis.
7. Slide the board to the right (B) until it disengages from the standoffs (C) and lift it out of the chassis.
8. Place the new backplane board on the chassis standoffs so that each mounting hole fits over a standoff.

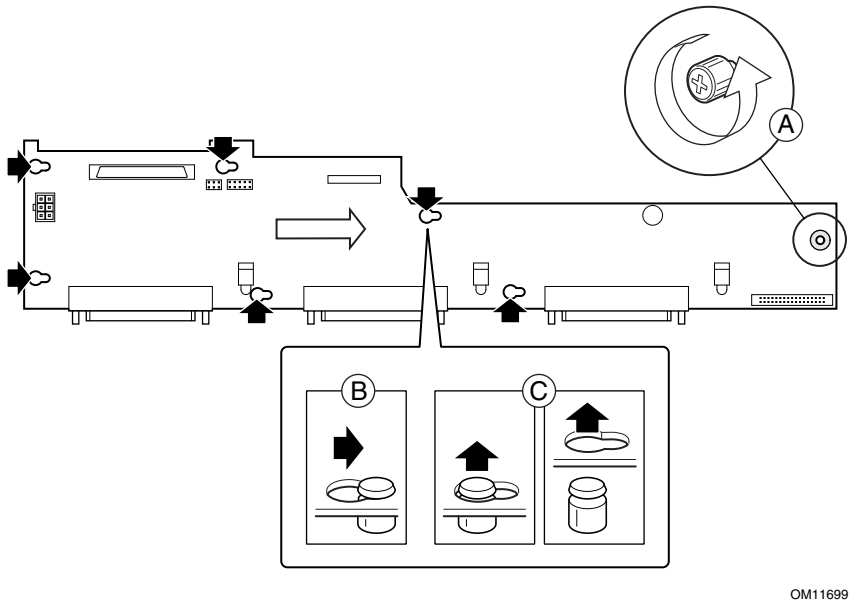


Figure 34. Replacing the Backplane Board

9. While gently pushing the board down, slide the board to the left until it snaps into place.
10. Install the thumbscrew that secures the board to the chassis.
11. Plug in all cables removed from the backplane board.
12. Install the air baffle.
13. Install all drives removed earlier.
14. Replace the chassis cover.

Replacing a Power Distribution Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove all drives from the drive bays and flex bay.
3. Remove the cover from the chassis.
4. Remove the power supply module.
5. Remove the air baffle.
6. Unplug auxiliary signal connector (B) from the server board.
7. Remove the SCSI cable on a SCSI system or the two ATA-100 cables on an ATA system.
8. Unplug power connector (A) from the backplane board and remove the backplane board.
9. Unplug the power distribution board (C) from the server board and remove it from the chassis.

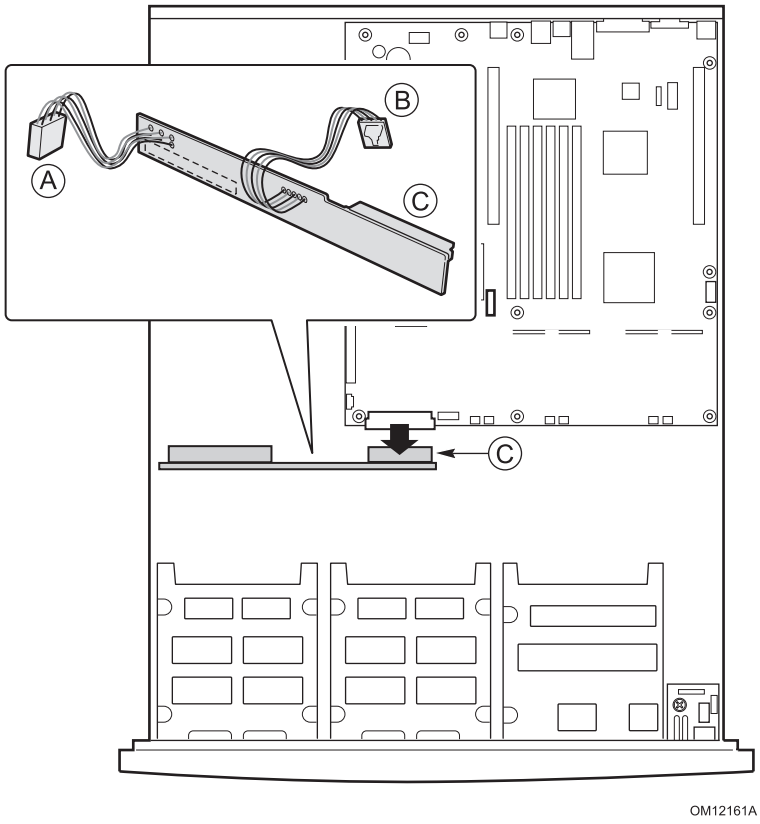


Figure 35. Replacing the Power Distribution Board

10. Install the replacement board by plugging its white 24-pin power connector into the server board power connector. Press the two firmly together until they are fully seated.
11. Install the backplane board and plug in cabling.
12. Route and connect all other cabling removed earlier.
13. Install the air baffle.
14. Install the power supply module.
15. Replace the chassis cover.
16. Install any drives removed earlier.

Replacing a Front Panel Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the cover from the chassis.
3. Unplug the USB and backplane cables from the front panel board (A).

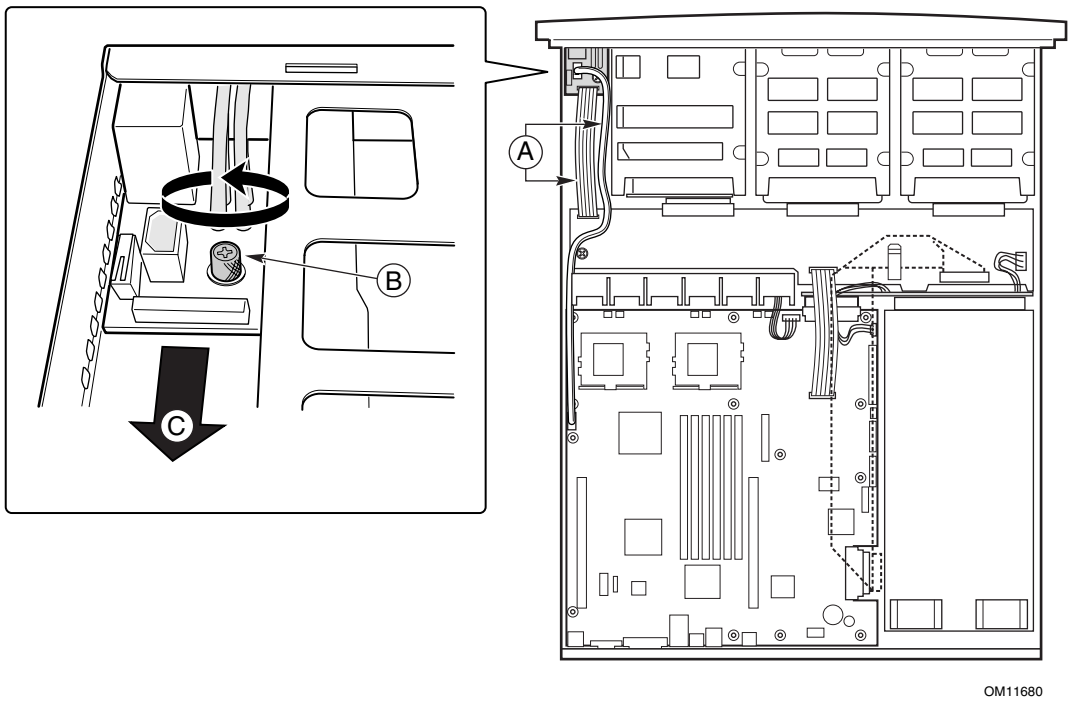


Figure 36. Replacing the Front Panel Board

4. Remove the thumbscrew (B) from the board.
5. Remove the front panel board from the chassis (C).
6. Install the new board in the chassis being careful to insert the LED light pipes into the front panel holes.
7. Secure the board to the chassis with the thumbscrew.
8. Plug the USB and backplane cables back into the front panel board.
9. Replace the chassis cover.

Replacing a Server Board

1. Before removing the cover to work inside the system, observe the safety guidelines on page 43.
2. Remove the cover from the chassis.
3. Remove both riser card/PCI card assemblies.
4. Remove the power supply module.
5. Remove the air baffle.
6. Disconnect the USB cable from the server board.
7. At the backplane board, disconnect the ribbon cable that comes from the front panel board.
8. Remove the fan module.
9. Disconnect both ends of all remaining cables.
10. Remove the backplane board.
11. Remove the power distribution board.
12. Remove any processors, terminators, and memory cards that you wish to use with the new board. (See the *Intel® Server Board SCB2 Quick Start Guide* shipped with your server board.)
13. Remove the three mounting screws that secure the server board to the chassis (see Figure 37).

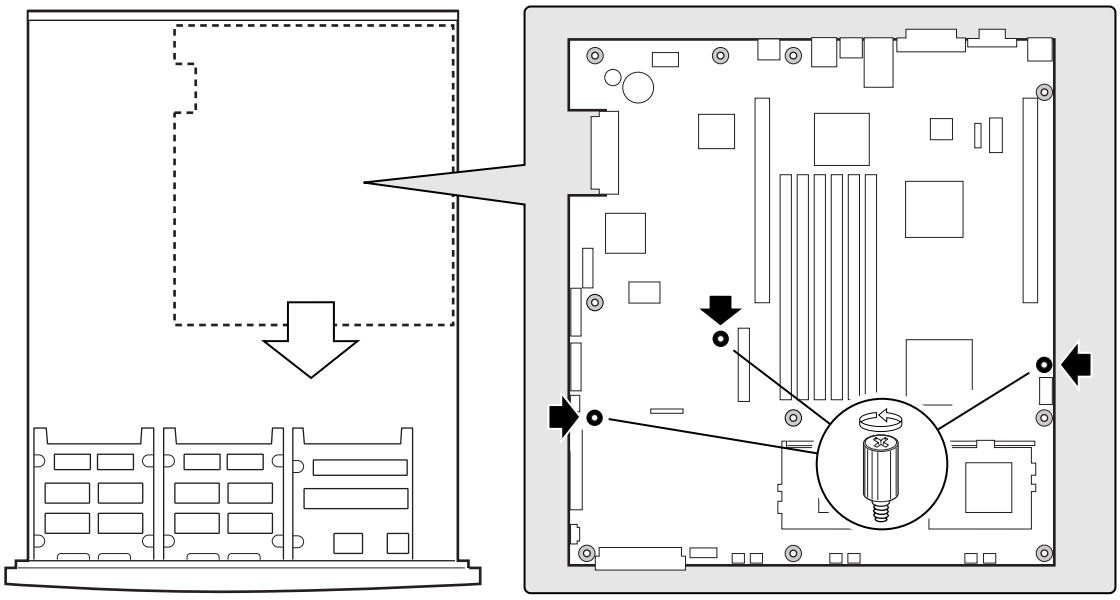


Figure 37. Removing the Server Board

14. Slide the board toward the front of the chassis until the I/O connectors are clear of the chassis I/O openings. Place the server board in an anti-static bag.
15. If you are installing a SCSI server board, remove the SCSI knockout at the I/O ports at the back of the chassis.
16. Ensure that the Mylar insulator sheet is seated securely over the standoffs, is laying flat on the chassis floor, and that the edge of the sheet is seated below the studs in the rear chassis wall.
17. Remove the replacement server board from its packaging and antistatic bag.

18. While placing the board on the chassis standoffs, carefully position the board I/O connectors in the rear chassis I/O openings.

NOTE

The SCB2 uses three holes to mount the board to the chassis stand-offs. Each hole is designated with a white circle around them.

19. Adjust board position so that the two mounting holes near the board edges rest securely on the two-shouldered standoffs.
20. Install the power distribution board.
21. Install the backplane board.
22. Install the fan module.
23. Cable the new server board to the other system components.
24. Install the air baffle.
25. Install the power supply module.
26. Install the processor(s), terminator, and memory cards that you wish to use with the new board (see the *Intel® Server Board SCB2 Quick Start Guide* shipped with your server board).
27. Install both riser card/PCI card assemblies.
28. Replace the chassis cover if you have no additional work to do inside the chassis.

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 SR1200 chassis 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

This product is provided with the following Product Regulation Markings:

- cULus Mark (USA/Canada)
- CE Mark (CENELEC Europe)
- GS Mark (Germany)
- GOST Mark (Russia)
- FCC, Class A Markings (USA)
- ICES-003, Class Markings (Canada)
- VCCI, Class A Mark (Japan)
- C-Tick Mark (Australia)
- BSMI Certification number & EMC Warning (Taiwan)

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

Product Type: SR1200

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.

檢磁 3902I911
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。

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 Intel's Server Builder Web-site at: *http://channel.intel.com/go/serverbuilder*
If you do not have access to Intel's web address please contact your local Intel representative.

- **SR1200 chassis** (base chassis is provided with power supply and fans)—UL listed.
- **Server board**—you must use an Intel Server Board – UL Recognized.
- **Add-in boards**—must have a printed wiring board flammability rating of minimum UL94V-1. Add-in boards containing external power connectors and/or lithium batteries must be UL Recognized or UL Listed. Any add-in board containing modem telecommunication circuitry must be UL Listed. In addition the modem must have the appropriate telecommunications, safety and EMC approvals for the region in which it is sold.
- **Peripheral storage devices**—must be UL Recognized or UL listed accessory and TUV or VDE licensed. Maximum power rating of any one device is 19W. Total server configuration is not to exceed maximum loading conditions of power supply.
  - — When using a UL Recognized Peripheral Storage Device, the plastic bezel must be made of a UL recognized plastic with flammability rating of UL94V-1.

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 SSU.

Item	Manufacturer Name and Model Number	Serial Number	Date Installed
Chassis			
Server Board			
Processor Speed and Cache			
Video Display			
Video Controller			
Keyboard			
Mouse			
3.5” Drive			
CD-ROM Drive			
Hard Disk Drive 1			
Hard Disk Drive 2			
Hard Disk Drive 3			

continued

Equipment Log (continued)

Item	Manufacturer Name and Model Number	Serial Number	Date Installed

Current Usage

Calculating Power Usage

The total combined power consumption for your configuration **must be less than 250 watts**, with any combination of loads not to exceed 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

	Current (maximum) at voltage level:				
Device	**+5Vsb**	**+3.3 V**	**+5 V**	**+12 V**	**–12 V**
Boards, processors, and memory (get totals from your board manual)					
SCSI backplane and front panel			0.40		
3.5-inch drive			0.30		
CD-ROM drive			0.60		
1st hot swap hard drive					
2nd hot swap hard drive					
3rd hot swap hard drive					
Cooling fan 5 x, 40 mm				1.75	
Total Current					
Maximum Ratings (for comparison)	2.0 A	16.0 A	12.0 A	18.0 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 250 watts for all DC outputs.

C Safety Warnings

WARNING: English (US)

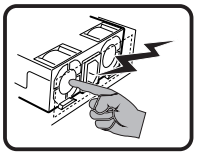
AVERTISSEMENT: Français

WARNUNG: Deutsch

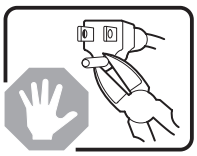
AVVERTENZA: Italiano

ADVERTENCIAS: Español

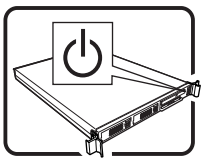
WARNING: English (US)



The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel.



Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.

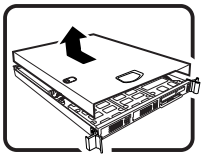


The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply.

The power cord(s) is considered the disconnect device to the mains (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.

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.

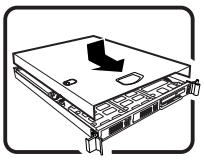


After you have completed the six SAFETY steps above, you can remove the system covers. To do this:

1. Unlock and remove the padlock from the back of the system if a padlock has been installed.
2. Remove and save all screws from the covers.
3. Remove the covers.

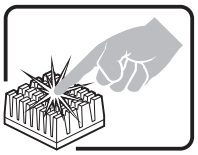
continued

WARNING: English (continued)

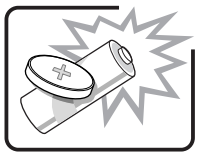


For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:

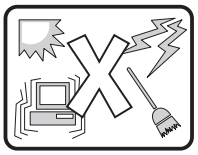
1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.
4. Insert and lock the padlock to the system to prevent unauthorized access inside the system.
5. Connect all external cables and the AC power cord(s) to the system.



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.



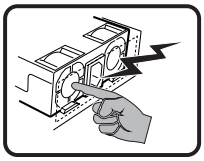
Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.



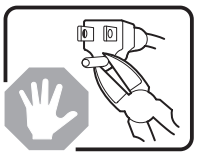
The system is designed to operate in a typical office environment. Choose a site that is:

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

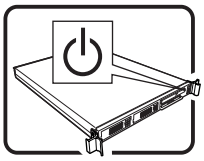
AVERTISSEMENT: Français



Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.



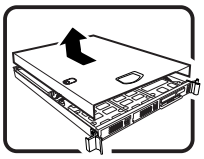
Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit.



Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.

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.

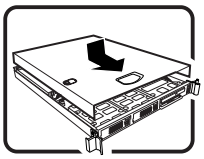


Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit:

1. Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le.
2. Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr.
3. Retirez les panneaux.

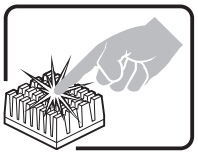
suite

AVERTISSEMENT: Français (suite)

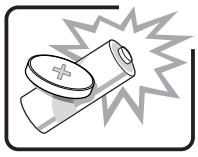


Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit:

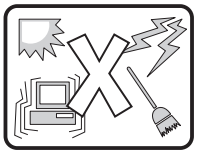
1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.
2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.
3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.
4. Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système.
5. Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.



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.



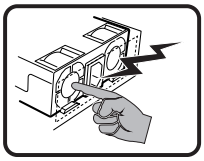
Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.



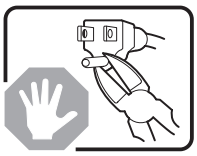
Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être:

- Propre et dépourvu de poussière en suspension (sauf la poussière normale).
- Bien aéré et loin des sources de chaleur, y compris du soleil direct.
- A l'abri des chocs et des sources de vibrations.
- Isolé de forts champs électromagnétiques géenérés par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques il est recomandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.
- Muni d'une prise murale correctement mise à la terre.
- Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).

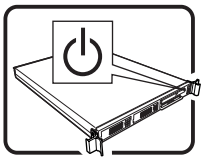
WARNUNG: Deutsch



Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.



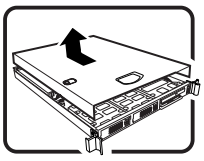
Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.



Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.

SICHERHEISMASSNAHMEN: 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.

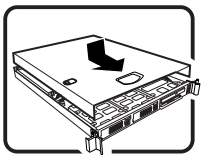


Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie:

1. Öffnen und entfernen Sie die Verschlußeinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlußeinrichtung installiert ist.
2. Entfernen Sie alle Schrauben der Gehäuseabdeckung.
3. Nehmen Sie die Abdeckung ab.

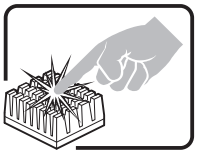
Fortsetzung

WARNUNG: Deutsch (Fortsetzung)

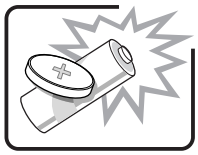


Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:

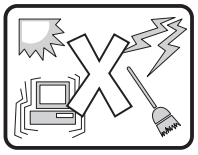
1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.
2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.
3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an.
4. Bringen Sie die Verschlußeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern.
5. Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.



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.



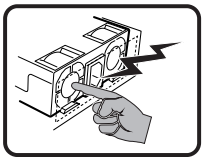
Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.



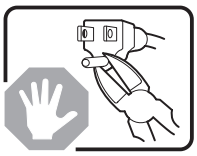
Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

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

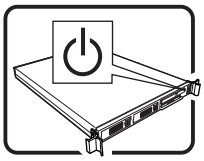
AVVERTENZA: Italiano



Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.



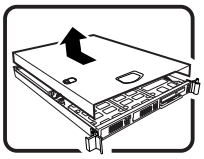
Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato.



L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.

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.

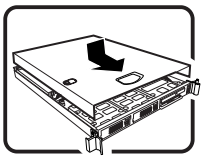


Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come seque:

1. Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato.
2. Togliere e mettere in un posto sicuro tutte le viti delle coperture.
3. Togliere le coperture.

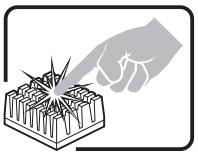
continua

AVVERTENZA: Italiano (continua)

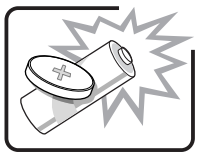


Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:

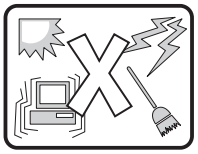
1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.
2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.
3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente.
4. Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema.
5. Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.



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.



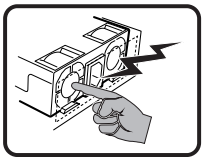
Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.



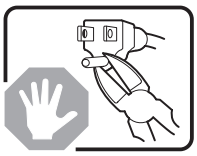
Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

- Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).
- Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.
- Al riparo da urti e lontana da fonti di vibrazione.
- Isolata dai forti campi magnetici prodotti da dispositivi elettrici.
- In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.
- Dotata di una presa a muro correttamente installata.
- Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.

ADVERTENCIAS: Español

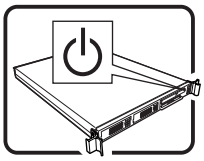


El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.



No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido.

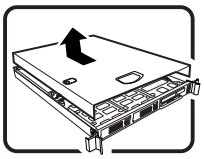
El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto.



Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.

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 sujetada 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.

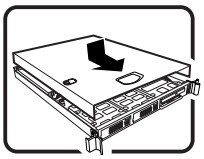


Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:

1. Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno.
2. Extraiga y guarde todos los tornillos de las tapas.
3. Extraiga las tapas.

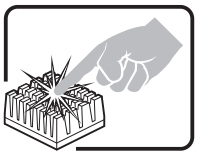
continúa

ADVERTENCIAS: Español (continúa)

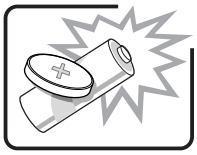


Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:

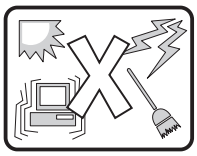
1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.
2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.
3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.
4. Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización.
5. Conecte todos los cables externos y los cables de alimentación CA al sistema.



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.



Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.



El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:

- Limpio y libre de partículas en suspensión (salvo el polvo normal).
- Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.
- Alejado de fuentes de vibración.
- Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.
- En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas.
- Provisto de una toma de tierra correctamente instalada.
- Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.

D 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 & Latin America—To obtain warranty repair for the product, please go to this website 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 can't 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.