

Intel® SR2100 Chassis Subassembly Product Guide

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

Order Number: A45510-002

Translations can be found on the accompanying CD-ROM and at the following URL:

<http://support.intel.com/support/motherboards/server/chassis/sr2100>

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1 Introduction

The SR2100 server chassis provides security and environmental features specifically designed for server applications. The SR2100 comes in kit form and contains the following features:

- Base server chassis with:
 - Front bezel
 - Two-fan cooling system
 - One 275W PFC power supply with cooling fan
 - A PCI riser card for use with the Intel® Server Board STL2
 - Two hot swappable 1-inch SCSI hard drive carriers with drive blanks (baffles)
 - Two hot swappable 1.6-inch SCSI hard drive carriers with drive blanks (baffles)
 - Ultra2/Ultra160 SCSI backplane with SAF-TE supporting up to 4 SCA drives
 - One empty 3.5-inch drive bay which supports either a standard floppy, a 1-inch drive or other half height peripheral
- Cables:
 - One power cord (U.S. version)
 - Ultra2/Ultra160 SCSI cable (non-terminated for baseboard to backplane connection)
 - Front panel cable (do not use—use cable that ships with server board)
 - I²C cable
 - IDE data cable
 - Diskette drive data cable
 - Chassis intrusion cable
- Screw package
- Speaker and bracket
- Sliding rail mount kit

2 System Description

The SR2100 system consists of the following major components:

- The chassis and its subassemblies, device bays, and front bezel
- The power supply
- The cooling system

To complete the system you must add a server board and optional peripherals and devices. The following subsections take you on a tour of each of these components.

Chassis

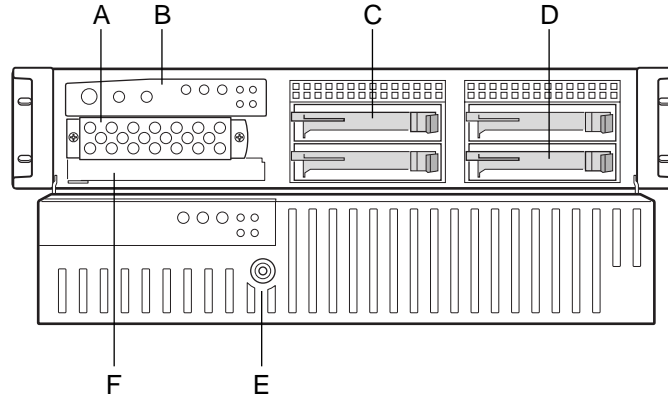
The major component of the kit is the chassis, which comes pre-assembled with the exception of the server board and optional peripherals. Before adding these devices, it is important to become familiar with the chassis both externally and internally and the security features it provides.

⇒ NOTE

The following sections provide a high-level overview of the chassis. For a more detailed, technical description, contact your Intel representative about how to receive or gain access to the *Intel® SR2100 KDK Server Chassis Technical Product Specification*.

Front Panel

You can access the panel and the system peripherals by grasping the bezel at its edges and gently pulling it towards you.



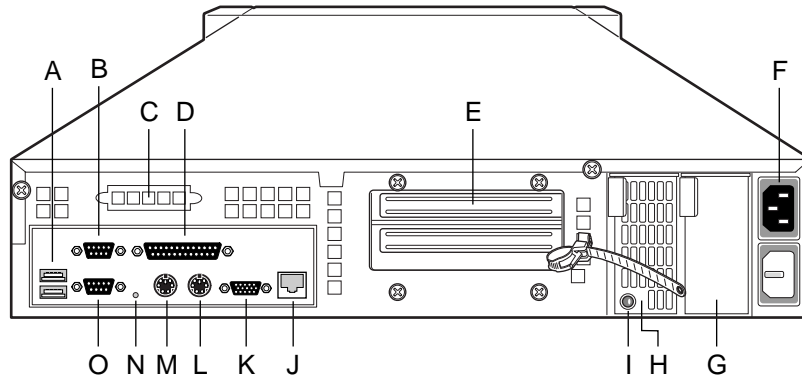
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|--|--|
| A. 3.5-inch peripheral bay | D. 1-inch hot swap drive bay (up to 2 drives) |
| B. Control panel | E. Bezel lock |
| C. 1.6-inch hot swap drive bay (up to 2 drives) | F. Slim-line device bay |

Figure 1. Front View of the SR2100

For a description of the control panel and its controls and indicators, refer to “Using the Front Panel Controls and Indicators” on page 16.

Back Panel

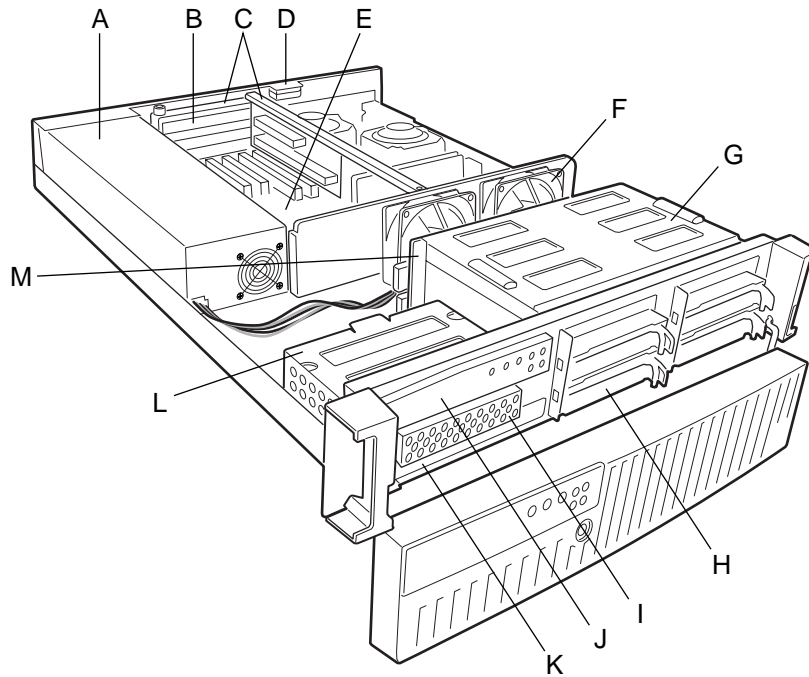


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|---|---------------------------------|
| A. USB connectors | I. Power supply fault indicator |
| B. Serial port connector (Com1) | J. RJ45 Network connector |
| C. Knockout, optional external SCSI connector | K. Video connector |
| D. Parallel Port connector | L. Mouse connector |
| E. PCI expansion slots | M. Keyboard connector |
| F. AC input power connector | N. NMI switch |
| G. Cover, empty power supply bay | O. Serial port connector (Com2) |
| H. Power supply | |

Figure 2. Back View of the SR2100

Internal View



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- | | |
|---------------------------------------|-------------------------------------|
| A. Power supply | H. Hard drives (up to four) |
| B. PCI expansion slots | I. EMI shield |
| C. Riser card assembly | J. Control panel |
| D. Intrusion switch | K. CD-ROM drive bay |
| E. Server board (accessory to system) | L. Bay assembly for 3.5-inch drives |
| F. Fan assembly | M. Hot swap backplane |
| G. Hot swap peripheral bay | |

Figure 3. Major Internal Components of SR2100

Power Supply

The power supply consists of the power supply bay and one power supply module. You can purchase and install an optional second module and have a redundant, 1+1 system. Either way, the supply provides 275-watts of power and is designed to minimize EMI. The supply operates within the following voltage ranges and is rated as follows:

- 100-120 V~ at 50/60 Hertz (Hz); 5.0 A maximum
- 200-240 V~ at 50/60 Hz; 2.5 A maximum

The DC output voltages of the power supply are +3.3 V, +5 V, +12 V, -12 V, and +5 V standby. The power supply features a 24-pin main power connector and a 10-pin power supply signal connector.

System Cooling

The chassis includes two system fans for cooling and airflow. Both fans provide cooling for the processor(s), hard drives, and add-in cards. The power supply contains its own built-in fan for cooling. As shown in Figure 3, two 80mm fans are located in the middle of the chassis to pull cooling air through the chassis.

Security

To help prevent unauthorized entry or use of the system, the chassis includes a mechanical lock on the front bezel to prevent access to the system's peripherals and control panel. The chassis also includes an intrusion switch that can be monitored by server management software. When the top cover is opened, the switch transmits a signal to 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.

Optional Peripherals

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

Hot Swappable Hard Disk Drives

The chassis provides a hot swap bay for the installation of up to four 3.5-inch SCSI hard drives. A major feature of the hot swap bay is the backplane, which powers down a drive when a failure is detected and reported to the SCSI bus. When a new drive is inserted, the power control waits a short time for the drive to become fully seated and then applies power to the drive. The backplane provides signals to the control panel to indicate failure status for each drive in the bay.

Either four 1-inch high or two 1-inch high and two 1.6-inch high, 3.5-inch SCA-compatible SCSI hard drives can be installed in the bay. Drives can consume up to 17 watts of power each. Drives must be specified to run at a maximum ambient temperature of 50 °C.

The chassis ships with four drive carriers for mounting the separately purchased hard drives. For information on how to install these drives, refer to page 38.

Slim-line CD-ROM

The chassis provides a bay for installing a slim-line CD-ROM drive. For information on installation, refer to page 40.

3.5-inch Drives

The chassis provides a bay for installing one of many types of 3.5-inch (i.e. non-hot swappable) drives including a diskette drive, zip drive, tape drive, or an additional hard drive. The chassis includes a drive tray for installing the device, which must be purchased separately. For information on how to install a drive, refer to page 42.

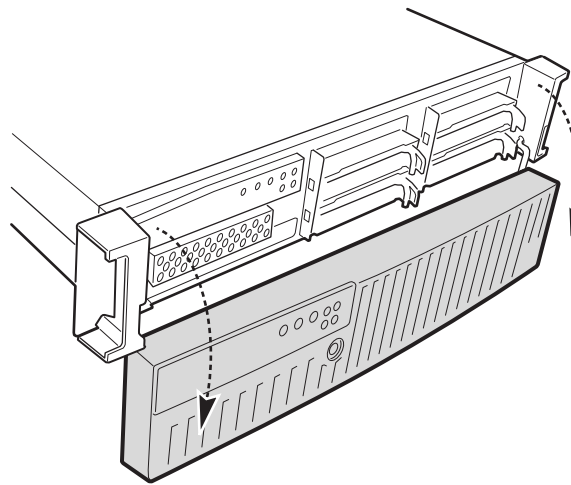
3 Operating the System

Opening and Closing the Bezel

With the bezel open you have access to all of your system's front panel functions and indicators. With the bezel closed you can protect critical functions and still view the system's indicators.

To open the bezel, do the following:

1. Stand in front of the chassis and grasp the edges of the bezel from each side.
2. Gently pull the bezel towards you until it begins to separate from the chassis.
3. As the bezel separates from the chassis, allow it to swing to its open position situated below the chassis.



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Figure 4. Opening the Bezel

4. To close the bezel, gently raise it upwards. The hinging mechanism will guide the bezel into the correct position where it will snap shut.

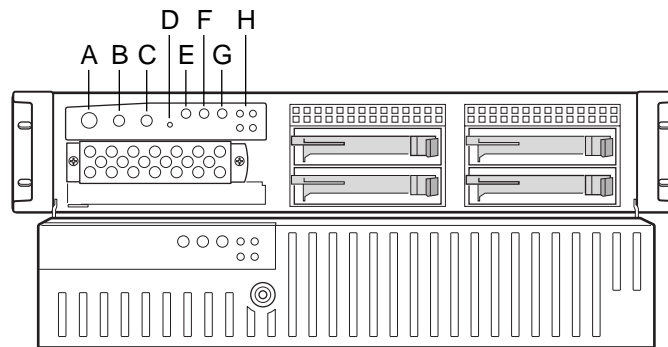
Locking and Unlocking the Bezel

The bezel can be locked and unlocked to prevent unwanted access to the system.

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

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

Using the Front Panel Controls and Indicators



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- | | |
|-----------------|----------------------------|
| A. Power button | E. Power LED |
| B. Sleep button | F. NIC activity LED |
| C. Reset button | G. Fail LED |
| D. NMI button | H. Disk activity/fail LEDs |

Figure 5. Front Panel Controls and Indicators

The control panel buttons provide the following function:

| | |
|---------------------|--|
| Power button | Powers the system up and down. |
| Sleep button | Puts the system in idle mode and reduces the power consumption needed by the system. |
| Reset button | Reboots and initializes the system. |
| NMI button | Puts server in a halt state for diagnostic purposes. The button is recessed and allows you to issue a non-maskable interrupt. After issuing the interrupt, a memory dump can be performed to determine the cause of the problem. |

The control panel LEDs report the following status:

| | |
|--------------------------------|--|
| Power LED | When lit, indicates that the system has power applied to it. |
| NIC activity LED | When lit, indicates activity between the system and the network to which it is connected. |
| Fail LED | When lit, indicates a system fault/failure has occurred. |
| Disk activity/fail LEDs | A green LED indicates disk activity is occurring and yellow LED indicates a disk failure occurred. |

4 Assembling the System

Before the SR2100 can be installed for use, you must assemble the hardware components that make up your particular system. Minimally, you must install a server board with the desired number of processors and memory. 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 shall 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

Before you start the assembly process you will need to have the right tools available to you and you will need to make sure you follow certain basic safety precautions.

Tools and Supplies Needed

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

- Phillips (cross head) screwdriver (#2 bit)
- Anti-static wrist strap (recommended)
- SR2100 subassembly kit
- Server board kit
- 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



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 Cords



WARNING

Do not attempt to modify or use the supplied AC power cord(s) if it is not the exact type required.

The power supply cords are the main disconnect device to mains (AC power). The socket outlet shall be installed near the equipment and shall be readily accessible.

If the power cord(s) 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 access 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(s) 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 cords, 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.

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 - Eksplosjonsfare ved fejløgt 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.



WARNING

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.

Equipment Rack Precaution Information

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. The rack selected and the ventilation provided must be suitable to the environment in which the server will be used.

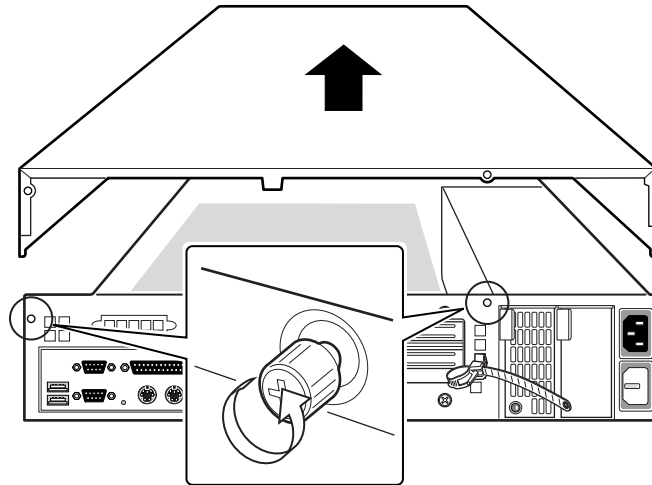
Installing the Server Board

Installing the server board consists of the following steps:

1. Removing the cover.
2. Removing the riser card mounting bracket.
3. Mounting the server board in the chassis.
4. Cabling the server board to the other chassis components.
5. Adding processors and memory to the server board.
6. Installing PCI cards, riser card, and bracket.
7. Replacing the cover.

Removing the Cover

1. Unscrew the two captive thumbscrews on the rear of the system.
2. Pull the cover back and remove it from the chassis.
3. Set the chassis cover aside and away from immediate work area.

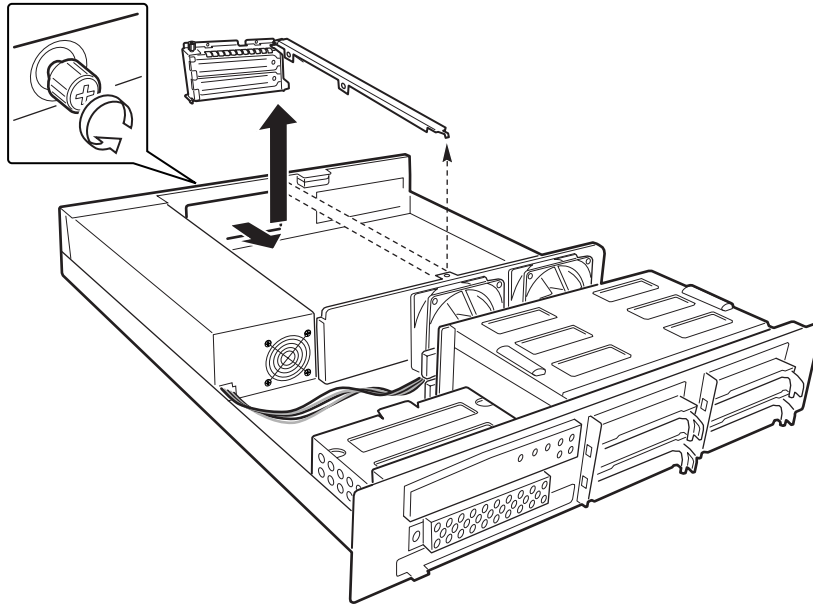


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Figure 6. Removing the Cover

Installing the Server Board

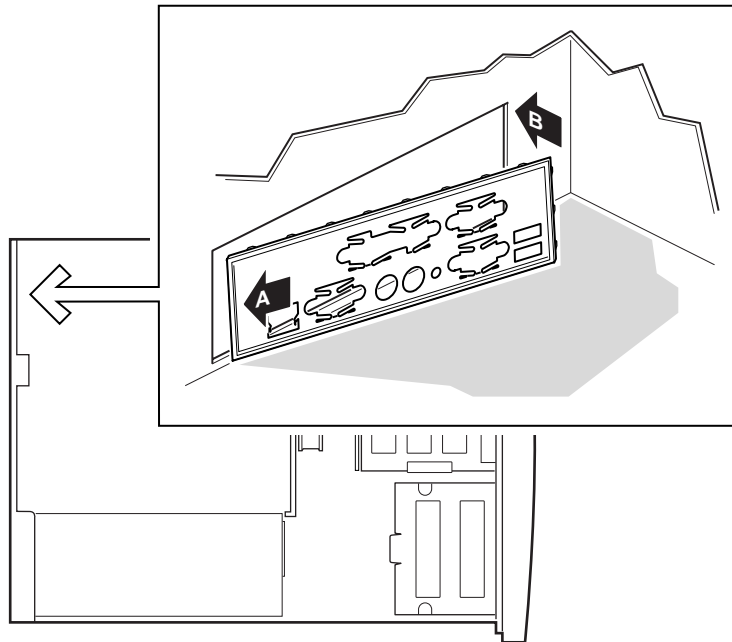
1. Remove the four thumbscrews on the rear retention bracket that hold the riser card mounting bracket in the chassis.
2. Remove the riser card mounting bracket from the chassis to give you full access to the server board area. See Figure 7.



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Figure 7. Removing the Riser Card Mounting Bracket

3. Remove the I/O shield and the server board from your server board kit.
4. Working from the inside of the chassis, position the I/O shield in the lower rear chassis opening. Orient the shield so that the cutouts will align with the corresponding I/O connectors on the server board. (See Figure 8.)
5. Make sure the metal fingers are on the inside of the chassis and snap the I/O shield into place.

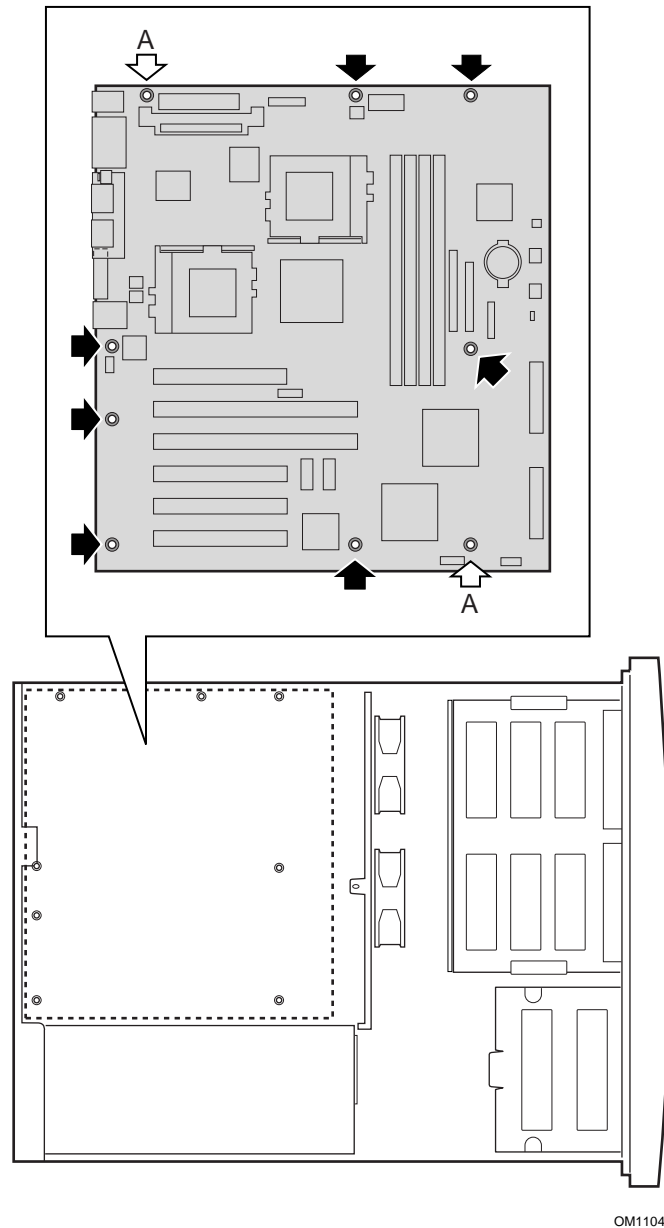


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Figure 8. Installing the I/O Shield

6. Orient the board so that the I/O connectors on the board are positioned in front of the I/O shield.
7. Insert the I/O connectors into the I/O shield and lay the server board flat on the chassis floor standoffs.

8. Align the board by making sure the two standoffs with shoulders are inserted into their matching holes on the board (Figure 9, A).
9. Mount the board to the chassis by installing the screws supplied with the chassis through the holes on the server board and into the threaded standoffs.

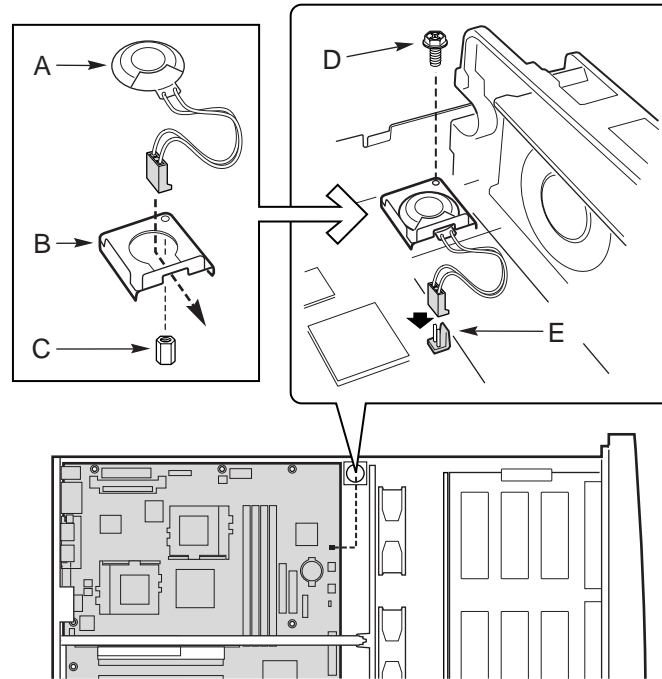


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Figure 9. Mounting the STL2 Server Board

Installing the Speaker

1. Assemble the speaker (Figure 10, A) to its bracket (B).
2. Position the speaker and bracket on the chassis standoff (C).
3. Insert and tighten screw (D) to hold the bracket to the chassis. The screw also holds the speaker to the bracket.
4. Connect the cable to the server board at (E). Be careful not to pull the cable off of the speaker.



OM11049

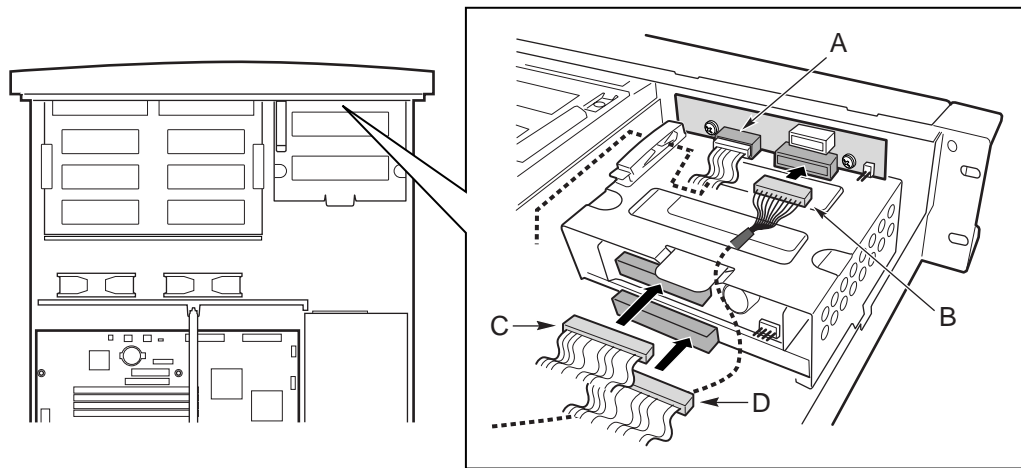
Figure 10. Installing the Speaker

Cabling the Server Board

After mounting the server board, it needs to be cabled to the following chassis components:

- Power supply
- Fan assembly
- Front panel
- Hot swap bay
- Chassis intrusion switch
- CD-ROM drive (if installed)
- Diskette drive (if installed)

Connect Cables to the Front Panel Board



OM11047

Figure 11. Connecting Cables to the Front Panel Board

1. Ensure that the I²C cable from the hot swap backplane is connected at Figure 11, A.

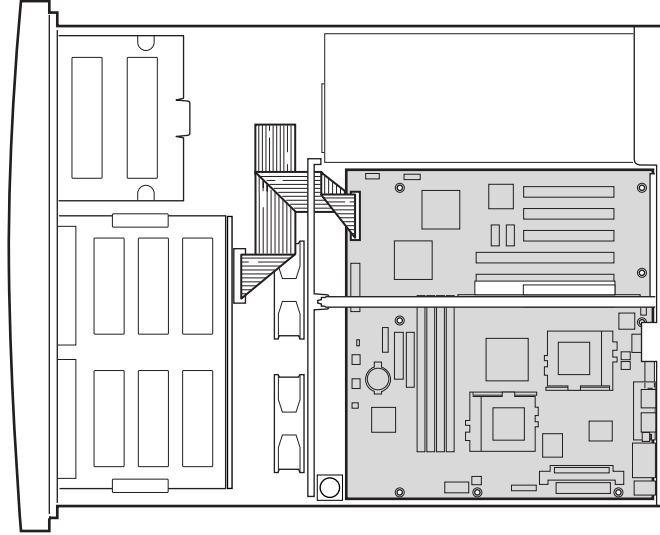


CAUTION

- Do not use the cable shipped with the chassis for connection to (B). Only use the cable shipped with the server board.
2. Connect the cable from the server board to the bottom connector (B) of the front panel board.
 3. If you are installing a diskette drive, connect the diskette drive data cable to the connector (C).
 4. If you are installing a slim-line IDE CD-ROM, connect the IDE cable to the connector (D).

Route the SCSI Cable

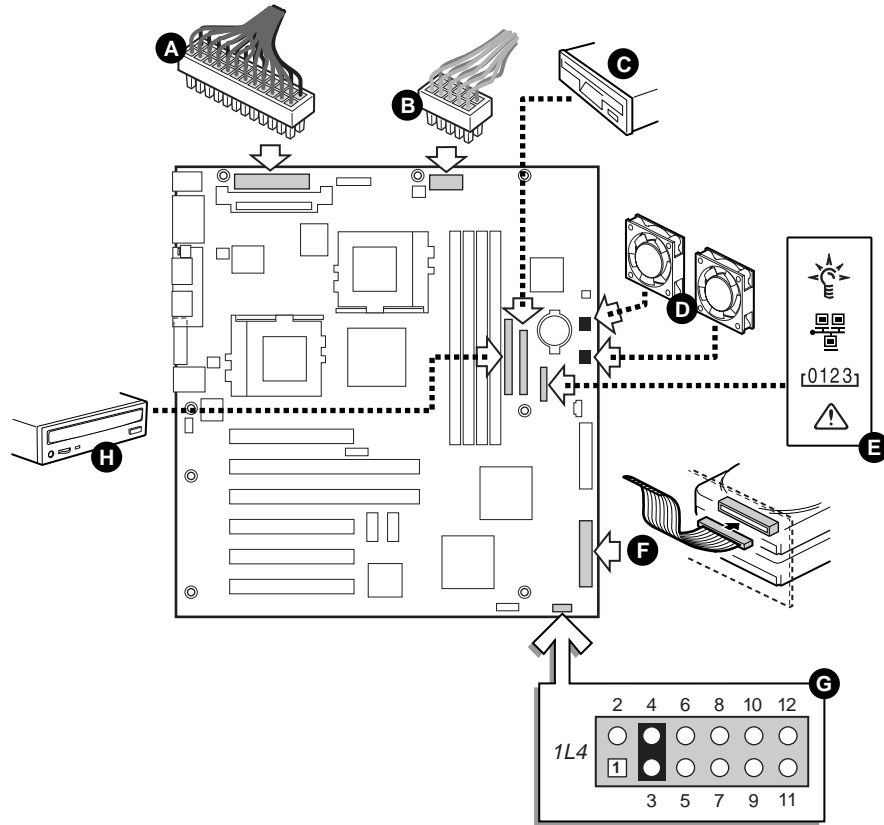
For optimal performance complying with FCC-A, the hot swap backplane SCSI cable should be routed as shown in the illustration below. Folding the cable as shown in the illustration before connecting it to the system makes routing easier.



OM11042

Figure 12. Routing for the SCSI Cable

Connect Cables to the Server Board



OM11050

Figure 13. Connecting Cables to the Server Board

1. Connect the power cables to connector (Figure 13, A) and the power supply signal connector to (B).
2. At (D) on the server board, connect the power cables for the fan nearest the side of the chassis to connector FAN3A. Connect the power cables for the fan nearest the center of the chassis to connector FAN2A.
3. Connect the front panel cable to the connector (E).
4. If you are installing a CD-ROM, connect the IDE cable to the connector (H).
5. If you are installing a diskette drive, connect the diskette drive cable to the connector (C).
6. Connect the SCSI connector from the hot swap backplane cable to the SCSI connector (F) nearest the corner of the server board.
7. Connect the chassis intrusion switch cable to pins 3-4 of connector 1L4 (G).

Installing the PCI Riser Card

1. Attach the riser card (B) to the riser card bracket (A) with two screws (C).

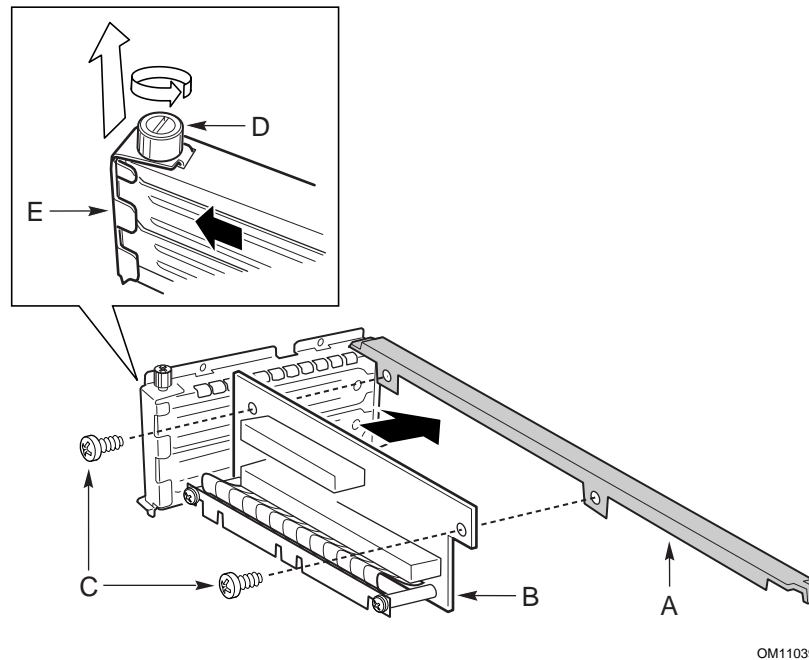


Figure 14. Attaching the Riser Card to the Riser Card Bracket

NOTE

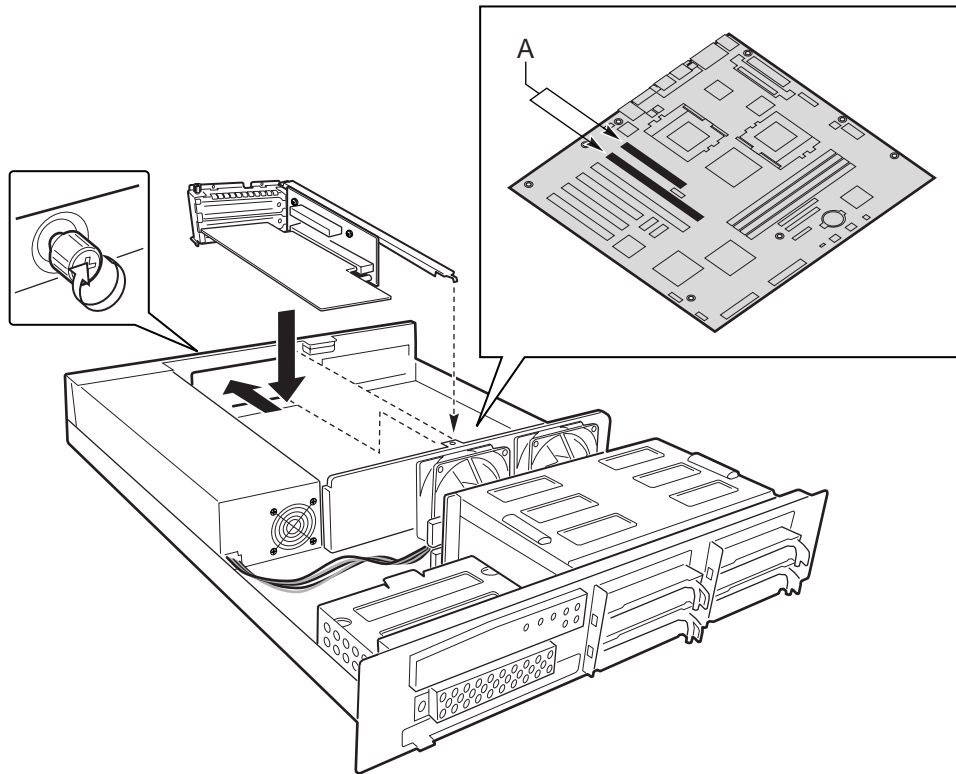
Most PCI add-in cards must be installed when the riser card is removed from the chassis due to limited space between the riser card and the power supply.

2. Before installing the riser card on the server board, install any PCI cards. Refer to “Installing Optional Peripherals and Devices/Add-In Cards” on page 34.
3. Place the riser card assembly on the appropriate server board slots (Figure 15). Ensure that the rear retention bracket is centered on the opening in the rear of the chassis and that the riser card connectors are aligned with the corresponding server board slots.

CAUTION

Press only on the riser card bracket and/or the standoffs. Do not press on the 64-bit connector or the orange flexible circuit attached to the standoffs.

4. Press the riser card firmly into the server board slots (A).
5. Ensure that tab on the riser card bracket is inserted in the slot of the bracket on the fan housing.
6. Reinstall the four thumbscrews in the rear retention bracket to secure the riser card assembly to the chassis.



OM11054

Figure 15. Installing the Riser Card

Adding Components to the Server Board

After installing the server board, you must add the desired number of processors and memory cards. See the documentation that shipped with your server board for instructions.

Reattaching the Cover

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, reattach the cover and continue on to Chapter 4, which describes how to install the system in a cabinet.

To reattach the cover:

1. Place the cover on the chassis and slide it forwards as far as possible.
2. Tighten the two screws on the rear of the chassis.

Installing Optional Peripherals and Devices

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

- Up to four hard drives into the system's hot swappable hard drive bay
- A slim-line CD-ROM drive
- A 3.5-inch drive into the system's drive bay
- Up to two PCI add-in cards into the system's riser card

Add-In Cards

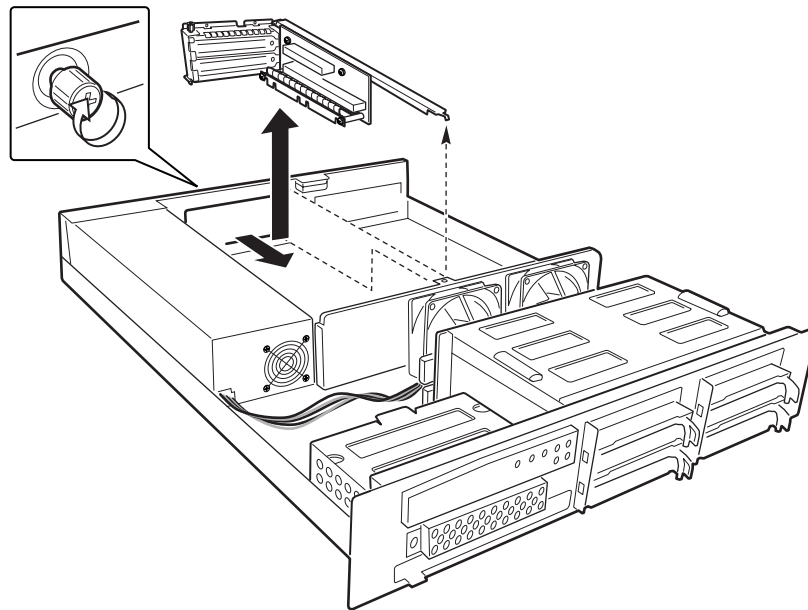
You can only add two PCI cards to this server. You must use the PCI slots on the riser card and cannot use any expansion slots on the server board.

➡ NOTE

Most PCI add-in cards must be installed when the riser card is removed from the chassis due to limited space between the riser card and the power supply.

To install an add-in card:

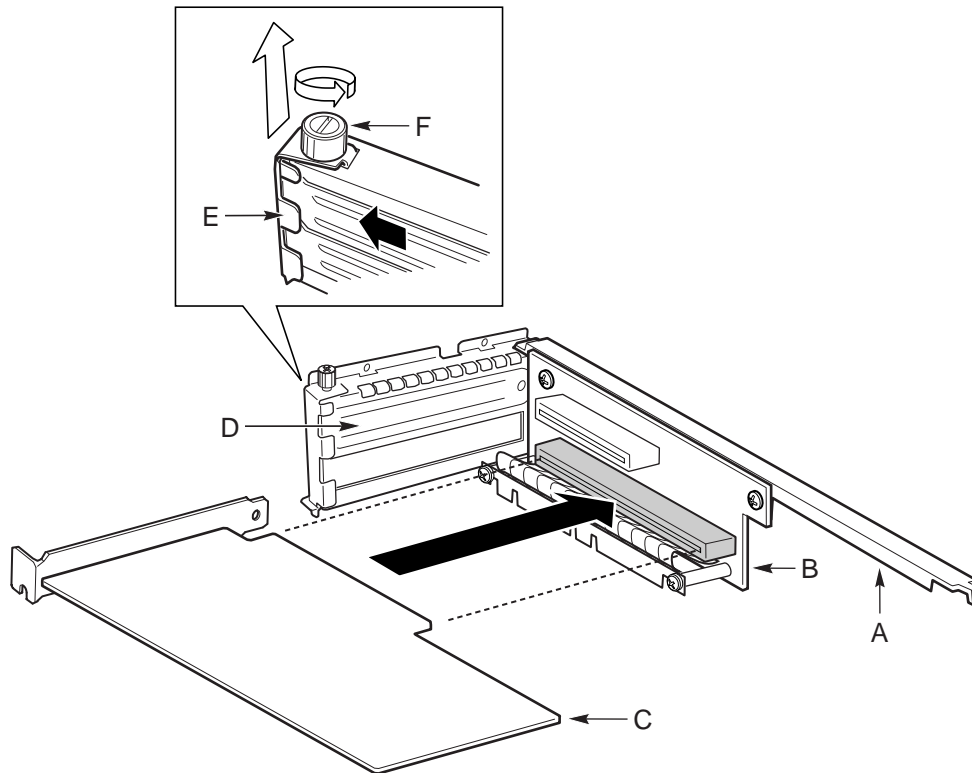
1. Remove the chassis cover if the chassis is not already open.
2. Remove the four thumbscrews on the rear retention bracket that secure the riser card assembly to the chassis. (See Figure 16.)



OM11243

Figure 16. Removing the Riser Card Assembly from the Server Board

3. Grasp the riser card mounting bracket (Figure 17, A) near each end of the riser card and pull up until the card is released from the server board slots. Lift the assembly out of the chassis.
4. On the riser card assembly, unscrew the captive thumbscrew (Figure 17, F) that holds the cover retention bracket (E) on the rear retention bracket (D).
5. Remove the cover retention bracket and the corresponding slot cover. Reinstall the retention bracket.
6. Remove the add-in board from its protective wrapper. Set jumpers or switches according to the manufacturer's instructions.



OM11138

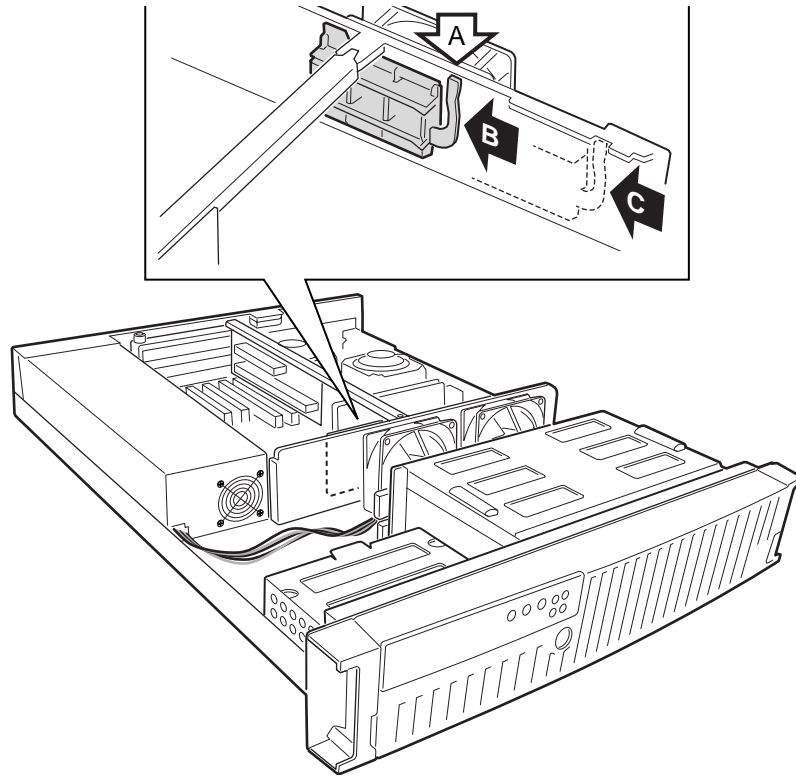
Figure 17. Installing a PCI Add-in Card in the Riser Card

7. Insert the connector of the PCI card (C) into the appropriate open expansion slot on the riser card (B). Insure the tapered foot of the board-retaining bracket is inserted into the mating slot in the expansion slot frame. Press the PCI card connector firmly into the riser card slot.
8. Connect any cables to the PCI card.
9. Reinstall the cover retention bracket on the rear retention bracket. Tighten the captive thumbscrew.

NOTE

Before installing a riser card containing a full-length PCI card, you must reposition the card guide (see Figure 18). To do this, pull arm (A) out enough to release the card guide. Slide the guide from position (C) to position (B) in front of the fans.

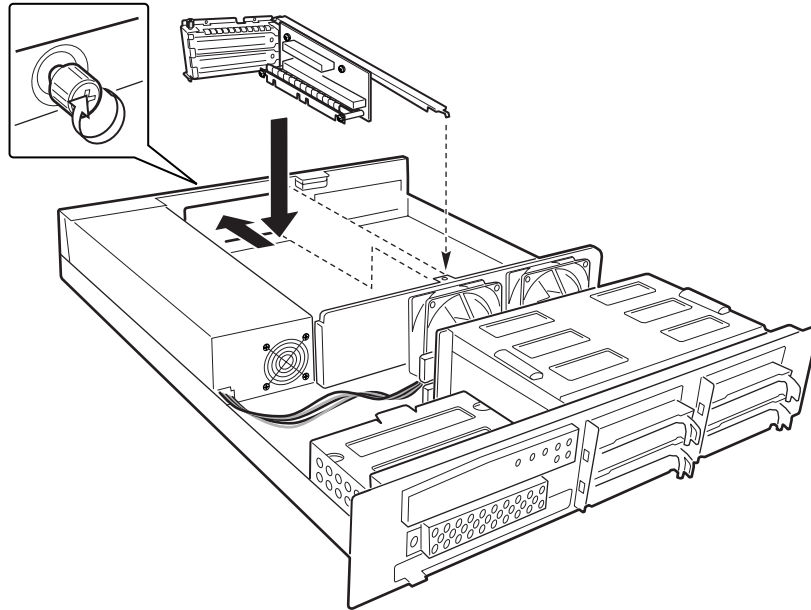
Also, you must remove the add-in card extension from the end of the full-length PCI card—the card will not fit in the system with the extension still attached.



OM11136

Figure 18. Using the Add-in Card Guide

10. Place the riser card assembly on the corresponding server board slots. Ensure that the rear retention bracket is centered on the opening in the rear of the chassis and that the riser card connectors are aligned with the corresponding server board slots.



OM11242

Figure 19. Reinstalling the Riser Card



CAUTION

Press only on the riser card bracket and/or the standoffs. Do not press on the 64-bit connector or the orange flexible circuit attached to the standoffs.

11. Press the riser card firmly into the server board slots.
12. Ensure that the tab on the riser card bracket is inserted in the slot of the bracket on the fan housing.



NOTE

If you are installing a riser card containing a full-length PCI card, slide the card guide back to position (C). The card guide should now be holding the edge of the PCI card.

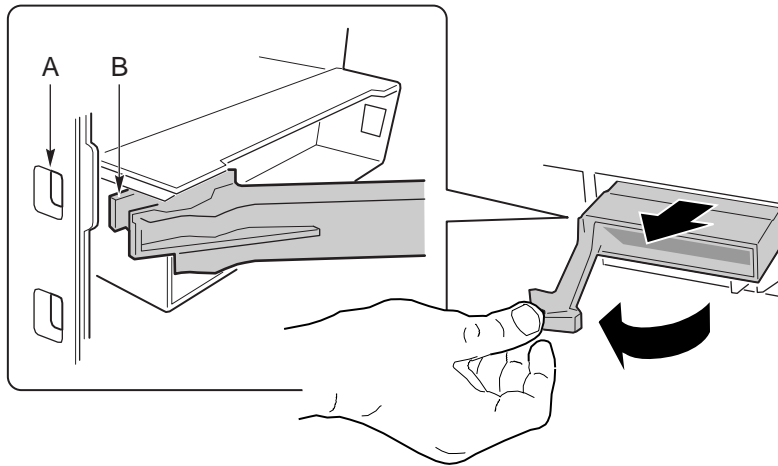
13. Reinstall the four thumbscrews in the rear retention bracket to secure the riser card assembly to the chassis.
14. Reattach the chassis cover if you have no other work to do within the chassis.

Hard Drives

Your server does not include a hard drive. You must purchase them separately and install them. The server has four hot swappable hard drive bays.

1. Remove the drive carrier(s) from the drive bays by unclipping the retention lever on the right side of the handle.

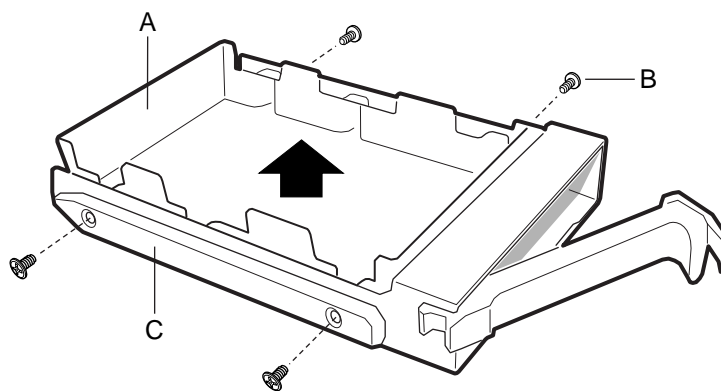
Pull the retention lever toward you until the tab end (Figure 20, B) of the lever is free of the housing slot (A). Pull the drive forward and out of the housing.



OM09653

Figure 20. Removing a Hard Drive Carrier from a Drive Bay

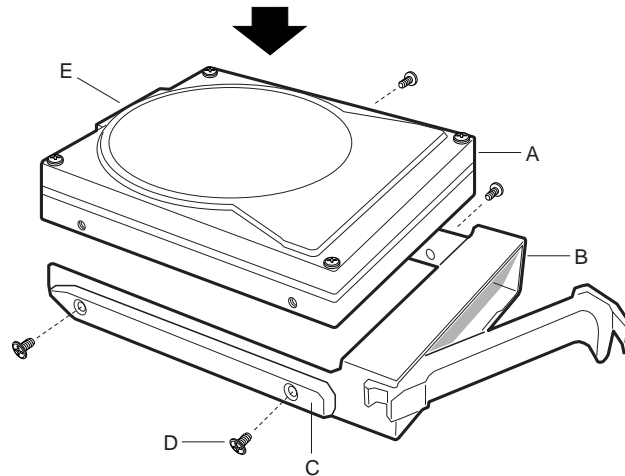
2. Release the air baffle (Figure 21, A) by removing the four screws (B) from the drive carrier/drive slide track (C).
3. Remove the hard drive from its wrapper and place it on an anti-static surface.
4. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.



OM11040

Figure 21. Removing an Air Baffle

5. With its top facing upward, position the drive (Figure 22, A) so that its connector end (E) 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.
7. Slide the carrier/drive into the chassis with the retention mechanism extended in the open position, and then push the arm towards the front of the chassis until the lever tab clicks into the chassis slot indicating that it is closed.



OM09654

Figure 22. Attaching the Drive to the Carrier

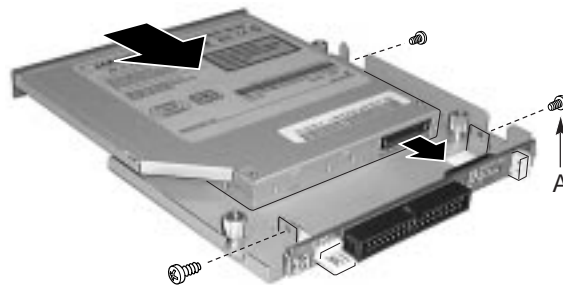
CD-ROM Drive

Your server does not come with an integrated slim-line CD-ROM drive. You must purchase one separately and install it. You should install a CD-ROM drive before you install a diskette drive.

➡ NOTE

If you install another IDE device in addition to the CD-ROM, the new device must be setup as the slave.

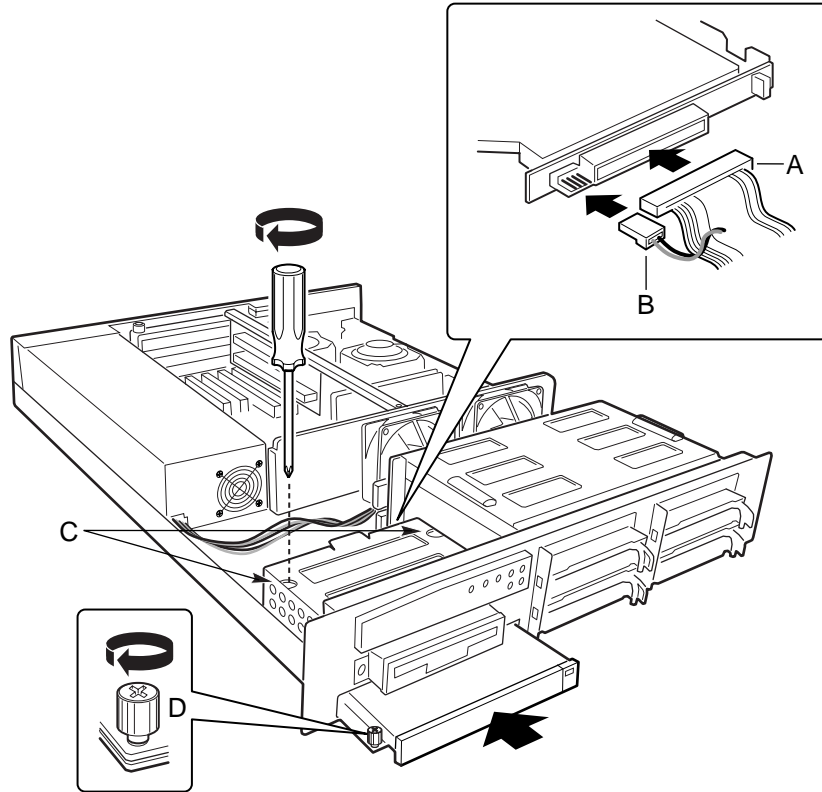
1. Remove the drive from its protective wrapper, and place it on an anti-static surface.
2. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
3. Attach the CD-ROM drive to the CD-ROM tray using the mounting screws (Figure 23, A) supplied with the system.



OM09348

Figure 23. Attaching a Slim-line CD-ROM Drive to the CD-ROM Tray

4. Remove the screws that hold the filler panel to the front of the chassis and remove the panel.



OM11139

Figure 24. Installing a Slim-line CD-ROM Drive

5. Slide the slim-line CD-ROM tray into the CD-ROM bay.
6. Connect the provided CD-ROM IDE cable (Figure 24, A) and power cables (B) to the connectors at the back of the CD-ROM.
7. Insert the recessed retention screws (C) through the access holes in the top of the drive bay housing.
8. Insert the retention screw (D) on the front of the chassis.
9. Connect the CD-ROM IDE cable to the server board. (See Figure 13, H on page 31).

3.5-inch Drives

The system provides a 3.5-inch drive bay that allows you to install a variety of different drives such as a diskette drive, a hard drive, a tape drive, or a ZIP[†] drive. If you are going to install a slim-line CD-ROM below the 3.5-inch drive bay, do it before you install the 3.5-inch drive.

The following is a generic procedure that, for the purpose of example, shows how to install a 3.5-inch hard drive.

1. Remove the chassis cover if the chassis is not already open.
2. Remove the EMI shield from the 3.5-inch drive bay opening by removing and saving the two mounting screws (Figure 25, A).
3. Slide the drive tray (B) out of the chassis.

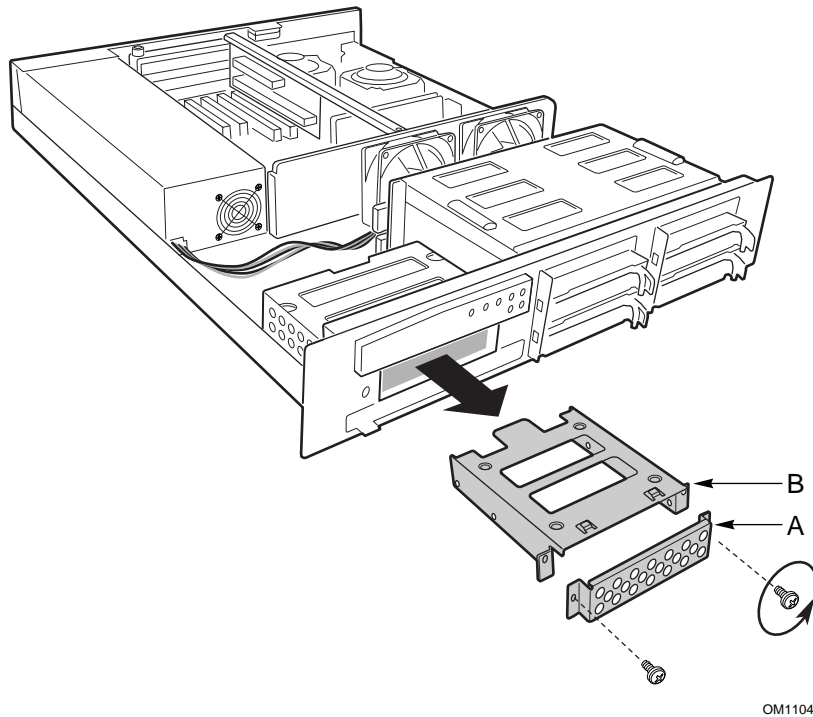


Figure 25. Removing the Drive Tray

4. Remove the 3.5-inch hard drive from its protective wrapper, and place it component-side up on an anti-static surface.
5. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.

6. Install the drive into the drive tray and secure it with the provided mounting screws. (See Figure 26.)

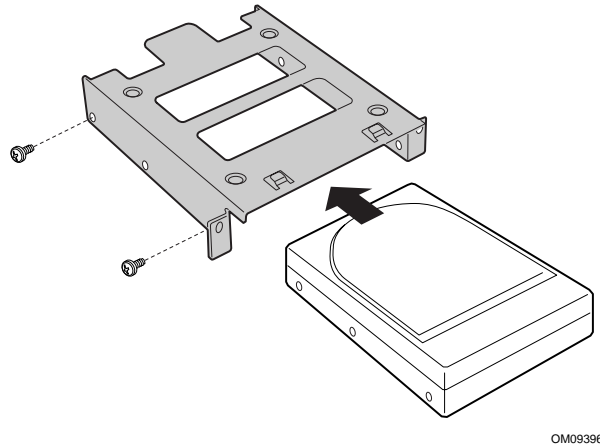


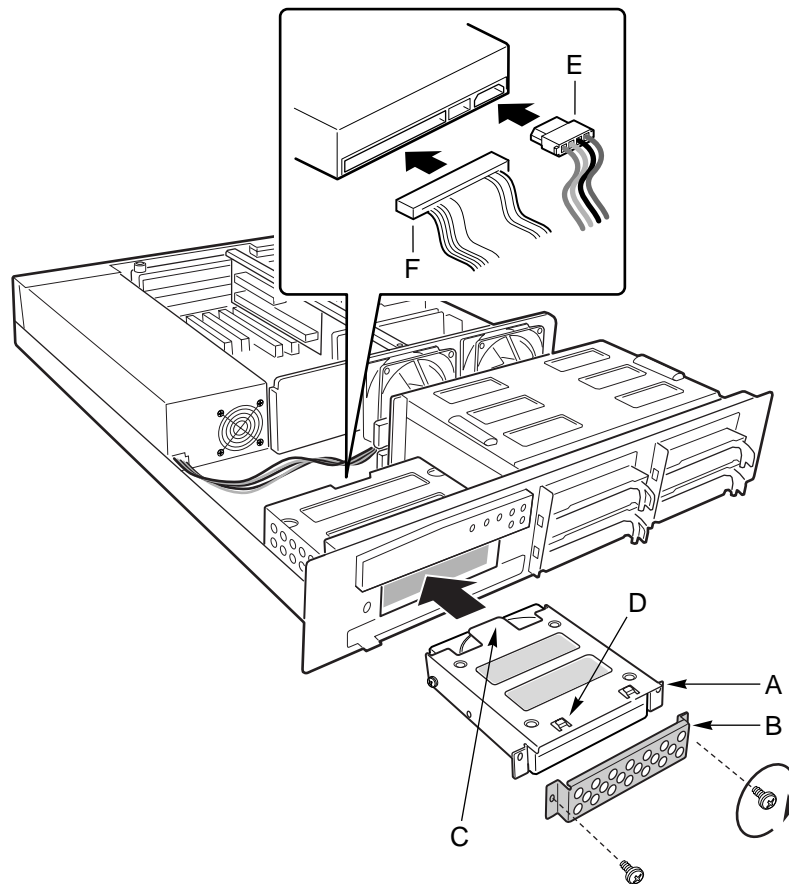
Figure 26. Installing a Hard Drive into the Drive Tray

7. Slide the drive carrier through the front of the chassis, being sure to insert the rear tab (Figure 27, C on page 44) into its chassis slot and the two front tabs (D) into their chassis slots.
8. Secure the drive tray and the EMI shield to the front of the chassis with the screws you removed earlier.

➡ **NOTE**

If you are installing a device that requires user access such as a diskette, tape, or zip drive, do not reattach the EMI shield.

9. Connect the signal (Figure 27, F) and power (E) cables to the drive according to the manufacturer's specifications.
10. Reattach the chassis cover if you have no other work to do within the chassis.



OM11048

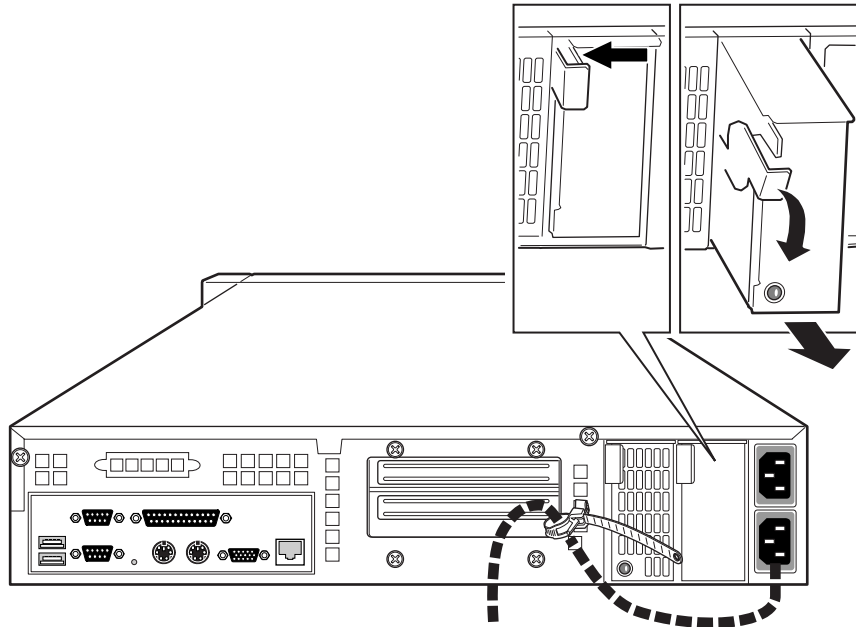
Figure 27. Installing the Drive into the Chassis

Power Supply Module

Your server does not include a second, redundant power supply module. To take advantage of power supply redundancy, you must purchase the second module separately and install it.

To install a second power supply module:

1. Locate the power supply and the blank filler panel (the one with no perforations) at the rear of the server.
2. Grip and squeeze the handle of the blank filler panel (Figure 28, A) to release the latch.
3. Rotate the handle down while pulling the filler panel toward you. Pull the blank out and save it.
4. Insert the second, redundant power supply module in the bay.
5. Grip the module handle, rotate it down, and push the module into the bay.
6. When the module is nearly all of the way in, the handle will rotate up. At this time, push firmly on the front of the handle to lock the latch.
7. Install the second power cord into the strain relief.
8. Connect the cord to the power supply, and plug it into the AC power source.



OM11241

Figure 28. Installing a Redundant Power Supply Module

5 Installing the System in a Rack

The SR2100 system comes with a rail kit that allows you to install it into a four-post, network server cabinet (e.g. APC Netshelter). If the cabinet is not of this general type, you will have to purchase a separate rail kit that is specific to your cabinet.

Follow these steps to install the rail kit and place your system into the cabinet.

1. Assemble tools and miscellaneous parts. You will need a Phillips screwdriver and assorted lock washers and nuts.
2. Remove the inside piece (Figure 29, C) from both sides of the rail system.

To remove an inside piece of the rail system, slide the part as far out as you can. This action reveals a brass colored finger tab (D) that when depressed allows you to completely separate the inside rail piece from the outer (A) and middle (B) rail pieces.

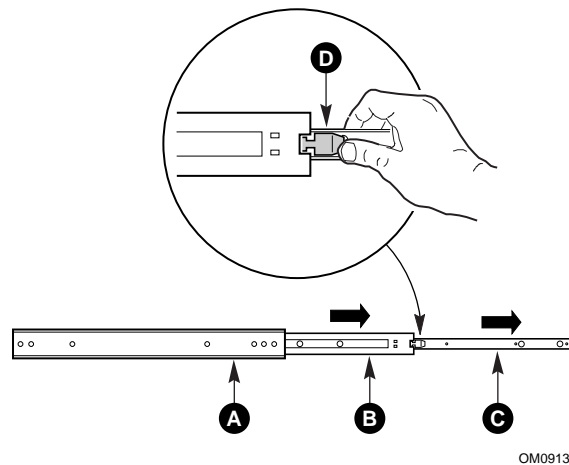
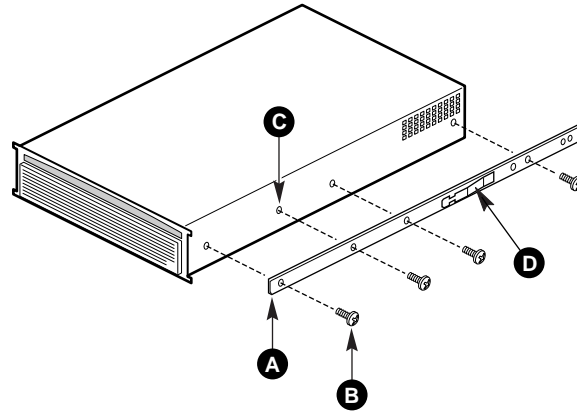


Figure 29. Chassis Rail System

- Align each inside rail (Figure 30, A) to a side of the chassis.
Be sure that the flat end of the inside rail is toward the front of the chassis and that the brass colored finger tab (D) is facing outward. With the holes in the chassis (C) aligned with the holes in the rail, fasten the rail using the smallest screws (B) supplied with the rail kit.



OM09133

Figure 30. Aligning Rail to Chassis

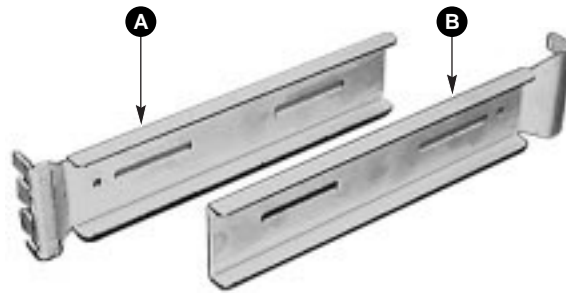
Here is a combination side and rear view of the chassis after the right inside rail has been attached.



OM10121

Figure 31. Chassis Rear and Side View

4. Locate the front and rear rail brackets for one side of the rail kit. One pair (Figure 32, A and B) exists for each side of the cabinet rack.

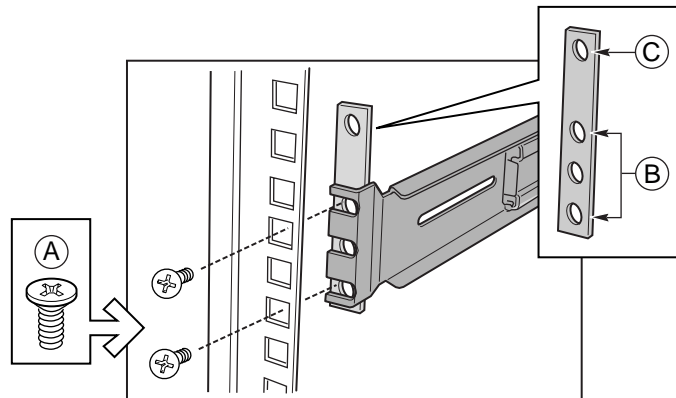


OM09145

Figure 32. Rail Brackets

5. Attach all four rail brackets to the cabinet rack. Be sure that the sharper angled side of each bracket is facing up.

To attach a rail bracket, use two flat-head mounting screws (Figure 33, A), supplied with the kit, to secure the bracket to the inside of the cabinet rack. Fasten the screws by aligning the nutbar behind the bracket. Be sure that the nutbar is positioned such that the isolated hole (C) is upright. Tighten the screws (A) through the nutbar holes (B). Figure 33 shows how to align all pieces. The other brackets are attached similarly.



OM10061

Figure 33. Attaching Rail Brackets to the Cabinet Rack

6. Attach the side rail system's outer pieces (total of two) to the rail brackets you installed in step six.

To attach the front part of an outer piece to a rail bracket, you must reveal the access hole (Figure 34, A) by sliding the innermost piece toward the back. Once you see the access hole, align it with the hole in the rail bracket (B) such that you can secure the bolt. Insert the screw through the rail and the front hole in the bracket. Then put the nut on the backside of the rail bracket.

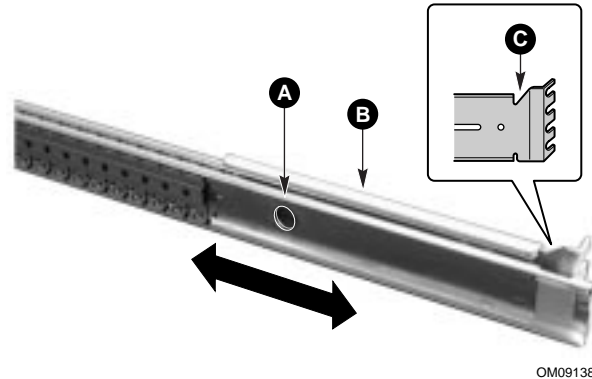


Figure 34. Attaching Outer Pieces to the Rail Brackets

7. To attach the rear part of the rail system to the rear rail bracket (Figure 35, A), slide the rail system within the rail brackets such that you can place a bolt through the rail's hole (B) and into the rail bracket's slot. Tighten the bolt and nut.

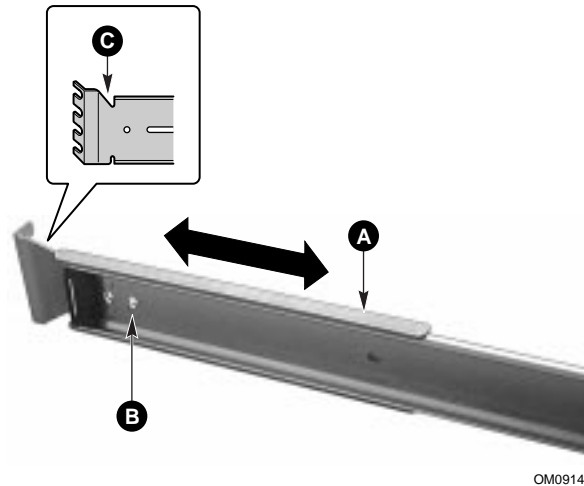
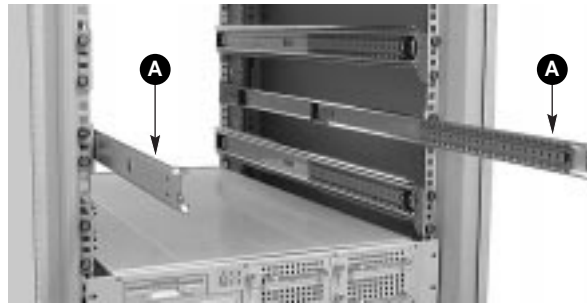


Figure 35. Attaching the Rail System to the Rear Rail Bracket

NOTE

For a very deep cabinet, you might need to move the front screw used in the front bracket to one of the bracket slots. If you do use slots instead of holes in the brackets, be sure to use the same rail positions for both sides.

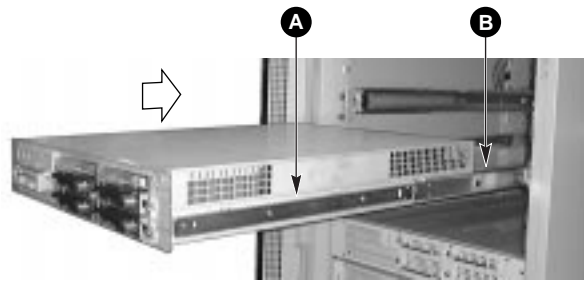
8. Extend the right and left rails (Figure 36, A) so they fully extend in front of the cabinet rack and slide the bearing insert (inside the rails) to the front of the rails. The rail system is now ready to receive the chassis.



OM09141

Figure 36. Extending the Rails

9. Lift the chassis with its front facing you and carefully guide the inner rail (Figure 37, A) that is mounted to the chassis system, into the outer pieces (B) you attached in previous steps. Gently move the system evenly towards the rear of the cabinet until it locks. Press the brass colored finger tabs located in the center of each inner side rail piece to slide the chassis all the way back. If you feel resistance as you slide the chassis, loosen the front mounting screws and retighten them to adjust for width.



OM09143

Figure 37. Guiding the Chassis into the Rack

10. Be sure to use the largest screws to secure the chassis into the cabinet to keep the chassis from sliding out. Figure 38 shows the system from the rear fully inserted into the cabinet.



OM10120

Figure 38. Chassis Mounted into the Rack

6 Maintaining the System

Should you have any problem with SR2100 components, you can order parts for the system and replace them. For information about these parts and how to order them, contact your Intel representative. The following procedures describe how to replace these components in your system.

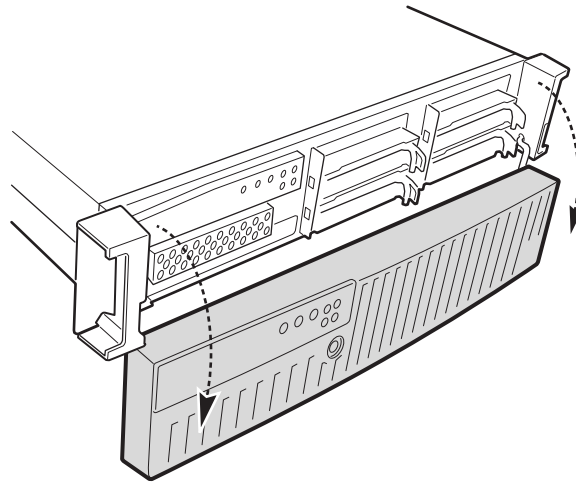
Safety: Before You Remove the Cover

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. Wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.

Replacing the Bezel

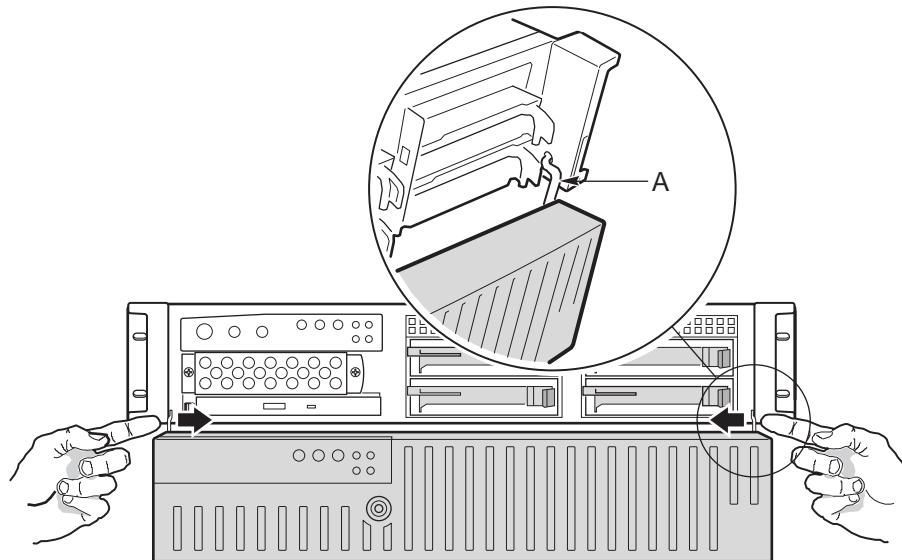
1. Open the bezel.



OM11055

Figure 39. Opening the Bezel

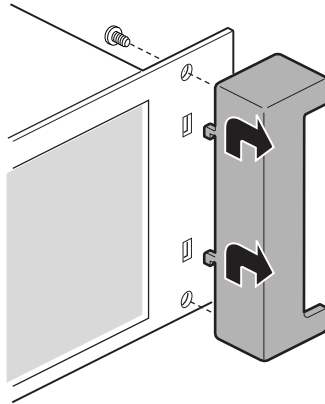
2. Place your hands to the right and left of the bezel such that you can gently press each bezel hinge inward. Pressing the hinges inward removes the hinge pegs from the bezel mounts. (See Figure 40.)



OM11056

Figure 40. Removing Hinge Pegs from Bezel Mounts

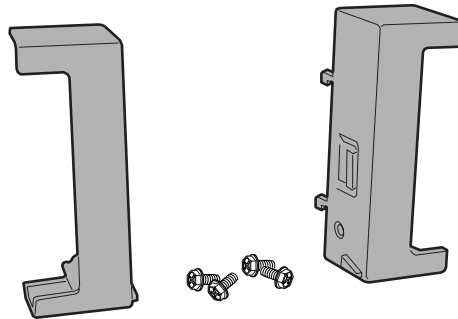
3. Remove the right bezel mount by removing the two screws from the back of the bezel mount.
4. Remove the left bezel mount by removing the two screws from the back of the bezel mount.



OM11140

Figure 41. Removing a Bezel Mount

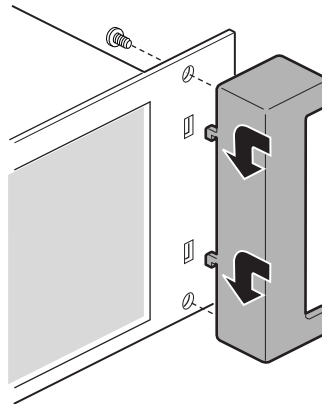
5. Locate the two new bezel mounts and the screws used to fasten them to the right and left sides of the front panel.



OM09186

Figure 42. Bezel Mounting Hardware

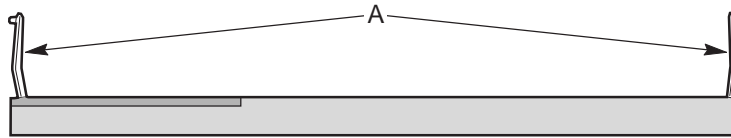
- Align the right bezel mount with the fastening hole on the right side of the system's front panel. Fasten the mount to the panel by securing the two screws from the back of the bezel mount.



OM11141

Figure 43. Attaching the Bezel Mount

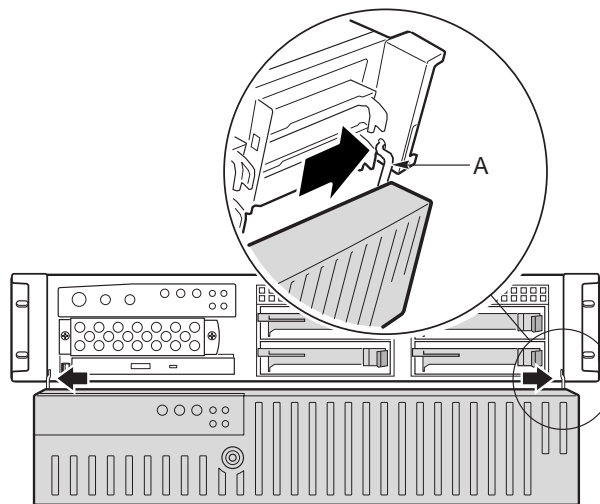
- Attach the left bezel mount to the left side of the system in a manner similar to that described for the right bezel mount.
- Locate the bezel's left and right hinges (Figure 44, A) and extend them away from the bezel.



OM09731

Figure 44. Extending the Bezel Hinges

- Align the round pegs at the ends of the hinges with their respective holes in each bezel mount (Figure 45, A). Press inward on each hinge slightly to allow you to seat the pegs in the holes.

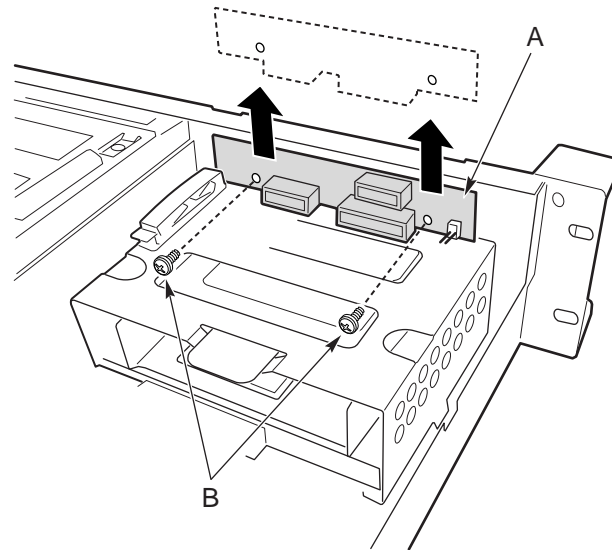


OM11057

Figure 45. Attaching the Bezel

Replacing the Front Panel Board

1. Observe the safety precautions at the beginning of this chapter.
2. Remove the cover from the chassis.
3. Unplug the cables from the front panel board.



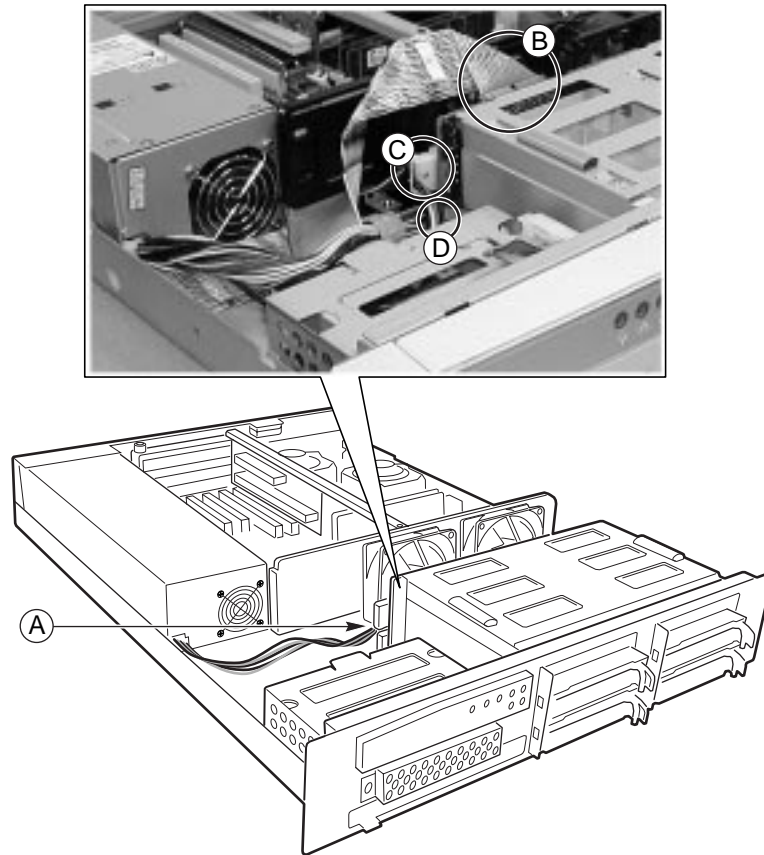
OM10728

Figure 46. Replacing the Front Panel Board

4. Remove and save the two mounting screws (Figure 46, B) from the board. Remove the board (A) from the chassis.
5. Install the new board in the chassis using the two screws removed earlier.
6. Plug the cables back into the front panel board.
7. Replace the chassis cover if you have no additional work to do inside the chassis.

Replacing the Hot Swap Backplane

1. Observe the safety precautions at the beginning of this chapter.
2. Remove the disk drives from the hot swap drive bay.
3. Remove the cover from the chassis.
4. Locate the backplane board (Figure 47, A) and the cables connected to it.



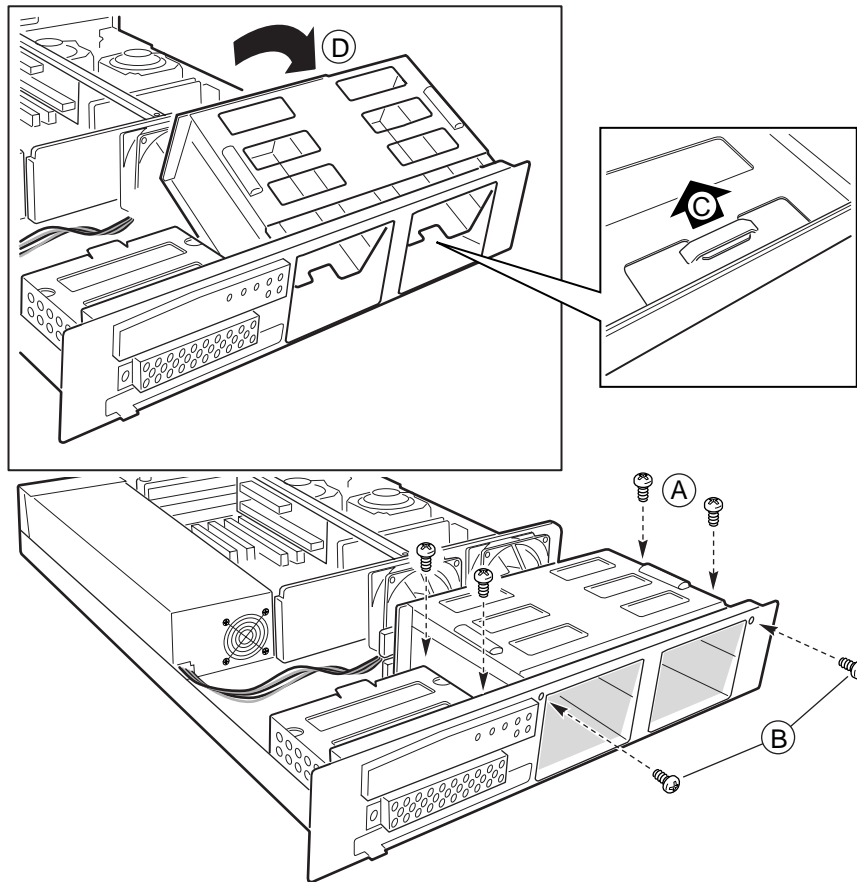
OM11142

- A. SCSI backplane
- B. SCSI data cable
- C. Power connector
- D. Front panel connector

Figure 47. Disconnecting the Hot Swap Backplane

5. Disconnect the SCSI data cable (B) from the backplane.
6. Disconnect the power cable (C) from the backplane.
7. Disconnect the front panel cable (D) from the backplane.

8. Remove and save the four screws (Figure 48, A) that hold the bay assembly to the bottom of the chassis.

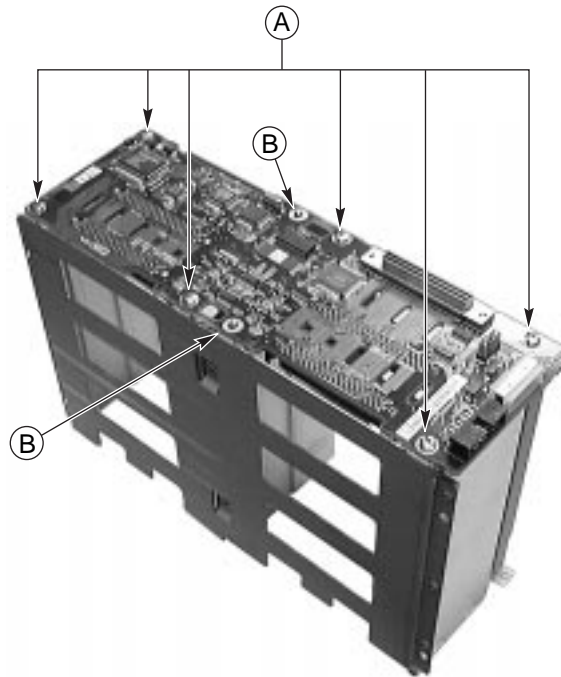


OM11143

Figure 48. Removing the Hot Swap Bay

9. Remove and save the two screws (B) that hold the bay assembly to the front of the chassis.
10. Slide the chassis out of the tabs on the bottom of the chassis and tilt the backplane side of the bay up and toward the front of the chassis (C).
11. Pull the bay out and clear of the chassis and set the front of bay on a flat working surface.

12. Remove and save the six mounting screws (Figure 49, A) that hold the backplane to the bay.

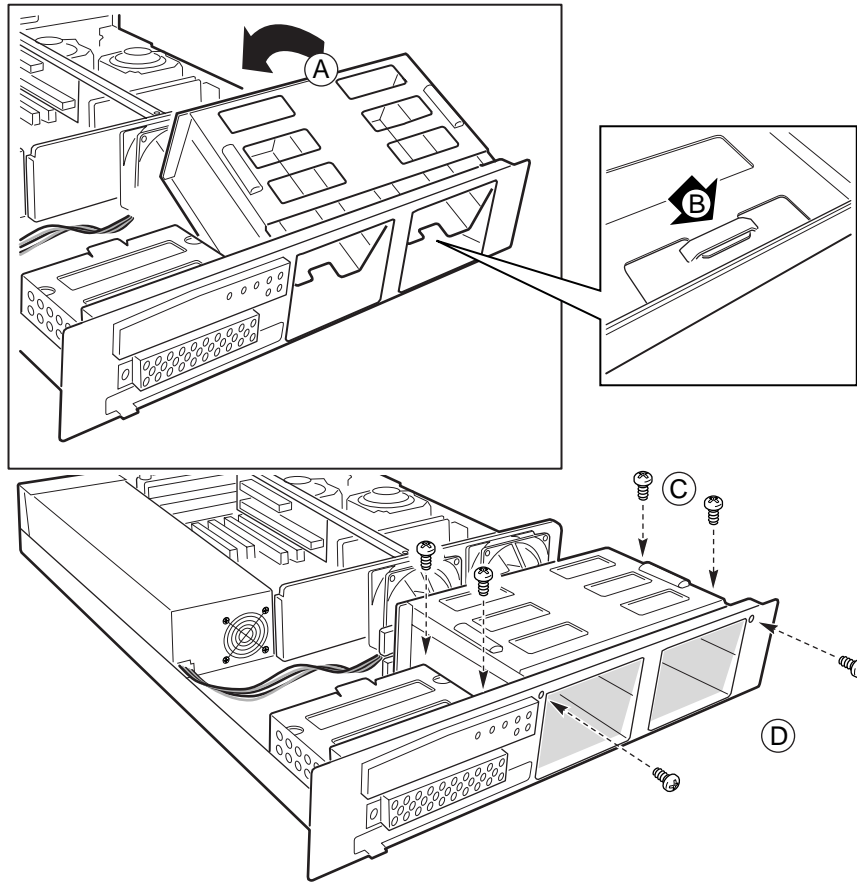


OM09725

Figure 49. Removing the Hot Swap Backplane

13. Remove the backplane from the bay and place it in an anti-static bag.
14. Remove the new backplane from its packaging.
15. Orient the new board on the bay such that the locating pins on the bay (B) pass through the board.
16. Attach the board to the bay using the six screws that you removed earlier.
17. Position the bay back into the chassis.

18. Insert the front of chassis first and then lower the backplane end (Figure 50, A).



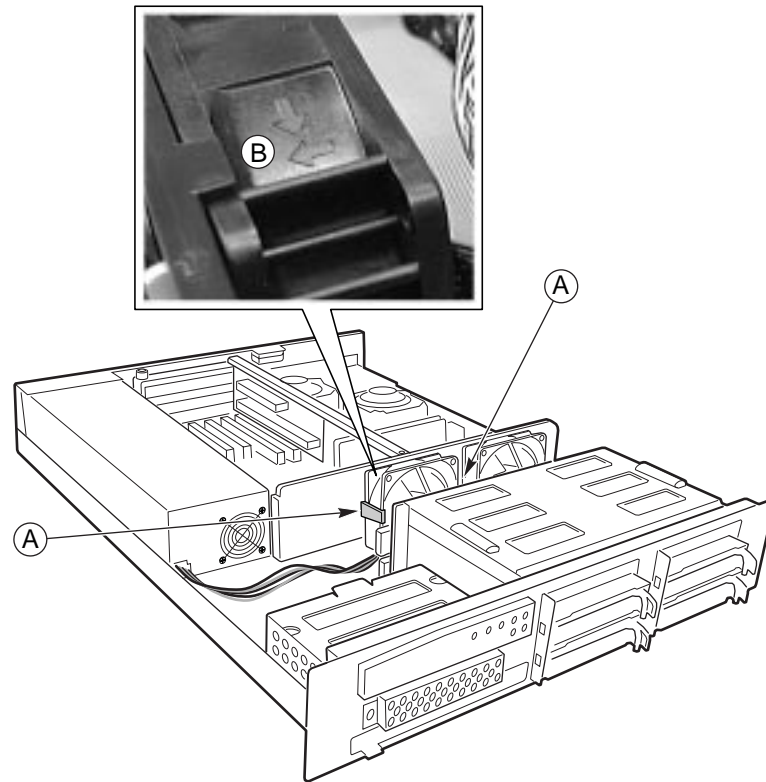
OM11135

Figure 50. Reinstalling the Hot Swap Bay

19. Slide the bay into the tab located on the bottom front of the chassis (B).
20. Insert the interior and exterior screws that you removed earlier to reattach the bay to the chassis.
21. Replace the chassis cover if you have no additional work to do inside the chassis.

Replacing a Fan

1. Observe the safety precautions at the beginning of this chapter.
2. Remove the cover from the chassis.
3. Unplug the fan cable from the server board.



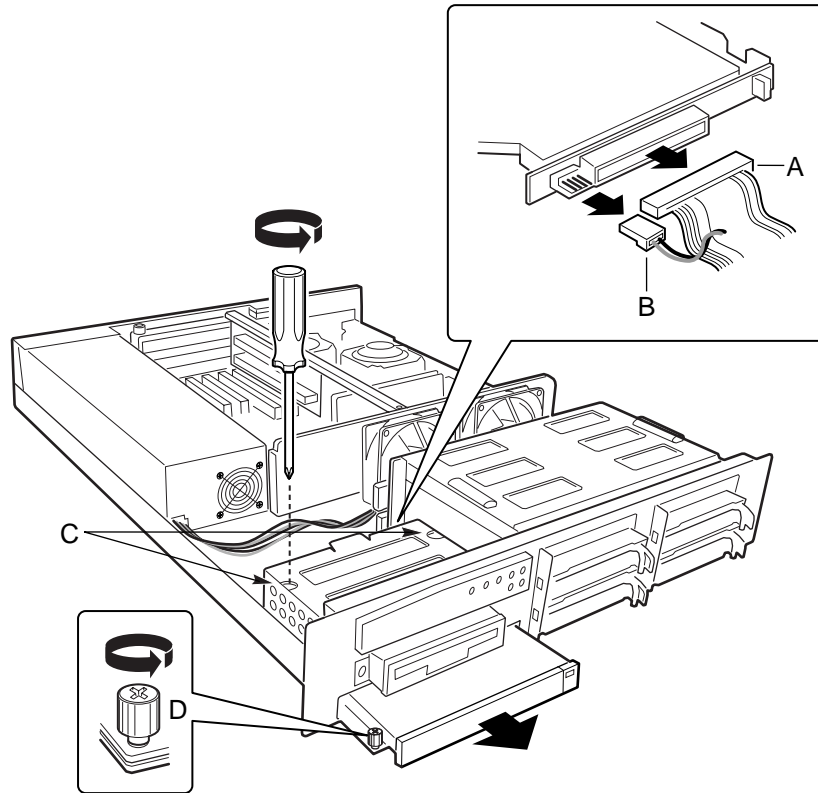
OM11144

Figure 51. Replacing a Fan

4. Press the tabs (Figure 51, A) on both sides of the fan and lift it out of the fan assembly.
5. Insert the new fan into the fan assembly making sure that the flow and rotation arrows on the fan point as shown in the figure (B).
6. Plug the fan cable back into the connector on the server board.
7. Replace the chassis cover if you have no additional work to do inside the chassis.

Replacing the CD-ROM

1. If there is a drive in the 3.5-inch drive bay, remove it to have better access to the CD-ROM drive.
2. Remove the three screws holding the drive to the chassis (Figure 52, C and D).
3. Disconnect the data (A) and power (B) cables from the drive.
4. Slide the drive tray out of the front of the chassis.

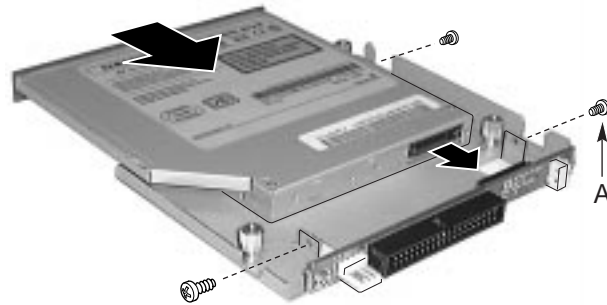


- A. Data cable
B. Power cable
C. Screws
D. Retention screw

OM11145

Figure 52. Removing the CD-ROM Drive

5. Remove the CD-ROM from the CD-ROM tray (see Figure 53) and save the screws.
6. Place the drive in an anti-static protective wrapper if you are not reinstalling the same drive.



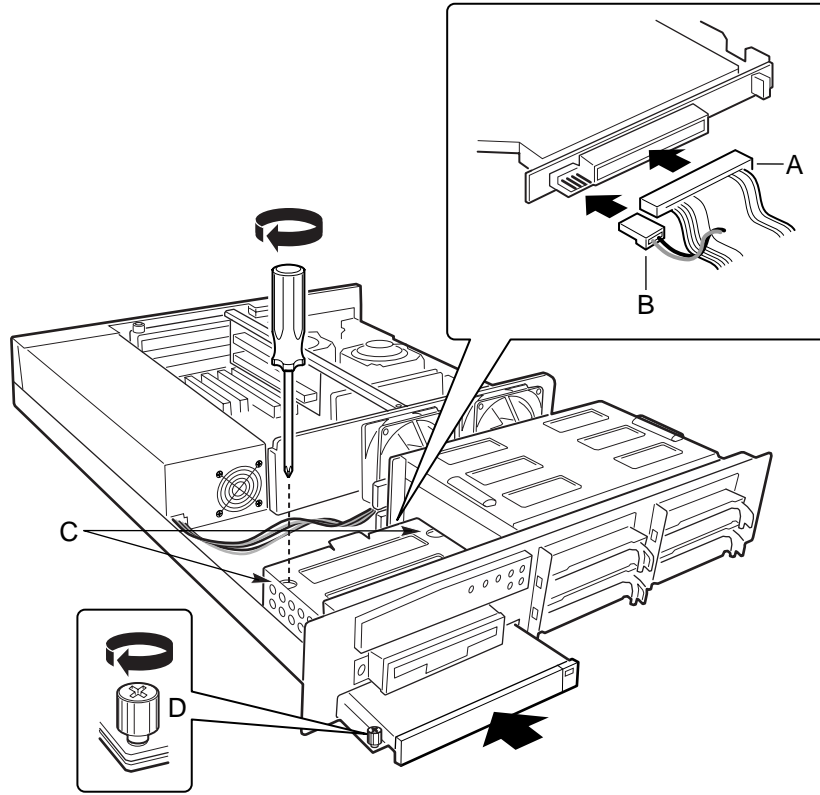
OM09658

A. Mounting screws

Figure 53. Removing a CD-ROM Drive from the CD-ROM Tray

7. Remove the new drive from its protective wrapper, and place it on an anti-static surface.
8. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
9. Attach the CD-ROM drive to the CD-ROM tray using the mounting screws (Figure 53, A) supplied with the system.

10. Slide the slim-line CD-ROM tray into the CD-ROM bay (see Figure 54).



OM11139

Figure 54. Installing a CD-ROM Drive

11. Connect the CD-ROM IDE cable and power cables (Figure 54, A and B) to the connector at the back of the CD-ROM drive.
12. Insert the recessed retention screws (Figure 54, C) through the access holes in the top of the drive bay housing.
13. Insert the retention screw (Figure 54, D) on the front of the chassis.
14. If you removed a drive from the 3.5-inch drive bay to replace the CD-ROM drive, re-install it.

Replacing the Server Board

1. Observe the safety precautions at the beginning of this chapter.
2. Remove the cover from the chassis.
3. Remove the four mounting screws holding the riser card bracket to the chassis and lift the card out of its server board connector.
4. Disconnect all cables from the server board and set their ends aside and away from the server board.
5. Remove any processors and memory cards that you wish to use with the new board.
6. Remove the mounting screws that secure the server board to the chassis.
7. Place the server board in an anti-static bag.
8. Remove the new server board from its package.
9. Mount the new server board to the chassis.
10. Re-cable the new server board to the chassis.
11. Re-install the processors and memory into the new server board.
12. Re-install the riser card.
13. Replace the chassis cover if you have no additional work to do inside the chassis.

Power Supply

The power supply system consists of the power supply bay and either one or two power supply modules. The optional second module provides a redundant, 1+1 system.

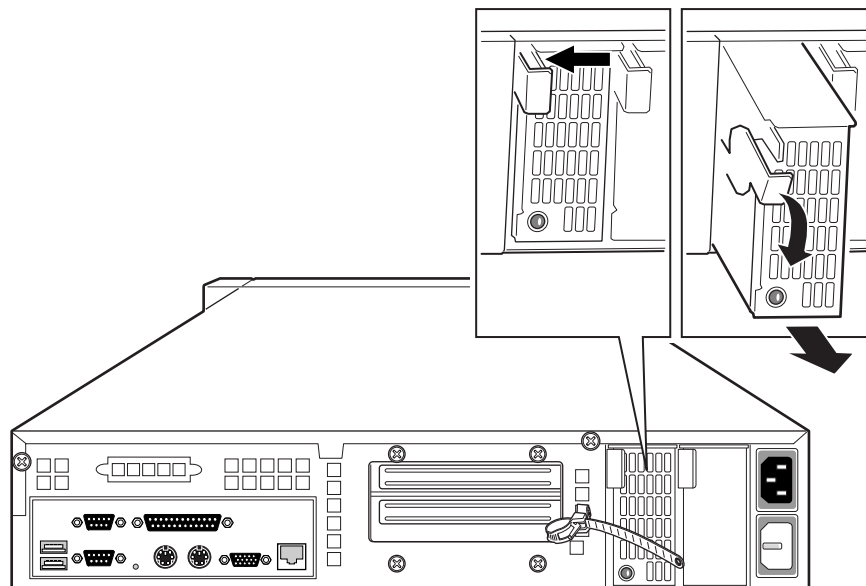
Replacing a Power Supply Module

CAUTION

If you do not have the second, redundant power supply module, you must take the server out of service before replacing the single module. AC input power can remain on.

To replace a power supply module:

1. Grip and squeeze the module handle (Figure 55) to depress the latch that is the right side of the handle.
2. Rotate the handle down while pulling the module toward you. As you pull the module out, support the module with your free hand.
3. Insert a new power supply module in the bay.
4. Grip the module handle, rotate it down, and push the module into the bay.
5. When the module is nearly all of the way in, the handle will rotate up. At this time, push firmly on the front of the handle to lock the latch.
6. The power supply module is now functional and the power supply fault indicator should not be lit.

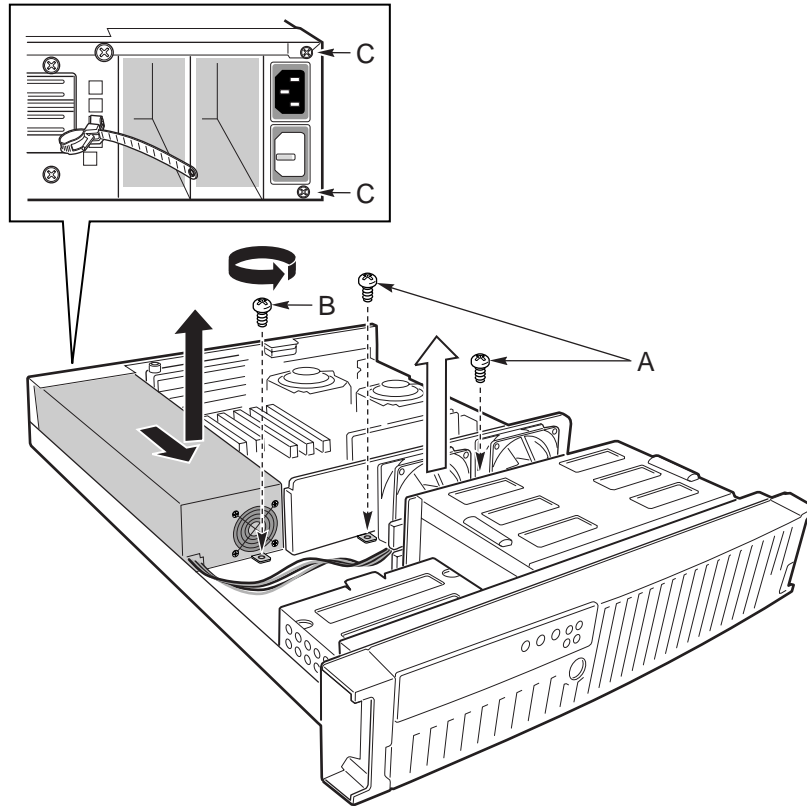


OM11240

Figure 55. Replacing a Power Supply Module

Replacing the Power Supply

1. Unplug the power cord from the power source.
2. Remove the power supply modules. Refer to steps 1 and 2 of “Replacing a Power Supply Module” on page 67.
3. At the rear of the server, undo the strain relief and unplug the power cord from the power supply.



OM11244

Figure 56. Replacing the Power Supply

4. Remove the top cover from the system.
5. At the server board, hot swap backplane, CD-ROM drive, and peripheral drives, label and disconnect the power cables.
6. Remove the power cables from the bundle clip located near the hot swap backplane power connector.
7. Remove the wire tie from the server board power cables where they pass through the fan assembly.
8. At the server, disconnect both fans.
9. Remove the two screws (Figure 56, A) that attach the fan assembly to the chassis floor.
10. Slide the fan assembly toward the power supply to release it from the chassis clip. Remove it from the chassis.
11. At the rear of the chassis, remove the two screws (C) that secure the power supply to the chassis.

12. At the fan end of the power supply, remove the screw (B) that attaches the power supply to the standoff in the chassis floor.
13. Lift the fan end of the power supply above the chassis standoff and slide it toward the front of the server. Lift the power supply out of the chassis.
14. Place the new power supply in the chassis and slide it to the rear as far as it will go.
15. Install the two screws (C) at the rear of the chassis and the one screw (B) at the fan end of the power supply.
16. Place the power cables in the bundle clip.
17. Place the fan assembly in the chassis. Slide it away from the power supply and under the chassis clip. Install two screws (A) and secure it to the chassis.
18. At the server, connect both fans.
19. Install a new wire tie on the server board power cables where they pass through the fan assembly.
20. Connect the power cables that go to the server board, hot swap backplane, CD-ROM drive, and peripheral drives.
21. Re-connect the power cord to the power cord receptacle and plug the cord back into its power source.

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 SR2100 chassis subassembly, when correctly integrated per this guide, complies with the following safety and electromagnetic compatibility (EMC) regulations.

NOTE

Certifications for the SR2100 chassis may have been obtained under the name SR2100 and/or the code BYRD2.

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 (Class A) – Radiated & Conducted Emissions (USA)
- ICES-003 (Class A) – Radiated & Conducted Emissions (Canada)
- CISPR 22 (Class A) – Radiated & Conducted Emissions (International)
- EN55022 (Class A) – Radiated & Conducted Emissions (European Union)
- EN55024 (Immunity) (European Union)
- EN61000-3-2 – Harmonics (European Union)
- EN61000-3-3 – Voltage Flicker (European Union)
- CE – EMC Directive (89/336/EEC) (European Union)
- VCCI (Class A) – Radiated & Conducted Emissions (Japan)
- AS/NZS 3548 (Class A) – Radiated & Conducted Emissions (Australia)
- RRL (Class A) Radiated & Conducted Emissions (Korea)
- BSMI (Class A) Radiated & Conducted Emissions (Taiwan)

Product Regulatory Compliance Markings

This product is provided with the following Product Certification Markings.

- UL & cUL Listing Mark
- CE Mark
- The CE marking on this product indicates that it is in compliance with the European community's EMC (89/336/EEC) and low voltage (73/23/EEC) directives
- German GS Mark
- Russian GOST Mark
- FCC, Class A Markings (Declaration of Conformity)
- ICES-003 (Canada EMC Compliance Marking)
- VCCI, Class A Mark
- Australian C-Tick Mark
- Taiwan BSMI Class A Markings

Electromagnetic Compatibility Notices

FCC Verification Statement (USA)

Product Type: SR2100 (BYRD2)

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 A prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques”, NMB-003 édictée par le Ministre Canadien des Communications.

(English translation of the notice above.) This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Canadian Department of Communications.

Europe (CE Declaration of Conformity)

This product has been tested in accordance 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 the following EMC warning is located on the outside rear area of the product.

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.

- **SR2100 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 | | | |
| Hard disk drive 4 | | | |

continued

Current Usage

Calculating Power Usage

The total combined wattage for your configuration **must be less than 275 watts**, with any combination of loads not to exceed maximum currents on any one channel as defined in Table 1. 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 currents in each column. Then go to the next worksheet.

Table 1. Power Usage Worksheet 1

| Device | Current (maximum) at voltage level: | | | | | |
|--|-------------------------------------|--------|--------|-------|--------|-------|
| | +5Vsb | +3.3 V | +5 V | -5 V | +12 V | -12 V |
| Boards, processors, and memory (get totals from your board manual) | | | | | | |
| SCSI backplane | | | | | | |
| Front panel board | | | | | | |
| 3.5-inch drive | | | | | | |
| CD-ROM drive | | | 0.4 A | | 1.0 A | |
| 1st hot swap hard drive | | | | | | |
| 2nd hot swap hard drive | | | | | | |
| 3rd hot swap hard drive | | | | | | |
| 4th hot swap hard drive | | | | | | |
| Cooling fan 2, 80 mm | | | | | 0.4 A | |
| Total Current | | | | | | |
| Maximum Ratings (for comparison) | 2.0 A | 14.0 A | 20.0 A | 0.2 A | 14.0 A | 0.2 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 2. 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 |
| (-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 275 watts for all DC outputs.

C Safety Warnings

WARNING: English (US)

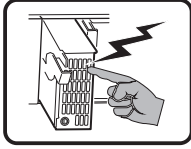
AVERTISSEMENT: Français

WARNUNG: Deutsch

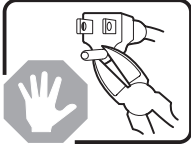
AVVERTENZA: Italiano

ADVERTENCIAS: Español

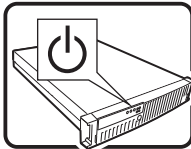
WARNING: English (US)



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.

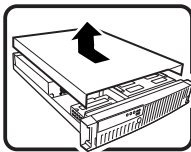


The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the mains (AC) power. The socket outlet that the system plugs into shall 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.

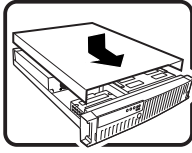


After you have completed the six SAFETY steps above, you can remove the system covers. To do this:

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.
-

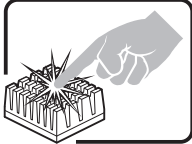
continued

WARNING: English (continued)

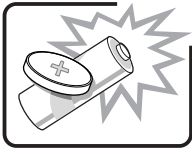


For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:

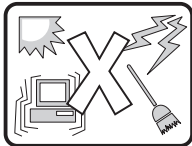
1. Check first to make sure you have not left loose tools or parts inside the system.
 2. Check that cables, add-in boards, and other components are properly installed.
 3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.
 4. Insert and lock the padlock to the 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.



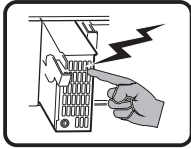
Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.



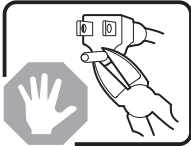
The system is designed to operate in a typical office environment. Choose a site that is:

- 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 cords, because they serve as the product's main power disconnect.
-

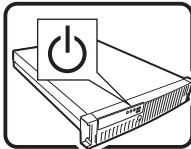
AVERTISSEMENT: Français



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.

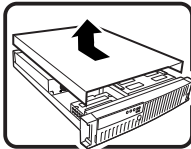


Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.



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.

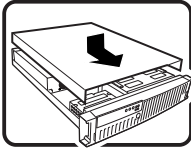


Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit :

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.

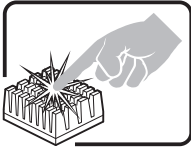
suite

AVERTISSEMENT: Français (suite)

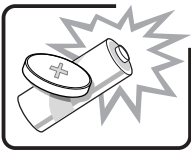


Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit :

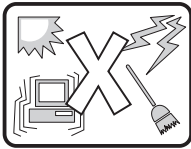
1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.
 2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.
 3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.
 4. Remettez le cadenas en place 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.



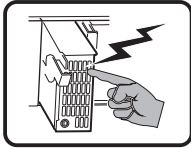
Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.



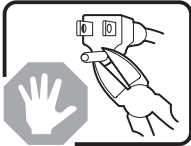
Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être :

- 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 géénérés 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).
-

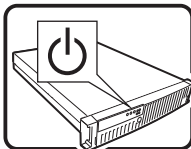
WARNUNG: Deutsch



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.

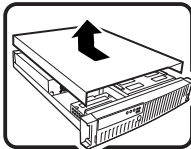


Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.



SICHERHEISSCHRIITTE: 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.

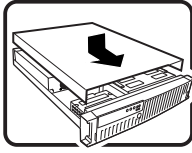


Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie:

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.

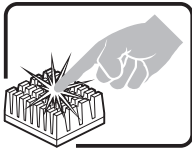
Fortsetzung

WARNUNG: Deutsch (Fortsetzung)

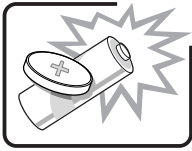


Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:

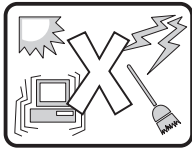
1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.
2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.
3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben 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.



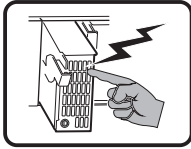
Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.



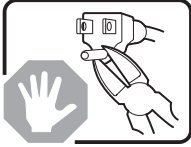
Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

- 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.
-

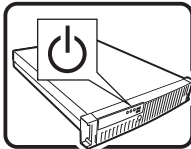
AVVERTENZA: Italiano



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.

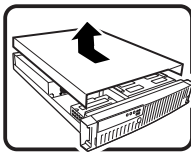


L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.



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

1. Spegner tutti i dispositivi periferici collegati al sistema.
2. Spegner il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.
3. Togliere tutte le spine dei cavi del sistema dalle prese elettriche.
4. Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.
5. Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – .
6. Non far operare il sistema quando il telaio è senza le coperture.

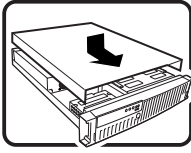


Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come segue:

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.

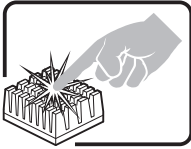
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AVVERTENZA: Italiano (continua)

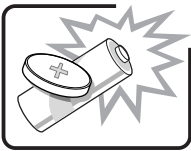


Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:

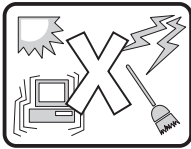
1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.
 2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.
 3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente.
 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.



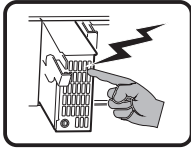
Esiste il pericolo di un'esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.



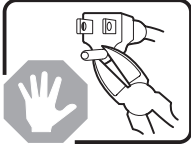
Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

- 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

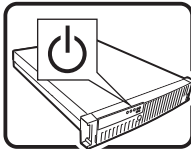


El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.



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.

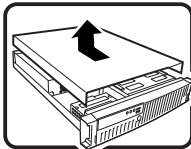


Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.



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 sujeta a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.
6. No ponga en marcha el sistema si se han extraído las tapas del chasis.

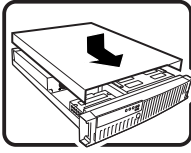


Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:

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.
-

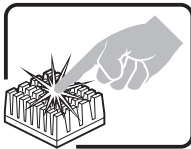
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ADVERTENCIAS: Español (continúa)

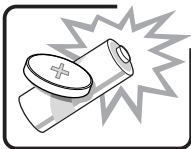


Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:

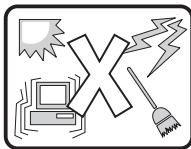
1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.
 2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.
 3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.
 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:

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- **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

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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.

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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—Call Intel at 1-800-628-8686 during the warranty period during normal business hours (Pacific Time), excluding holidays. Please be prepared to provide: (1) your name, address, and telephone numbers; (2) model name and serial number of the Product; (3) an explanation of the problem. The customer service representative may need additional information from you depending on the nature of the problem.

In Europe, Asia, or South America—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

All calls are billed US \$25.00 per incident, levied in local currency at the applicable credit card exchange rate plus applicable taxes.

| | | | |
|-------------------------------|--------------------|----------------------------------|---|
| In U.S. and Canada | | 1-800-404-2284 | |
| In Europe | | | |
| UK | 0870 6072439 | Finland | 9 693 79297 |
| France | 01 41 918529 | Denmark | 38 487077 |
| Germany | 069 9509 6099 | Norway | 23 1620 50 |
| Italy | 02 696 33276 | Sweden | 08 445 1251 |
| Spain | 91 377 8166 | Holland | 020 487 4562 |
| In Asia-Pacific region | | | |
| Australia | 1800 649931 | Indonesian | 001-803 65 7249 |
| Hong Kong | 852 2 844 4456 | Malaysia | 1-800 80 1390 |
| Korea | 822 767 2595 | New Zealand | 0800 444 365 |
| PRC | 800 820 1100 | Pakistan | 632 6368415 |
| Singapore | 65 831-1311 | Philippines | 1-800 1 651 0117 |
| Taiwan | 2 2718 9915 | Thailand | 001-800 6310003 |
| India | 0006517-2-830 3634 | Vietnam | 632 6368416 |
| In Japan | | | |
| 0120-868686 (Domestic) | | 81-298-47-0800 (outside country) | |
| In Latin America | | | |
| Brazil | 0021-0811-408-5540 | Ecuador | 999-119, 800-628-8686 (via AT&T) |
| Mexico | 001-800-628-8686 | Guatemala | 99-99-190, 800-628-8686 (via AT&T) |
| Colombia | 980-9-122-118 | Venezuela | 800-11-120, 800-628-8686 (via AT&T) |
| Costa Rica | 0-800-011-0395 | Argentina | 001-800-222-1001, 800-628-8686 (via AT&T) |
| Panama | 001-800-628-8686 | Paraguay | 008-11, 800-628-8686 (via AT&T) |
| Chile | 800-532-992 | Peru | 0-800-50000, 800-628-8686 (via AT&T) |
| Miami | 1-800-621-8423 | Uruguay | 000-410, 800-628-8686 (via AT&T) |

Returning a Defective Product

Before returning any product, call your authorized dealer/distribution authority. If the customer support group verifies that your product is defective, you will receive a Return Material Authorization (RMA) number to place on the outer package of the product. Intel can not accept any product without an RMA number on the package.