Intel® Cabrillo-C Server Chassis Subassembly Product Guide

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

Order Number: 728969-004

If an FCC declaration of conformity marking is present on the system, the following statement applies:

FCC Declaration of Conformity

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

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

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

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

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

Canadian Department of Communications Compliance Statement:

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numerique német pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Réglement sur le broullage radioélectrique édicté par le ministére des Communications du Canada.

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1 Chassis Description

The Intel® Cabrillo-C server chassis is designed specifically for the Intel® C440GX+ Server Board. No other board should be integrated with this chassis. The Cabrillo-C chassis is designed to either stand upright (pedestal) or be mounted in a rack. Figures 1 and 2 show examples of these configurations. Before operation, you must purchase an adapter kit to configure the server for one of the two modes. If you have already created a pedestal server but now want to install it in a rack, you will need a rack adapter kit.

If you have not already purchased a kit for your particular task, contact your customer service representative for details. For instructions on mounting your server, see the printed *SC450NX MP Server System Rack/Pedestal Kit Installation Guide* accompanying your kit.

Table 1. Cabrillo-C Chassis Physical Specifications

Specification	Pedestal Mode	Rack Mode
Height	48.26 cm (19 inches)	7u (12.25 inches)
Width	31.12 cm (12.25 inches)	19 inch rack
Depth	63.5 cm (25 inches)	25 inches
Weight	45 kg (90 lbs.) typical configuration	45 kg (90 lbs.) typical configuration
Required front clearance	10 inches (inlet airflow <35 °C / 95 °F)	10 inches (inlet airflow <35 °C / 95 °F)
Required rear clearance	8 inches (no airflow restriction)	8 inches (no airflow restriction)
Required side clearance	0.0 inches (additional side clearance required for service)	N/A

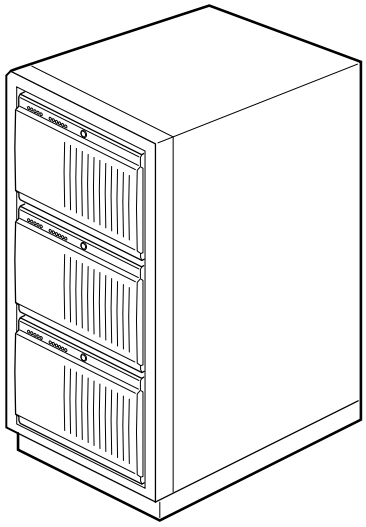

Figure 1. Equipment Rack with Three Servers

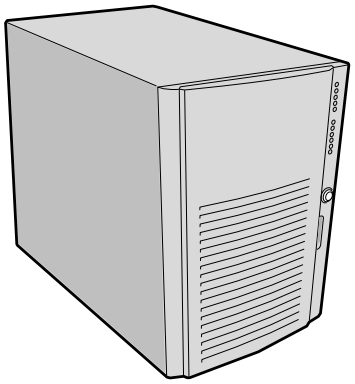

Figure 2. Single Server in Pedestal

Kit Contents

The Cabrillo-C KDK hardware accessory kit includes this Product Guide, three power cords, and the following hardware bags:

- Server board installation bag includes one bag of six 6-32 x 5/16" pan head screws with washers for mounting the server board, one DMA 33 cable (IDE), and one floppy cable, two 12 volt Voltage Regulator Modules (VRM's).
- Six 5.25-inch external slide rails and twelve M3 x ¼ " indented hex washer head mounting screws (two screws per rail).
- Thirty-two 6-32 x 5/16" pan head screws with washers (twenty-four for mounting hard drives to the hot swap drive carriers and eight for spares and other 5.25-inch peripheral mounting needs).

See the Screw Descriptions section, page 17 for detailed information.

Feature Summary

The galvanized metal chassis minimizes EMI and radio frequency interference (RFI). The removable access cover is attached with three screws. A front subchassis and an electronics bay (at the rear of the main chassis) both pivot outward and can be removed entirely to provide easy access to internal components.

Table 2. Chassis Feature Summary

Feature	Description
Drive expansion capacity	3.5-inch diskette drive bay, accessible from front subchassis. Three 5.25-inch-wide bays that are externally accessible, designed to hold half-height standard removable media devices; the bays can be converted into a single full-height bay. One externally accessible bay can hold up to six one-inch drives.
Server Board	C440GX+.
Power supply	Three 400-watt power supplies (hot plugable) with integrated cooling fans and detachable AC power cords.
Cooling	Seven fans provide cooling and airflow: four fans inside the chassis and one fan for each power supply.

Chassis Front Controls and Indicators

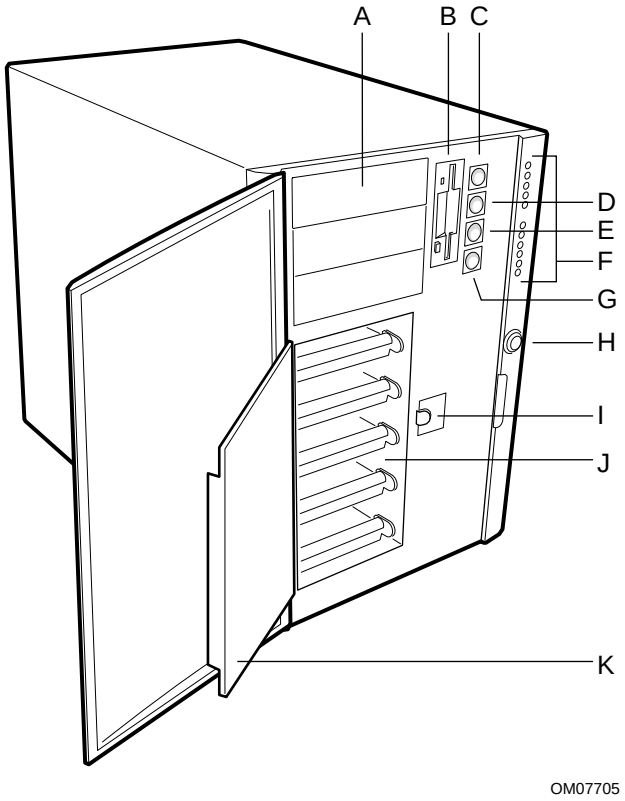

Figure 3. Front Controls and Indicators

A. External drive bay (5¼-inch)
B. Diskette drive bay; diskette drive shown installed (not included)
C. Power On/Off button
D. Button reserved for future use
E. Reset button
F. Front panel LEDs (Top to bottom: top five are power on, reserved for future use, HDD activity, fan failure, power supply failure; bottom six are hard-drive failure LEDs, labeled 0-5)
G. NMI (Non-Maskable Interrupt) button
H. Security latch
I. EMI shield latch
J. Internal drive bays (3½-inch). Five are shown installed, but maximum capacity is six
K. Hot swap bay door

Chassis Back I/O Ports and Features

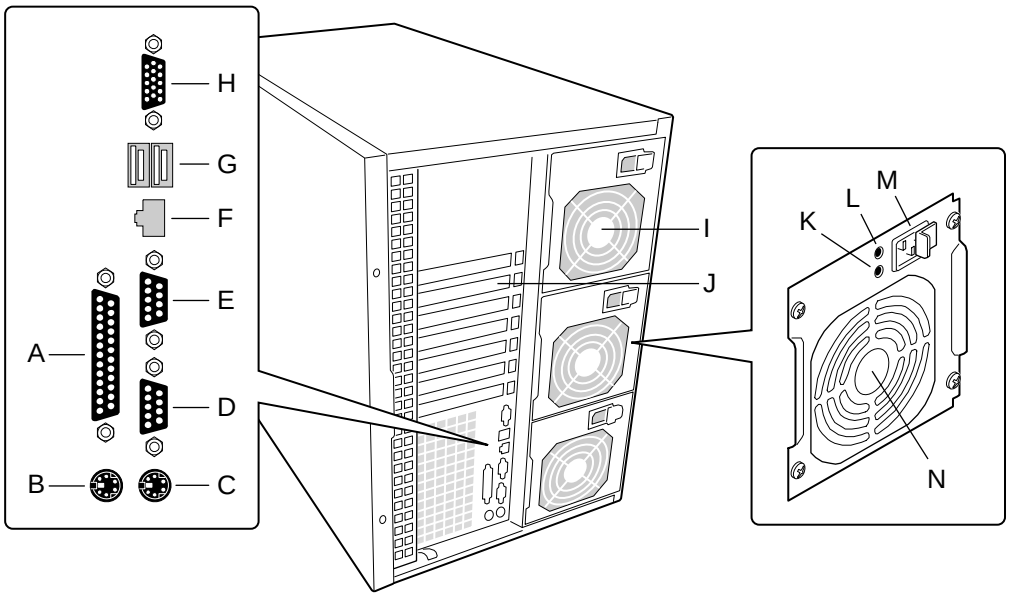

Figure 4. Back Controls and Indicators

A. Parallel port
B. Keyboard connector
C. Mouse connector
D. Serial port A, COM1
E. Serial port B, COM2
F. NIC connector
G. Universal serial bus connectors
H. VGA monitor connector
I. Power supply
J. Expansion slot covers
K. Power supply LED overload (LED not lit means failure)
L. Power supply failure LED (LED not lit means failure)
M. AC input power connector
N. Power supply fan

Chassis Side View

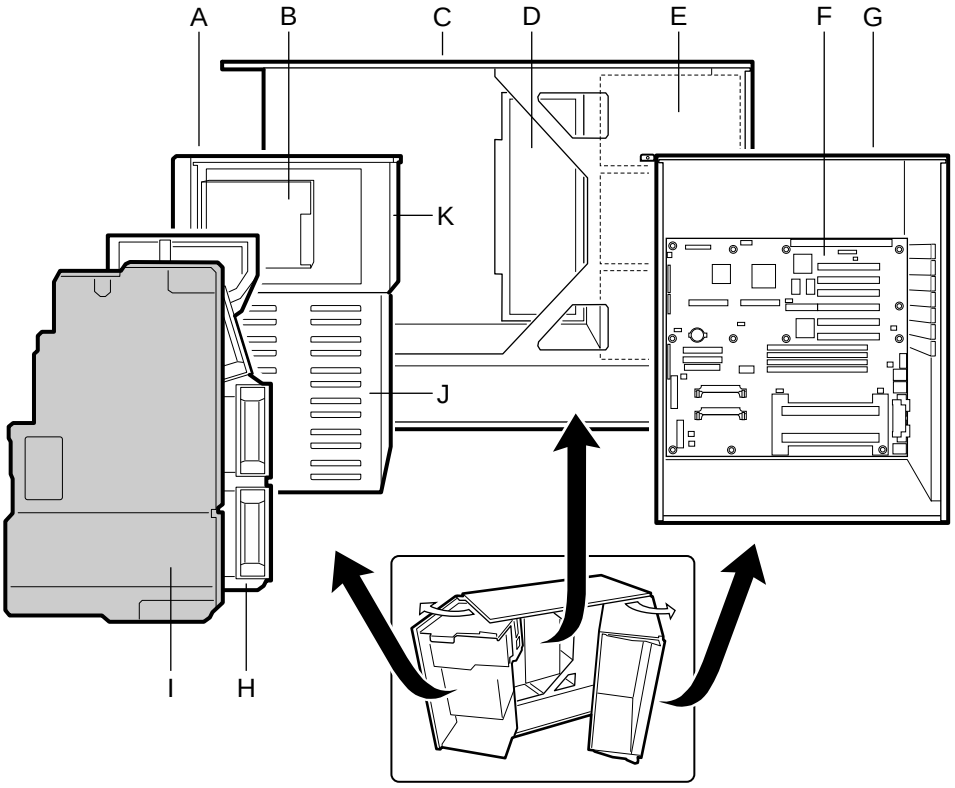

Figure 5. Chassis Side View

A. Front swing-out subchassis
B. Diskette drive*
C. Main chassis
D. Power share board (PSB)
E. Power supply(ies)
F. Server board*
G. Lift-out electronics bay
H. Foam fan housing
I. Foam fan housing cover
J. SCSI hard drive bay
K. 5.25-inch device bay

* Items shown may not be included in the chassis.

Peripherals

3.5-inch Hard Drive Bays

The chassis contains one bay for six 3.5-inch-wide (1-inch high) hard drives, which are accessed externally from the front. The drives are mounted in a carrier with four fasteners and the carrier snaps into the chassis.

A single metal EMI shield and plastic door cover the drive bays. A hot swap drive bay is provided for drives that are 3.5-inches wide and 1-inch high. Drives can consume up to 19 watts of power and must be specified to run at a maximum ambient temperature of 55 °C.

The server was designed to allow the user to install a Redundant Array of Independent Disks (RAID). A software implementation with onboard SCSI or an add-in RAID controller can be used to set up RAID applications.

5.25-inch Removable Media Device Bays

The chassis has three 5.25-inch half-height bays that are accessible from the front of the chassis. These bays are intended to provide space for tape backup, CD-ROM drive, or other removable devices. You can convert the 5.25-inch bays to a single full-height bay.

EMC Compliance Notice — 5.25-inch Removable Media Device Bays

As a cost benefit to customers, and based on the assumption that customers will integrate a 5.25-inch peripheral device in the lower bay of the Cabrillo-C chassis (gasket present), this chassis does not include a cover plate in the lower 5.25-inch bay.

To maintain compliance with electromagnetic compatibility (EMC) regulations, this bay MUST be configured with either:

- An EMC-compliant 5.25-inch peripheral device (such as a CD-ROM drive), OR
- A metal cover plate, available through Intel

To order the metal cover plate:

1. Contact your local Intel service representative
2. Order metal cover plate (product code CBFILLPNL)

NOTE

Integration of the 5.25-inch peripheral bay can affect EMC compliance and is a regulated activity. Except as noted here, any changes to the bay configuration could result in noncompliance with EMC regulations in your area.

CAUTION

To avoid damage to a 5.25-inch peripheral device, ensure the conductive EMI gasketing provided in the lower bay or the metal cover plates do not make contact with any exposed circuitry on the peripheral device. If the 5.25-inch device has exposed circuitry, install it in one of the two upper bays.

Power Supply

The chassis ships with three 400-watt PFC (power factor correction) power supplies, each designed to minimize EMI and RFI. Each supply auto-senses within the following voltage ranges and is rated as follows:

- 100-120 V~ at 50/60 Hertz (Hz); 7.6 A maximum
- 200-240 V~ at 50/60 Hz; 3.8 A maximum

The DC output voltages of each power supply are:

- +3.3 V at 36 A max
- +5 V at 24 A max (total combined output of +3.3 V and +5.5 V not to exceed 390 W)
- +12 V at 18.0 A with 19.0 A <10ms peak
- -12 V at 0.5 A
- +5 V standby at 1.5 A
- -5 V at 0.25 A

Power is sourced through the power cable to the 24 pin main connector on the server board. Remote sensing signals are provided through the cable to the 30 pin front panel/power control connector on the server board.

Checking the Power Cords

WARNING

Do not attempt to modify or use a supplied AC power cords if they are 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 a power cord supplied with the chassis 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 connector 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.

Chassis Cooling

The chassis includes seven fans for cooling and airflow, three of which are power supply fans, one fan for each power supply.

NOTE

The access cover must be on the chassis for proper cooling.

Chassis Security

To help prevent unauthorized entry or use of the server, the chassis includes a chassis intrusion switch that can be monitored by Server Management software and a padlock loop at the front of the chassis.

Monitoring

Install the chassis intrusion switch. When the access cover is removed, the switch transmits a signal to the BMC on the server board. Server management software can be programmed to respond to an intrusion by powering down or by locking the keyboard, for example.

Mechanical Locks

A padlock loop on the front of the chassis access cover can be used to prevent access to the hard drives. A variety of lock sizes can be accommodated by the .300 diameter loop. The front bezel has a three position lock to prevent access to the hard drives and the interior of the chassis.

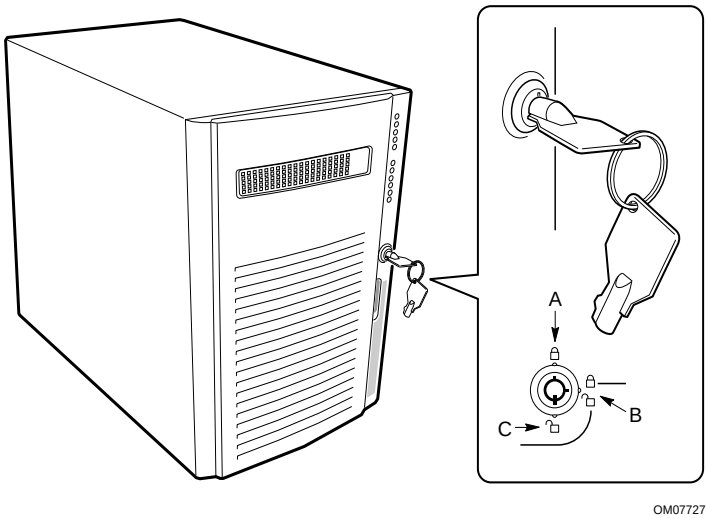

Figure 6. System Lock

A. Chassis locked
B. Side cover locked, front bezel unlocked
C. Chassis unlocked

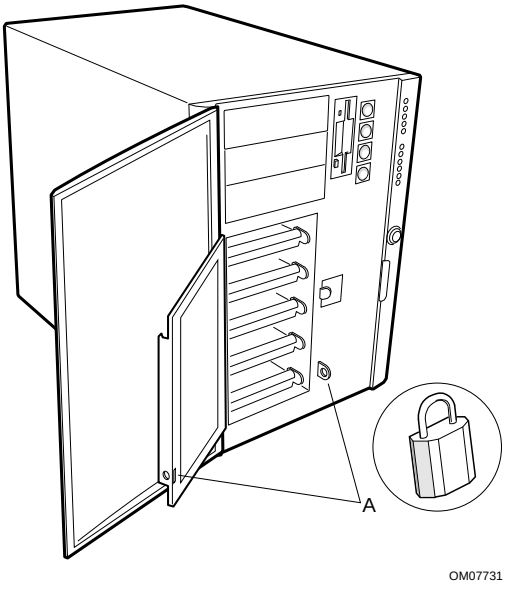

Figure 7. Lock Loop

A. Padlock loop

2 Working Inside the Chassis

All references to top, sides, and directions in this chapter refer to a chassis in a pedestal mount.

Tools and Supplies Needed

- Phillips (cross slot) screwdriver (#2 bit)
- Antistatic wrist strap (recommended)
- Needle-nosed pliers

Screw Descriptions

The following shows the five different screw types included with the server, and their application.

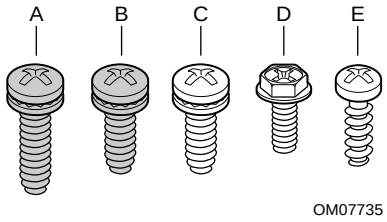

Figure 8. Types of Screws

A.	Brass-colored 6-32 x 3/8" pan head, Phillips recess, internal tooth lock washer sems	Processor to retention mechanism, retention mechanism to server board
B.	Brass-colored 6-32 x 5/16" pan head, Phillips recess, internal tooth lock washer sems	Hard drive carriers
C.	Zinc plated 6-32 x 5/16" pan head with washer, Phillips recess, thread rolling tip	Mounting server board, and all other applications not specified here such as add-in boards, expansion slots, chassis modules, and power supplies
D.	Zinc plated M3 indented hex washer head, Phillips recess	5.25-inch slide rails
E.	Zinc plated M3.5 x 10mm pan head Phillips recess, threadforming	Attaching retention mechanism fans to the retention mechanism

Safety: 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.

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.

⚠ WARNINGS

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

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.

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

⚠ CAUTIONS

ESD can damage disk drives, boards, and other parts. Perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—on your server when handling parts.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. Do not touch the connector contacts. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. If you place the server board on a conductive surface, the battery leads may short out. If they do, this will result in a loss of CMOS data and will drain the battery.

Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

For proper cooling and airflow, always install the access cover before turning on the server. Operating it without the cover in place can damage system parts.

Removing the Access Cover

You need to remove the access cover, and in some cases the front bezel, to reach components inside the chassis. Facing the front of the chassis, the access cover is on the right side for pedestal-mounted (tower) servers, and on the top for rack-mounted servers.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Turn off all peripheral devices connected to the server.
3. Turn off the server by using the power on/off switch on the front panel AND unplug all AC power cords.
4. Label and disconnect all peripheral cables attached to the I/O panel.
5. Remove and save the three screws from the back of the access cover; you will need them later to reattach the cover.
6. Place the fingertips of your right hand under the built-in handle on the back of the cover. A rounded, rectangular depression in the front middle of the access cover serves as another handle.
7. Using an even pull, slide the cover backward, about an inch, until it stops.
8. Pull the entire cover outward, straight away from the chassis, to disengage the rows of tabs from the notches in the top and bottom edges of the chassis. Set the cover aside.

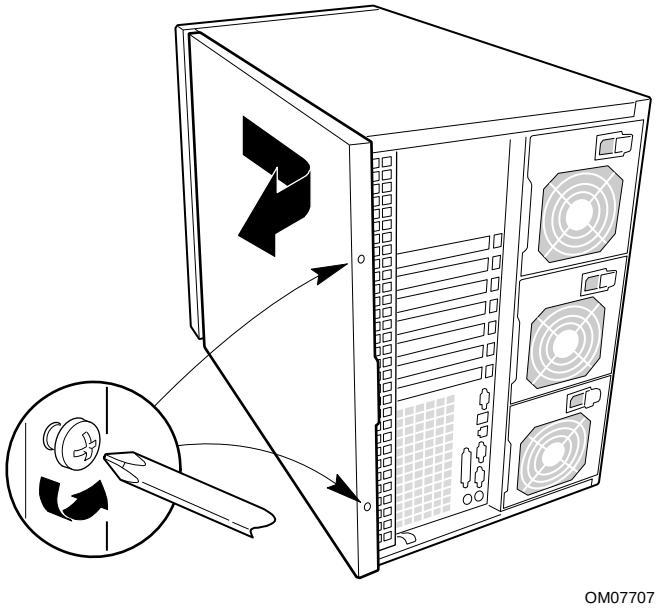

Figure 9. Removing the Access Cover

Installing the Access Cover

1. Before replacing the access cover, check that you have not left loose tools or parts inside the server.
2. Check that cables, add-in boards, and other components are properly installed.
3. Position the cover over the chassis so that the rows of tabs align with slots in the chassis. Slide the cover toward the front of the chassis until the tabs on the cover firmly engage in the chassis.
4. Attach the cover to the chassis with the three screws you removed earlier, and tighten them firmly.
5. Connect all external cables and the power cords to the server.

Opening the Subchassis and Electronics Bay

The chassis is comprised of three parts: the main chassis, a swing-out subchassis at the front, and a swing-out subchassis, called the electronics bay, at the rear. To access components in some instances, you must swing away and/or completely remove the subchassis and electronics bay.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove the access cover.
3. Remove the two screws on the top and bottom edges of the chassis (Figure 10, A). These screws attach the front subchassis and the electronics bay to the main chassis.

⚠ CAUTION

You must disconnect all cabling to the electronics bay before pivoting/removing the bay. Failure to do so can result in serious damage to system components.

4. Pivot the front subchassis left, away from the main chassis, until it stops (Figure 10, B).
5. Disconnect all cabling to the electronics bay.
6. Using the vertical edge of the electronics bay as a handle, pivot the bay right, away from the main chassis, until it stops (Figure 10, C).
7. If necessary, completely remove the subchassis and electronics bay: pivot the bays outward until the two pins that function as hinges for the bays slide out of their slots. Set the bays aside.

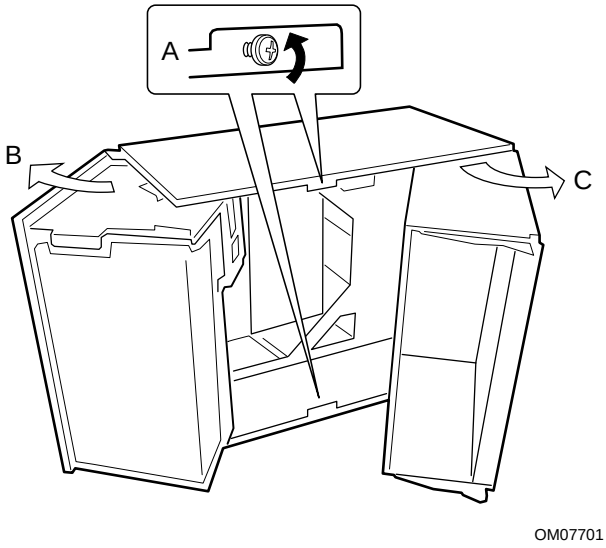

Figure 10. Opening the Subchassis and Electronics Bay

A. Screws
B. Front swing-out subchassis
C. Electronics bay

Installing the I/O Shield

NOTE

An ATX 2.01-compliant I/O shield is provided with the server board. The shield is required by Electromagnetic Interference (EMI) regulations. It minimizes EMI and ensures proper cooling of the server. If the shield does not fit the chassis, obtain a properly sized shield from the chassis supplier.

The shield fits the rectangular opening near the power supply in the back of the chassis. The shield has cutouts that match the external I/O connectors (e.g., keyboard and mouse).

1. Install the shield from inside the chassis. Orient the shield so that the cutouts align with the corresponding I/O connectors on the server board.
2. Position one edge so that the dotted groove (A) is outside the chassis wall, and the lip of the shield rests on the inner chassis wall.
3. Hold the shield in place, and push it firmly into the opening until it is seated (B). Pressure holds the shield in place.

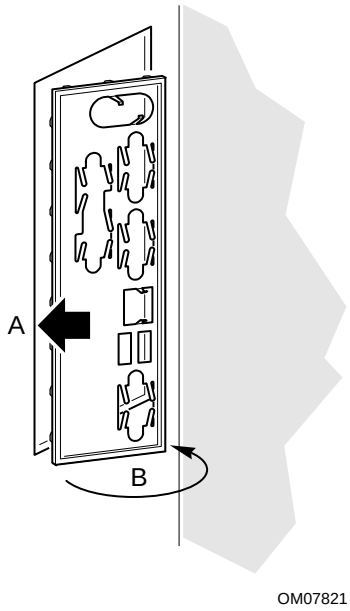

Figure 11. Installing the I/O Shield

A. Dotted groove
B. Seated shield

Installing the Server Board

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Snap the EMI I/O panel into the proper position on the inside of the electronics bay. Orient the shield so that the cutouts align with the corresponding I/O connectors on the server board.
3. Position the board over the two snap-in standoffs and threaded standoffs inside the chassis. Make sure the I/O connectors stick out through the I/O shield.
4. Press the board onto the snap-in standoffs, then insert one screw through one of the mounting holes of the board and into a threaded standoff. Do not tighten the screw until the next step.
5. Insert the remaining screws through the mounting holes and into the threaded standoffs. Make sure the board is properly seated, then tighten all the screws firmly, starting with the screws in the center of the board. Do not insert screws in the holes designated (B). These holes are for mounting the Retention Mechanism.

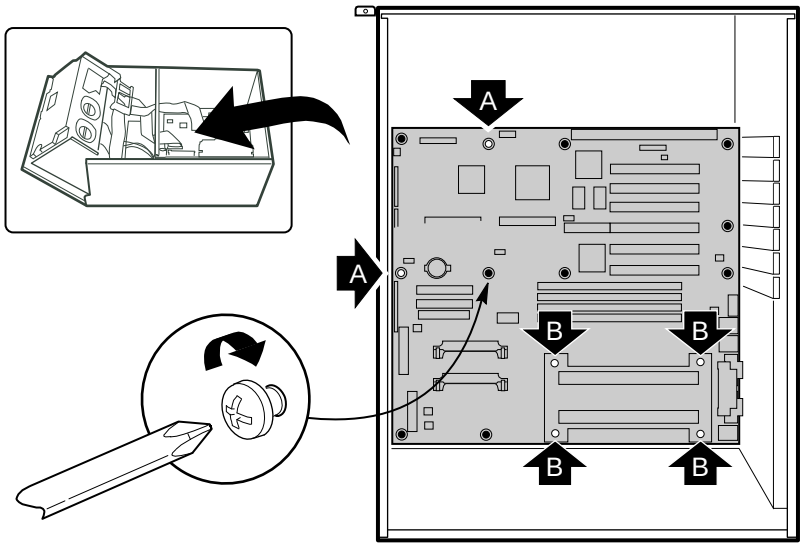

Figure 12. Installing the Server Board

A. Snap-in standoffs
B. Retention Mechanism screw holes

NOTE

When installing the server board, make sure the metal tabs on the ATX I/O shield rest on top of the USB port and RJ45 network connector.

6. Gently squeeze the tabs on the bottom of the cable latch and lift away.
7. Position the cable and lower the cable latch over the cable and snap into place.
8. Connect all internal cables to the server board.

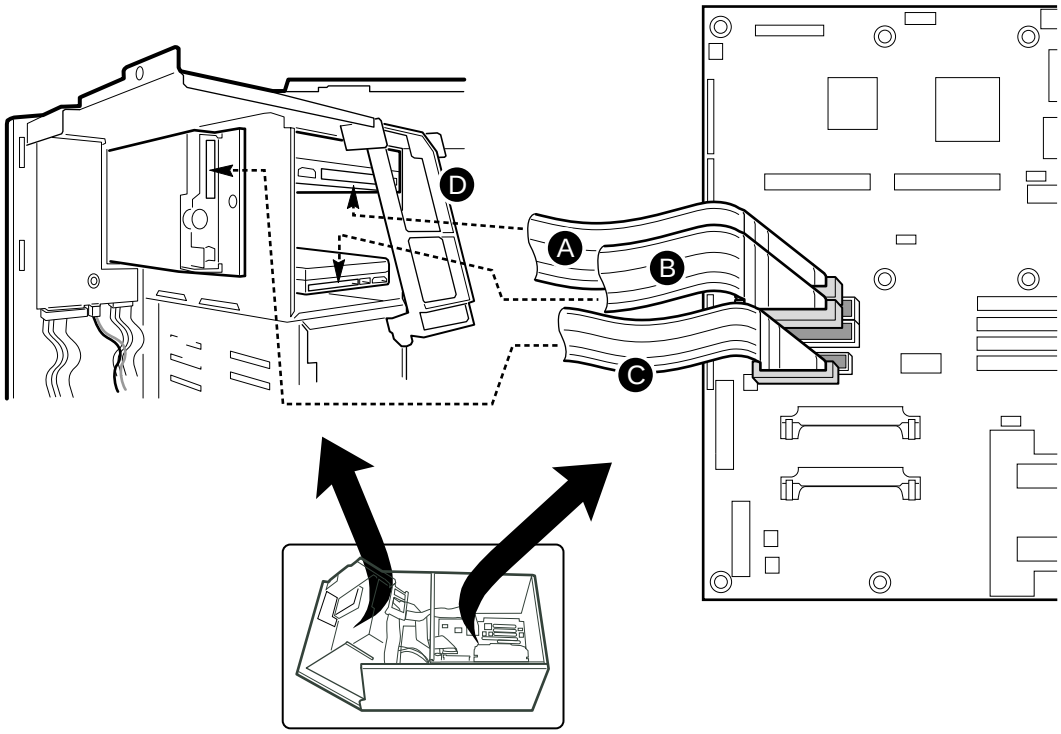

Figure 13. IDE and Floppy Cable Connections

A. Cable to secondary IDE connector (not provided)
B. Cable to primary IDE connector
C. Diskette data cable
D. Cable latch

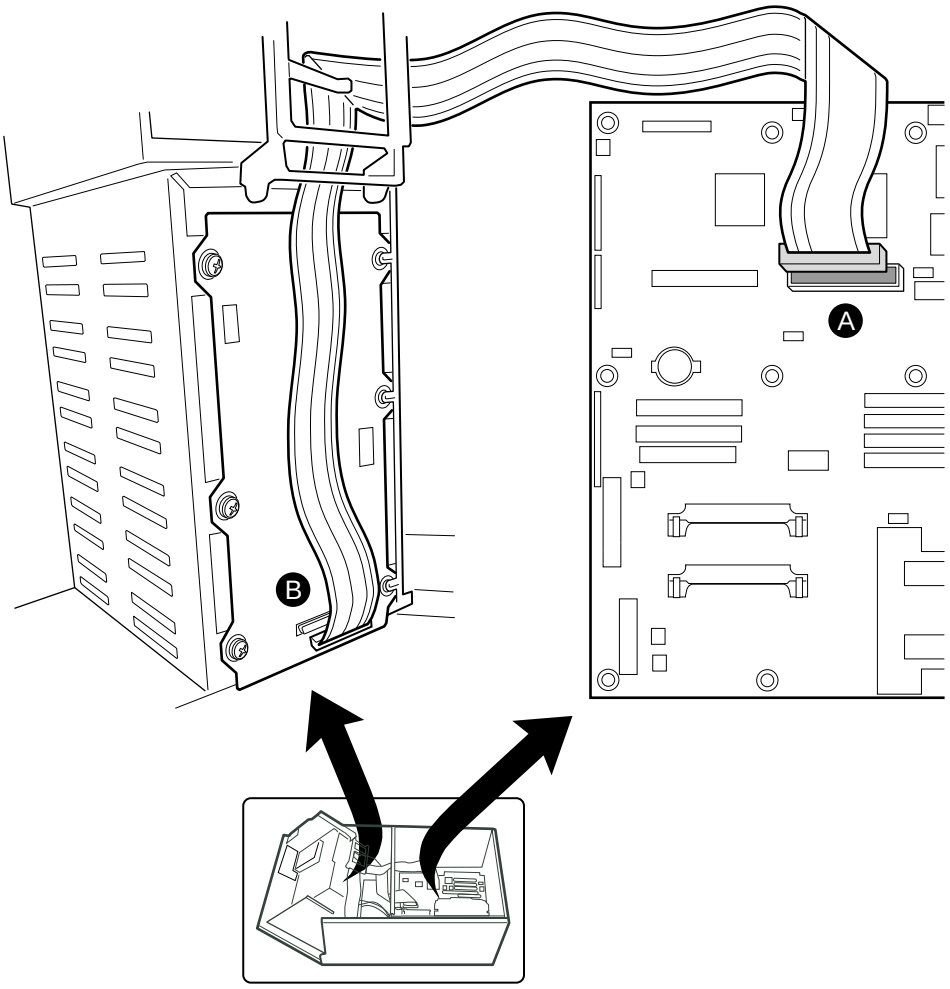

Figure 14. LVD SCSI Cable Connections

A. LVD SCSI connector on server board
B. LVD SCSI connector on hot swap backplane
C. Cable

NOTE

The SCSI cable provided with the chassis is designed to be connected to either the onboard SCSI connector or a SCSI add-in peripheral card such as a RAID card.

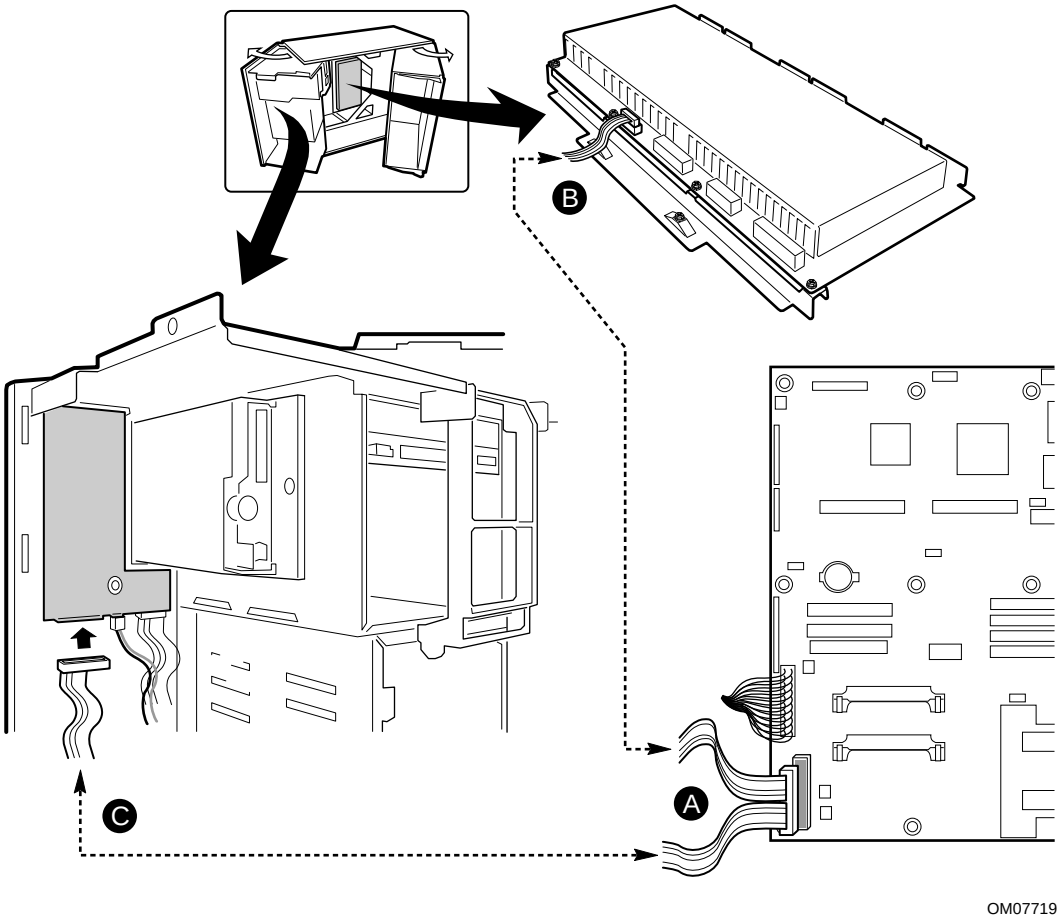

Figure 15. Front Panel Cable Connections

A. 30 pin front panel connector on server board
B. Front panel connector on power share board
C. Front panel connector on front panel board

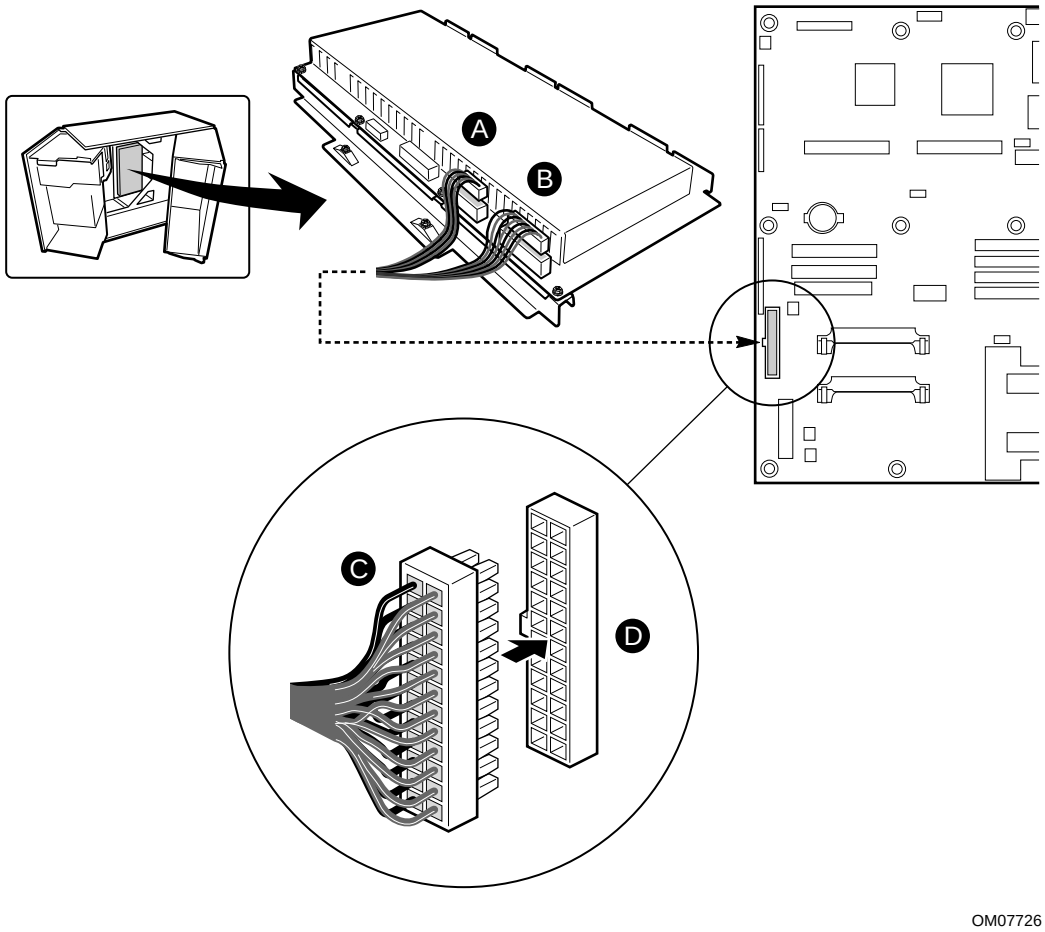

Figure 16. Power Cable Connections

A. Aux power connector on power share board
B. Main power connector on power share board
C. 24-pin power cable
D. Main power connector on server board

9. Install add-in boards.
10. Connect all internal cables to add-in boards.
11. Reinstall the electronics bay if you removed it and close the front subchassis.
12. Reinstall the access cover using the original screws.
13. Connect all peripheral device cables to the I/O panel.
14. Run the SSU and FRUSDR utility to configure the server.

NOTE

Make sure the power cable connector is snapped into the main power connector on the server board.

Installing the Microprocessor

The C440GX+ server board supports up to two Pentium® II Xeon™ or Pentium III Xeon processors. If you are installing two processors, make sure they are the same speed, voltage, and stepping.

The processor cartridges are mounted with a retention mechanism, which is provided with the C440GX+ server board.

NOTE

Your chassis must have anchors for the four screws that hold the retention mechanism to the board/chassis.

1. Install the board in the chassis.
2. Install the two 60 mm retention mechanism fans (A) into one of the retention mechanism ends (E) label side out so the airflow (B) flows away from the processors. Pressing the driver firmly, insert the two threadforming screws (D) to hold each fan in place.

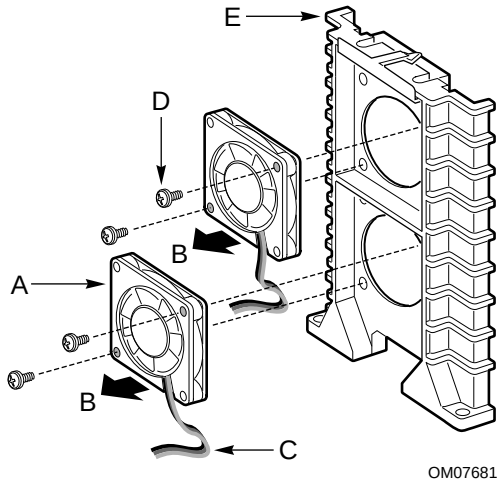

Figure 17. Installing the Retention Mechanism Fans into the Retention Mechanism

A. Fan
B. Airflow direction
C. Cable
D. Screws
E. Retention mechanism

3. Install both ends of the retention mechanism. The end with the fans should be closest to the back panel I/O ports. Make sure the pins (C) line up with the holes (D). Use two screws (F) to secure each end through the board to the chassis.

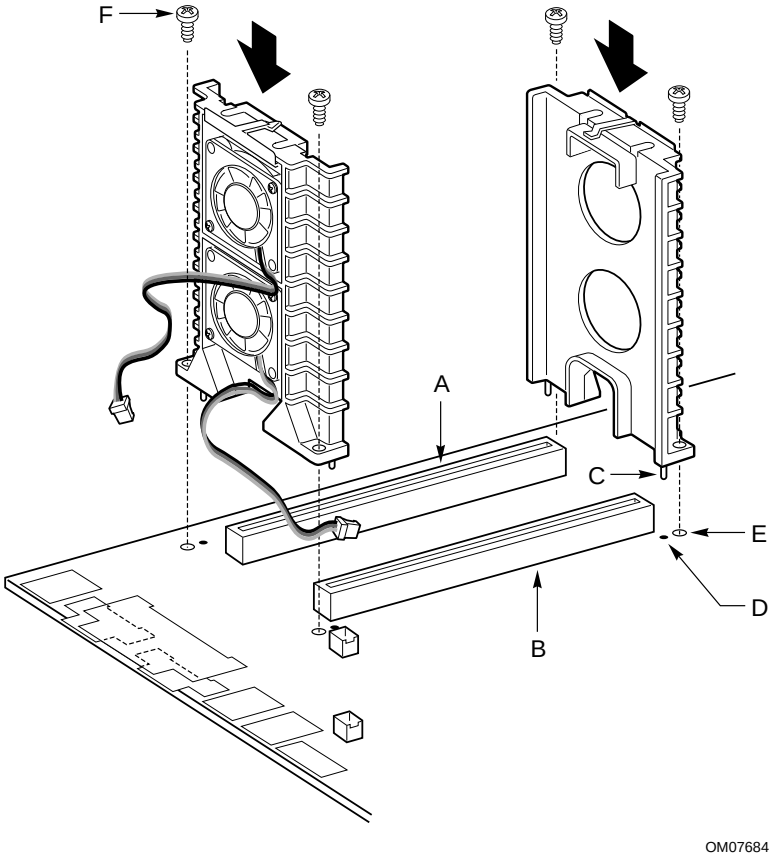

Figure 18. Mounting Retention Mechanism

A. Primary processor slot
B. Secondary processor slot
C. Positioning pin
D. Hole for positioning pin
E. Screw hole
F. Screws

4. Connect the fan cables to the server board. The top fan (A) connects to the PROC FAN2 TOP connector (C). The bottom fan (B) connects to the PROC FAN1 BTM connector (D).

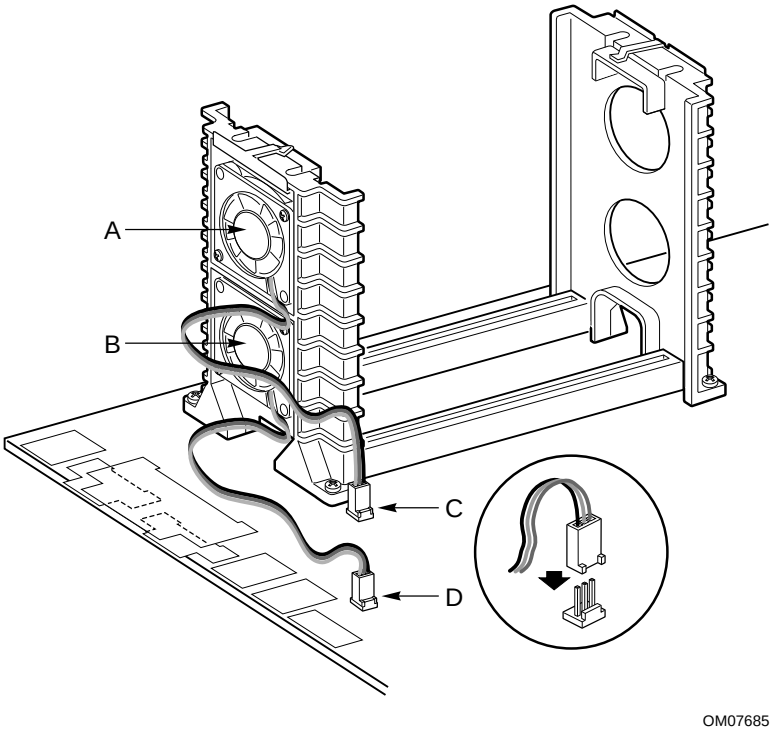

Figure 19. Installing the Microprocessor Fan Cables

A. Top microprocessor fan
B. Bottom microprocessor fan
C. PROC FAN2 TOP connector (J7B1)
D. PROC FAN1 BTM connector (J6A1)

5. Attach the top of the retention mechanism to the processor cartridge. Make sure the screw holes (A) are on the same side as the heatsink. The clips (B) clip into the holes in the processor cartridge (C).

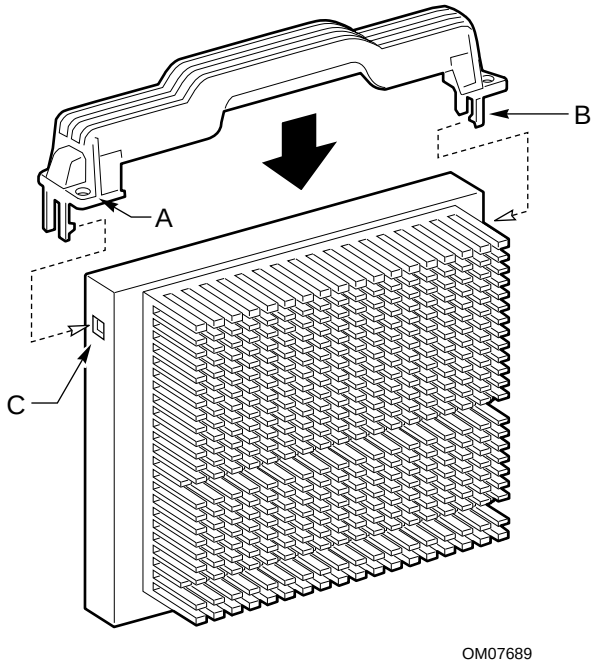

Figure 20. Attach Retention Mechanism to Processor

A. Screw hole
B. Locking tab
C. Hole

NOTE

If you are installing a second processor, the screw holes (A) are on the side away from the heatsink.

CAUTION

If you install only one processor in a system, it must go in the primary connector (farthest from the DIMM sockets). With a single-processor configuration, you must install a termination board in the empty secondary connector. A termination board is provided with the C440GX+ server board.

6. Slide the processor (B) into the retention mechanism (C) and press it firmly into its slot (D). Secure the processor with two screws (A).

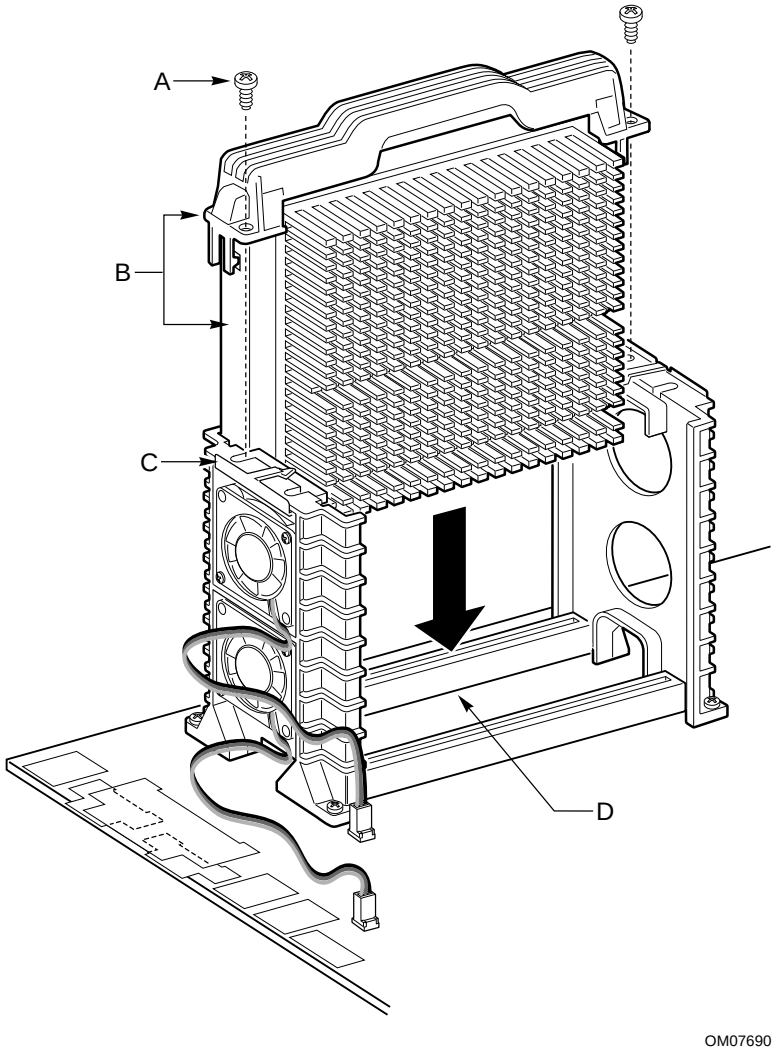

Figure 21. Installing the Processor

A. Screw
B. Processor
C. Retention mechanism
D. Processor slot

7. Attach the top of the retention mechanism to the termination card assembly. Make sure the screw holes (A) are on the rear of the assembly. The clips (B) clip into the holes in the assembly (C).

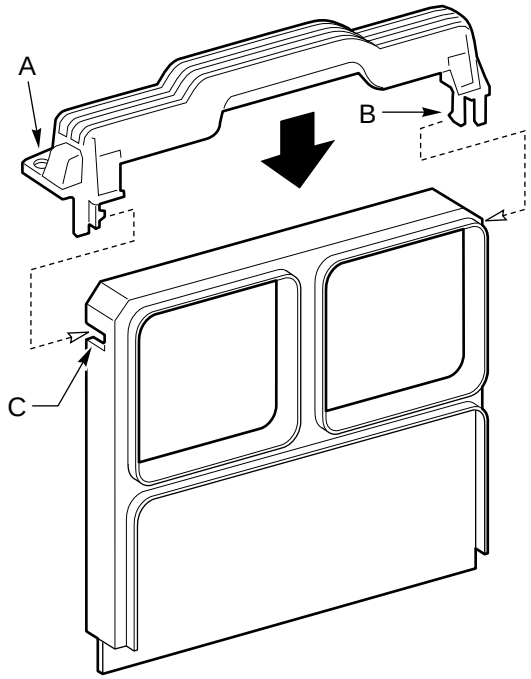

Figure 22. Attaching the Retention Mechanism to the Termination Card Assembly

A. Screw hole
B. Locking tab
C. Hole

8. Slide the termination card assembly into the retention mechanism and press it firmly into its slot. Secure the assembly with two screws (A).

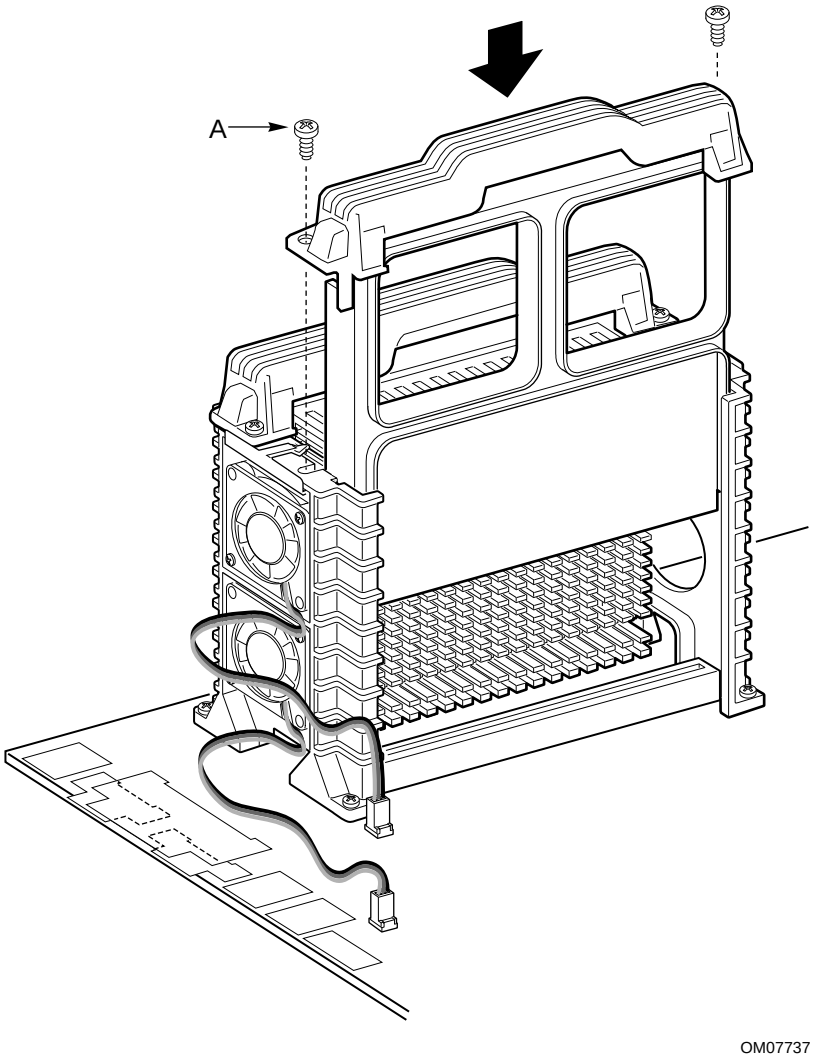

Figure 23. Installing the Termination Card

A. Screw

Installing a Voltage Regulator Module (VRM)

You must install a VRM in the P1 Primary VRM socket. If you install a secondary processor, you must also install a VRM in the P2 Secondary VRSocket. You may install 5 V or 12 V VRMs. See the following URL for information on which URM to use:

http://www.intel.com/go/serverbuilder/ and look under Reference Chassis.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Open your server.
3. Remove the VRM from its antistatic packaging.
4. Insert the VRM into the socket component side facing the center of the server board and snap it into place.

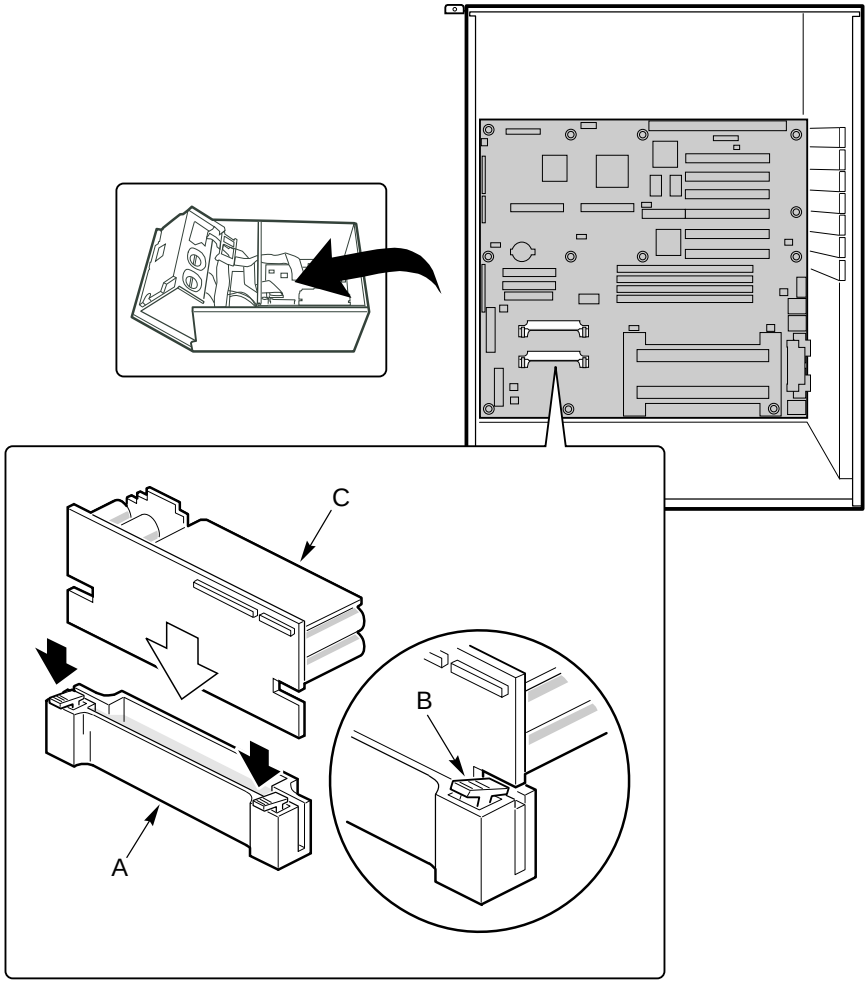

Figure 24. Installing a Voltage Regulator Module

A. Screw
B. Locking tab
C. VRM

Fans

The Cabrillo-C chassis contains four removable chassis fans to cool the system components and drives. These fans connect to the server board and are enclosed in a removable foam assembly. The integrated power supply fans provide more cooling and airflow.

Removing an Individual Fan

NOTE

Correct airflow direction: The side of each fan is embossed with directional arrows indicating airflow direction. Always note the direction of the arrows on a fan before removing it. You will need this information later when you install a different fan.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove the access cover.
3. Remove the foam cover from the front subchassis by pulling it straight out (see Figure 26 on page 39). Be careful not to break the foam.
4. Label and disconnect the desired fan cable from the server board. Be sure to note the position of the cable where it is held in place in the foam fan assembly.
5. Remove the fan cable from the foam assembly, noting the routing of the cable. Be careful not to break the foam.
6. Remove the fan from the foam assembly. All fans sit differently in the assembly, but in general, each fan can slide in and out of the foam in only one way.

NOTE

The two installed fans nearest the hot swap bay (fans 2 and 4 in Figure 25) are separated by a square piece of foam (the piece with a crescent-shaped hole) that extends perpendicularly from the front of the fans. You must remove this piece to access the two fans it separates (pull it straight out).

Installing an Individual Fan

⟹ NOTE

A general rule about correct airflow direction: The removable fan pulls air from in front of the chassis so that it flows across the system components and out the back. Thus, the fan must be oriented for the correct airflow direction. In general, the fan's label is on the side from which air EXITS the fan. You can confirm correct orientation by checking the embossed arrows on the side of the fan:

⇒ Arrow points horizontally to indicate airflow direction

⇑ Arrow points vertically to indicate rotation direction

Always note the direction of the arrows on the existing fan before you remove it. Replace a failed fan with the same type as the one removed, with a tachometer signal, or an approved fan. For a list of approved fans, contact your customer service representative.

1. See "Removing an Individual Fan" on page 36, as necessary.
2. Observe the safety and ESD precautions at the beginning of this chapter.
3. Slide the fan into its correct receptacle in the foam fan assembly.

4. Route the cable through the foam at the correct places (if you are REPLACING a bad fan, you should have recorded where each cable attaches to the foam; if you are ADDING a fan, see Figure 25).

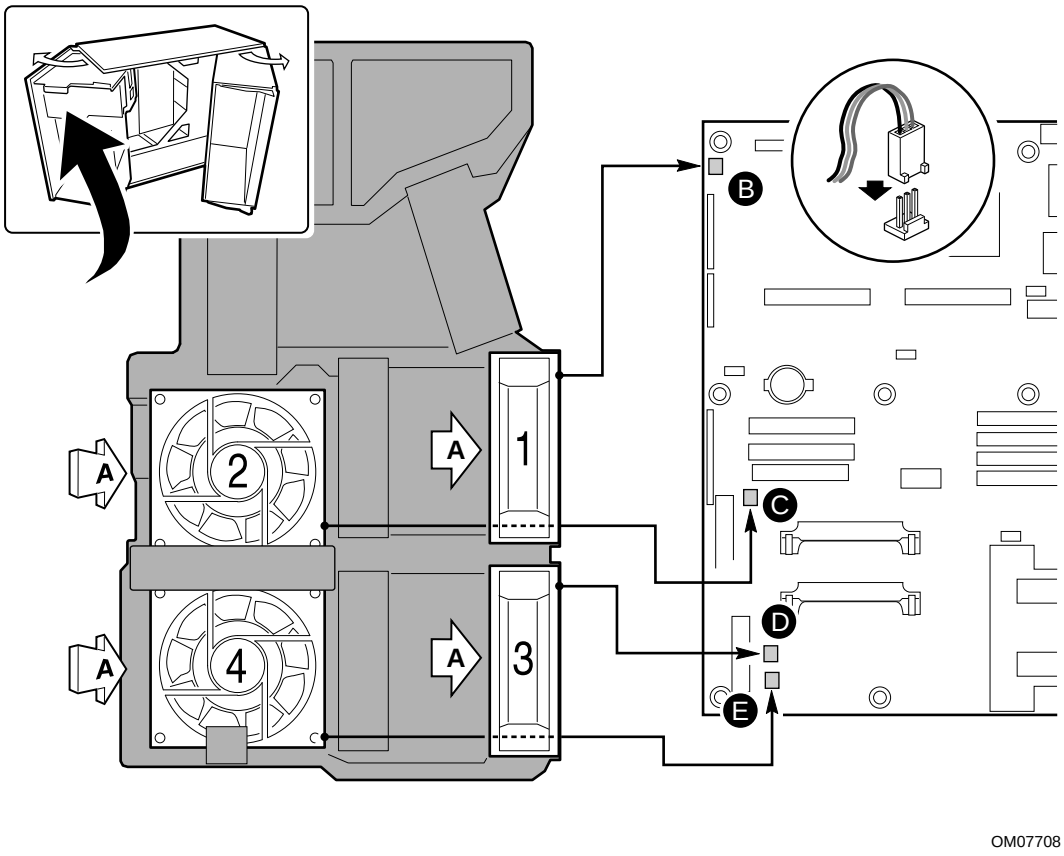

Figure 25. Fan Cabling

A. Airflow direction
B. FAN1 connector
C. FAN2 connector
D. FAN3 connector
E. FAN4 connector

5. Position the fan assembly inside the chassis so that the individual fan cables can easily reach their connectors on the server board.
6. Attach the cable to the server board at the correct connector (if you are REPLACING a bad fan, you should have recorded where each cable connects to the server; if you are ADDING a fan, see Figure 25).
7. Position the fan assembly as it was inside the chassis prior to removal, so that it rests firmly against the diskette drive at the top and the 5.25-inch bays at the middle and bottom. Make sure the fan assembly slides under the plastic tabs (Figure 27, C).
8. Reinstall the foam cover. It is molded to match the position of the fans and fits in only one way.

Reinstall the access cover using the original screws.

Removing the Fan Assembly

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove the access cover.
3. Remove the foam cover from the front subchassis by pulling it straight out (Figure 26).

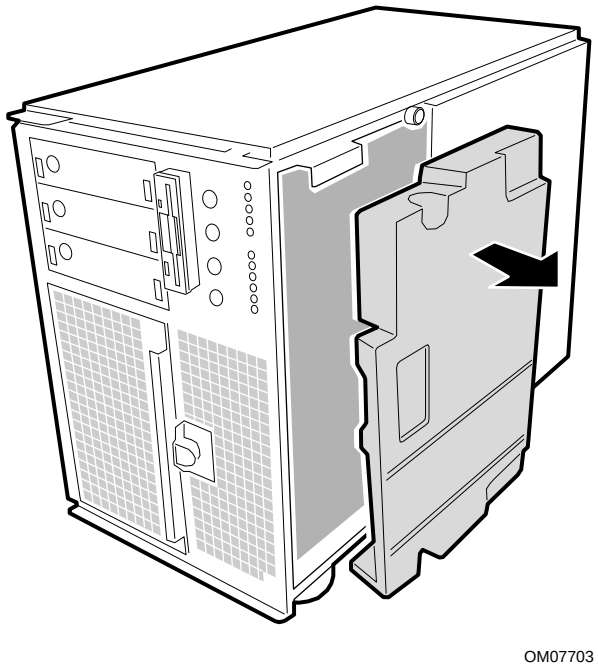

Figure 26. Removing the Foam Cover

4. Label and disconnect the individual fan cables from the server board. For fan cabling considerations, see Figure 25 on page 38.
5. Remove the fan assembly from the chassis.

Installing the Fan Assembly

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Position the fan assembly inside the chassis so that the individual fan cables can easily reach their connectors on the server board.
3. Reconnect the individual fan cables, being careful to match each cable with its correct connector on the server board.
4. Position the fan assembly as it was inside the chassis prior to removal, so that it rests firmly against the diskette drive at the top and the 5.25-inch bays at the middle and bottom. Make sure the fan assembly slides under the plastic tabs (Figure 27, C).
5. Reinstall the foam cover. It is molded to match the position of the fans and fits in only one way.
6. Reinstall the access cover using the original screws.

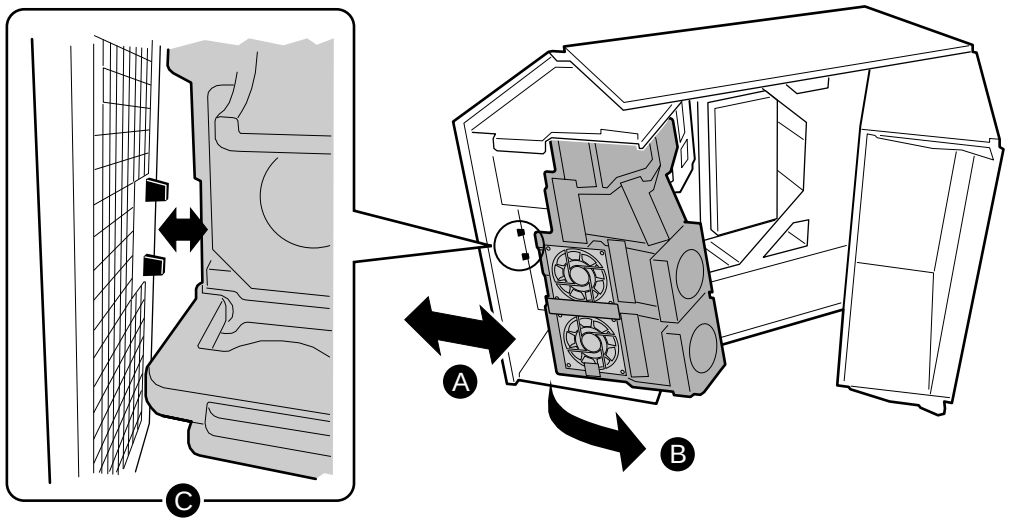

Figure 27. Installing the Fan Assembly

Front Panel Board

Removing the Front Panel Board

The front panel board contains the controls and indicators. It is mounted on a threaded standoff inside the chassis.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove the access cover.
3. Remove the fan housing assembly.
4. On the front panel board, remove and save the screw from the threaded standoff to use later.
5. Disconnect the cables from the front panel board.
6. Remove the front panel board from the chassis. Place it on an antistatic foam pad or a grounded workstation.

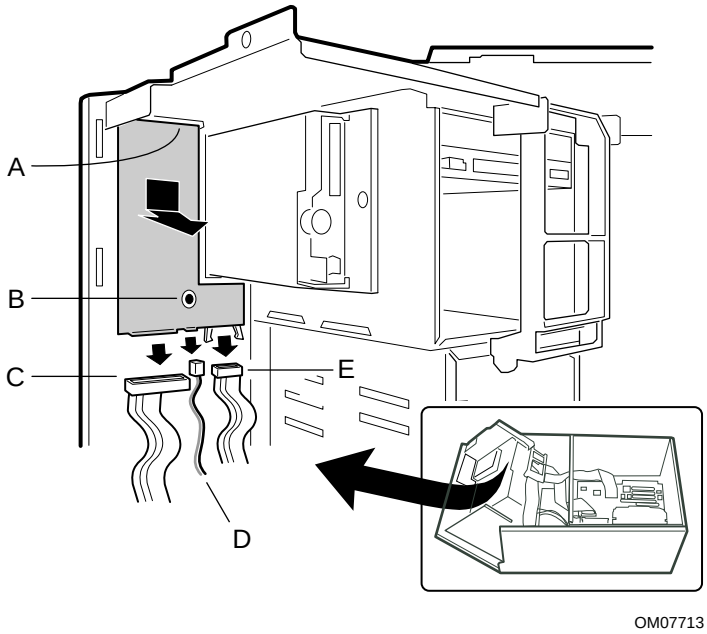

Figure 28. Removing the Front Panel Board

A. Chassis slot
B. Screw
C. Front panel signal cable to server board
D. Chassis intrusion cable
E. Front panel signal cable to hot swap backplane

Installing the Front Panel Board

1. Reconnect the cables to the front panel board.
2. Position the front panel board over the threaded standoff inside the chassis.
3. Reinstall and firmly tighten the screw that secures the board to the chassis.
4. Replace the fan housing assembly.

Installing the Diskette Drive

1. Remove the 3.5-inch diskette drive from its protective wrapper, and place it component-side up on an antistatic surface. Record the drive model and serial numbers in your equipment log.
2. Set any jumpers or switches according to the drive manufacturer's instructions.
3. Slide the drive into the drive carrier component side down, lining the positioning pins up with the front screw holes on the drive.

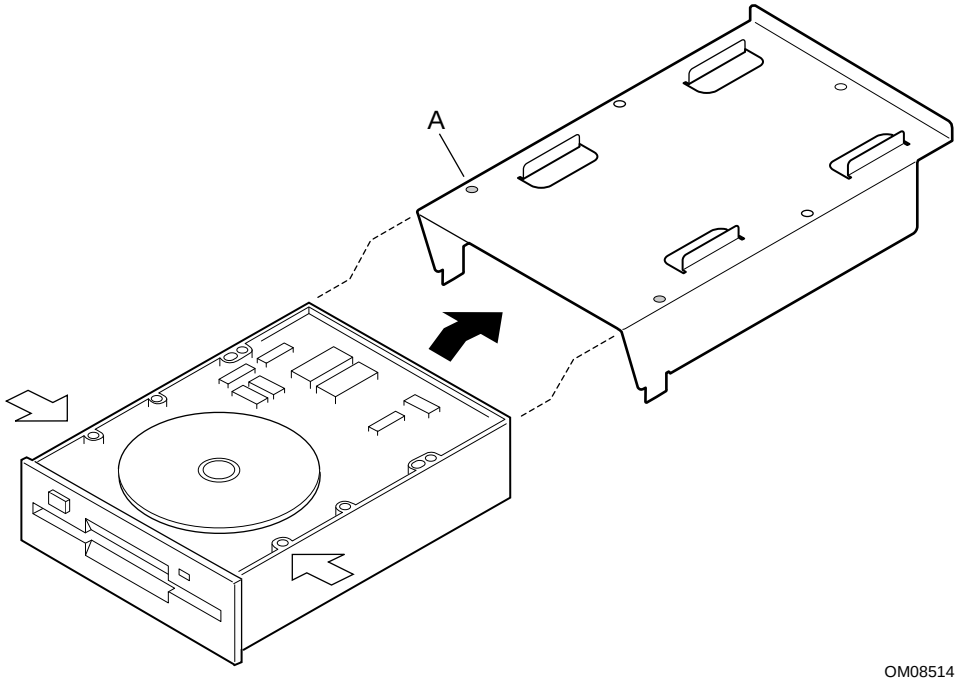

Figure 29. Installing the Diskette Drive into the Drive Carrier

A. Positioning pins

4. Position the carrier so the front of the drive fits correctly in the front opening of the chassis. When properly positioned, the hole in the carrier aligns with the threaded hole in the frame.
5. Secure the assembly to the 5.25-inch bay with a screw; tighten the screw firmly.
6. Connect the signal and power cables to the drive. The red stripe on the signal cable must face toward the center of the drive.

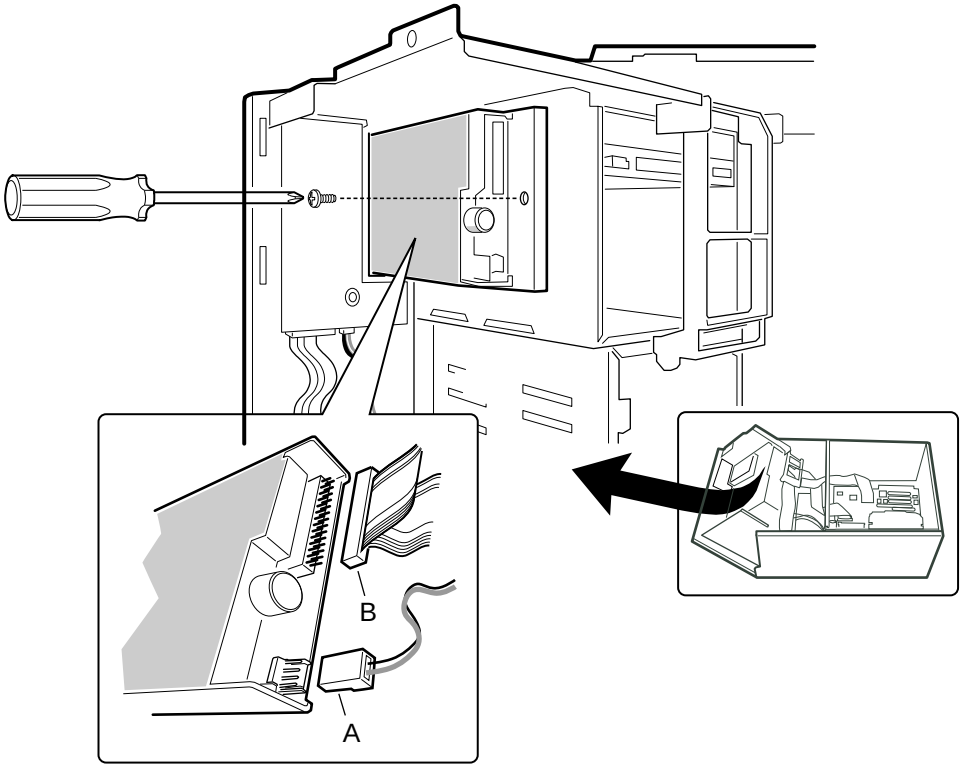

Figure 30. Diskette Drive Position in the Chassis

A. Power cable
B. Signal cable

Removing the Diskette Drive

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove the access cover.
3. Disconnect the power and signal cables from the diskette drive. The connectors are keyed for ease in reconnecting them to the drive.
4. Remove and save the screw that secures the diskette drive carrier to the 5.25-inch drive bay.
5. Slide the carrier toward the back of the chassis and remove the carrier from the chassis.

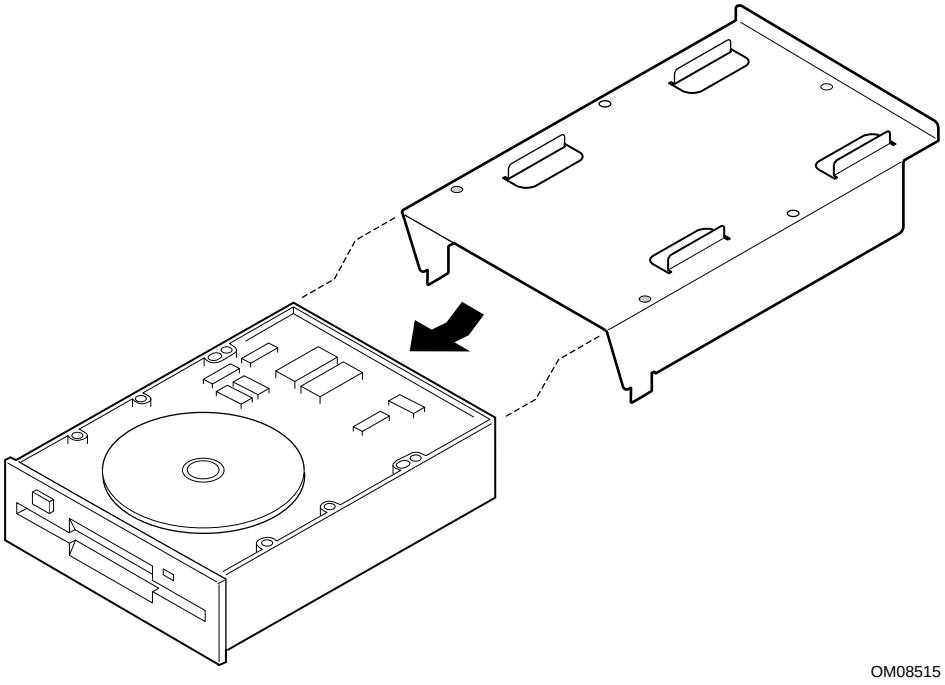

Figure 31. Removing the Diskette Drive from the Drive Carrier

A. Positioning pins

6. Slide the drive out of the carrier. Set the carrier aside.
7. Place the drive in an antistatic protective wrapper if you are not reinstalling the same drive.
8. Reinstall the access cover using the original screws.

Hard Drives

Drive Cabling Considerations

The cables that ship with the Cabrillo-C chassis are prefolded to fit the chassis. To minimize the chance of damaging a cable, you should keep the cables folded correctly as much as possible. The number of devices you can install depends on:

- The number supported by the bus
- The number of physical drive bays available
- The combination of SCSI and IDE devices

Refer to Figure 14 and Figure 15 for information on cable routing and connections.

IDE Requirements

An IDE cable that supports two drives is standard in the chassis. If no drives are present on an IDE channel, the cable must be removed. If only one drive is installed, it should be connected at the end of the cable.

NOTE

To disable the IDE controller: If you plan to disable the IDE controller to reuse the interrupt for that controller, you must physically unplug the IDE cable from the board connector if a cable is present. Simply disabling the drive by configuring the SSU option does not make the interrupt available.

SCSI Requirements

One wide SCSI cable is provided with the chassis to connect the hot swap backplane with the server board. This cable should be connected to the LVD connector on the server board.

Installing a 5.25-inch Peripheral Device

Three 5.25-inch half-height bays provide space for tape backup, CD-ROM, or other removable media drives.

NOTES

Save the EMI shields: EMI integrity and cooling are both protected by having drives installed in the bays or EMI shields covering the bays. When you install a drive, save the shield to reinstall in case you should later remove the drive and not reinstall one in the same bay.

1. Observe the safety and ESD precautions at the beginning of this chapter. Also see the cabling considerations on page 45.
2. Open the front bezel door by rotating its right side out and to the left.
3. Pull the shield out of the chassis. Save the shield.

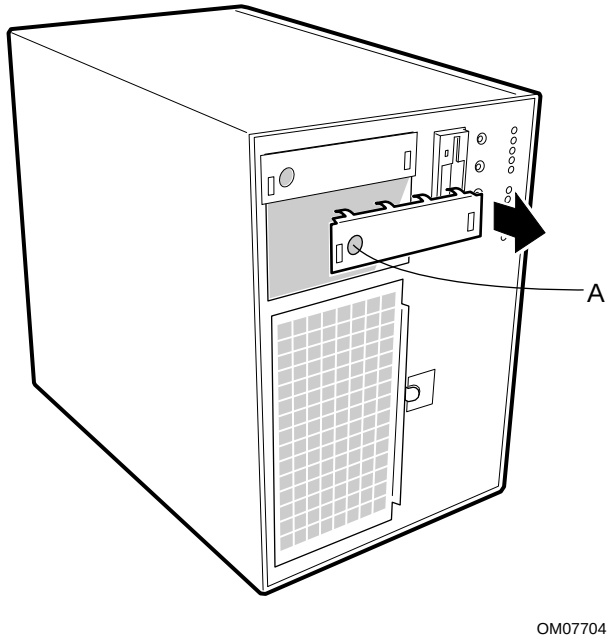

Figure 32. Removing EMI Shields

A. Finger hole

4. Remove the drive from its protective wrapper, and place it on an antistatic surface.
5. Record the drive model and serial numbers in your equipment log.
6. Set any jumpers or switches on the drive according to the drive manufacturer's instructions.
7. Using four screws of the appropriate size and length, attach two plastic slide rails to the drive.

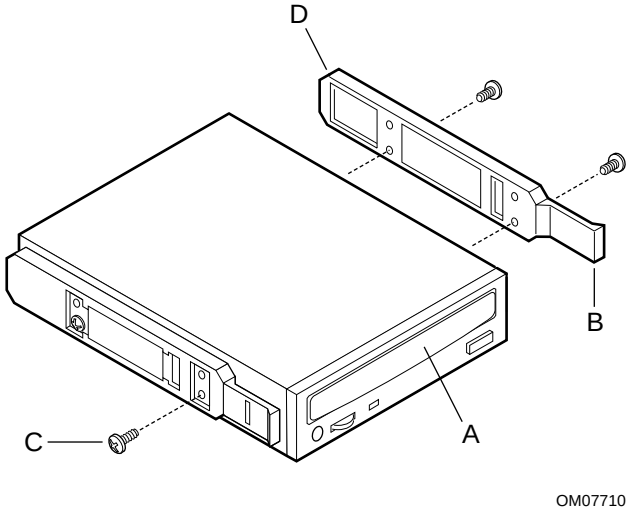

Figure 33. Snap-in Plastic Slide Rails

A. CD-ROM drive or other removable media device
B. Tab on slide rail
C. Screws (4)
D. Slide rails (2)

8. Position the drive so the plastic slide rails engage in the bay guide rails. Push the drive into the bay until the slide rails lock in place.
9. Connect a power cable to the drive. The connectors are keyed and can be inserted in only one way.
10. Connect a signal cable to the drive. The connectors are keyed and can be inserted in only one way.
11. Close the front bezel.

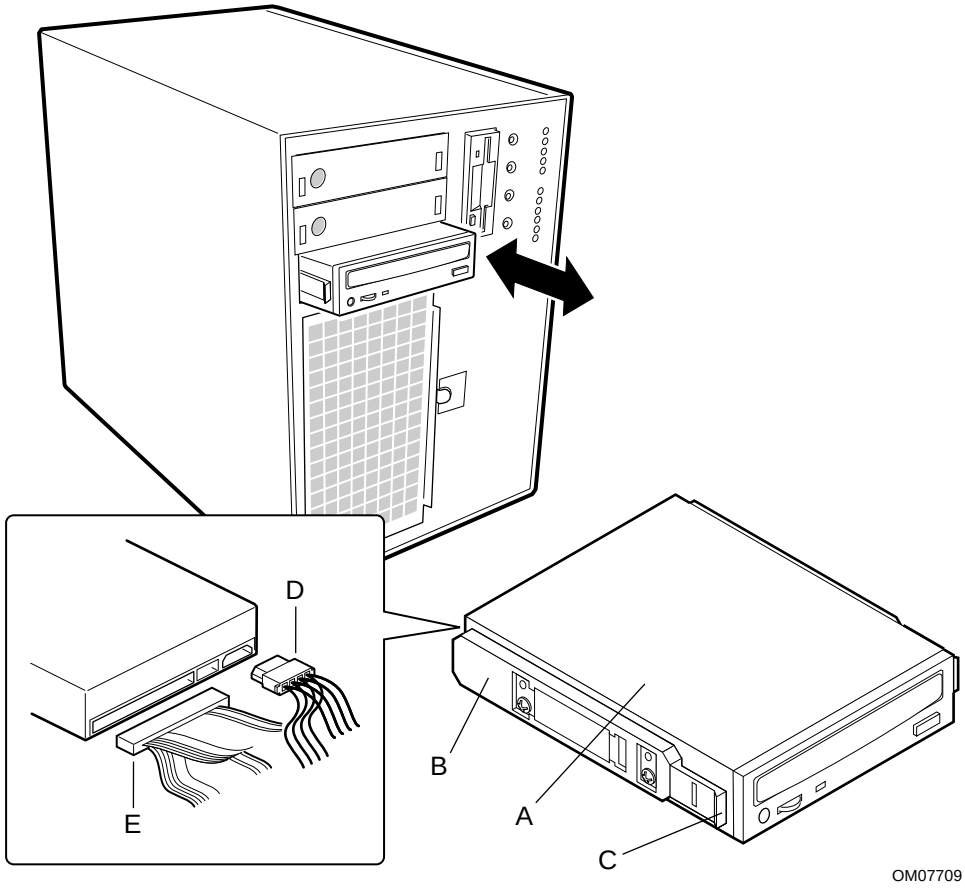

Figure 34. Installing a Removable Media Device

A. Removable media device
B. Drive rail
C. Rail tab
D. Power cable
E. Data cable

Removing a 5.25-inch Peripheral from the Front Bay

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Open the front bezel by pivoting its right side out and to the left.
3. Disconnect the power and signal cables from the drive.
4. The drive has two protruding plastic, snap-in rails attached. Squeeze the rail tabs toward each other as you carefully slide the drive forward out of the bay, and place it on an antistatic surface.
5. Remove and save the four screws and two slide rails.
6. If you leave the bay empty, install a stainless steel EMI shield on the bay for proper cooling and airflow.
7. Close the front bezel.

SCSI Hard Disk Drives

The server supports a variety of LVD (Low Voltage Differential) and single-ended SCSI devices. As shipped from the supplier, the chassis will contain 6 drive carriers, but might contain no hard disk drives. Refer to the Intel customer support website for a list of approved SCSI devices.

http://support.intel.com/support/motherboards/server/c440gx

⚠ **CAUTION**

Electrostatic Discharge (ESD) and ESD protection: ESD can damage disk drives, add-in boards, and other components. This server can withstand normal levels of environmental ESD while you are hot-swapping SCSI hard disk drives. However, we recommend doing all procedures in this manual only at an ESD-protected workstation. If one is not available, you can provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground of the server—any unpainted metal surface—when handling components.

Mounting a SCSI Hard Disk Drive in a Drive Carrier

1. Remove the 3.5-inch hard drive from its wrapper and place it on an antistatic surface.
2. Record the drive model and serial number in your equipment log.
3. Orient the drive so the connector is near the top surface of the drive, then place the drive carrier on top of the drive.
4. Using four screws of the correct size and length, attach the carrier to the drive.

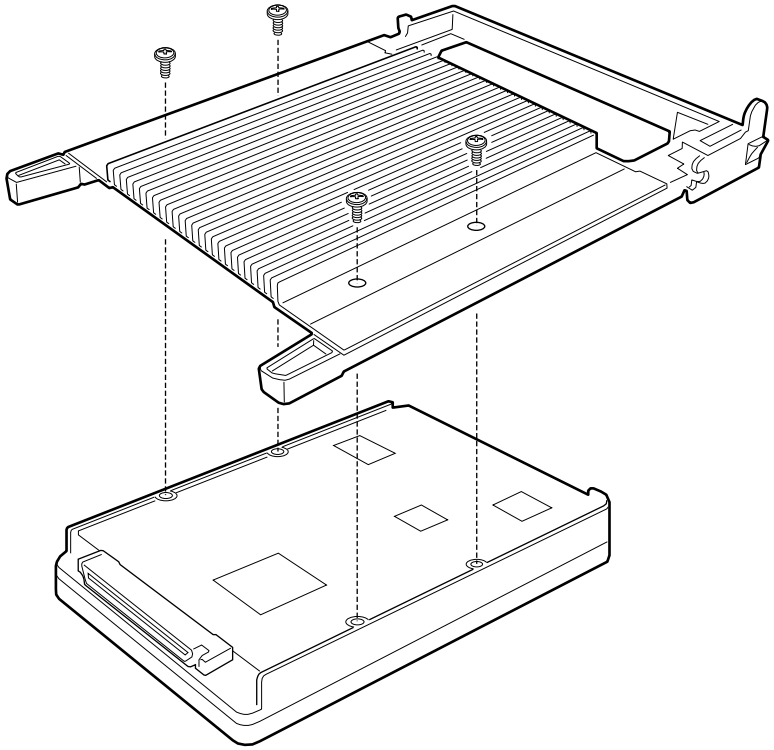

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Figure 35. Hard Disk Drive and Drive Carrier

Hot-swapping a SCSI Hard Disk Drive

A bank of six yellow LEDs on the front panel monitors the drive status of each drive in the hot swap drive bay. Each LED corresponds directly to a drive, so that the upper-most LED reflects activity in the upper-most drive. The six LEDs and corresponding drives are numbered (top to bottom) zero through five. When a yellow LED is on continuously, it is okay to hot swap (replace) a bad drive with a good one. You DO NOT need to shut the server down to hot swap a drive.

1. Open the front bezel by pivoting its right side out and to the left.
2. If you installed a padlock on the metal door to the bays, unlock the padlock and remove it.
3. Loosen the plastic latch securing the metal door to the chassis, and open the door.
4. Check the bank of yellow LEDs on the front panel to determine which drive is bad.

5. Press the rounded tab on the right of the carrier to the left (toward the center of the drive—(Figure 36, B) while gently pulling straight down on the carrier handle (Figure 36, A). This disengages the latch that secures the carrier to the chassis.
6. Grasp the drive carrier handle and pull it toward you to disengage the drive connector from the backplane connector.

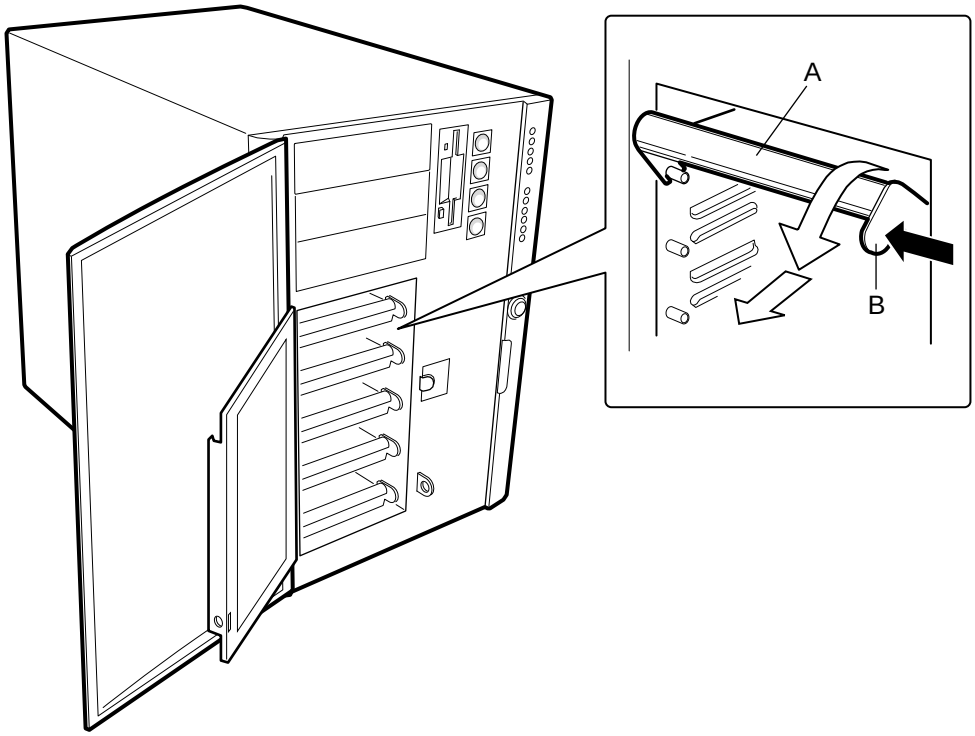


Figure 36. Disengaging Drive Carrier from Chassis

A. Carrier handle (pull straight down to disengage carrier and bay from backplane connector)
B. Tab on carrier handle (push left to unlock carrier)

7. Carefully slide the bad drive forward out of the bay. Place the drive on an antistatic surface.

8. Position the new drive carrier and drive assembly so that it engages the bay guide rails.
9. Gently push the drive into the bay. To engage the latch, the carrier handle should be approximately at a 45° angle from the vertical front of the chassis. As you push the drive into the bay, the two rounded notches in the carrier handle (Figure 37, B) slide onto the two round pegs inside the drive bay (Figure 37, A). When they engage, push the handle straight up (Figure 37, C) to lock the notches onto the pegs and press the rounded tab on the right of the carrier to the left until it clears the edge of the bay and snaps into place.
10. Close the metal door, and secure it to the chassis with the plastic latch.
11. For security and to prevent unauthorized access to the bays, insert a padlock through the metal loop protruding through the door.
12. Close the front bezel.

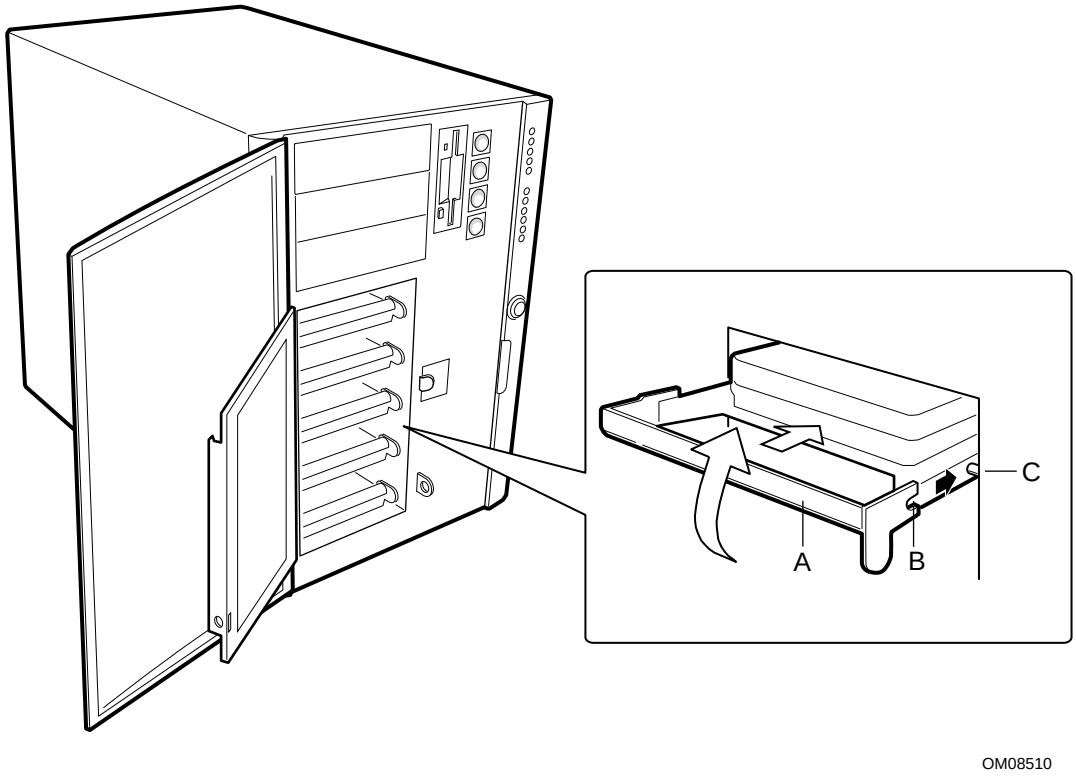


Figure 37. Installing a New Drive

A. Carrier handle
B. Round notches on carrier handle (must fit over pegs in drive bay)
C. Round peg inside drive bay

Installing an Add-in Board

⚠ CAUTIONS

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

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

1. Remove the access cover.
2. Remove and save the expansion slot screw and cover.
3. Remove add-in board from its protective wrapper. Be careful not to touch the components or gold edge connectors. Place board component side up on an antistatic surface.
4. Record the type and serial number of the add-in board in your equipment log.
5. Set jumpers or switches according to the manufacturer's instructions.
6. Hold board by its top edge or upper corners. Firmly press it into an expansion slot on the server board. The tapered foot of the board retaining bracket must fit into the mating slot in the expansion slot frame.
   - Install an ISA board component side DOWN.
   - Install a PCI board component side UP.

7. Align the rounded notch in the retaining bracket with the threaded hole in the frame. The bracket fits the space that was occupied by the slot cover.
8. Use the screw removed earlier. Insert it into the threaded hole, and tighten it firmly. Attach cables if necessary.
9. Reinstall the access cover.

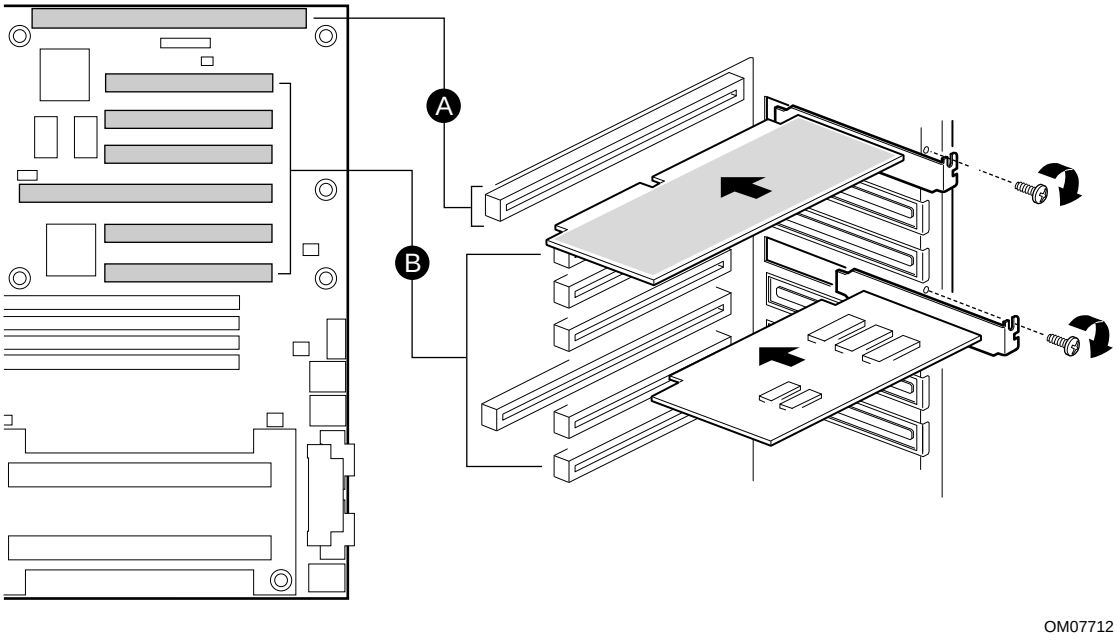


Figure 38. Installing an Add-in Board

A. ISA slot
B. PCI slots

Removing an Add-in Board

CAUTION

Slot covers must be installed on all vacant expansion slots. This maintains the electromagnetic emissions characteristics of the chassis and ensures proper cooling of components.

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Disconnect any cables attached to the board you are removing.
3. Remove and save the screw from the board retaining bracket.
4. Holding the board by its top edge or upper corners, carefully pull it out. Do not scrape the board against other components.
5. Store board in an antistatic protective wrapper.
6. If you are not reinstalling a board in the same slot, install a slot cover over the vacant slot. The tapered foot of the cover must fit into the mating slot in the expansion slot frame.
7. Use the screw removed earlier. Insert it into the threaded hole, and push the rounded notch against screw. Tighten it firmly to prevent the bracket from interfering with adjacent brackets.

Power Share Board (PSB)

Replacing the PSB

1. Observe the safety and ESD precautions at the beginning of this chapter.
2. Remove all power supplies. See “Power Supply” on page 58.
3. Remove the access cover.
4. Open the front subchassis. See “Opening the Subchassis and Electronics Bay” on page 20.
5. Label and disconnect all cables to the server board.
6. Remove the electronics bay. See “Opening the Subchassis and Electronics Bay” on page 20.
7. Disconnect the cables from the power share board (PSB). The board is behind the electronics bay (Figure 39, A).

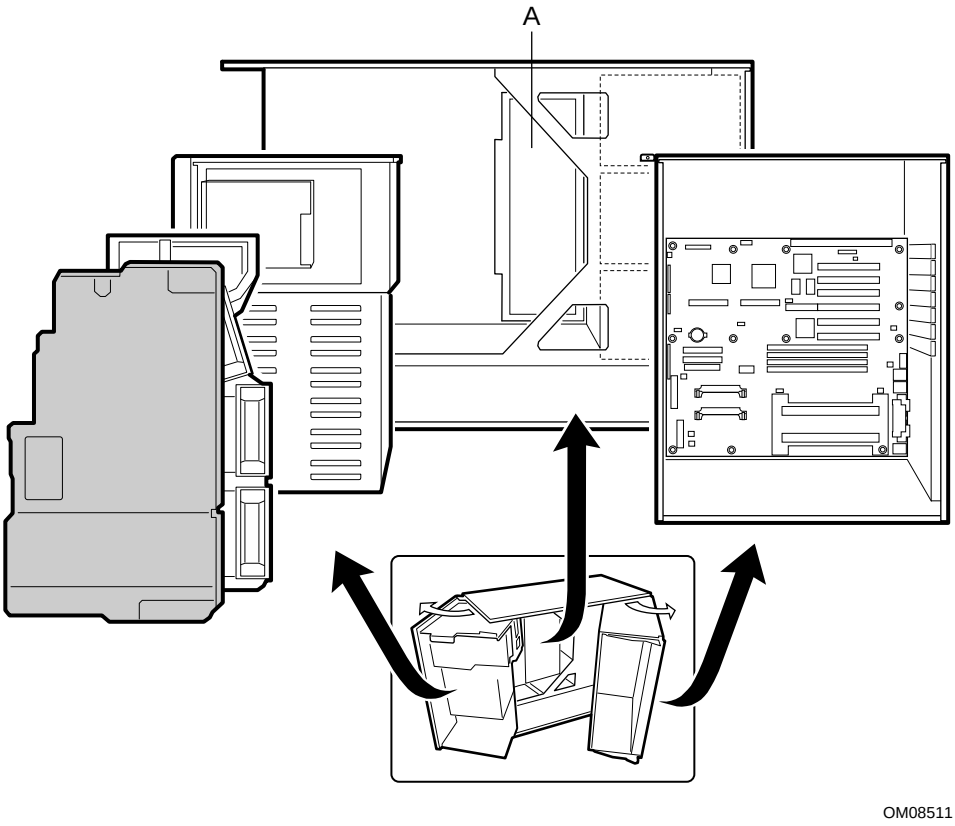


Figure 39. Chassis Side View

8. Remove and save the two screws that attach the bracket to the chassis.
9. To remove the board, lift the BRACKET END first; when you have freed the bracket from the tabs on the chassis, lift out the entire board.

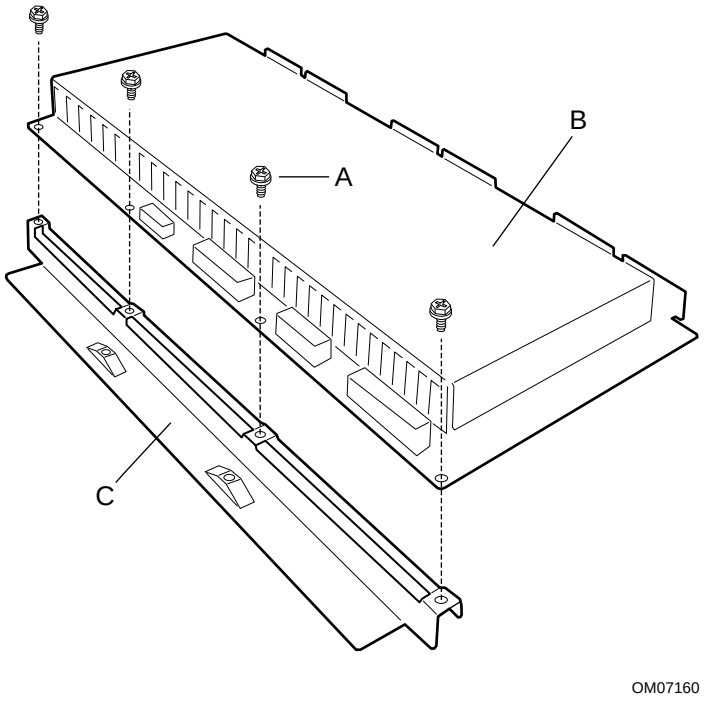


Figure 40. Attaching the New Board to its Bracket

A. Screws
B. Power Share Board
C. Bracket

10. Remove the screws that attach the bracket to the board. Set the board aside on an antistatic surface or conductive foam pad.
11. Attach the bracket to the new PSB using four screws.

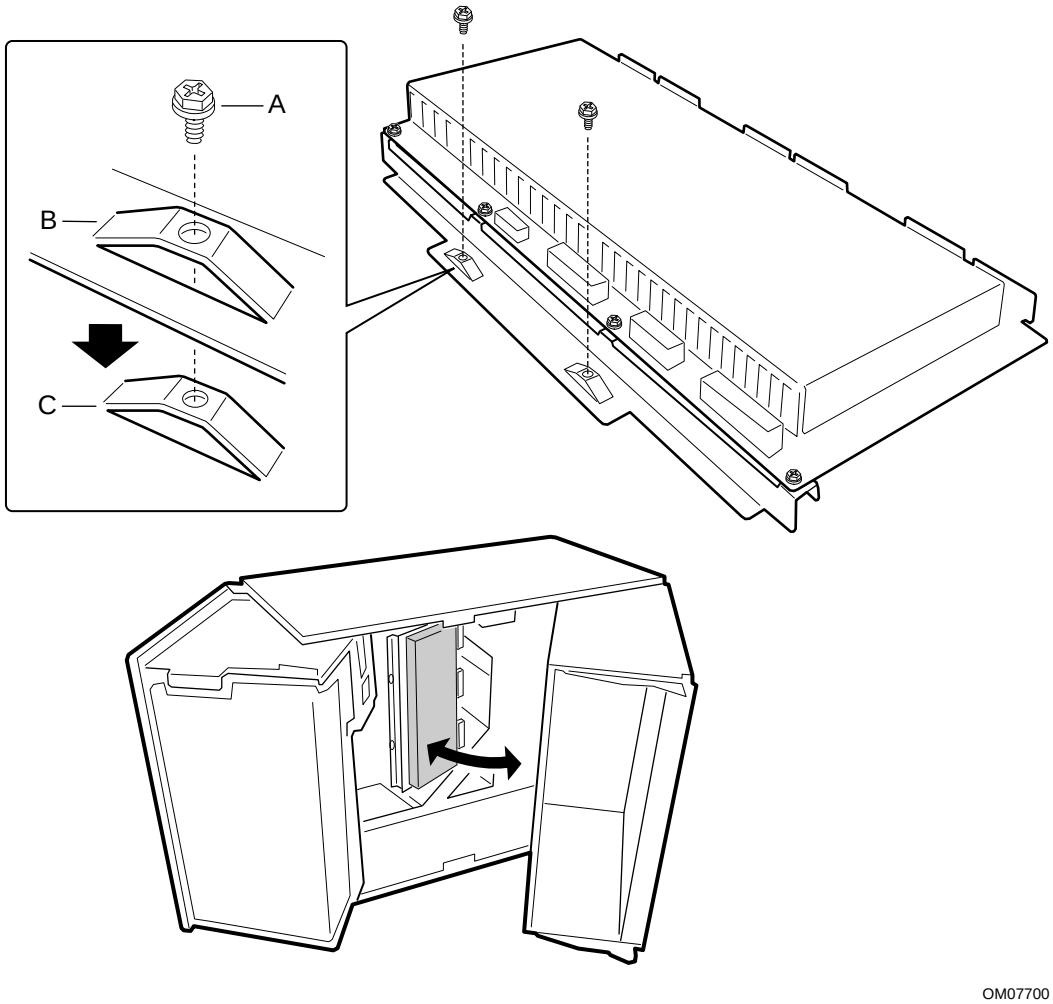


Figure 41. Removing the PSB

A. Screws that attach the bracket to the chassis
B. Bracket
C. Chassis

12. Correctly position the new board inside the chassis: insert the NON-BRACKET END, then push the other end down so that the two slots in the bracket (Figure 31, B) slide over the corresponding tabs (Figure 31, C) on the chassis wall.
13. Use the two screws you removed earlier to attach the bracket to the chassis.
14. Connect the cables to the new PSB.
15. Reattach the electronics bay.
16. Connect the new PSB cables to the server board.
17. Reinstall the access cover using the original screws.
18. Reinstall the power supplies.
19. Connect all AC power and peripheral device cables to the rear of the chassis.

Power Supply

The Cabrillo-C chassis ships with three power supplies.

⚠ WARNINGS

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

Removing a Power Supply

1. Disconnect the AC power cable from the power supply. The power supplies have a mechanical lock that prevents them from being removed from the chassis if the power cord is still connected.
2. Remove the four screws (Figure 42, B) holding the power supply to the back of the chassis.
3. Using the flared, vertical edges as handles, slide the supply straight back from its bay (Figure 42, C).

⚠ CAUTION

You might feel initial resistance in sliding the power supply from its bay. Do not tilt or twist the supply; this can damage components. Resistance is caused by the supply disengaging from its 40-pin connector. Use even, steady force to remove the supply.

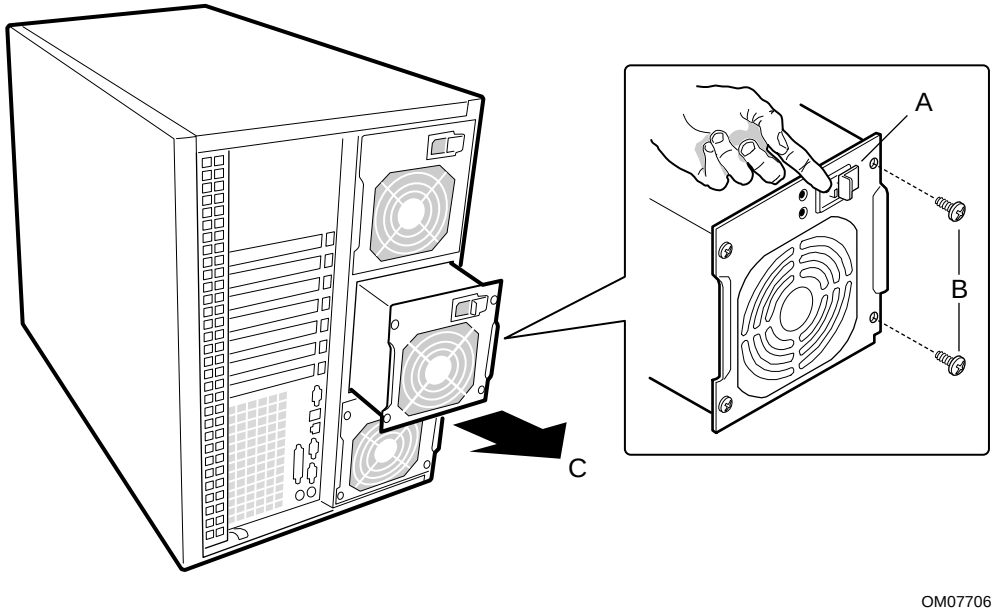


Figure 42. Removing a Power Supply

A. Power cord lock
B. Screws
C. Pull Drive from Chassis

Installing a Power Supply

1. Slide the power supply into its bay.
2. With even force on the flared, vertical edges, push toward the front of the chassis until the edges rest against the rear of the chassis and the supply engages its connector.
3. Install and tighten the four screws holding the supply to the back of the chassis.
4. Install the access cover.
5. Connect the AC power cable. You must slide the cover on the AC connector to access the connector itself (Figure 42, A).

Adding External Cables or Connectors

If you want to install external cables or connectors, you will need to remove the knockout tabs on the rear of the chassis.

Removing the Knockout Tabs

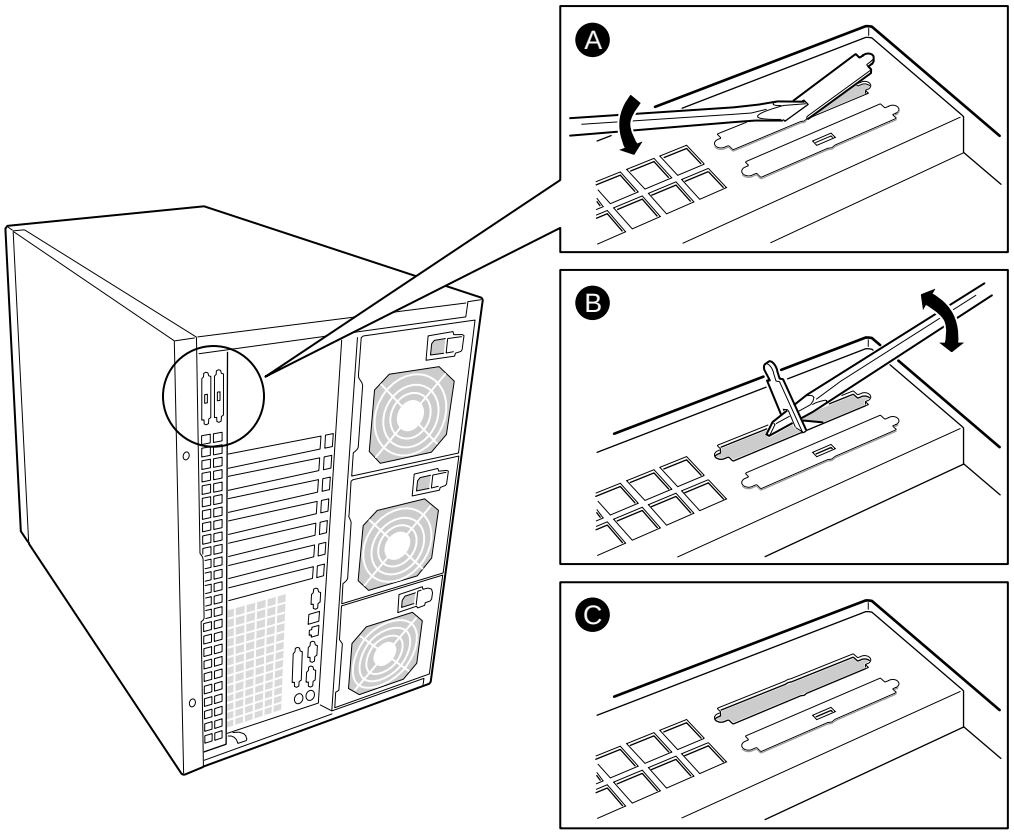


Figure 43. Removing the Knockout Tabs

A. Insert a slotted screwdriver into the slot on the tab and move from side to side
B. The ends of the tab pop free with moderate force
C. Knockout removed

NOTE

The tabs break from metal fatigue rather than force. The driver blade should fit the tab slot width as closely as possible to remove the tab cleanly. Removing the tabs by other means can damage the chassis.

3 Technical Reference

Power Supply Specifications

Input Voltages

The 400 watt power supplies, designed to minimize EMI, provides sufficient power for a maximum configuration of the server. The input voltage ranges are:

- 100-120 V~ at 50/60 Hz; 7.6 A maximum current per supply
- 200-240 V~ at 50/60 Hz; 3.8 A maximum current per supply

If a server is integrated to a fully configured condition, checking the input current rating of each supply will provide an indication of whether the server is overloaded or not. The input current rating should not exceed 7.6 amperes (for 100-120Vac) or 3.8 amperes (for 200-240Vac) for each supply.

Output Voltages

The table below lists the total wattage available from the power subsystem for each voltage. If you configure your system heavily, ensure that your loads do not exceed the combined total wattage of 800 watts. For information about calculating the power usage for your configuration, see page 71.

Table 3. Power Supply System Output Capability*

Voltage	P/S rating, Maximum Continuous Current	Watts
+3.3 V	72 A	237 W
+5.0 V	48 A	240 W
-5 V	.5 A	2.5 W
+5V Standby	3.0 A	15 W
+12.0 V	36 A	432 W
–12.0 V	1.0 A	12 W

* This shows the power subsystem output capability based on two power supplies. The third power supply provides redundancy.

⚠ CAUTION

Do not exceed a combined power output of 390 watts for the +5 V and +3.3 V outputs. Exceeding a combined 390 watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

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

Environmental Specifications

Table 4. Environmental Specifications

Temperature	
Non-operating	–40° to 70 °C (–40° to 158 °F)
Operating	10° to 35 °C (50° to 95 °F); derated 0.5 °C for every 1000 ft (305 m) to a maximum of 10,000 ft
Humidity	
Non-operating Operating wet bulb	50%-95% relative humidity (non-condensing) at 25-30 °C (77-86 °F)
Shock	
Operating	2.0 g, 11 msec, 1/2 sine
Packaged	Operational after a 30” free fall, although cosmetic damage may be present
Acoustic noise	<50 dBA at 18° to 28 °C (65° to 82 °F) with six internal hard disk drives (measured at 1 meter from the chassis with the peripherals active). The noise of the variable speed power supply fans will increase with temperature and power load**. Your selection of peripherals may change the noise level.**
Electrostatic discharge (ESD)	Tested to 20 kilovolts (kV); no component damage
AC Input Power	
100-120 V~	100-120 V~, 7.6 A, 50/60 Hz
200-240 V~	200-240 V~, 3.8 A, 50/60 Hz

4 Regulatory Information

WARNING

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

Regulatory Compliance

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

Safety Compliance

UL 1950 - CSA 950-95, 3rd Edition, July 28, 1995

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (USA and Canada). This product has been evaluated and complies to UL1950 – CSA 950-95 3rd Edition. However, if a UL1950 2nd Edition modem telecommunications add-in card is used, the server will be deemed to comply with UL 1950 2nd Edition/CSA950-93.

EN 60 950, 2nd Edition, 1992 (with Amendments 1, 2, 3, and 4)

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (European Union)

IEC60 950, 2nd edition, 1991 (with Amendments 1, 2, 3 and 4)

The Standard for Safety of Information Technology Equipment including Electrical Business Equipment. (International)

EMKO-TSE (74-SEC) 207/94

Summary of Nordic deviations to EN 60 950. (Norway, Sweden, Denmark, and Finland)

EMC Compliance

FCC Class B

Title 47 of the Code of Federal Regulations, Parts 2 and 15, Subpart B, pertaining to unintentional radiators. (USA)

CISPR 22, 2nd Edition, 1993, Amendment 1, 1995

Limits and methods of measurement of Radio Interference Characteristics of Information Technology Equipment. (International)

EN 55 022, 1995

Limits and methods of measurement of Radio Interference Characteristics of Information Technology Equipment. (Europe)

EN 50 082-1, 1992

Generic Immunity Standard. Currently, compliance is determined via testing to IEC 801-2, -3 and -4. (Europe)

VCCI Class B (ITE)

Implementation Regulations for Voluntary Control of Radio Interference by Data Processing Equipment and Electronic Office Machines. (Japan)

ICES-003, Issue 2

Interference Causing Equipment Standard, Digital Apparatus. (Canada)

Australian Communication Authority (ACA)

Australian C-tick mark, limits and methods of measurement radio interference characteristics of information technology equipment to ASNZS 3548 (Australian requirements based on CISPR 22 requirements).

New Zealand Ministry of Commerce

Australian C-tick mark, limits and methods of measurement radio interference characteristics of information technology equipment to ASNZS 3548 (New Zealand requirements based on CISPR 22 requirements). New Zealand authorities accept ACA C-Tick Compliance Mark.

Regulatory Compliance Markings

This Cabrillo-C chassis subassembly is provided with the following Product Certification Markings.

- UL and cUL Listing Marks
- CE Mark
- Australian C-Tick Mark
- German GS 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 directives (73/23/EEC)
- NEMKO Mark
- FCC, Class B (Declaration of Conformity)
- ICES-003 (Canada Compliance Marking)
- VCCI Class B

Electromagnetic Compatibility Notice (USA)

This equipment has been tested and found to comply with the limits for a Class B 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 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.

NOTE

If a Class A device is installed within this system, then the system is to be considered a Class A system. In this configuration, operation of this equipment in a residential area may cause harmful interference.

FCC Declaration of Conformity

Product Type: CAB

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

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

(English translation of the notice above.) This digital apparatus does not exceed the Class B 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.

Electromagnetic Compatibility Notices (International)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

(English translation of the notice above) This is a Class B 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.

When used near a radio or TV receiver, it may become the cause of radio interference.

Read the instructions for correct handling.

This equipment has been tested for radio frequency emissions and has been verified to meet CISPR 22 Class B.

Installation Safety Instructions

⚠ CAUTION

Integration of this assembly shall be done only by technically qualified personnel.

Follow these guidelines to meet and maintain safety and product regulatory requirements when integrating this Cabrillo-C 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 will be void, and the product will most likely be noncompliant with other regional product laws and regulations.

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

⚠ WARNING

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

⚠ ADVARSEL!

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

⚠ ADVARSEL!

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

⚠ VARNING

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

⚠ VAROITUS

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

Use Only for Intended Applications

This product was evaluated as Information Technology Equipment (ITE) that may be installed in offices, homes, 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

⚠ WARNING

Do not open the power supply. Risk of electric shock and burns from high voltage and rapid overheating. Refer servicing of the power supply to qualified technical personnel.

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. Information for configurations can be found on Intel's Server Builder Website, through Intel's web address (http://www.intel.com). If you do not have access to Intel's web address please contact your local Intel representative.

- **Cabrillo-C chassis** (chassis is provided with power supply and fans)—UL listed.
- **Server board**—you must use the Intel C440GX+ Server Board.
- **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. Add-in boards containing modem telecommunication circuitry must be UL Listed.
- **Peripheral storage devices**—must be UL recognized or UL listed accessory and TUV or VDE licensed. Maximum capacity for this chassis is 10 devices; maximum 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 a flammability rating of UL94-5V.

A Equipment Log and Worksheets

Equipment Log

Use the blank equipment log provided here to record information about your server. 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			
Memory			
Video display			
Keyboard			
Mouse			
Diskette drive A			
CD-ROM drive			
Additional 5.25” Peripheral			
IDE hard disk drive			
SCSI hard disk drive 1			
SCSI hard disk drive 2			
SCSI hard disk drive 3			
SCSI hard disk drive 4			
SCSI hard disk drive 5			
SCSI hard disk drive 6			

continued

Equipment Log (continued)

Item	Manufacturer Name and Model Number	Serial Number	Date Installed

Current Usage

As an overall current usage limitation on the power subsystem, do not exceed a combined power output of 390 watts for the +5 V and +3.3 V outputs. Exceeding a combined 390 watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

Calculating Power Usage

The total combined wattage for your configuration **must be less than 800 watts.** 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 5. Power Usage Worksheet 1

	Current (maximum) at voltage level:					
Device	**+3.3 V**	**+5 V**	**–5 V**	**+12 V**	**–12 V**	**5V standby**
Server Board, front panel board and fans	0.64	3.00	0.00	1.56	0.05	0.75
Processor(s)						
Memory						
3.5-inch diskette drive						
CD-ROM drive						
Second 5.25-inch device						
Third 5.25-inch device						
1st hard drive						
2nd hard drive						
3rd hard drive						
4th hard drive						
5th hard drive						
6th hard drive						
SCSI backplane		1.3				
Power share board		1.0		1.75		
Expansion board 1						
Expansion board 2						
Expansion board 3						
Expansion board 4						
Expansion board 5						
Expansion board 6						
Expansion board 7						
Total Current						
Maximum Ratings (for comparison)	72.0 A	48.0 A	0.50 A	36.0 A	1.0 A	3.0 A

Worksheet, Total Combined Power Used by the Server

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 the total combined power usage for the power subsystem.

Table 6. Power Usage Worksheet 2

Voltage level and total current (V X A = W)	Total Watts for each voltage level
(+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
(5 V standby) X (_____ A)	_____ W
Total Combined Wattage	_____ **W**

⚠ CAUTION

As an overall current usage limitation on the power subsystem, do not exceed a combined power output of 390 watts for the +5 V and +3.3 V outputs. Exceeding a combined 390 watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

B Warnings

WARNING: English (US)

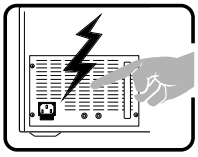
AVERTISSEMENT: Français

WARNUNG: Deutsch

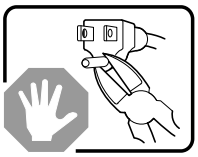
AVVERTENZA: Italiano

ADVERTENCIAS: Español

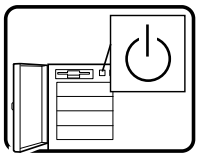
WARNING: English (US)



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.

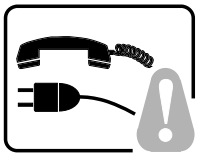


Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.



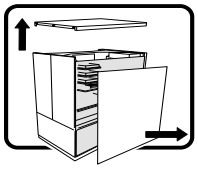
The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply.

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.



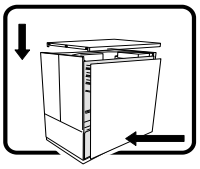
SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:

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.

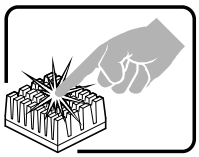


For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:

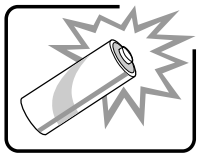
1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.
4. Insert and lock the padlock to the system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

continued

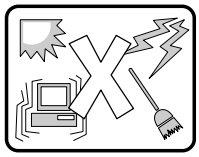
WARNING: English (continued)



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.



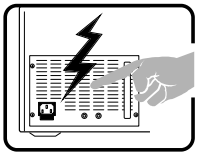
Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.



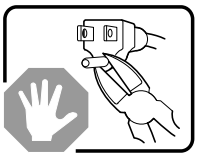
The system is designed to operate in a typical office environment. Choose a site that is:

- 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.

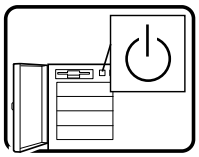
AVERTISSEMENT: Français



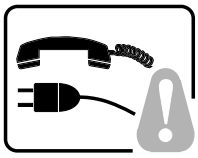
Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.



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.

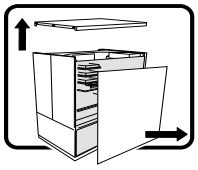


Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.



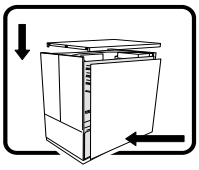
CONSIGNES DE SÉCURITÉ - Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes :

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.

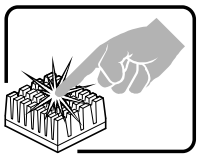


Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit :

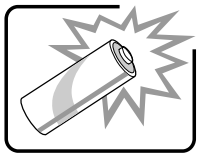
1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.
2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.
3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.
4. Remettez le cadenas en place et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

suite

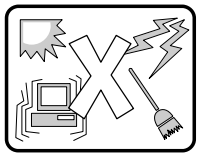
AVERTISSEMENT: Français (suite)



Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.



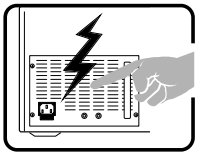
Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.



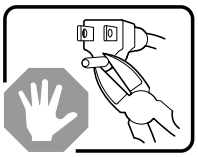
Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être :

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

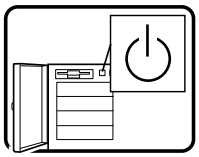
WARNUNG: Deutsch



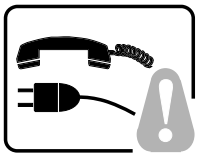
Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.



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

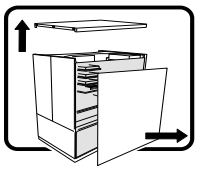


Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.



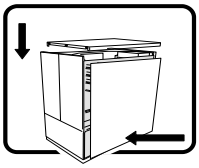
SICHERHEISMASSNAHMEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:

1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.
2. Schalten Sie das System mit dem Hauptschalter aus.
3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.
4. Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.
5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.
6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.



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

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

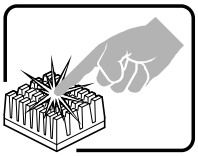


Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:

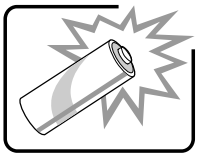
1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.
2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.
3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben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

Fortsetzung

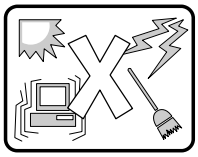
WARNUNG: Deutsch (Fortsetzung)



Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.



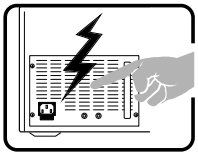
Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.



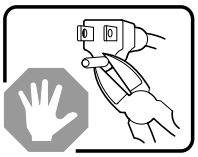
Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

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

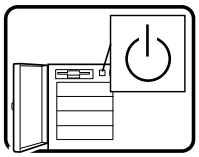
AVVERTENZA: Italiano



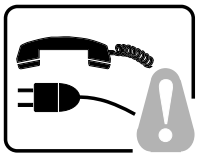
Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.



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

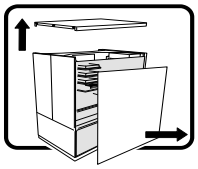


L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.



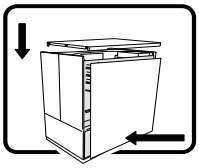
PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:

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



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

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

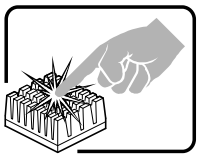


Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:

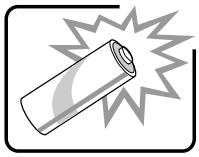
1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.
2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.
3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente.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

continua

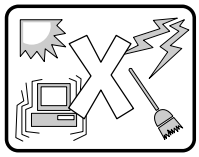
AVVERTENZA: Italiano (continua)



Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.



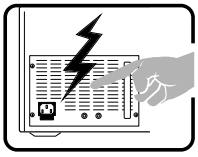
Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.



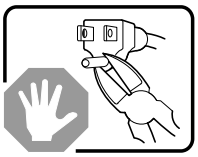
Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

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

ADVERTENCIAS: Español

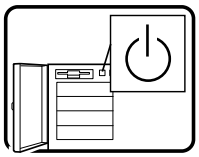


El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.

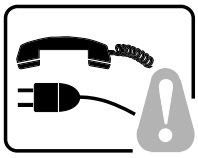


No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido.

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

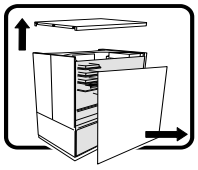


Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.



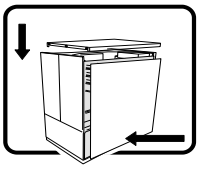
INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:

1. Apague todos los dispositivos periféricos conectados al sistema.
2. Apague el sistema presionando el interruptor encendido/apagado.
3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.
4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.
5. Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.
6. No ponga en marcha el sistema si se han extraído las tapas del chasis.



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

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

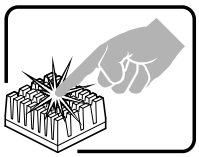


Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:

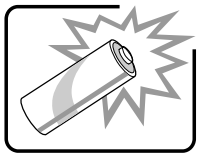
1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.
2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.
3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.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

continúa

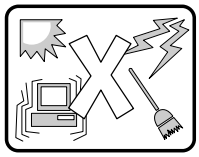
ADVERTENCIAS: Español (continúa)



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.

C Warranty

Limited Warranty for Intel® Server Chassis Subassembly Products

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

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

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

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

In no event will Intel be liable for any other costs associated with the replacement or repair of Product, including labor, installation or other costs incurred by buyer.

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Extent of Limited Warranty

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

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

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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

If you can't find the information you need on Intel's World Wide Web site (http://www.intel.com), call your local distributor or an Intel Customer Support representative.

Country	Customer Support Telephone Number	Hours (Monday-Friday)	Billing
United States	1-900-555-5800	7:00 - 17:00	$2.50/minute
United States & Canada	1-800-404-2284	7:00 - 17:00 PST	Credit card calls $25.00/incident
European Community English: Francaise: Deutsch: Italiano:	 +44-131-458-6847 +44-131-458-6848 +44-131-458-6954 +44-131-458-6951	UK time 8:00 - 17:00 (M, Th, F) 8:00 - 16:00 (Tues - W)	Credit Card Calls $25.00/incident Levied in local currency at the applicable credit card exchange rate plus applicable VAT
Asia-Pacific Australia: Hong Kong: Korea: Manila: PRC: Singapore: Taiwan:	 +1-800-649-931 +852-2-844-4456 +822-767-2595 +886-2-718-9915 +852-2-844-4456 +65-831-1311 +886-2-718-9915	Singapore local time Oct-April: 6:00 - 16:00 April-Oct: 5:00 - 16:00	Credit card calls $25.00/incident
Everywhere else	+916-377-7000	7:00 - 17:00 PST	Credit card calls $25.00/incident

Returning a Defective Product

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

- From Europe:
  - — in English +44 1793 431144
  - — in French +44 1793 421777
  - — in German +44 1793 421333
- All other locations: +(503) 264-7000

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.