

# Hardware Installation Guide

**hp server rx5670**

**First Edition**



**Manufacturing Part Number : A6695-96005**

**July 2002**

USA

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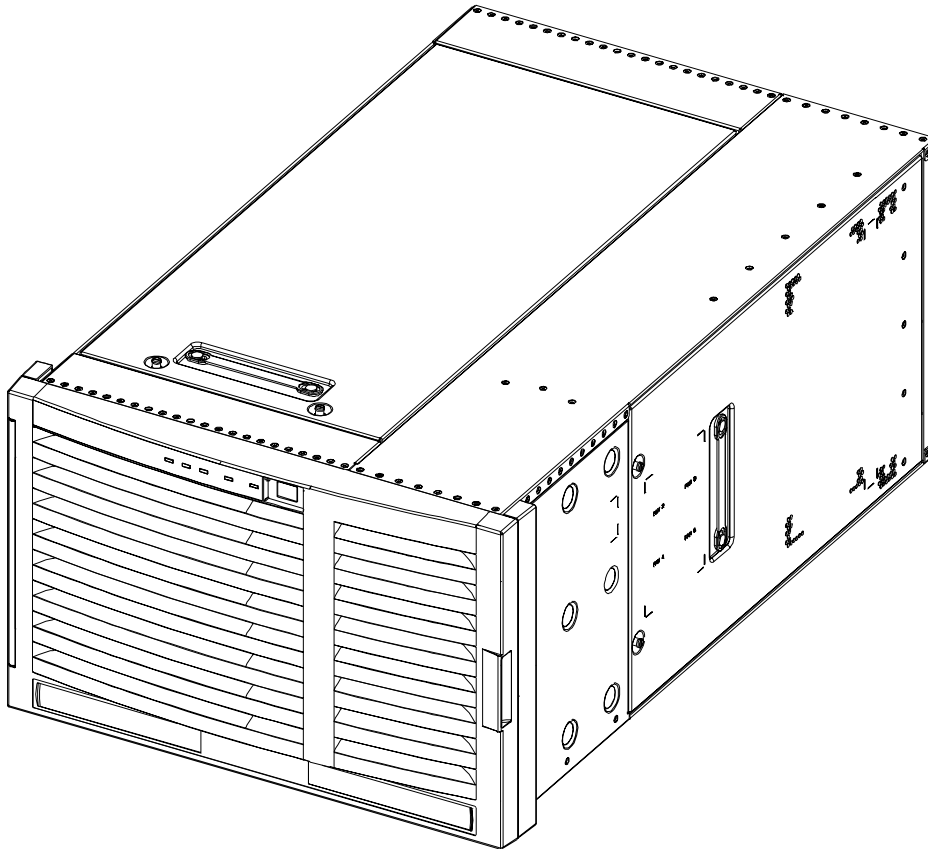
# **1 Server Overview and Unpacking**

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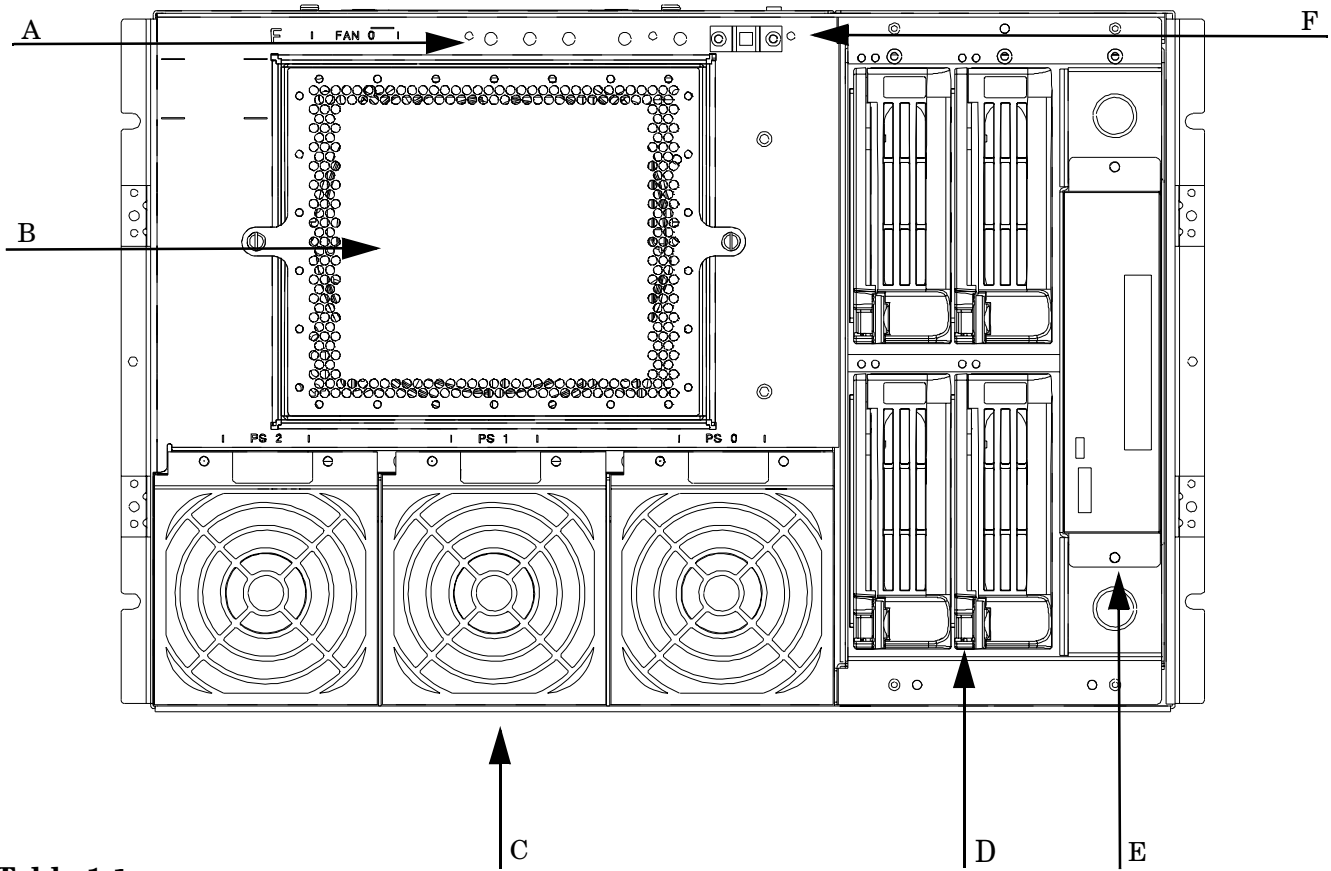
## Server Overview

The hp server rx5670 is a 4-way SMP, rack-mount server based on the Itanium processor family architecture. The hp server rx5670 accommodates up to 48 DIMMs and internal peripherals including disks and DVD ROM/Tape. Its high availability features include HotSwap fans and power supplies, and HotPlug internal disk drives. The supported operating systems include HP-UX, Windows, and Linux.

**Figure 1-1**      **hp server rx5670**



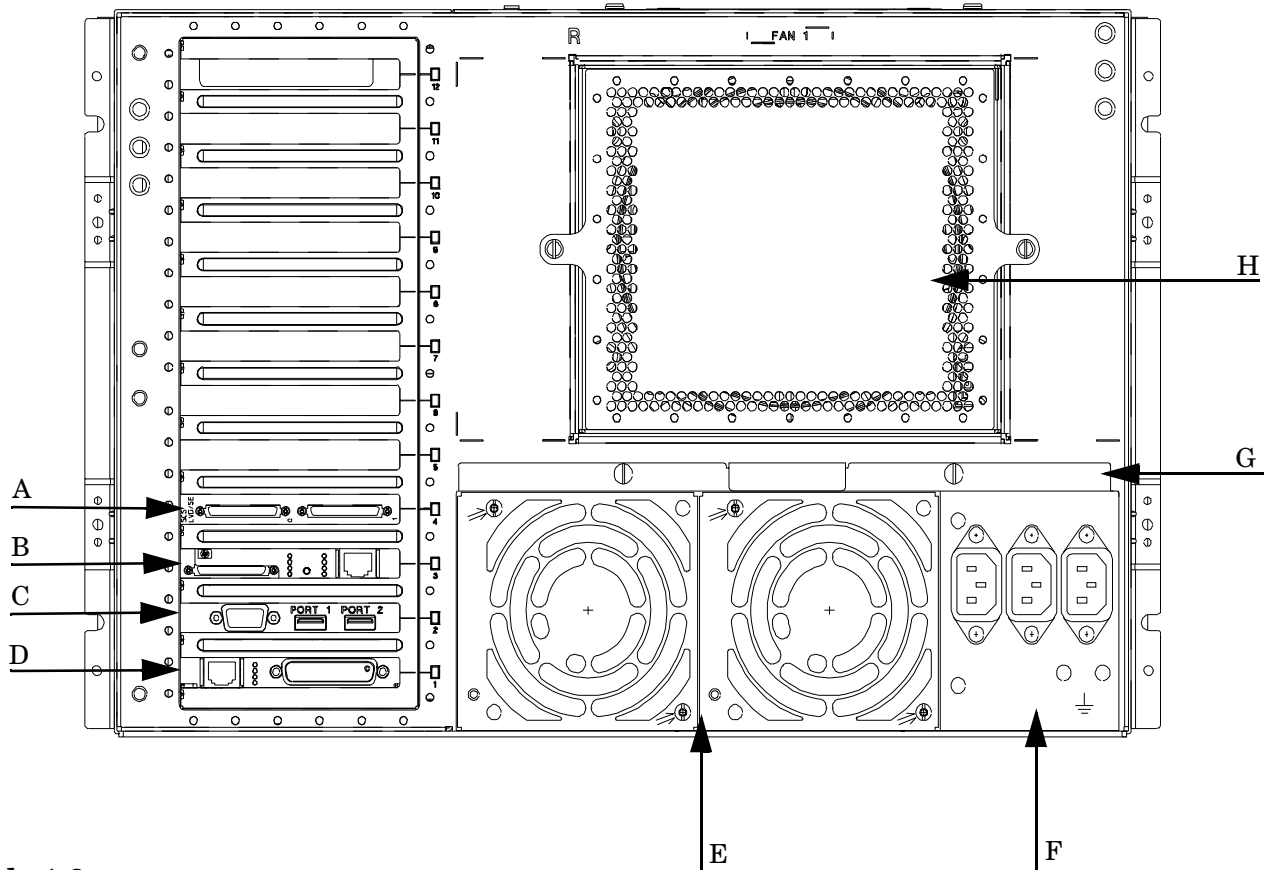
**Figure 1-2 hp server rx5670 (front view without bezel)**



**Table 1-1**

Identifier	Component
A	Front Panel LEDs
B	Front HotSwap Chassis Fan Cover
C	HotSwap Power Supplies
D	HotPlug Disk Drives
E	Removable Media Drive
F	Power Switch

**Figure 1-3 hp server rx5670 (rear view)**

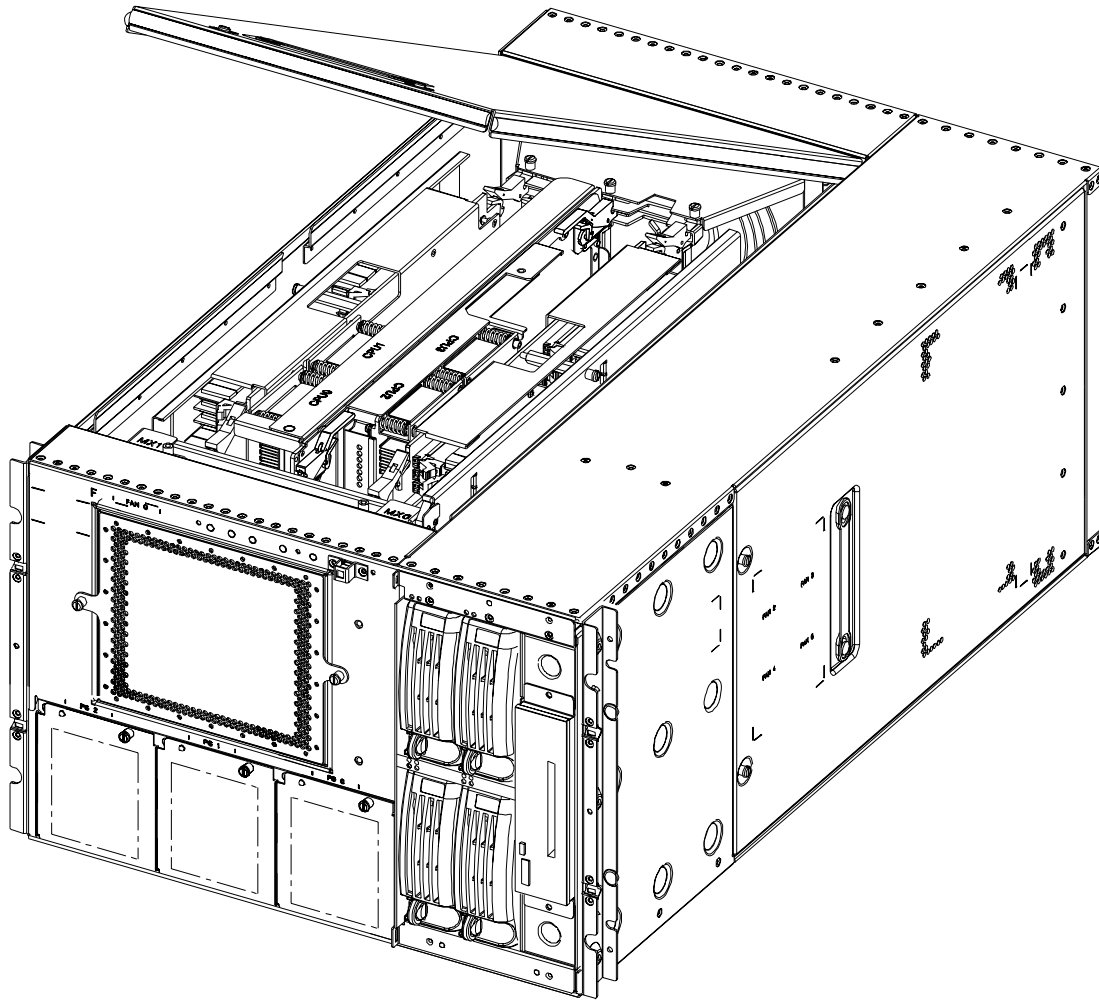


**Table 1-2**

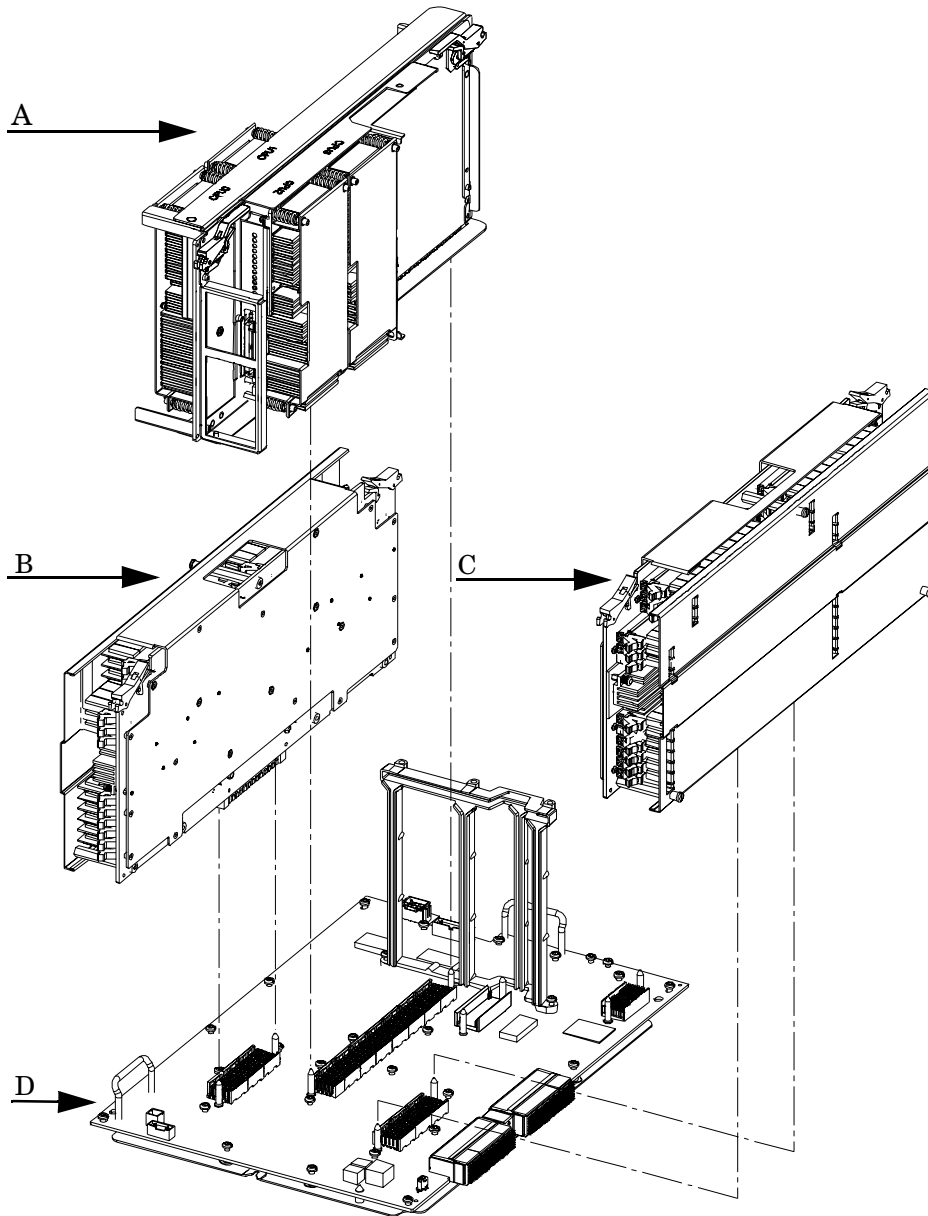
Identifier	Component
A	NetRaid PCI Card (Option, Supported with Windows and Linux)
B	LAN/SCSI PCI Card (Required with All Operating Systems)
C	VGA/USB PCI Card (Required with Windows, Option for HP-UX and Linux)
D	MP/SCSI PCI Card (Required with All Operating Systems)
E	Power Converter Fan Covers
F	Power Receptacles
G	Power Converter
H	Rear HotSwap Chassis Fan Cover



**Figure 1-4**      **hp server rx5670 Top Service Bay**



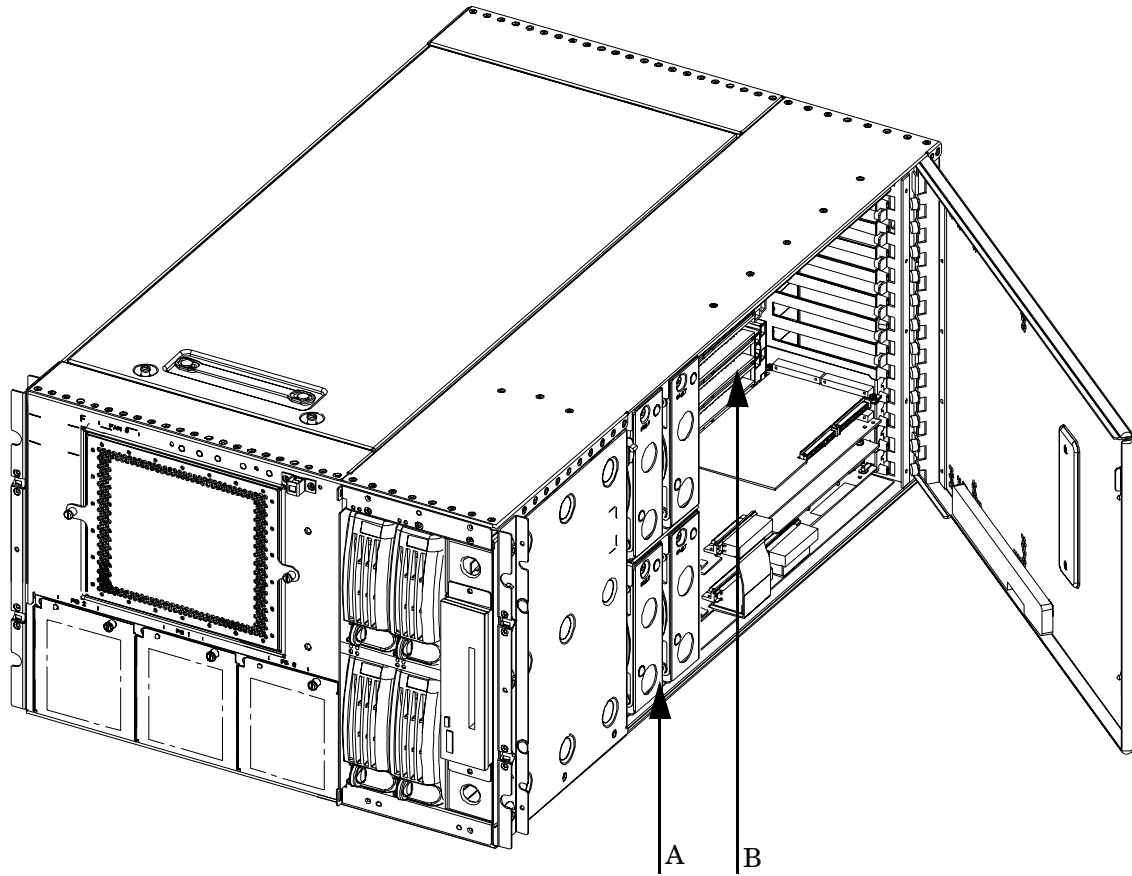
**Figure 1-5** hp server rx5670 Top Service Bay Components



**Table 1-3**

Identifier	Component
A	Processor Extender Board
B	Memory Extender Board MX1 (Option)
C	Memory Extender Board MX0 (Required)
D	System Baseboard

**Figure 1-6** hp server rx5670 Side Service Bay



**Table 1-4**

Identifier	Component
A	HotSwap Card Cage Fans
B	PCI Backplane

## Unpacking the Server

Hewlett-Packard shipping containers protect their contents under normal shipping conditions. After the equipment arrives, carefully inspect each carton for signs of shipping damage. A tilt indicator is installed on each carton shipped. The beads in the indicator will roll to the upper position if the container has been tilted to an angle that could cause equipment damage. The tilt indicator itself will have two windows and each window under normal conditions will show four beads present. If a carton has been mishandled, accidentally dropped, or knocked against something, the tilt indicator will indicate missing beads. If damage is found, document the damage with photographs and contact the transport carrier immediately.

Examine the server cabinet for visible shipping damage. After unpacking the cabinet, check for damage that may have been obscured by the shipping container. If damage is found after visual inspection, document the damage with photographs and contact the transport carrier immediately.

If the equipment has any damage, a damage claim form must be obtained by the customer from the shipping representative. The customer should complete the form and return it to the shipping representative.

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**NOTE**      The server may come already racked or ready for rack installation.

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## Unpacking a Racked Server

This section contains information pertaining to unpacking the hp server rx5670 cabinet.

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**WARNING**      **Wear protective glasses while cutting the plastic bands around the shipping container. These bands are under tension. When cut, they can spring back and cause serious eye injury.**

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**NOTE**      Position the pallet to allow for enough space to roll the cabinet off the pallet before starting.

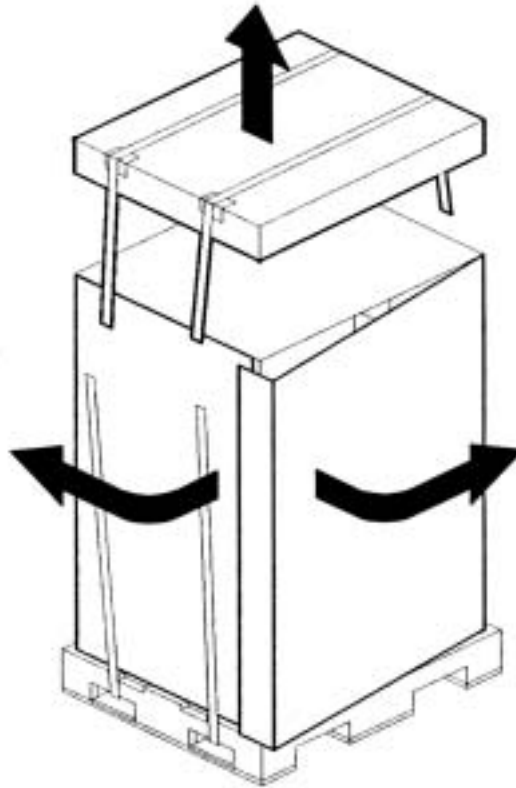
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To remove the hp server rx5670 cabinet, perform the following steps:

1. Cut the polystrap bands around the shipping container.

2. Lift the cardboard top cap from the shipping box.

**Figure 1-7 Removing the Polystraps and Cardboard**



3. Remove the corrugated wrap from the pallet.

4. Remove the packing materials.

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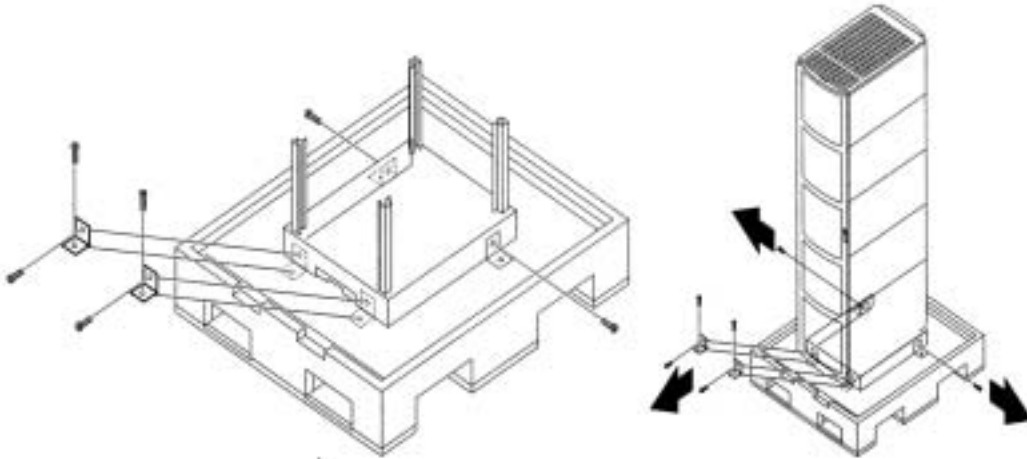
**CAUTION** The plastic wrapping material should be cut off rather than pulled off. Pulling the plastic covering off represents an ESD hazard.

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5. Remove the bolts holding down the ramps and remove the ramps.

6. Remove the six bolts from the base attaching the rack to the pallet.

**Figure 1-8 Preparing to Roll Off the Pallet**



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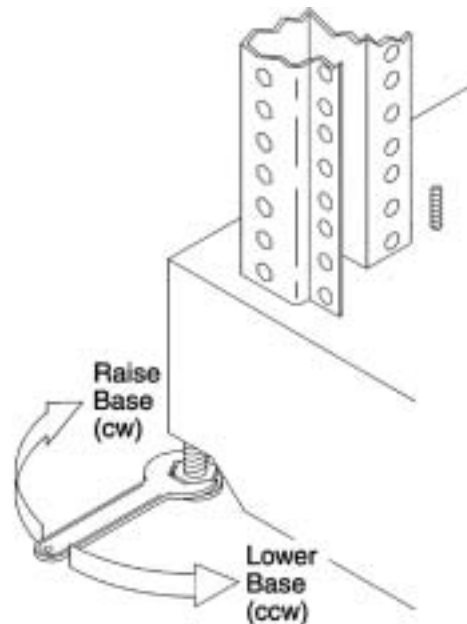
**WARNING** Use caution when rolling the cabinet off the ramp. Make sure the leveling feet on the rack are raised before you roll the rack down the ramp and any time you roll the rack on the casters. A single server in the cabinet weighs approximately 425 pounds. It is strongly recommended that two people roll the cabinet off the pallet.

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## Securing the Cabinet

Once in position, secure and stabilize the cabinet using the leveling feet at the corners of the base and install the anti-tip mechanisms on the bottom front and rear of the rack.

**Figure 1-9**      **Securing the Cabinet**



## Unpacking a Non-Racked Server

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**NOTE**      HP recommends the use of a lifter, such as a RonI Company model 17000 SP 400 lifting device, when moving a Non-Racked system.

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### Unloading with a Lifter

To unload the server from the pallet using a lifter, perform the following steps:

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**WARNING**      **Use caution when using a lifter. An hp server rx5670 may weigh up to 175 pounds. Because of the weight of the hp server rx5670, it must be centered on the lifter forks before raising it off the pallet to avoid injury.**

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1. Follow the instructions on the outside of the server packaging to remove the banding and carton top from the server pallet.
2. Remove all cartons from the pallet, leaving only the server.
3. Lower the cardboard from the side on which the lifter will be inserted and slide the server as close as possible to the edge of the pallet.
4. Break off any foam packaging which could prevent the lifter from being fully inserted under the server. Do not remove the foam packaging from the corners of the system. This foam is required to elevate the system and allow the forks of the lifter to be placed under the server.

## Unpacking the Server

5. Insert the lifter forks under the server.
6. Carefully roll the lift forward until it is fully positioned against the side of the server.
7. Slowly raise the server off the pallet until it clears the pallet cushions.
8. Carefully roll the lifter and server away from the pallet. Do not raise the server any higher than necessary when moving it over to the rack.

## Installing the Server into a Rack

Any hp server rx5670 that is to be installed into a rack is shipped with equipment slides. With every set of slides comes an installation guide: *hp server rx5670 rack installation guide*. Follow the steps in this installation guide to determine where and how to place the server into the rack.



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## **2 Installing Additional Components**

## Installing Power Supplies and Internal Disk Drives

This section provides information about installing HotSwap Power Supplies and internal HotPlug Disk Drives. HotSwap Power Supplies and internal HotPlug Disk Drives are located behind the Front Bezel.

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**CAUTION** A HotPlug device may require interaction with the operating system before the device can be safely installed into the server. Verify that the operating system supports installing disk drives while the operating system is running. If the operating system does not support this feature, shut down the operating system before attempting this procedure. Failure to observe this caution will result in system failure.

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**NOTE** A HotSwap device does not require interaction with the operating system before the device is removed from or installed into the server.

The AC power to the server does not have to be off to install a HotSwap Power Supply.

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### Opening the Front Bezel

The Front Bezel is hinged on the left (facing the front of the server). The server does not have to be turned off to open or to completely remove the Front Bezel.

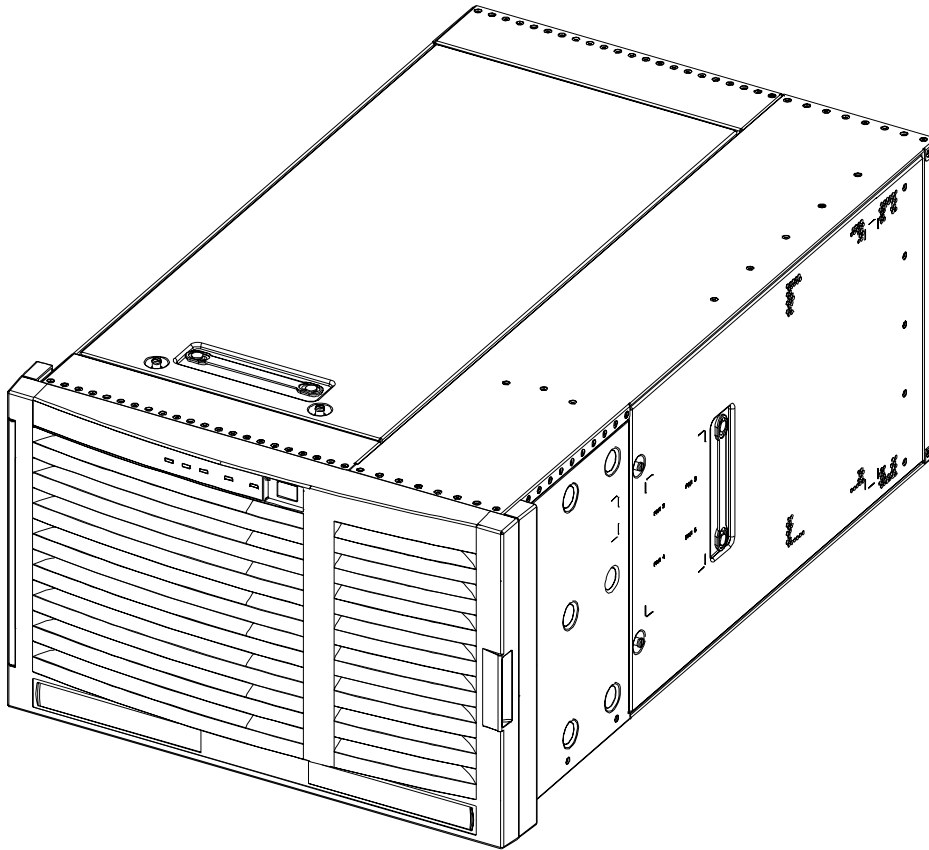
Opening the Front Bezel provides access to the following components:

- HotPlug Disks (up to four).
- Removable Media (DVD ROM drive, etc.).
- HotSwap Chassis Fan cover.
- HotSwap Chassis Fan 0.
- HotSwap Power Supplies (up to three).

To open the Front Bezel, perform the following step:

1. Grasp the handle located at the right edge of the Front Bezel and pull out. The Front Bezel will swing away from the chassis.

**Figure 2-1** hp server rx5670 (front view)



## Installing HotSwap Power Supplies

### Power Supply Load Order

There is no specific load order requirement for HotSwap Power Supplies. However, the supported configuration of an hp server rx5670 requires a minimum of two supplies be installed. A third, optional HotSwap Power Supply, may be installed to provide N+1 capability.

The right side HotSwap Power Supply is identified as P0, the center HotSwap Power Supply is identified as P1, and the left HotSwap Power Supply is identified as P2. Each HotSwap Power Supply requires a separate power cord be installed in the appropriate power cord receptacle located at the rear of the chassis.

### Installing a HotSwap Power Supply

To install a HotSwap Power Supply, perform the following steps:

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**WARNING** Be careful when installing a HotSwap Power Supply. It is heavier than it appears.

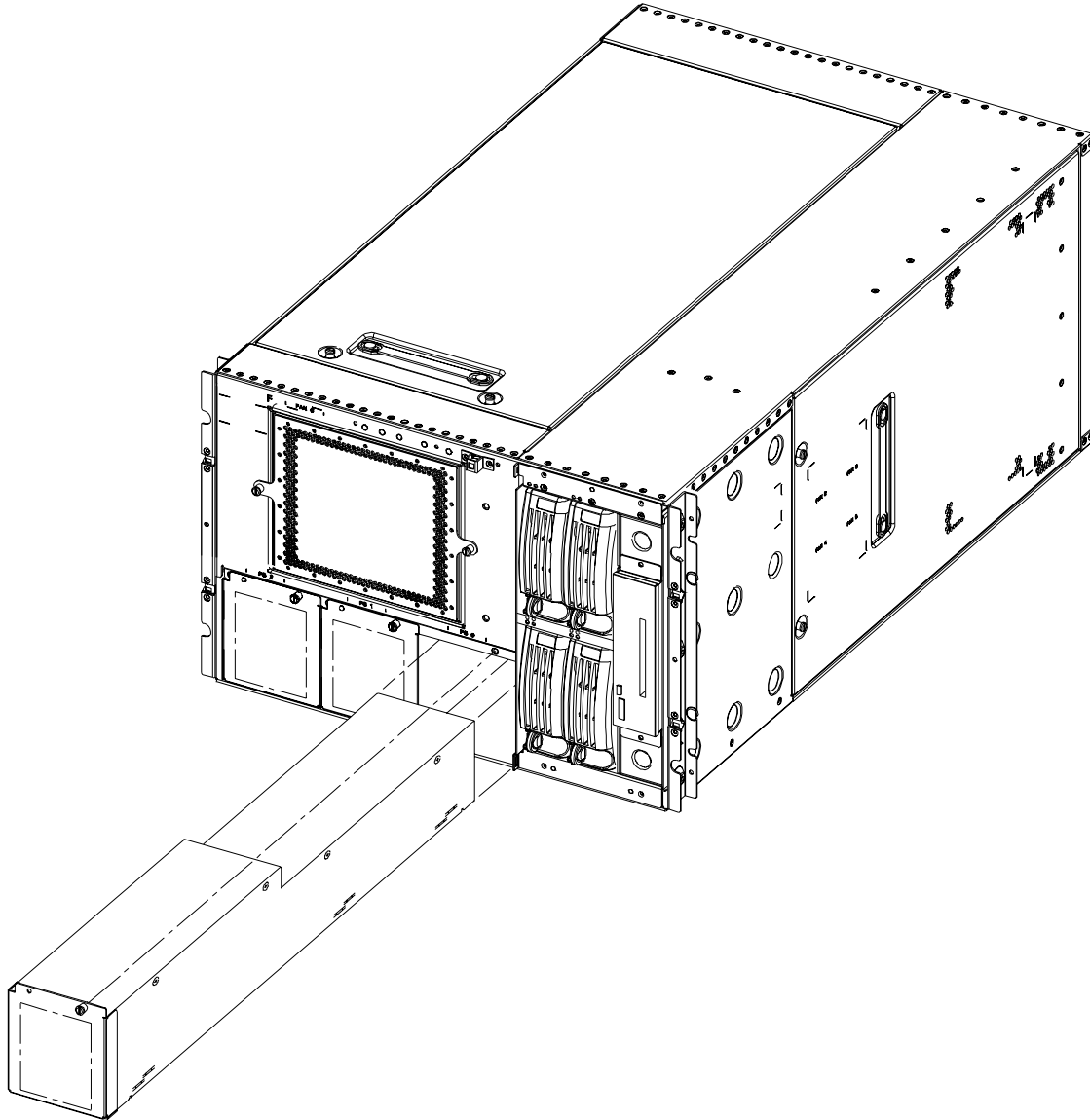
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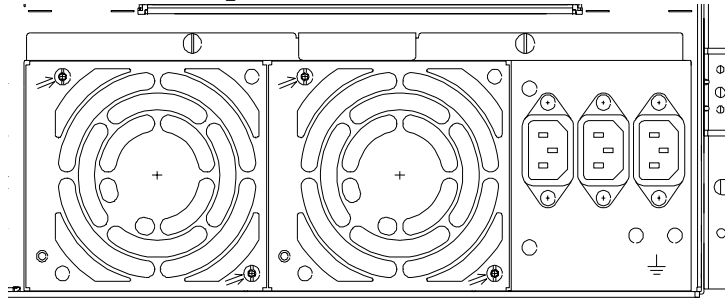
**CAUTION** Install the HotSwap Power Supply before attaching the new power cord at the rear of the system if the system is powered down. Failure to observe this caution will result in damage to the server.

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**Figure 2-2** HotSwap Power Supply Installation



**Figure 2-3 Power Cord Receptacles at Rear of Chassis**



1. Grasp the handle in one hand and support the HotSwap Power Supply with the other.
2. Slide the HotSwap Power Supply into the server. If the server is powered on, the HotSwap Power Supply LED should illuminate immediately.
3. Tighten the captive T-15 screw located to the right of the handle near the top of the HotSwap Power Supply.

## Installing HotPlug Disk Drives

### HotPlug Disk Drive Load Order

The internal disks drives, known as HotPlug Disk Drives, must be installed in a specific order. The HotPlug Disk Drives are located in the Disk Media Housing, found at the front of the chassis. Within the Disk Media Housing are slots that accommodate up to four HotPlug Disk Drives. HotPlug Disk Drive installation order is shown in Table 2-1.

**Table 2-1 HotPlug Disk Drive Load Order**

Disk	Slot
First Disk (A)	Lower Left
Second Disk (B)	Lower Right
Third Disk (C)	Upper Left
Fourth Disk (D)	Upper Right

### Installing a HotPlug Disk Drive

To install a HotPlug Disk Drive, perform the following steps:

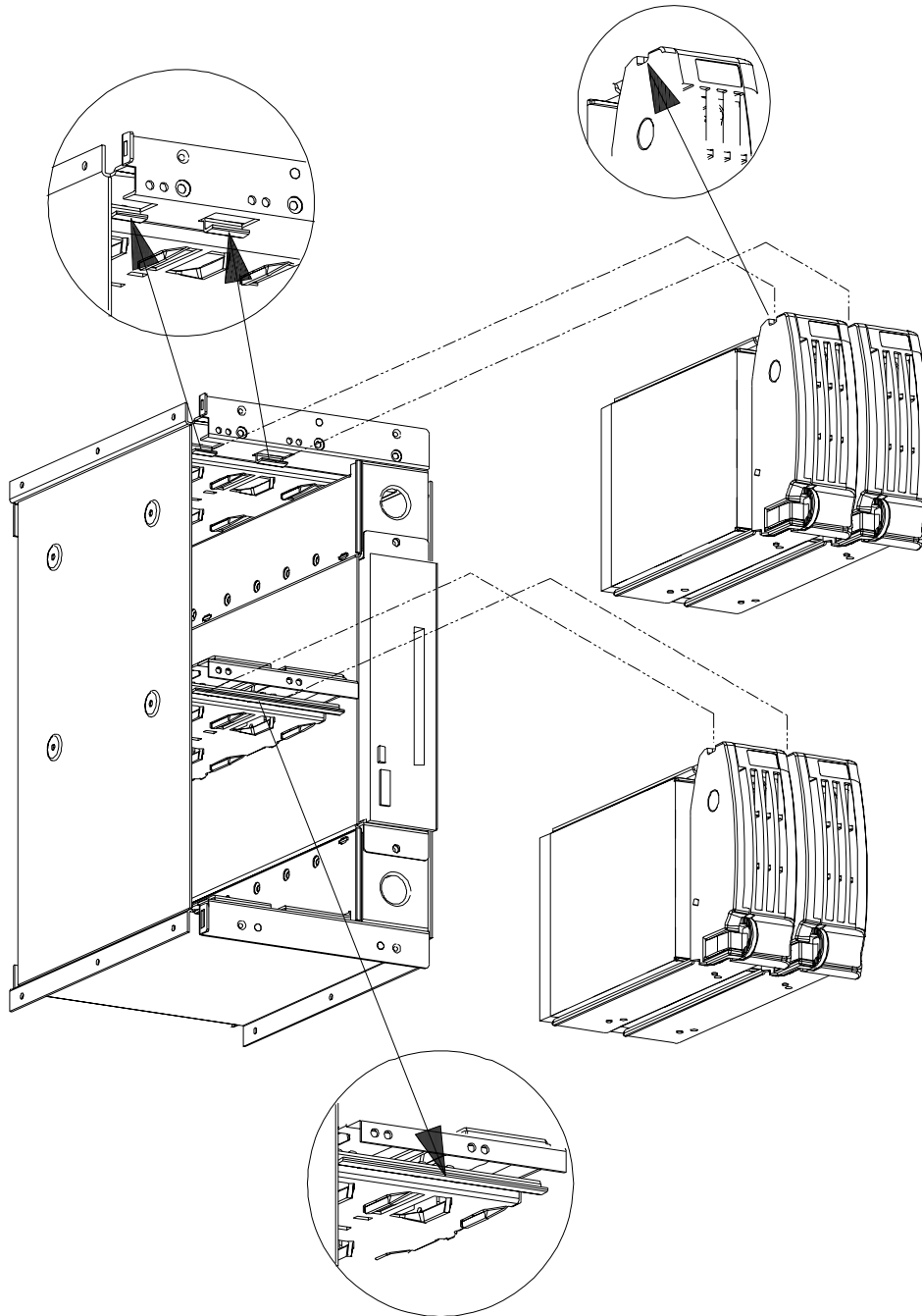
1. Ensure the HotPlug Disk Drive latch is in the open/unlocked position.
2. Gently slide the HotPlug Disk Drive into the chassis until it locks into place.

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**NOTE** When the disk drive is properly seated, the notch located at the top of the latch will lock onto the lip located at the top of the disk drive slot in the Disk Media Housing.

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**Figure 2-4 Disk Drive Installation**



## Installing Processors and Memory

This section provides information about installing processors and memory. Processors and memory are located under the Top Cover.

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**WARNING**    **Ensure that the system is powered-down and all power sources have been disconnected from the server prior to attempting the following procedures.**

**Voltages are present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position.**

**Failure to observe this warning could result in personal injury or damage to equipment.**

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**CAUTION**    Do not operate the server without the Top Cover in place. Operation of the server without the Top Cover in place will result in server failure. Operation of the server without the Top Cover in place will make the server susceptible to EMI problems.

Observe all ESD safety precautions before attempting this procedure. Failure to follow ESD safety precautions could result in damage to the server.

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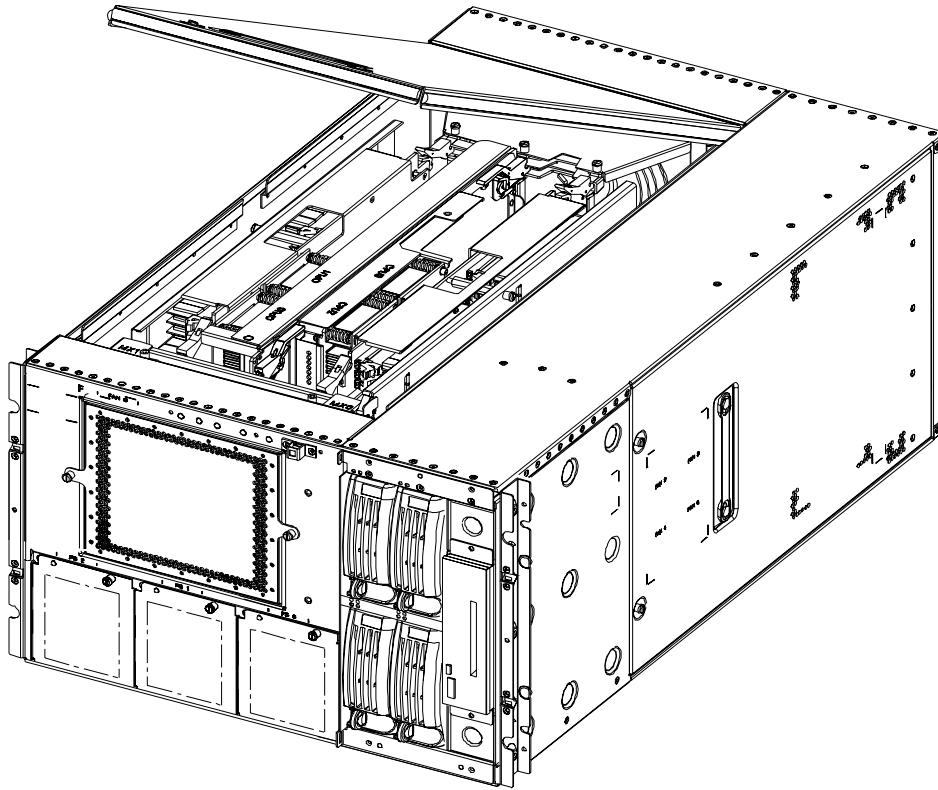
### Removing the Top Cover

To remove the Top Cover, perform the following steps:

1. Loosen the captive T-15 screws that hold the Top Cover in place.

2. Grasp the strap handle, raise the cover slightly, and pull the cover toward the front of the server to free the cover tabs from the slots in the rear of the chassis.

**Figure 2-5**      **Top Cover Removal**





## Installing Processors

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**CAUTION** Ensure that the cache size is identical for all processors. Failure to observe this caution will result in system failure.

Ensure that all processors are rated for use at the same speed. Failure to observe this caution will result in performance degradation.

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### Processor Load Order

Processors are housed on the Processor Extender Board located under the Top Cover in the Top Service Bay. The Processor Extender Board can hold between one and four Processors. Processors must be installed in a specific order. The Processor installation order is shown in Table 2-2.

**Table 2-2 Processor Load Order**

Processor	Socket
First	Left Front
Second	Left Rear
Third	Right Front
Fourth	Right Rear

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**CAUTION** Do not modify the settings of the DIP switches located on the Processor Extender Board. These switches are for factory use. Failure to observe this caution will result in system failure.

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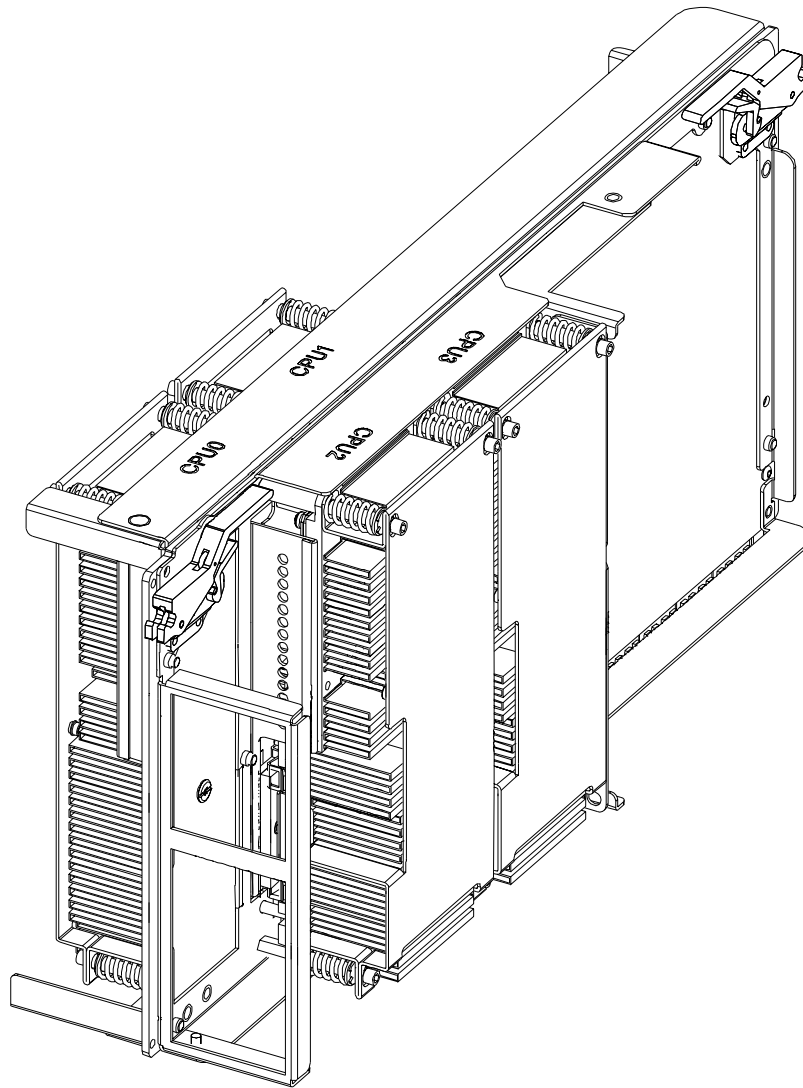
### Removing the Processor Extender Board

To remove the Processor Extender Board, perform the following steps:

1. Press the latch on the extraction levers located on each side of the Processor Extender Board.

2. Pull up on the extraction levers to free the Processor Extender Board from the socket located on the System Baseboard.

**Figure 2-6 Processor Extender Board**



### Installing the Processor

To install a Processor, perform the following steps:

1. Ensure that the cam on the Processor socket (Figure 2-7, item 1) is in the unlocked, counterclockwise position.
2. Carefully lower the Processor, without the Retention Cover, into the Processor socket using the guide pins (Figure 2-7, item 2) to align the assembly.
3. Rotate the cam on the socket (Figure 2-7, item 3) 180 degrees clockwise using a 2.5mm hex driver.

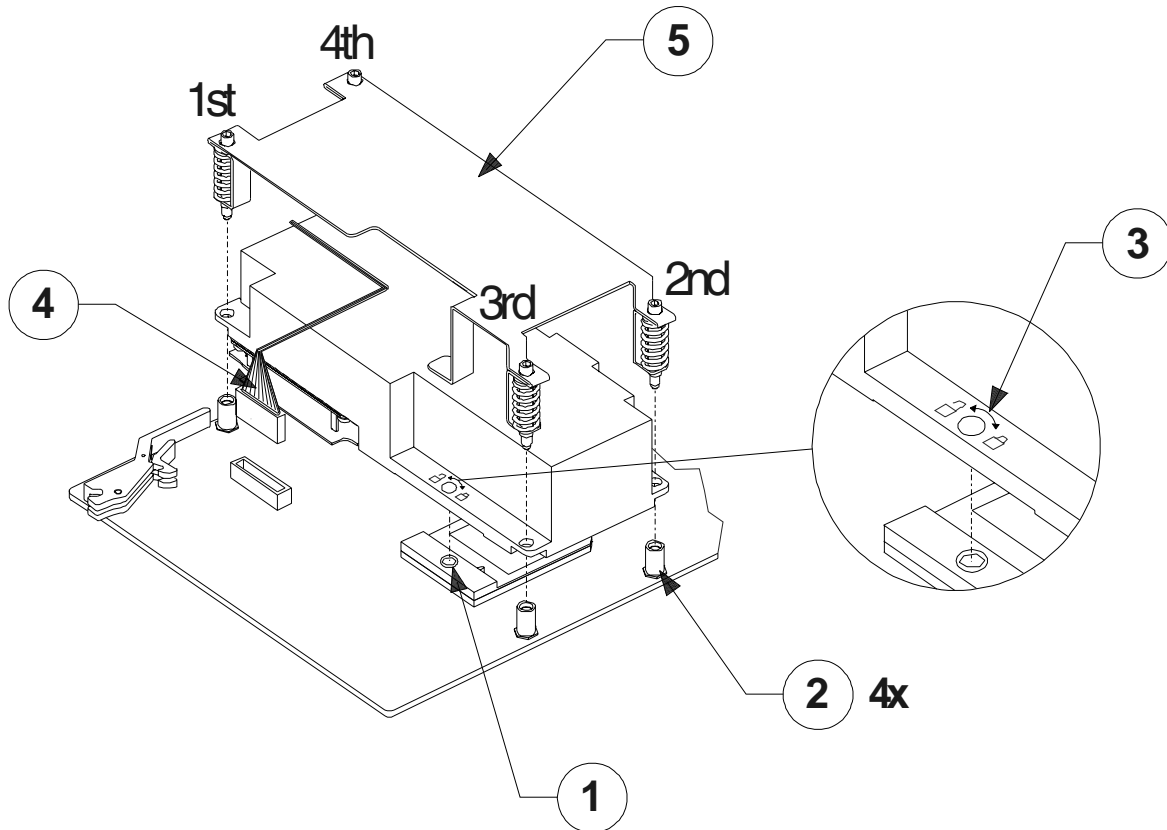
4. Connect the Processor power cable (Figure 2-7, item 4).
5. Place the Processor Retention Cover (Figure 2-7, item 5) over the Processor.

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**NOTE** When performing the following step, the screws should be tightened in sequence as shown on the following graphic. Each screw should be turned 2-3 times until all screws are bottomed out.

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**Figure 2-7 Processor Installation**



6. Tighten the captive T-15 screws to secure the Processor Retention Cover.

### Replacing the Processor Extender Board

To replace the Processor Extender Board, perform the following steps:

1. Ensure the extraction levers are positioned in the outward, unlocked position.
2. Align the Processor Extender Board with the front and rear Card Guides.
3. Slide the Processor Extender Board down until it begins to seat in the socket located on the System Baseboard.
4. Push the extraction levers inward to the locked position in order to fully seat the Processor Extender Board.

## Installing Memory

### Memory Load Order

DIMMs are installed on Memory Extender Boards located in the Top Service Bay. A minimum of one Memory Extender Board is required. A maximum of two Memory Extender Boards may be installed per system. Each Memory Extender Board can hold up to 24 DIMMs.

Memory must be installed in groups of four identical DIMMs. For a minimally loaded system, DIMMs will be loaded in slots 0A, 0B, 0C and 0D. This collection of slots is referred to as Rank 0. The next set of DIMMs loaded are installed into slots 1A, 1B, 1C and 1D. The process of loading additional DIMMs continues in a similar manner through the last set of DIMMs, which is installed in slots 5A, 5B, 5C, and 5D.

### Memory Performance Considerations

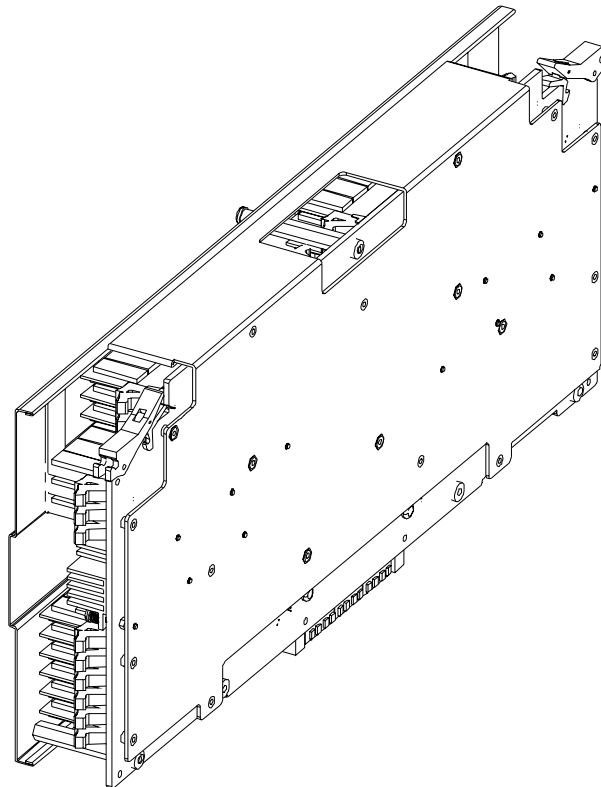
For best memory performance, install a second Memory Extender Board and distribute DIMM installation between them. Memory performance increases as the difference in memory installed between Memory Board Extenders is decreased. Optimal memory performance is obtained when the differential is 0. Memory performance will also be increased by loading the highest capacity DIMMs in the lower ranks.

### Removing a Memory Extender Board

To remove a Memory Extender Board, perform the following steps:

1. Press the latch on the extraction levers located on each side of the Memory Extender Board.
2. Pull up on the extraction levers to free the Memory Extender Board from the socket located on the System Baseboard.

**Figure 2-8** Memory Extender Board



## Installing Memory

To install memory, perform the following steps:

1. Loosen the captive T-15 screws that secure the Memory Extender Board DIMM Retainer.
2. Remove the DIMM Retainer from the Memory Extender Board.
3. Align the Memory DIMM with the socket located on the Memory Extender Board.
4. Push gently and evenly on each side of the Memory DIMM until it seats in the socket.

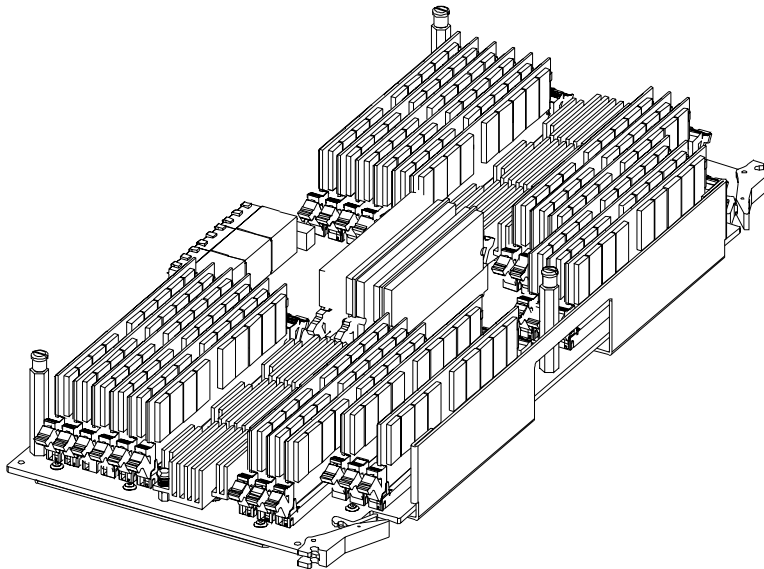
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**NOTE** Ensure that the extraction levers are in the closed position.

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5. Repeat steps 3 and 4 until all Memory DIMMs are seated in their sockets.
6. Align the DIMM Retainer on the Memory Extender Board.
7. Tighten the captive T-15 screws to secure the DIMM Retainer to the Memory Extender Board

**Figure 2-9** Memory DIMM Location



## Installing a Memory Extender Board

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**CAUTION** Ensure that a Memory Extender Board is installed in slot MX0 (right slot). If the system is configured with only one Memory Extender Board a memory filler panel must be installed in slot MX1 (left slot). Failure to observe this caution will result in system failure.

---

To install a Memory Extender Board, perform the following steps:

1. Remove the filler panel located in slot MX1 if you are installing a second Memory Extender Board.
2. Ensure the Memory Extender Board extraction levers are positioned in the outward, unlocked position.
3. Align the Memory Extender Board with the front and rear Card Guides.
4. Slide the Memory Extender Board down until it begins to seat in the socket located on the System Baseboard.

5. Push the extraction levers inward to the locked position in order to fully seat the Memory Extender Board.

## **Replacing the Top Cover**

To Replace the Top Cover, perform the following steps:

1. Align the tabs at the rear of the Top Cover with the corresponding slots in the chassis and fully seat the tabs into the slots.
2. Seat the Top Cover in the top of the service bay and tighten the captive T-15 screws that hold the Top Cover in place.

## Installing PCI Cards

This section provides information about installing PCI Cards. PCI Cards are located in the Side Service Bay.

---

**WARNING**    **Ensure that the system is powered-down and all power sources have been disconnected from the server prior to attempting the following procedure.**

**Voltages are present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position.**

**Failure to observe this warning could result in personal injury or damage to equipment.**

---

**CAUTION**    **Observe all ESD safety precautions before attempting this procedure. Failure to follow ESD safety precautions could result in damage to the server.**

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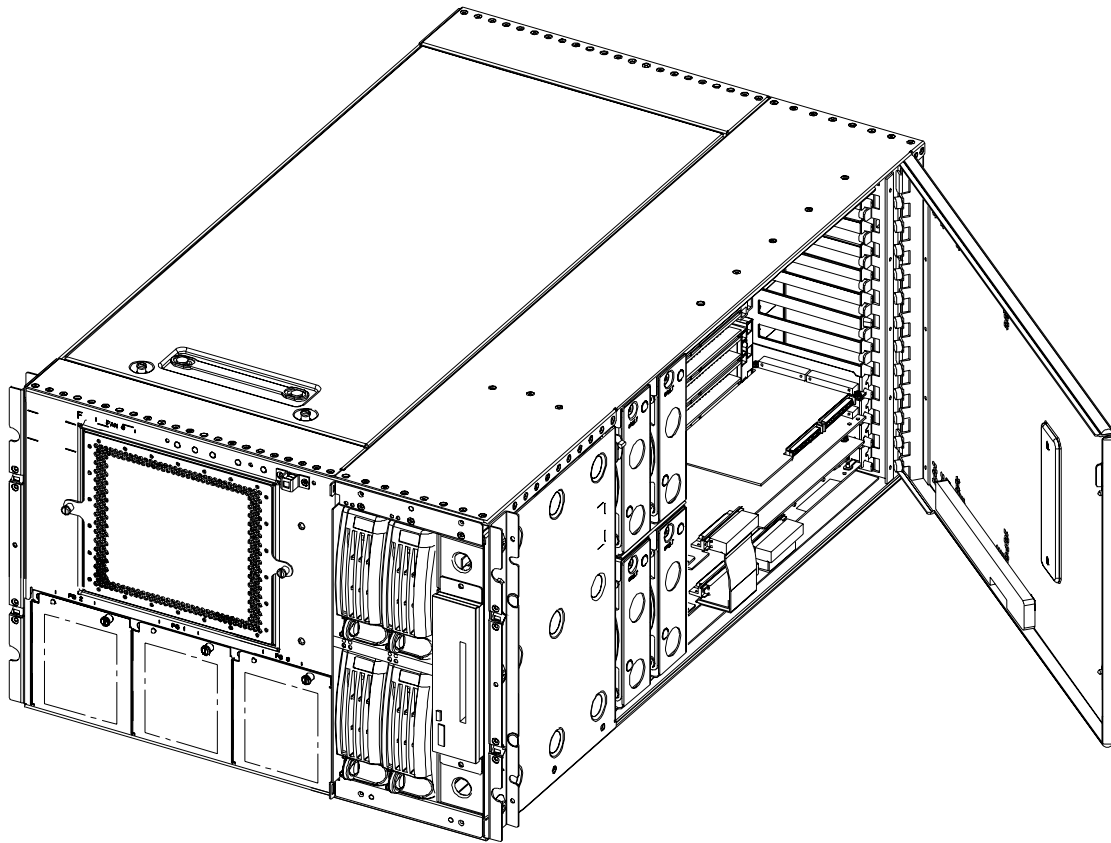
## Removing the Side Cover

To remove the Side Cover, perform the following steps:

1. Loosen the captive T-15 screws that hold the Side Cover in place.
2. Grasp the strap handle, pull the Side Cover slightly away from the server, and pull the cover toward the front of the server to free the cover tabs from the slots in the rear of the chassis.

The following graphic shows the Side Cover.

**Figure 2-10 Side Cover Removal**



## PCI Card Load Order

PCI slots are numbered 1 through 12, starting from the bottom of the PCI Backplane. PCI slots 1 and 3 are dedicated for use by the servers Core I/O cards. The Core I/O functions are shared between two cards; an MP/SCSI card which must be located in slot 1, and a LAN/SCSI card which must be located in slot 3.

If the VGA/USB card is installed, it must reside in PCI slot 2. If the VGA/USB card is not installed, slot 2 may be used for other supported PCI Cards.

A RAID card is available for use with Microsoft Windows and Linux. If the RAID card is installed, it must reside in PCI slot 4. If the RAID card is not installed, slot 4 may be used for other supported PCI Cards.

## PCI Card Performance Considerations

Slot 2, which shares a 33MHz bus with slot 1, is the lowest performance slot in the system available and is recommended for use with 33MHz PCI Cards.

A common 66MHz bus is shared between slots 4 and 5, slots 6 and 7, and slots 8 and 9. To maximize PCI bus bandwidth, populate only one slot on each bus and leave the second slot empty. For example, install cards in slots 4, 6, and 8, but leave slots 5, 7, and 9 empty.

Slots 10, 11, and 12 are the highest performance slots in the system. Each of these slots provide an individual bus with 500MB/second peak data rate at 133MHz.



## Installing a PCI Card

The server may contain up to 12 PCI Cards. PCI Cards are located in the Side Service Bay.

---

**WARNING**    **Ensure that the system is powered-down and all power sources have been disconnected from the server prior to installing a PCI Card.**

**Voltages are present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position.**

**Failure to observe this warning could result in personal injury or damage to equipment.**

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**CAUTION**    **Observe all ESD safety precautions before attempting this procedure. Failure to follow ESD safety precautions could result in damage to the server.**

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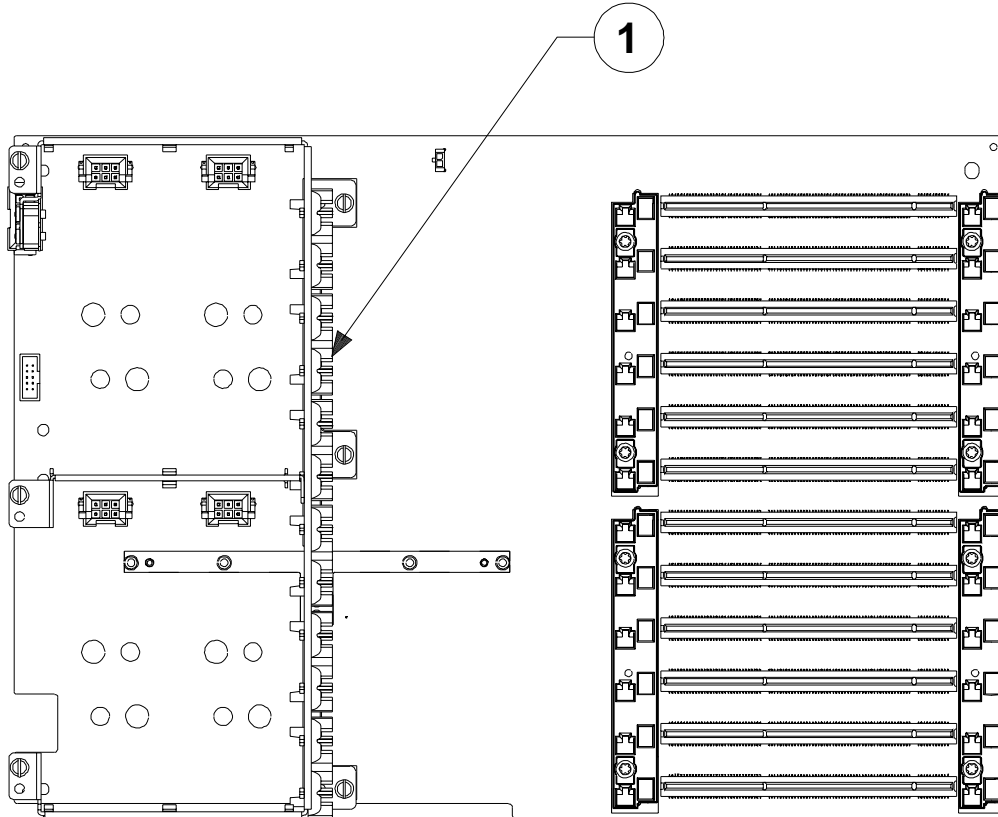
To install a PCI Card, perform the following steps:

1. Remove the appropriate PCI Slot Cover from the rear of the chassis.

Installing PCI Cards

2. Locate the PCI Card Guide, item 1 in Figure 2-11, on the outside of the Side Fan Housing. Orient the PCI Card into its guide slot and push it into the server until the PCI Card is seated in the PCI Backplane card connector.

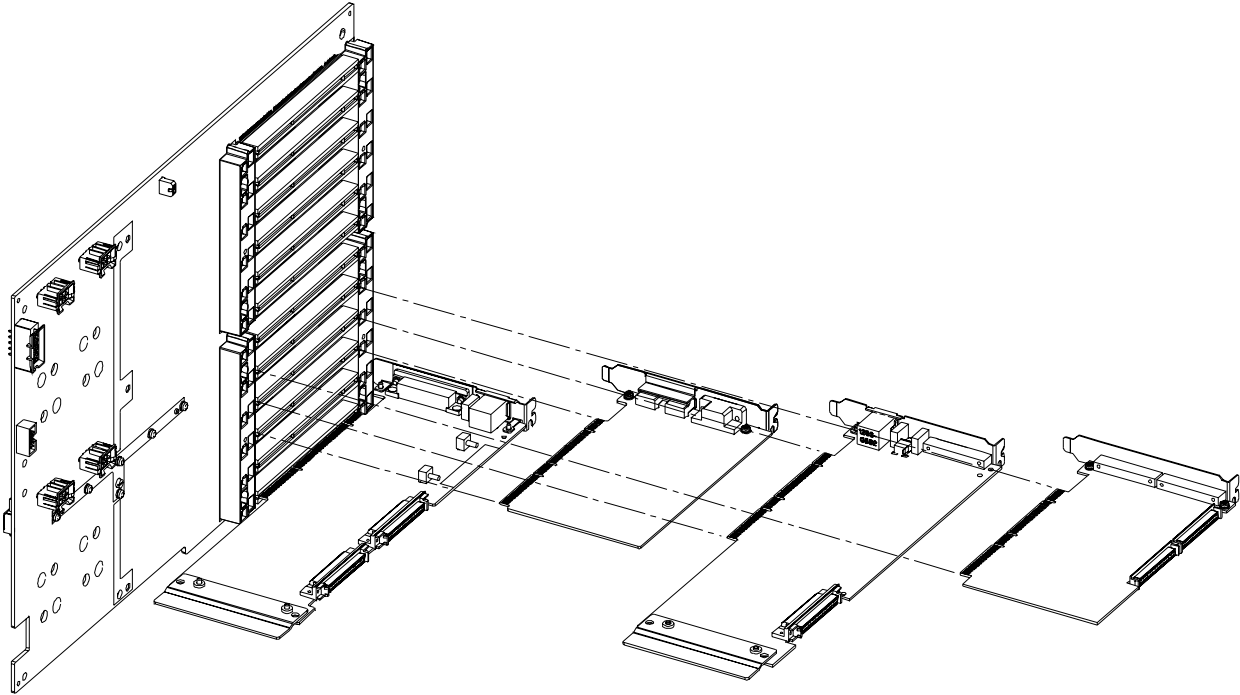
**Figure 2-11 Front PCI Card Guide Location**



3. Connect all external cables to the PCI card at the rear PCI bulkhead.

4. Connect all internal cables to the PCI Card in the side service bay.

**Figure 2-12**      **PCI Cards Location**



## Replacing the Side Cover

To replace the Side Cover, perform the following steps:

1. Grasp the strap handle and insert the tabbed end of the Side Cover into the server chassis slots at the rear of the Side Service Bay.
2. Push the Side Cover into the Side Service Bay opening and fasten the captive T-15 screws that hold the Side Cover in place.



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## **3 Cable Connections**

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## AC Input Power

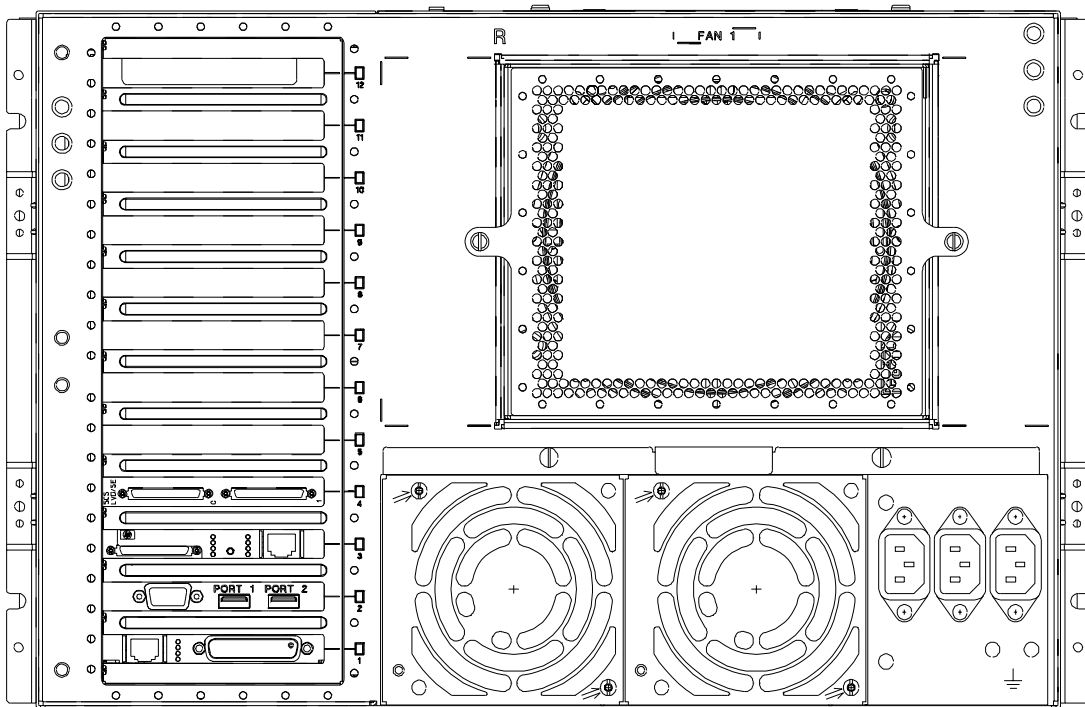
The hp server rx5670 comes with two power supplies installed: each with one AC input connector. The input for each connector is rated for 100 to 240 VAC at 13 Amps. As a minimum, both power supplies must be connected to an AC power source. A third power supply may be installed to provide N+1 capability.

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**WARNING** Voltage is present at various locations within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position. Failure to observe this warning could result in personal injury or damage to equipment.

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Figure 3-1 rx5670 (rear view)



## Core I/O Connections

Each hp server rx5670 contains one Core I/O board set, consisting of an MP/SCSI board and a LAN/SCSI board. The MP/SCSI board is located in PCI Slot 1. The LAN/SCSI board is located in PCI Slot 3.

### MP/SCSI Connections

The MP/SCSI board is required to update firmware, access the console, access all but two of the internal peripherals, and utilize other features of the system.

Connections to the MP/SCSI board include the following:

- DB25 Connector via the M cable (part number A6144-63001).  
This RS232 connector provides connections for a local console, external modem, and a UPS. The server end of the M cable terminates in a DB25 connector. The opposite side of the cable terminates in 3 DB9 connectors labeled CONSOLE, REMOTE, and UPS.
- 10/100 Base-T LAN RJ45 connector (for LAN access to the management processor).  
This LAN connection is available whenever the system is connected to a power source, even if the hp server rx5670 main power switch is in the off position.
- Internal Ultra SCSI (Wide) channel for two internal mass storage devices.
- Internal Ultra SCSI (Narrow) channel for connection to internal removable media device.

### LAN/SCSI Connections

The LAN/SCSI board provides the basic external I/O connectivity for the system.

Connections to the LAN/SCSI board include the following:

- Internal Ultra SCSI (Wide) channel for two internal mass storage devices.
- External LVD Ultra 160 SCSI channel connected to a 68-pin VHDCI connector
- 10/100/1000 Base-T LAN RJ45 connector (for LAN access to the system).

### Management Processor

The management processor is an independent support system for the server. It provides a way for you to connect to a server and perform administration or monitoring tasks for the server hardware.

The management processor controls power, reset, Transfer of Control (TOC) capabilities, provides console access, displays and records system events, and can display detailed information about the various internal subsystems. The management processor also provides a Virtual Front Panel which can be used to monitor the front panel LEDs from a remote location.

The management processor is available whenever the system is connected to a power source, even if the hp server rx5670 main power switch is in the off position.

Access to the management processor can be restricted by user accounts. User accounts can be password protected and provide a specific level of access to the server and management processor commands.

Multiple users can interact with the management processor. However, all output is mirrored. The management processor main menu permits all users to interact and mirrors output to all users. The console permits one interactive user at a time and mirrors output to all users accessing those features.

## Accessing the Management Processor

You can connect to the management processor using the following methods:

- The local RS-232C port using a local terminal.
- The remote RS-232C port using external modem (dial-up) access, if remote modem access is configured.
- The management processor LAN port using Web Console or telnet if login access through the management processor LAN is enabled.

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**NOTE** The M cable (part number A6144-63001) must be connected to the DB25 connector located on the MP/SCSI board to allow a local terminal connection. The MP/SCSI board is located in PCI Slot 1.

If a local terminal is not available, the management processor may be configured using a network connection. Details for configuring the management processor via a network are found in the section titled Network Access to the management processor.

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**Local Terminal Access to the Management Processor** Communication with the management processor is established by connecting a terminal to the Local RS-232 port on the MP/SCSI Core I/O board.

A terminal session may be established using a standalone terminal, or using terminal emulation software such as Reflection 1 running on a PC.

During installation, communicating with the management processor enables such tasks as:

- Verifying that the components are present and installed correctly
- Setting the LAN IP addresses

**Setting Terminal Parameters** After powering on the Terminal, ensure the communications settings are as follows:

- 8/none (parity)
- 9600 baud
- None (Receive)
- None (Transmit)

If the terminal is a PC using Reflection 1, check or change these communications settings using the following procedure:

1. From the Reflection 1 Main screen, pull down the **Connection** menu and select **Connection Setup**.
2. Select **Serial Port**.
3. Select **Com1**.
4. Check the settings and change, if required.

Go to **More Settings** to set Xon/Xoff. Click **OK** to close the More Settings window.

5. Click **OK** to close the Connection Setup window.
6. Pull down the **Setup** menu and select **Terminal** (under the **Emulation** tab).
7. Select a supported terminal type.

The preferred type is **VT100**.

8. Click **Apply**.

This option is not highlighted if the terminal type you want is already selected.



9. Click **OK**.

### Network Access to the Management Processor

By connecting the management processor LAN port to an active network, another host on the same subnet can set the management processor IP address via the ping command. After the IP address has been set, a telnet session can be established to configure additional parameters.

To configure the management processor LAN IP address, perform the following steps:

1. Determine the MAC address of the management processor LAN interface by viewing the label located at the rear of the server.

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**NOTE** If this label is missing, another label can be found at the front of the MP/SCSI card. You might need to remove the MP/SCSI board to view this label.

For instruction on removing/replacing the MP/SCSI board, review chapter 6 of the Operations and Maintenance Guide. The section is titled Removing and Replacing PCI Cards.

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2. Connect a LAN cable on your local subnet to the LAN port found on the MP/SCSI board.
3. Add an ARP table entry to another host located on your local subnet. This ARP table entry will map the MAC address of the MP/SCSI LAN interface to the IP address chosen for that interface.

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**NOTE** Adding an entry to the ARP table is typically done using the ARP command with the appropriate option. For example, **arp -s** is used with Windows. Consult your Operating System documentation for more information.

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4. Use the ping command from the host that has the new ARP table entry. The destination address is the IP address that is mapped to the MAC address of the management processor. The management processor LAN port should now be configured with the appropriate IP address.
5. Use the telnet command to connect to the management processor from a host on the local subnet.

### Interacting with the Management Processor

To interact with the management processor, perform the following steps:

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**NOTE** On initial system installation no user account is set. To access the management processor use the return key at both the login and password prompts. It is recommended that the **SO** command be used (enter **SO** at the **MP>** prompt) during the initial management processor login session to configure management processor security and access control.

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1. Log in using your management processor user account name and password.

---

**NOTE** If the management processor is in console mode, use **CTRL-B** to access the management processor prompt.

---

2. Use the management processor menus and commands as needed. A list of available commands can be displayed by using the management processor help function (enter **HE** followed by **LI** at the **MP>** prompt). Log out using the **EX** command (enter **EX** at the **MP>** prompt) when done.

### Configuring Management Processor LAN Information

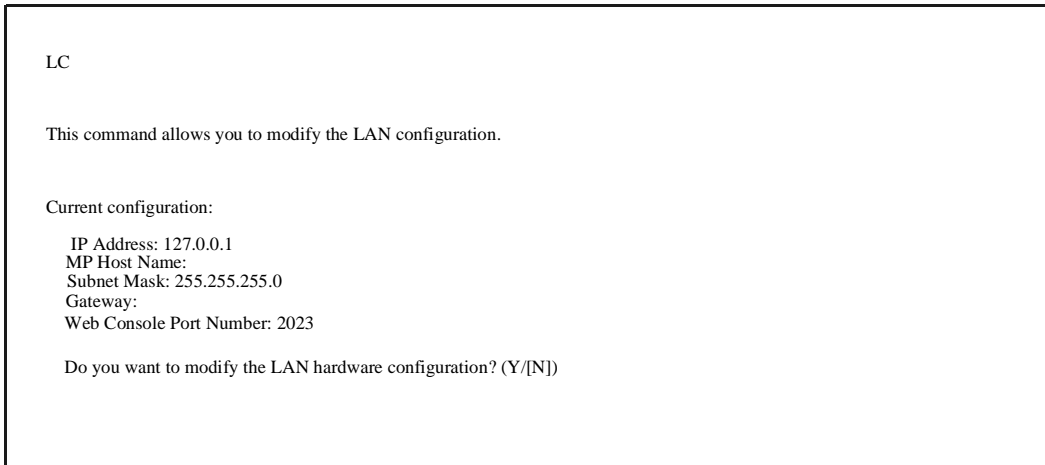
LAN information includes the management processor network name, the management processor IP address, the management processor subnet mask, the management processor gateway address, and the Web Console port number.

To set the management processor LAN IP address:

1. At the management processor menu prompt (**MP>**), enter **LC** (for LAN configuration) and press the *Return/Enter* key.

The screen displays the default values and asks if you want to modify them. It is good practice to write down the information, as it may be required for future troubleshooting.

**Figure 3-2 The LC Command Screen**



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**NOTE** The value in the “IP address” field is set at the factory. The customer must provide the actual management processor LAN IP address.

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2. At the prompt, *Do you want to modify the Lan hardware configuration?*, enter **y**.  
The current IP address is shown; then the following prompt appears: *Do you want to modify it? (Y/[N])*
3. Enter **y**.
4. Enter the new IP address.
5. Confirm the new address.
6. Enter the management processor Network Name.  
This is the host name for the management processor LAN. The name can be as many as 64 characters, and include alpha numerics, - (dash), \_ (under bar),. (period), or a space.
7. Enter the LAN parameters for *Subnet mask* and *Gateway address*, and *Web Console Port Number*.
8. Once step 7 is completed, the system will prompt for changes to the LAN hardware configuration. It is recommended that this prompt be answered with no by entering **n**.
9. The system will now indicate that the LAN settings have been updated and that the MP must be reset to initiate these changes. At the management processor menu prompt (**MP>**), check the LAN parameters and status with the **LS** command to confirm the new LAN settings. After confirmation, use the **R** option of the **XD** command to reset the MP.

10. Use the **EL** command to enable/disable Web Console and telnet access after the MP has been reset.

**Management Processor Commands**

**Table 3-1 Management Processor Commands and Descriptions**

<b>Command</b>	<b>Description</b>
AC	Alert Display Configuration
CA	Configure Asynch/Serial Ports
CL	View Console Log
CG	Certificate Generator
CO	Return to Console Mode
CSP	Connect to Remote management processor
DC	Default Configuration
DF	Display FRU Information
DI	Disconnect Remote or LAN Console
EL	Enable/Disable LAN/Web Access
ER	Enable/Disable Remote Modem
EX	Exit management processor and Disconnect
HE	Display Help for Menu or Command
IT	Inactivity Timeout Settings
LC	LAN Configuration
LOC	Locater LED Control
LS	LAN Status
MR	Modem Reset
MS	Modem Status
PC	Remote Power Control
PG	Paging Parameter Setup
PR	Power Restore Policy Configuration
PS	Power Management Module Status
RB	Reset BMC through Toggle GPIO Pin
RS	Request BMC to Reset System through RST Signal
SDM	Set Display Mode (hex or text)
SE	Log Into the System

**Table 3-1 Management Processor Commands and Descriptions (Continued)**

<b>Command</b>	<b>Description</b>
SL	Show Logs
SO	Security Options and Access Control
SR	System Firmware Revisions
SS	System Status of Processor Modules
TC	Request BMC to Reset via Transfer of Control (TOC)
TE	Send a Message to Other Users
VFP	Virtual Front Panel
WHO	Display Connected management processor Users
XD	Diagnostics and/or Reset of management processor
XU	Upgrade the management processor Firmware

## Booting the Server

To boot the server, perform the following step.

1. Depress the power switch located to the right of the Front Panel LEDs.

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**NOTE** If the Front Bezel is attached and in the closed position, you will need to open the small door on the Front Bezel to gain access to the power switch.

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If the autoboot function is enabled, the system will boot to the installed operating system. If autoboot is not enabled, the system will enter the EFI Boot Manager. The EFI Boot Manager allows you to control the server's booting environment. For more information about the EFI Boot Manager, review the Utilities chapter of the Operations and Maintenance Guide.

