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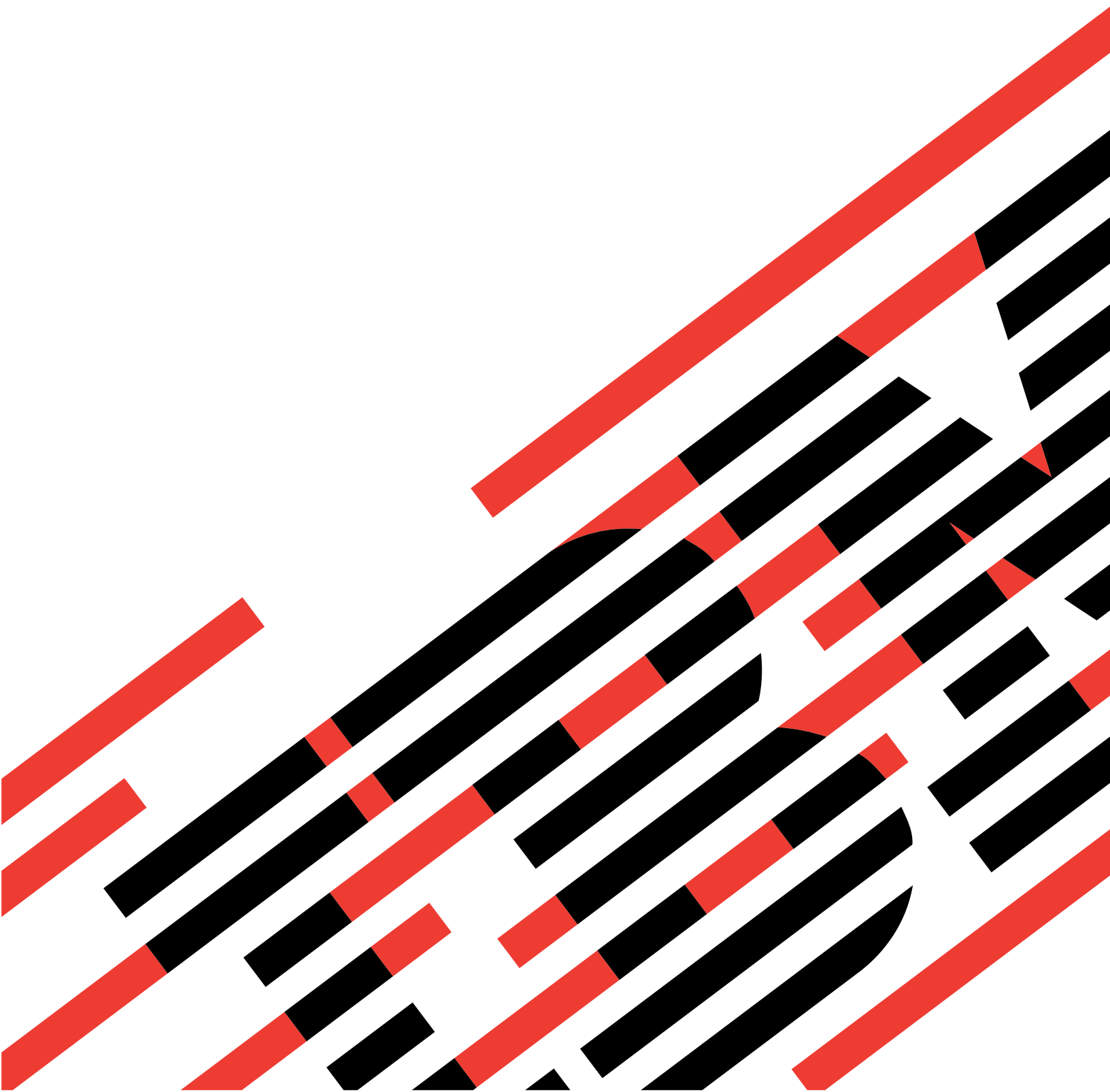
@server pSeries 615 Model 6C3 and Model 6E3

Your Guide to Removing, Replacing, and Installing Parts

IBM

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@server pSeries 615 Model 6C3 and Model 6E3

Your Guide to Removing, Replacing, and Installing Parts

SA38-0638-00

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Contents

Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. Danger notices appear on the following pages:

- viii
- 3
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A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. Caution notices appear on the following pages:

- viii
- ix
- 4
- 39

Note: For a translation of these notices, see *System Unit Safety Information*, order number SA23-2652.

Rack Safety Instructions

- Do not install this unit in a rack where the internal rack ambient temperatures will exceed 35 degrees C.
- Do not install this unit in a rack where the air flow is compromised. Any side, front or back of the unit used for air flow through the unit must not be in direct contact with the rack.
- Care should be taken to ensure that a hazardous condition is not created due to uneven mechanical loading when installing this unit in a rack. If the rack has a stabilizer it must be firmly attached before installing or removing this unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to the rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement for the supply circuit.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Electrical Safety

Observe the following safety instructions any time you are connecting or disconnecting devices attached to the workstation.

In the system you are about to setup or service:

- The ac power interface connector is considered the main power disconnect device.
- This system has redundant power supply capabilities, meaning that it has the ability to have two power supplies running simultaneously in the same system unit. When instructed to disconnect the power source, ensure that all power cables have been unplugged.

DANGER

To prevent electrical shock hazard, disconnect all power cables from the electrical outlet before relocating the system.
`D01`

CAUTION:
This product is equipped with a three-wire power cable and plug for the user's safety. Use this power cable with a properly grounded electrical outlet to avoid electrical shock.
`C01`

DANGER

To prevent electrical shock hazard, disconnect all power cables from the electrical outlet before relocating the system.
`D01`

Laser Safety Information

CAUTION:
This product may contain a CD-ROM, DVD-ROM, or laser module on a PCI card, which are class 1 laser products.
C30

Laser Compliance

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with the IEC 825 (first edition 1984) as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

CAUTION:
All IBM laser modules are designed so that there is never any human access to laser radiation above a class 1 level during normal operation, user maintenance, or prescribed service conditions. Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Only trained service personnel should perform the inspection or repair of optical fiber cable assemblies and receptacles.
C25, C26

Data Integrity and Verification

IBM computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check the IBM support websites for updated information and fixes applicable to the system and related software.

About This Book

This book provides information about identifying problems that are related to parts, removing and replacing those parts, installing optional parts (features), and verifying that parts are installed and operating correctly in your @server pSeries 615 Model 6C3 and Model 6E3. In this book, the @server pSeries 615 Model 6C3 and Model 6E3 are hereafter referred to as the *system*.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Highlighting

The following highlighting conventions are used in this book:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels, and icons that the user selects.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or information you should actually type.

Accessing Information

Documentation for the IBM @server pSeries is available online. Visit the IBM @server pSeries Information Center at http://publib16.boulder.ibm.com/pseries/en_US/infocenter/base.

* To access the pSeries publications, click **Hardware documentation**.
* To view information about the accessibility features of @server pSeries hardware and the AIX operating system, click **AIX and pSeries accessibility**.

References to AIX Operating System

This document may contain references to the AIX operating system. If you are using another operating system, consult the appropriate documentation for that operating system.

This document may describe hardware features and functions. While the hardware supports them, the realization of these features and functions depends upon support from the operating system. AIX provides this support. If you are using another operating system, consult the appropriate documentation for that operating system regarding support for those features and functions.

Related Publications

The following publications provide additional information about your system:

* The @server *pSeries 615 Model 6C3 and Model 6E4 Installation Guide*, order number SA38-0628, contains information on how to set up and cable the system, install and remove options, and verify system operation.
* The @server *pSeries 615 Model 6C4 and Model 6E4 User's Guide*, order number SA38-0629, contains information to help users use the system, use the service aids, and solve minor problems.
* The *RS/6000 @server pSeries Diagnostic Information for Multiple Bus Systems*, order number SA38-0509, contains diagnostic information, service request numbers (SRNs), and failing function codes (FFCs).

- The *RS/6000 @server pSeries Adapters, Devices, and Cable Information for Multiple Bus Systems*, order number SA38-0516, contains information about adapters, devices, and cables for your system. This manual is intended to supplement the service information found in the *RS/6000 @server pSeries Diagnostic Information for Multiple Bus Systems*.
- The *Site and Hardware Planning Guide*, order number SA38-0508, contains information to help you plan your installation.
- The *System Unit Safety Information*, order number SA23-2652, contains translations of safety information used throughout this book.
- The *PCI Adapter Placement Reference*, order number SA38-0538, contains information regarding slot restrictions for adapters that can be used in this system.
- The *IBM Hardware Management Console for pSeries Installation and Operations Guide*, order number SA38-0590, contains information for operators and system administrators about how to install and use a hardware management console to manage a system.
- The *IBM Hardware Management Console for pSeries Maintenance Guide*, order number SA38-0603, contains MAPS, removal and replacement, error code, and parts information that helps trained service representatives diagnose and repair the system.

Ergonomic Information

After you have set up your system, we encourage you to visit the Healthy Computing Web site. Good ergonomic practice is important to get the most from your workstation and to avoid discomfort. This means that the equipment and the workplace should be arranged to suit your individual needs and the kind of work you do.

The Healthy Computing Web site gives ergonomic guidelines to help you understand the ergonomic considerations that you should know when working at a computer workstation. The address is:
http://www.us.pc.ibm.com/healthycomputing

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- AIX
- @server
- IBM
- pSeries
- RS/6000

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Chapter 1. Overview

The Model 6C3 and Model 6E3are designed to allow customers to remove, replace and install certain options and parts.

If you are installing an optional part in your system, use the installation procedure for the part in Chapter 2, "Removal, Replacement, and Installation Procedures", on page 3.

If the system contains a part that is damaged, a part that fails to operate correctly, or the system needs service, perform the following steps:

Step 1. Check the Operator Panel

When a failing part is detected in your system, the amber-colored attention LED on the operator panel is turned on solid (not blinking). A failing part might also generate an error code. If an error code is generated, it is shown on the operator panel display.
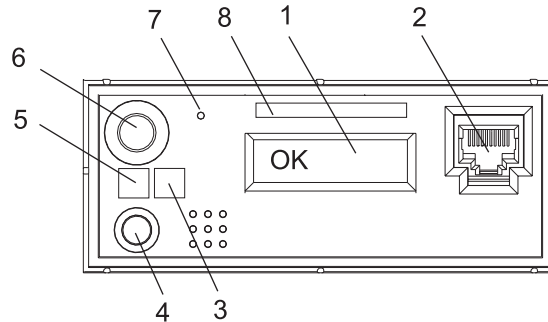
1 Operator Panel Display	**5** Power LED
2 Front Serial Connector (FS1)	**6** Power-On Button
3 Attention LED	**7** Service Processor Reset Switch (Pinhole)
4 System Reset Button	**8** Serial Number Label

Step 2. Record Needed Information

Record the following information:
- Machine type and model
- System serial number
- Any error codes that appear in the operator panel display or console
- Any LEDs lit on the operator panel

Step 3. Report the Problem

Call your service organization. The service organization provides you with information about how to:
- Identify the part in your system that is damaged or failing to operate correctly
- Determine if a damaged or failing part can be replaced by the customer
- Have a replacement part shipped to your location
- Complete the repair when a part is replaced or installed in your system

Chapter 2. Removal, Replacement, and Installation Procedures

This chapter provides removal, replacement, and installation procedures for both the Model 6C3 rack-mounted system unit and the Model 6E3 deskside system unit.

Notes:

1. Servicing of the Model 6E3 can be performed with the system either in the vertical or horizontal position. Servicing of the Model 6C3 is performed with the system in the rack and placed into the service position. The service position for the Model 6C3 is described in "Placing the Model 6C3 into the Service Position" on page 6.
2. Before performing any of the removal or replacement procedures in this chapter, read the following danger and caution notices.
3. If your system has a failure for one of the listed devices, refer to Appendix D, "Component and Attention LEDs", on page 99. When you have determined which device is the source of the problem, return to these procedures.
4. Only optional parts that are available for your system have installation procedures.
5. In the system, the ac power interface connector is considered the main power disconnect device.
6. This system has redundant power supply capabilities, meaning that it has the ability to have two power supplies running simultaneously in the same system unit. When instructed to disconnect the power source, ensure that all power cables have been unplugged.

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.

When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communications lines.
D05

CAUTION:
This product is equipped with a three-wire power cable and plug for the user's safety. Use this power cable with a properly grounded electrical outlet to avoid electrical shock.
C01

CAUTION:
This unit has more than one power supply cord. To reduce the risk of electrical shock, disconnect two power supply cords before servicing.
C21

Handling Static-Sensitive Devices

The following procedures describe how to handle static-sensitive devices.

Attention: Electronic boards, adapters, media drives, and disk drives are sensitive to static electricity discharge. These devices are wrapped in antistatic bags to prevent this damage.

Take the following precautions:
- If you have an antistatic wrist strap available, use it while handling the device.
- Do not remove the device from the antistatic bag until you are ready to install the device in the system.
- With the device still in its antistatic bag, touch it to the metal frame of the system.
- Grasp cards and boards by the edges. Hold drives by the frame. Avoid touching the solder joints or pins.
- If you need to lay the device down while it is out of the antistatic bag, lay it on the antistatic bag. Before picking it up again, touch the antistatic bag and the metal frame of the system at the same time.
- Handle the devices carefully to prevent permanent damage.

Procedure List

Part	Procedure Location
Adapters	"PCI Adapters" on page 17
Adapter Dividers and Light Pipes	"PCI Adapter Dividers and Light Pipes" on page 33
Battery	"Battery" on page 39
Bezels	"Bezels" on page 15
Bezel Door	"Bezel Door (Model 6E3)" on page 14
Cable-Management Arm	"Model 6C3 Cable-Management Arm" on page 11
Covers	"Covers" on page 12
Disk Drives	"Hot-Swap Disk Drives" on page 53
Disk Drive Bezels and Fillers	"Disk Drive Bezels and Fillers" on page 51
Display*	See note
Drawer Release Latch Brackets	"Drawer Release Latch Bracket (Model 6C3)" on page 10
Fans	"Hot-Swap System Fans" on page 40
Fan Tray	"Fan Tray Assembly" on page 42
Keyboard*	See note
Media Devices	"Media Devices" on page 46
Media Bay Chassis	"Media Bay Chassis" on page 59
Mouse*	See note
Operating Position	"Returning the Model 6C3 to the Operating Position" on page 7 "Placing the Model 6E3 into the Service and Operating Position" on page 7
Operator Panel Power Cable	"Operator Panel Power Cable" on page 61
Power Supply	"Power Supply" on page 63
Service Position	"Placing the Model 6C3 into the Service Position" on page 6 "Placing the Model 6E3 into the Service and Operating Position" on page 7
Service Processor Assembly	"Service Processor Assembly" on page 36

Note: For the removal, replacement, and installation instructions for the items marked with an asterisk, see the documentation provided by the product manufacturer.

Placing the Model 6C3 into the Service Position

Attention: When placing the Model 6C3 into the service position, it is essential that all stability plates are firmly in position to prevent the rack from toppling (see the illustration on page 7). Ensure that only one system drawer is in the service position at a time.

Note: Before doing any work inside the Model 6C3, place the system into the service position.

To place the Model 6C3 in to the service position, do the following:
1. Open the front rack door.
2. If your system is equipped with two thumbscrews securing it to the rack, remove the thumbscrews. The screws are located on the bezel, just above each system drawer release latch.
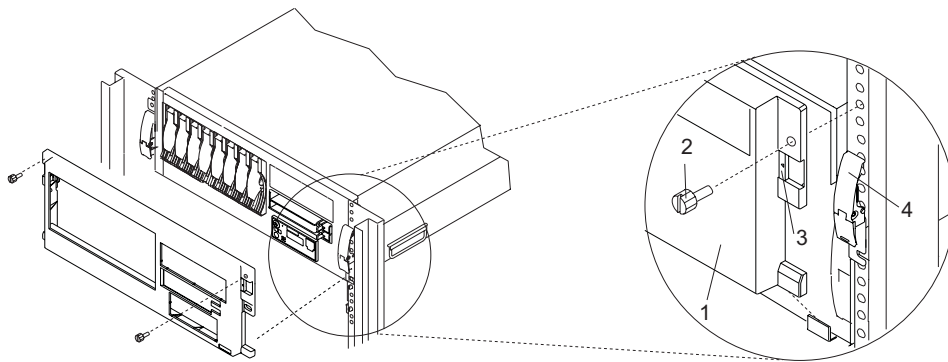
1 Model 6C3 Front Bezel	**3** Bezel-Release Tab
2 System-Retaining Thumbscrew	**4** System Drawer Release Latch

3. Release the system drawer release latches on both the left and right sides.
4. Pull the system drawer out from the rack until the rails are fully extended.

   Note: Ensure that the cables at the rear of the system do not catch or bind as you pull the system drawer forward in the rack.

Note: When the system rails are fully extended, the rail safety latches on the slide rails lock into place. This action prevents the system from being pulled out too far and dropped. The following illustration shows a system drawer in the service position.

1	Model 6C3	**4**	Stability Plate
2	19-Inch Rack	**5**	Front Rack Door
3	Rail Safety Latches	**6**	System Drawer Release Latch
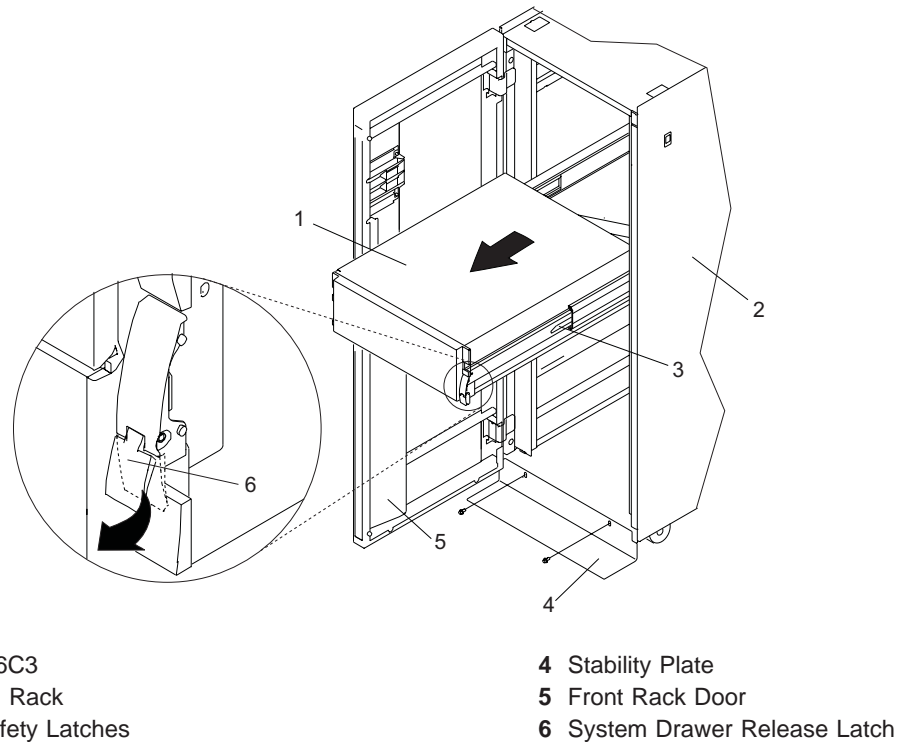
Returning the Model 6C3 to the Operating Position

To return the Model 6C3 to the operating position, do the following:

1. Press upward on both rail safety latches, located on each rail. See the illustration on page 7 for the location of the rail safety latches.
2. Push the system drawer back into the rack until both system drawer release latches have locked into position.

   Note: Ensure that the cables at the rear of the system do not catch or bind as you push the system drawer back in the rack.

3. If you removed two thumbscrews from the front bezel, replace them.
4. Close the front rack door.

Placing the Model 6E3 into the Service and Operating Position

So that you can work on the inside of the system unit, the Model 6E3 can be placed on its side. When you are finished working on the system, return it to the position in which it was placed for user operations.

Attention: The system weighs between 34 kg (75 pounds) and 41 kg (90 pounds). Do not try to lift the system by yourself.

Starting the System

This section discusses the various ways to start the system.

Starting the System without a Hardware Management Console (HMC) Attached

To start a system that does not use an HMC, do the following:

1. On a Model 6C3, open the front rack door.

   On a Model 6E3, open the bezel door.

2. Ensure that the power is connected to the system unit.

   Before you press the power-on button on the operator panel, observe the following:
   - The power LED is slowly blinking.
   - An OK prompt is visible in the operator panel display.

3. Press the power-on button on the operator panel.

   After pressing the power-on button on the operator panel, observe the following:

   a. The power LED begins to blink visibly faster.

   b. The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.

   c. There is approximately a 30-second transition period between the time the power button is pressed and the power LED remains on solid (no longer blinking). The power LED stays on solid and progress indicators, also referred to as *checkpoints*, are visible on the operator panel display.
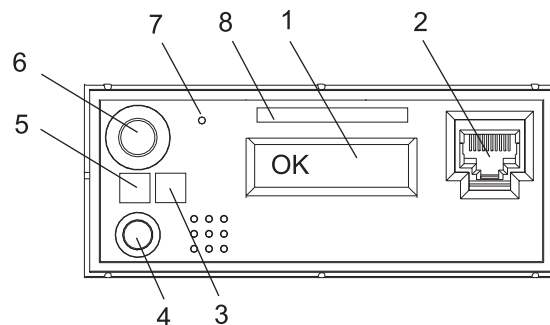
1	Operator Panel Display	**5**	Power LED
2	Front Serial Connector (FS1) (Model 6C3 Only)	**6**	Power-On Button
3	Attention LED	**7**	Service Processor Reset Switch (Pinhole)
4	System Reset Button	**8**	Serial Number Label

Starting the System with an HMC Attached

After the required cables are installed and the power cables are connected, the HMC user interface provides a power-on function to turn on the power to the system. The power-on button on the operator panel can be pushed to initialize the system but the preferred method is to use the HMC. Progress indicators, also referred to as *checkpoints*, are visible on the operator panel display as the system power is turned on. The power LED on the system stops blinking and stays on, indicating the system power is on.

The system unit is powered on through an internal system power control network (SPCN). When power is applied, the power LEDs on the system unit go from blinking to continuous. This indicates that the system power levels are satisfactory.

Stopping the System

This section discusses the various ways to stop the system.

Attention: Using the power-on button on the operator panel or commands at the HMC to power off the system can cause unpredictable results in the data files. The next initial program load (IPL) will also take longer to complete if all applications are not stopped beforehand.

Stopping the System without a Hardware Management Console (HMC) Attached

Attention: When shutting down your system, shut down all applications first and then shut down the operating system. The system power turns off and the system goes into standby mode when the operating system is shut down. If you are shutting down your system due to an error or to make a repair, write down the information displayed on the operator panel before turning off the system power. Before removing power from the system, ensure that the shutdown process is complete. Failure to do so can result in the loss of data. Some option-installation procedures do not require the system to be stopped for installation. The option-installation procedures in this chapter will direct you here if stopping the system is required.

1. Log in to the system as root user.
2. Stop all applications that are running on the system.
3. At the command line, type one of the following commands:
   - If your system is running AIX, type `shutdown`
   - If your system is running Linux, type `shutdown now -h`
4. After you shut down the operating system, set the power switches of any attached devices to Off.

Stopping the System with an HMC Attached and AIX Installed

The HMC user interface provides a power-off function to turn off the power to the system.

AIX provides hot-swap procedures for adapters and devices that support hot-swap removal and installation. Individual power components and fans can be serviced with the power on for power systems equipped with redundant power and cooling. Before servicing the system, check removal, replacement, and installation procedures.

If the system is running AIX, typing the **shutdown** command causes the system to shut down and power off. The **-F** flag shuts down the system without warning system users. Check with the system administrator before using this command. If you cannot use this method, you can power off the system by pressing the power-on button on the operator panel or typing the appropriate command at the HMC.

Stopping the System with an HMC Attached and Linux Installed

The HMC user interface provides a power-off function to turn off the power to the system.

Linux does not provide hot-swap procedures for adapter and device removal and installation. The system power must be turned off to service an adapter or device. Individual power components and fans may be serviced with power on for power systems equipped with redundant power and cooling. Before servicing this system, check removal and installation procedures.

If the system is operating under Linux, typing the **shutdown now -h** command causes the system to shut down and power off. The **-F** flag shuts down the system without warning system users. Check with the system administrator before using this command. If you cannot use this method, you can power off the system by pressing the power-on button on the operator panel or typing the appropriate command at the HMC.

Drawer Release Latch Bracket (Model 6C3)

The following procedures describe the removal and replacement of the Model 6C3 drawer release latch bracket. Before performing the following procedures, read the "Safety Notices" on page vii.

Removing a Drawer Release Latch Bracket

To remove a Model 6C3 drawer release latch bracket, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6.
2. Remove the front bezel as described in "Removing the Model 6C3 Front Bezel" on page 15.
3. Remove the retaining screws located on the front and side of the drawer release latch bracket.
4. Pull the drawer release latch bracket off of the system.
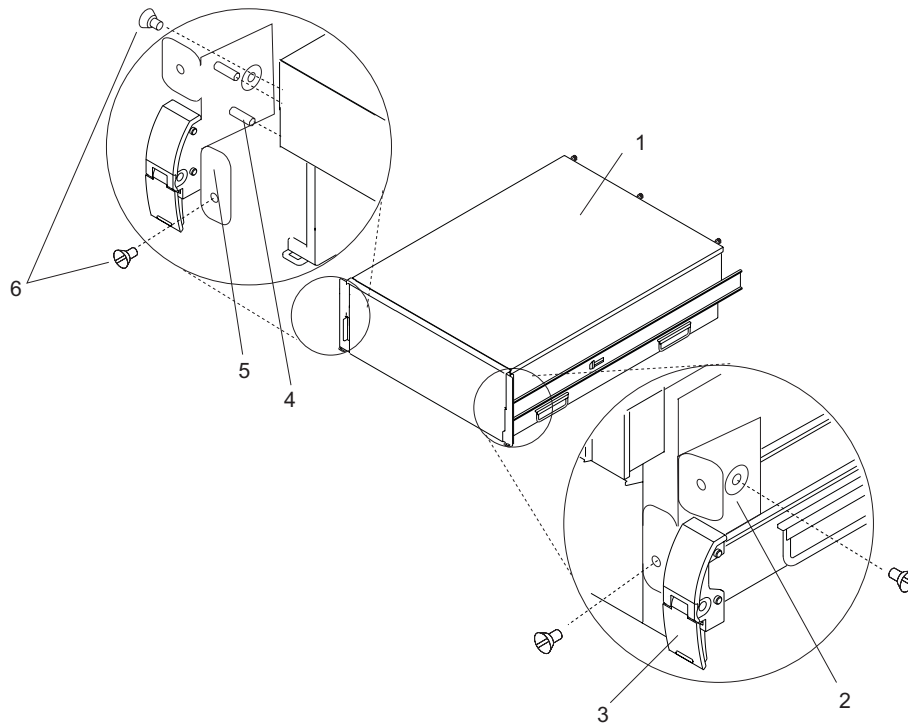
1	Model 6C3	**4**	Drawer Release Latch Bracket Post
2	Drawer Release Latch Bracket (Left)	**5**	Drawer Release Latch Bracket (Right)
3	Drawer Release Latch	**6**	Retaining Screws

Replacing a Drawer Release Latch Bracket

To replace a Model 6C3 drawer release latch bracket, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6.
2. Align the drawer release latch bracket posts with the holes in the system. Push the drawer release latch bracket into place on the side of the system.
3. Secure the drawer release latch bracket into place with two retaining screws.
4. Replace the front bezel as described in "Replacing the Model 6C3 Front Bezel" on page 15.
5. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7.

Model 6C3 Cable-Management Arm

The following procedures describe the removal and replacement of the Model 6C3 cable-management arm. Before performing the following procedures, read the "Safety Notices" on page vii.

Removing the Cable-Management Arm

To remove the Model 6C3 cable-management arm, do the following:

1. Open the rear rack door.
2. From the rear of the rack unit, locate the cable-management arm located on the fixed rear portion of the left system rail assembly.
3. Remove any cables held by the cable-management arm.
4. Remove the pins holding the cable-management arm to the flange on the fixed rear portion of the left system rail and to the flange attached to the sliding portion of the left system rail, as shown in the following illustration.
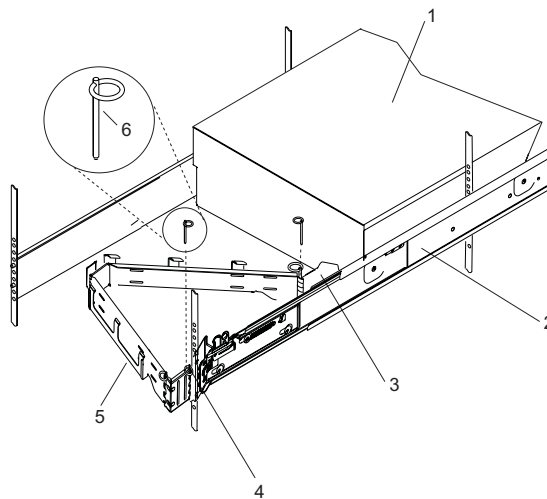
1	Model 6C3		**4**	Rear Flange (Fixed)
2	System Rail Assembly (Left rail as viewed from the front of the system)		**5**	Cable-Management Arm
3	Flange (Sliding)		**6**	Cable-Management Arm Pin

Replacing or Installing the Cable-Management Arm

To replace or install the Model 6C3 cable-management arm, do the following:

1. From the rear of the rack unit, locate the cable-management arm flange located on the fixed rear portion of the left system rail assembly.
2. Attach the cable-management arm to the flange with a cable-management arm pin (see illustration on page 11).
3. Attach the other end of the cable-management arm to the flange that is attached to the sliding portion of the left system rail assembly with a cable-management arm pin.

   Note: To avoid any binding of the cable-management arm, ensure that the cable-management arm is level.

4. Replace any cables held by the cable-management arm.
5. Close the rear rack door.

Covers

The following procedures describe the removal and replacement of the system's service access cover. Before performing the following procedures, read the "Safety Notices" on page vii.

Removing the Model 6C3 Service Access Cover

To remove the service access cover, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6.
2. Loosen the two captive thumbscrews located on the rear of the cover. See the following illustration for thumbscrew locations.
3. Using the access cover handle, slide the cover toward the rear of the system drawer. After the front of the service access cover has cleared the upper chassis ledge, lift the cover up and off the system drawer.

Attention: For proper cooling and airflow, replace the cover before turning on the system. Operating the system for extended periods of time (over 30 minutes) with the cover removed might damage the system components.
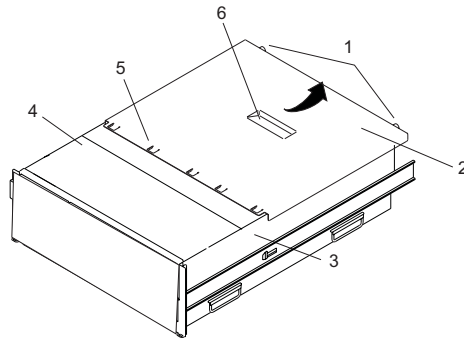
1	Thumbscrews	**4**	Upper Chassis Ledge
2	Service Access Cover	**5**	Access Cover Tabs
3	Model 6C3	**6**	Service Access Cover Handle

Replacing the Model 6C3 Service Access Cover

To replace the service access cover, do the following:

1. Place the service access cover on the top of the system, approximately 25 mm (1 inch) from the front of the system.
2. Hold the service access cover against the system drawer, and slide it toward the front of the system. Ensure that the fan LED cables do not get caught on the front edge of the service access cover as you move it forward. The tabs on the service access cover slide beneath the upper chassis ledge, and the two thumbscrews align with the screw holes on the rear of the system chassis.
3. Tighten the thumbscrews located on the rear of the cover.
4. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

Removing the Model 6E3 Service Access Cover

To remove the service access cover, do the following:

1. Loosen the two captive thumbscrews located on the rear of the cover. See the following illustration for thumbscrew locations.

2. Using the access cover handle, slide the cover toward the rear of the system. After the front of the service access cover has cleared the front chassis ledge, lift the cover off the system unit.

   Attention: For proper cooling and airflow, replace the cover before turning on the system. Operating the system for extended periods of time (over 30 minutes) with the cover removed might damage system components.
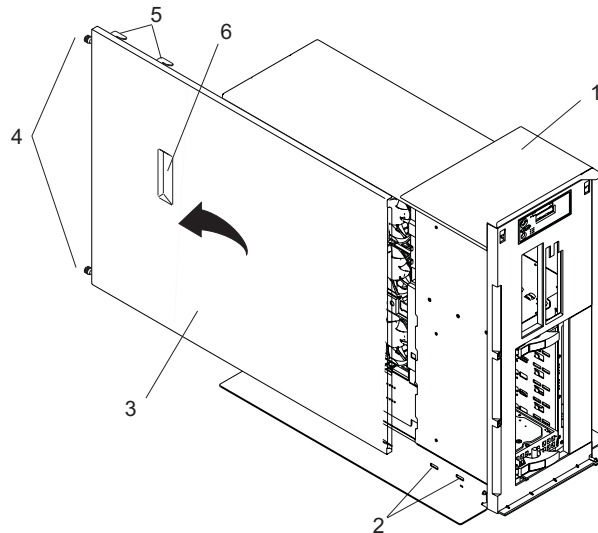
1 Model 6E3	**4** Thumbscrews
2 Service Access Cover Pin Slots	**5** Service Access Cover Pins
3 Service Access Cover	**6** Service Access Cover Handle

Replacing the Model 6E3 Service Access Cover

To replace the service access cover, do the following:

1. Align the service access cover pins with the slots in the the system. The flanges on the top and bottom of the cover wrap around the system chassis.

2. Hold the service access cover against the system drawer and slide it toward the front of the system.

3. Tighten the two captive thumbscrews located on the rear of the cover.

Bezel Door (Model 6E3)

The following procedures describe the removal and replacement of the bezel door.

Removing the Bezel Door

To remove the bezel door, do the following:

1. Open the bezel door by grasping the bezel door handle. Pull the bezel door out and away from the system.
2. Press down on the top back edge of the door.
3. Gently swivel the top back edge of the door forward, out past the top of the system.
4. Lift the door up to release it from the lower retaining post.
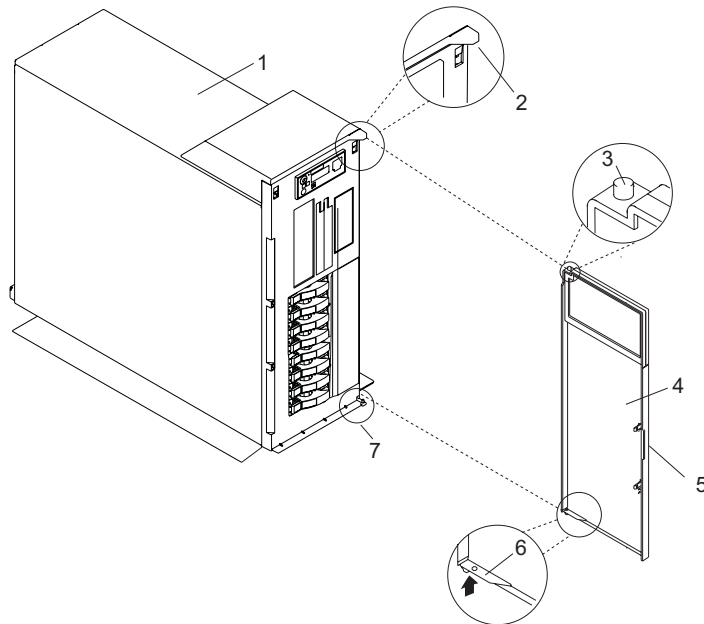
1 Model 6E3
2 Bezel Door Post Hole
3 Bezel Door Top Retaining Post
4 Bezel Door
5 Bezel Door Handle
6 Bezel Door Release Tab
7 Bezel Door Lower Retaining Post

Replacing the Bezel Door

To replace the bezel door, do the following:

1. Set the bezel door on the lower retaining post. See the preceding illustration.
2. Rotate the bezel door toward the top of the system.
3. Press down on the back edge of the bezel door, and seat the top post into its mating hole.
4. Close the bezel door.

Bezels

The following procedures describe the removal and replacement of the system bezel. Before performing the following procedures, read "Safety Notices" on page vii.

Removing the Model 6C3 Front Bezel

To remove the front bezel, do the following:

1. Open the front rack door.
2. Press in on both bezel-release tabs at the same time.
3. Tip the bezel forward and gently pull the bezel up and away from the system.
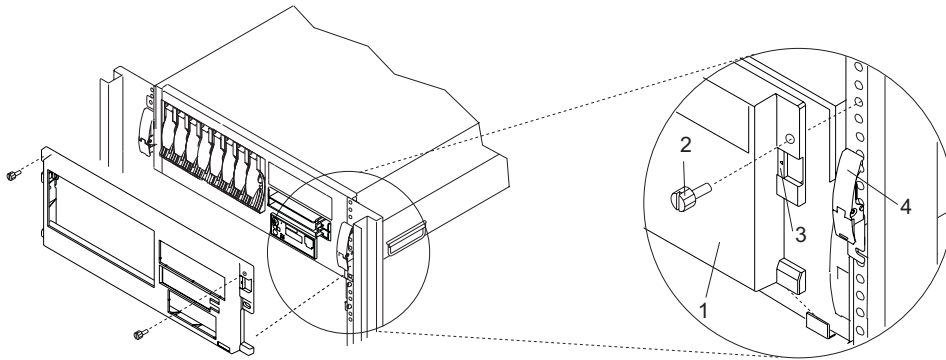
1	Model 6C3 Front Bezel	**3**	Bezel-Release Tab
2	System-Retaining Thumbscrew	**4**	System Drawer Release Latch

Replacing the Model 6C3 Front Bezel

To replace the front bezel, do the following:

1. Open the rack front door.
2. Seat the two tabs located on the bottom edge of the bezel into their mating slots located on the bottom edge of the system.
3. Pivot the bezel up, aligning the release tabs to the mating slots located on the front of the system.
4. Gently push the tabs into the slots until the bezel seats against the front of the system.
5. Close the front rack door.

Removing the Model 6E3 Front Bezel

To remove the front bezel, do the following:

1. Remove the bezel door as described in "Bezel Door (Model 6E3)" on page 14.
2. Press down on the two bezel-release levers.
3. Pull the top of the bezel out and away from the system.
4. Gently pull the bezel up and off the base, releasing the lower bezel locking tabs.
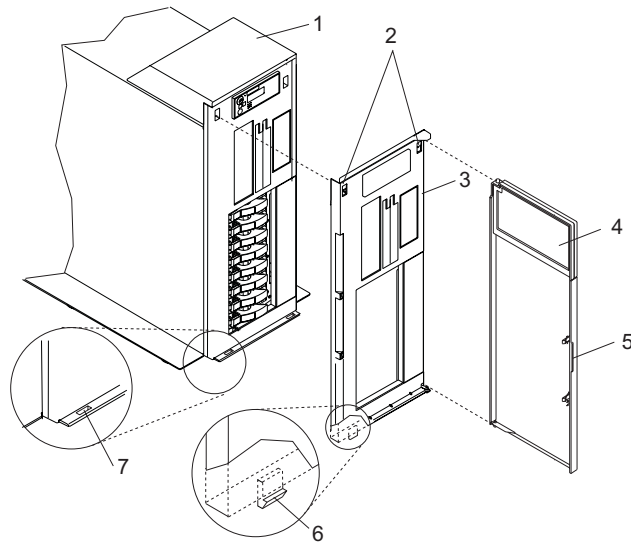
1 Model 6E3		**5** Bezel Door Handle	
2 Bezel-Release Levers		**6** Lower Bezel Locking Tab (Quantity 2)	
3 Front Bezel		**7** Lower Bezel Retaining Slots (Quantity 2)	
4 Front Door			

Replacing the Model 6E3 Front Bezel

To replace the front bezel, do the following:

1. Place the two lower bezel locking tabs into the retaining slots located on the system base.
2. Rotate the bezel up toward the top of the system, ensuring that the aligning pins are aligned with their mating holes located on the system.
3. Gently push the bezel in until the two bezel release levers are seated in their respective slots.
4. Replace the bezel door as described in "Bezel Door (Model 6E3)" on page 14.

PCI Adapters

The following procedures describe the removal, replacement, and installation of PCI adapters. Before performing the following procedures, read the "Safety Notices" on page vii.

Notes:

1. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support along the back edge of the card. To use adapters of this type in this system, you *must* remove the blue handle or support from the card.

2. With this system, you can install some PCI adapters with the power on. These adapters are referred to as *hot-pluggable PCI adapters*. Some adapters are not hot-pluggable, and the system must be powered off for this type of adapter installation.

3. If the PCI adapter dividers are removed, note their location so that they can be returned to the same place in the system.

Before you install the adapter, determine if the PCI adapter you are installing is hot-pluggable. See the *RS/6000 and eServer pSeries PCI Adapter Placement Reference*, order number SA38-0538.

Removing a Non-Hot-Pluggable PCI Adapter

To remove a non-hot-pluggable PCI adapter, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. On a Model 6C3, open the rear rack door.
4. Disconnect the power source to the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the system power source is completely disconnected.
5. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13. See the following illustration.
6. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter.
7. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system.
8. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.
9. If you are removing a short adapter, continue to the next step.

   If you are removing a long adapter, do the following:

   a. Unlatch and open the PCI adapter light-pipe plate attached to the fan tray.

   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.
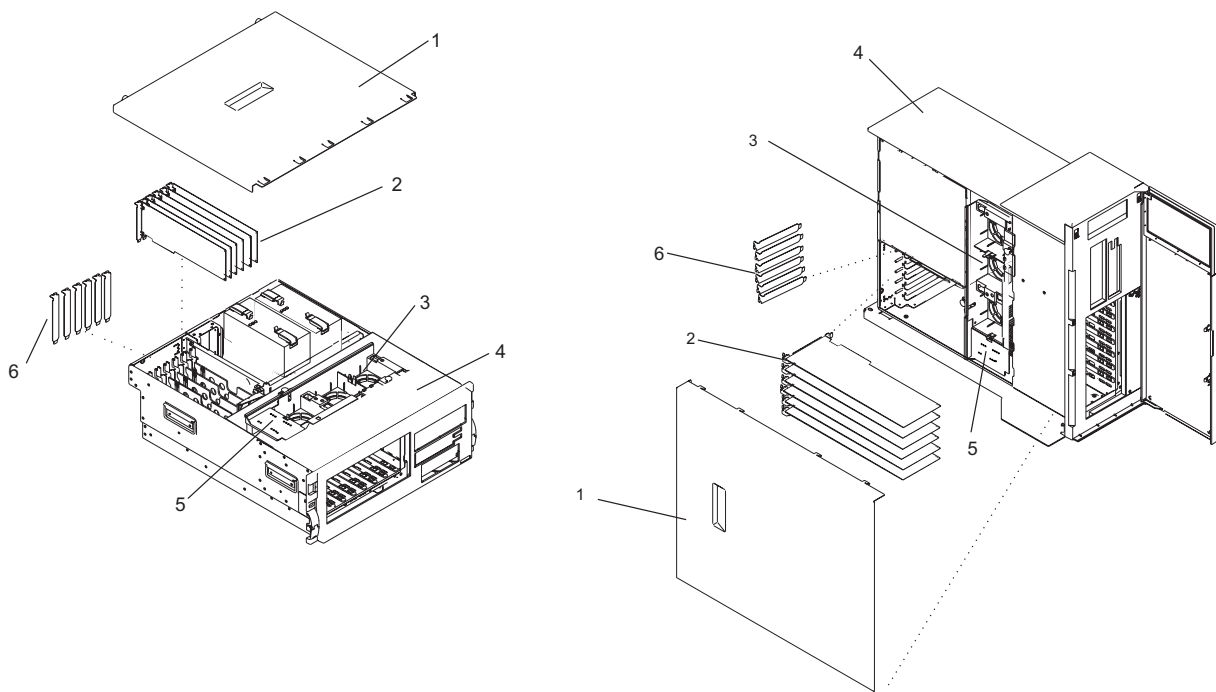
1	Service Access Cover	**4**	System
2	PCI Adapters	**5**	Light-Pipe Plate
3	Fan Tray	**6**	Adapter Expansion Slot Shields

10. Rotate the adapter locking latch counterclockwise, as shown in the following illustration.
11. Lift the black tab attached to the adapter retainer assembly, and keep the black tab in a vertical position.

1 Model 6C3 or Model 6E3	**5** PCI adapter faceplate (dotted lines)
2 Adapter Retainer Assembly	**6** Adapter Retainer Assembly (in the unlocked position)
3 Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)	**7** PCI Adapter
4 Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)	

12. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.
13. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
14. If you do not plan to install another adapter into the vacated slot, seal the expansion slot using an expansion-slot cover. If you are installing another adapter, go to "Replacing or Installing a Non-Hot-Pluggable PCI Adapter" on page 20.
15. If you have other options to install, refer to the procedures for that option. If you do not have other options to install, continue to the next step.
16. Connect the adapter cables.
17. On a Model 6C3, route the cables through the cable-management arm.
18. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

19. Reconnect the power source to the system.
20. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
21. On a Model 6C3, close the rear rack door.
22. Start the system as described in "Starting the System" on page 8.

Replacing or Installing a Non-Hot-Pluggable PCI Adapter

To replace or install an non-hot-pluggable adapter, do the following:
 1. Stop the system as described in "Stopping the System" on page 9.
 2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
 3. On a Model 6C3, open the rear rack door.
 4. Disconnect the power source to the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the system has been completely disconnected from its power source.
 5. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
 6. Refer to the *RS/6000 and eServer pSeries PCI Adapter Placement Reference*, order number SA38-0538, for information regarding slot restrictions for adapters that can be used in this system.
 7. If necessary, remove the adapter expansion slot shield.
 8. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.
 9. If necessary, remove the adapter from the antistatic package.

   Attention: Avoid touching the components and gold-edge connectors on the adapter.
10. Place the adapter, component-side up, on a flat, static-protective surface.
11. Set any jumpers or switches as instructed by the adapter's manufacturer.
12. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
13. Press the adapter *firmly* into its connector.

   Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.
14. If you are replacing or installing a short adapter, continue to the next step.

   If you are replacing or installing a long adapter, do the following:
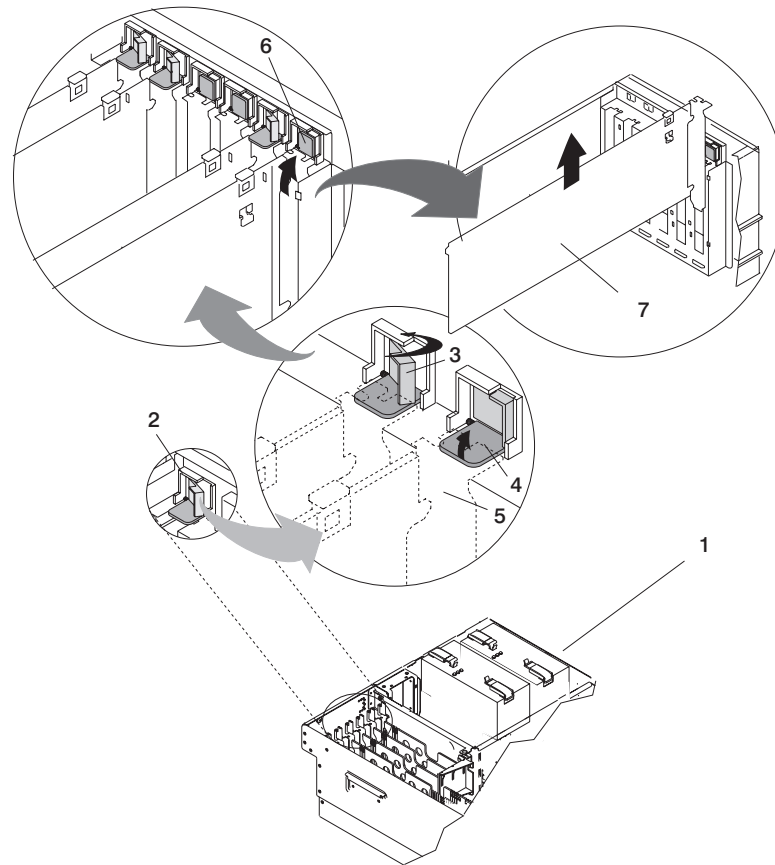   a. Close and latch the PCI adapter light-pipe plate attached to the fan tray.
   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.

15. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latch clockwise until it covers the tab at approximately a 45-degree angle. See the following illustration.

1 Model 6C3 or Model 6E3

2 Adapter Retainer Assembly (in the unlocked position)

3 Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)

4 Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)

5 PCI adapter faceplate (dotted lines)

16. Connect the adapter cables.

17. If you are servicing a Model 6C3, route the cables through the cable-management arm.

18. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

19. Reconnect the power source to the system.

20. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

21. On a Model 6C3, close the rear rack door.

22. Start the system as described in "Starting the System" on page 8.

Removing a Hot-Pluggable PCI Adapter

Attention: The Linux operating system does not support these hot-pluggable procedures. Also, Linux does not support hot-swaping any hot-pluggable PCI adapters. A system with Linux installed must be shut down and powered off before installing any PCI adapter. Use the non-hot-pluggable adapter procedures when removing a PCI adapter with the Linux operating system installed.

Note: Removing a hot-pluggable PCI adapter requires the system administrator to take the PCI adapter offline before performing any PCI adapter hot-swap procedures. Before taking an adapter offline, the devices attached to the adapter must also be taken offline. This action prevents a service representative or user from causing an unexpected outage for system users.

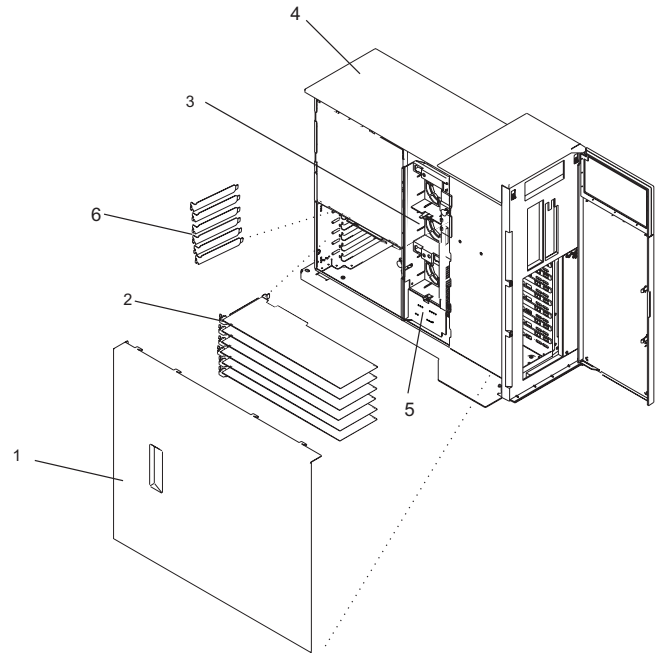To remove a hot-pluggable PCI adapter, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
2. On a Model 6C3, open the rear rack door.
3. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
4. Determine which adapters you want to remove.
5. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system.
6. Ensure that any processes or applications that might use the adapter are stopped.
7. Refer to "Accessing the PCI Hot-Swap Manager" on page 31, and follow those steps to select **PCI Hot Swap Manager**. Then return here to continue.
8. Select **Unconfigure a Device** and press Enter.
9. Press F4 to display the Device Names menu.
10. Select the adapter you are removing.
11. Use the Tab key to answer NO to **Keep Definition** and YES to **Unconfigure Child Devices**. Press Enter.
12. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.
13. Press F3 to return to the PCI Hot-Swap Manager menu.
14. Select **List PCI Hot-Swap Slots**.
15. Move the cursor to select the adapter that you are removing and press Enter. (The description entry displays as `unknown`).
16. Press the Tab key until the entry field displays the remove operation and then press Enter. Follow the instructions that display on the screen until you are instructed to remove the adapter.
17. When you are instructed to remove the adapter from the adapter slot, disconnect any cables that are connected to the adapter being removed.
18. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.
19. If you are removing a short adapter, continue to the next step.

    If you are removing a long adapter, do the following:
    a. Unlatch and open the PCI adapter light-pipe plate attached to the fan tray.
    b. Note the guide grooves located towards the front of the system in the disk drive backplane, and align the adapter properly.
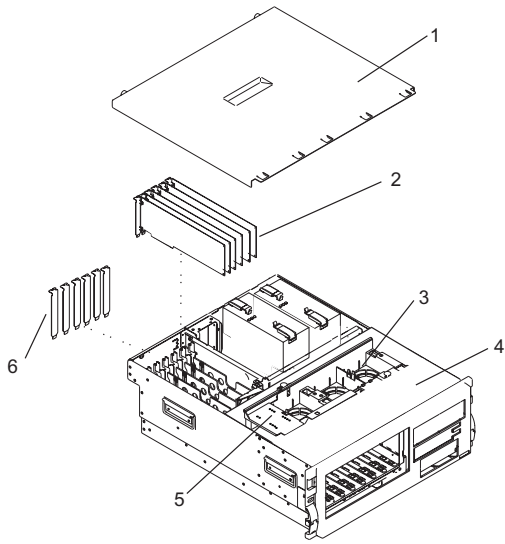
1 Service Access Cover
2 PCI Adapters
3 Fan Tray
4 System
5 Light-Pipe Plate
6 Adapter Expansion Slot Shields

20. Turn the locking latch, and lift the plastic retainer seat off the adapter.

1 Model 6C3 or Model 6E3	**5** PCI adapter faceplate (dotted lines)
2 Adapter Retainer Assembly	**6** Adapter Retainer Assembly (in the unlocked position)
3 Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)	**7** PCI Adapter
4 Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)	

21. Carefully grasp the adapter by the edges and pull it straight out from the system.
22. If you are not installing another adapter in this slot, place an expansion slot cover in the adapter slot opening.
23. Lower the plastic retainer seat over the PCI adapter faceplate.
24. Rotate the locking latch clockwise until it clicks into the locked position.
25. Continue to follow the screen instructions until you receive a message that the adapter removal is successful. Successful removal is indicated by the OK message displayed next to the **Command** field at the top of the screen.
26. If you do not have other adapters to remove, continue with the next step.

    OR

    If you have other adapters to remove, press F3 to return to the PCI Hot-Swap Manager menu and then return to step 14 on page 22.
27. Press F10 to exit the Hot-Swap Manager.

28. Run the **diag -a** command. If the system responds with a menu or prompt, follow the instructions to complete the device configuration.

29. If you have other options to install, refer to the procedures for that option. If you do not have other options to install, continue to the next step.

30. Connect the adapter cables.

31. On a Model 6C3, route the cables through the cable-management arm.

32. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

33. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

34. On a Model 6C3, close the rear rack door.

Replacing a Hot-Pluggable PCI Adapter

Attention: The Linux operating system does not support these hot-pluggable procedures. Also, Linux does not support hot-plugging any hot-pluggable PCI adapters. A system with Linux installed must be shut down and powered off before installing any PCI adapter. Use the non-hot-pluggable adapter procedures when replacing a PCI adapter with the Linux operating system installed.

Notes:

1. Use this procedure only when you are replacing an adapter with an identical adapter. If you are replacing an adapter with an adapter that is not identical to the adapter removed, go to "Removing a Hot-Pluggable PCI Adapter" on page 22 and afterwards, "Installing a Hot-Pluggable PCI Adapter" on page 28.

2. Replacing a hot-pluggable PCI adapter might require the system administrator to take the PCI adapter offline before performing any PCI adapter hot-plug procedures. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.
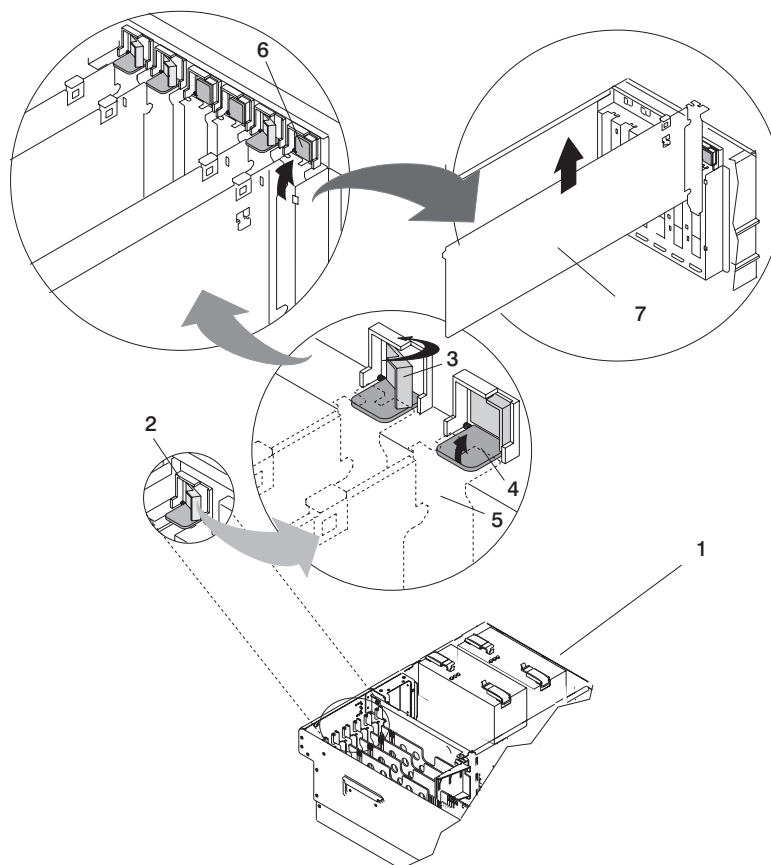
To replace a hot-pluggable PCI adapter, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

2. On a Model 6C3, open the rear rack door.

3. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.

4. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.

5. Determine which adapters you want to remove.

6. Ensure that any processes or applications that might use the adapter are stopped.

7. Refer to "Accessing the PCI Hot-Swap Manager" on page 31, and follow those steps to select **PCI Hot-Swap Manager**. Then return here to continue.

8. Select **Unconfigure a Device** and press Enter.

   Note: If the adapter or device has a problem that prevents it from being replaced by hot-swap, it must be replaced by shutting down the system. Go to "Replacing or Installing a Non-Hot-Pluggable PCI Adapter" on page 20.

9. Press F4 to display the Device Names menu.

10. From the menu, select the adapter you are removing.

11. Use the tab key to answer YES to **Keep Definition** and YES to set **Unconfigure Child Devices**. Press Enter.

12. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.

13. Press F3 to return to the PCI Hot-Swap Manager menu.

14. Press F3 to cancel.

15. Select **Replace/Remove a PCI Hot-Swap Adapter** and press Enter. The Replace/Remove a PCI Hot-Swap Adapter menu displays.

16. Move the cursor to select the adapter that you are replacing, and press Enter.

17. Press the Tab key until the entry field displays the replace operation, and then press Enter. Follow the instructions that display on the screen until you are instructed to remove the adapter.

18. When you are instructed to remove the adapter from the adapter slot, disconnect any cables that are connected to the adapter being removed.

19. Turn the locking latch, and lift the plastic stop for the adapter.

20. Carefully grasp the adapter by the edges, and pull it straight out from the PCI adapter slot connector.

1	Model 6C3 or Model 6E3	**5**	PCI adapter faceplate (dotted lines)
2	Adapter Retainer Assembly	**6**	Adapter Retainer Assembly (in the unlocked position)
3	Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)	**7**	PCI Adapter
4	Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)		

21. Remove the replacement adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

22. Place the adapter, component-side up, on a flat, static-protective surface.

23. Set any jumpers or switches as instructed by the adapter manufacturer.

24. Replace the adapter into the adapter slot. Carefully grasp the adapter by the edges and align the adapter in the slot guides. Insert the adapter fully into the adapter slot connector.

25. If you are replacing or installing a short adapter, continue to the next step.

    If you are replacing or installing a long adapter, do the following:

    a. Close and latch the PCI adapter light-pipe plate attached to the fan tray.

    b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.

26. Lower the plastic retaining seat over the PCI adapter faceplate (dotted lines). Rotate the locking latch clockwise until it clicks into the locked position.
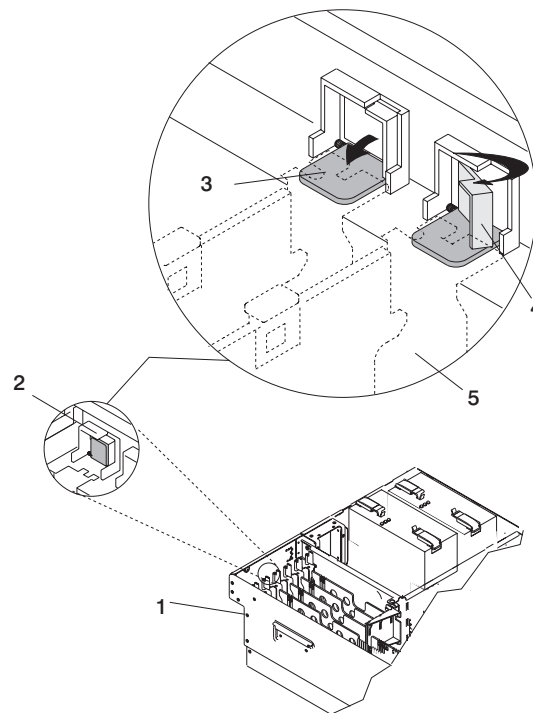
1	Model 6C3 or Model 6E3	**4**	Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)
2	Adapter Retainer Assembly (in the unlocked position)	**5**	PCI adapter faceplate (dotted lines)
3	Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)		

27. Connect appropriate cables and devices to the adapter.

28. Continue to follow the screen instructions until you receive a message that the replacement is successful. Successful replacement is indicated by the OK message displayed next to the **Command** field at the top of the screen.

29. Press F3 to return to the PCI Hot-Swap Manager menu.

30. Select **Install/Configure Devices Added After IPL** and press Enter. Follow the instructions on the screen. Successful replacement is indicated by the OK message displayed next to the **Command** field at the top of the screen.

Do not use **Install/Configure Devices Added After IPL** if your system is set up to run HACMP clustering. To determine the correct method to configure the replacement device, consult with your system administrator or software support.

31. If you do not have other adapters to replace, continue with the next step.

    OR

    If you have other adapters to replace, press F3 to return to the PCI Hot-Swap Manager menu and then return to step 15 on page 26.

32. Press F10 to exit the Hot-Swap Manager.

    If you have added, removed, or replaced any adapters, run the **diag -a** command. If the system responds with a menu or prompt, follow the instructions to complete the device configuration.

33. Connect the adapter cables.

34. On a Model 6C3, route the cables through the cable-management arm.

35. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

36. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

37. On a Model 6C3, close the rear rack door.
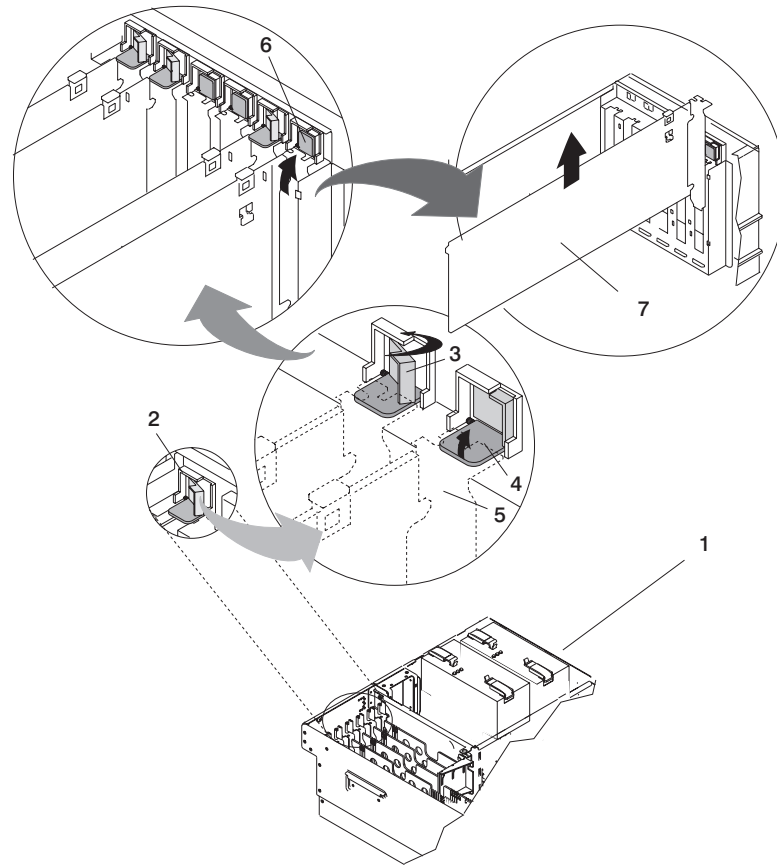
Installing a Hot-Pluggable PCI Adapter

Attention: The Linux operating system does not support these hot-pluggable procedures. Also, Linux does not support hot-swapping any hot-pluggable PCI adapters. A system with Linux installed must be shut down and powered off before installing any PCI adapter. Use the non-hot-pluggable adapter procedures when replacing a PCI adapter with the Linux operating system installed.

Note: This system supports PCI hot-pluggable adapters, so the system does not need to be shut down and the power cables removed before adding or replacing an adapter.

To install an adapter, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

2. On a Model 6C3, open the rear rack door.

3. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.

4. Refer to the *RS/6000 and eServer pSeries PCI Adapter Placement Reference*, order number SA38-0538, for information regarding slot restrictions for adapters that can be used in this system, and for adapter-placement information.

5. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.

6. Refer to "Accessing the PCI Hot-Swap Manager" on page 31, and follow the steps in the access procedure to select **PCI Hot Swap Manager**. Then return here to continue.

7. From the PCI Hot-Swap Manager menu, select **Add a PCI Hot-Swap Adapter** and press Enter. The Add a PCI Hot-Swap Adapter window opens.

8. Select the appropriate empty PCI slot from the ones listed on the screen, and press Enter.

9. Rotate the locking locking latch, lift the plastic stop, and remove the expansion slot cover.
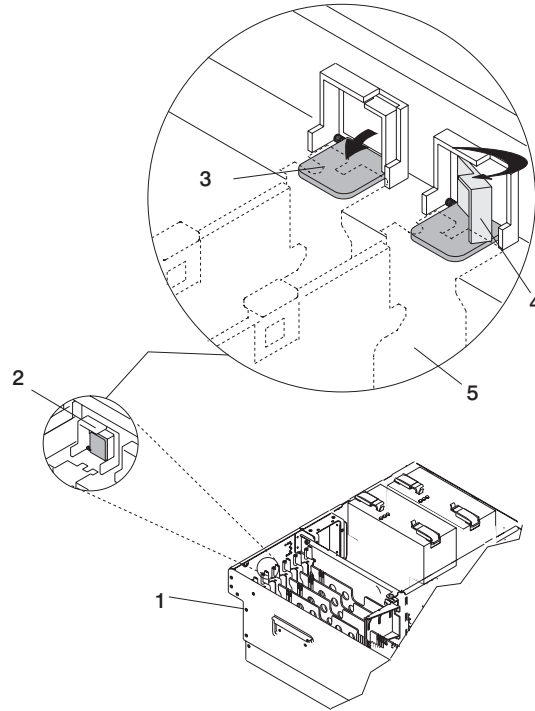

1 Model 6C3 or Model 6E3	**5** PCI adapter faceplate (dotted lines)
2 Adapter Retainer Assembly	**6** Adapter Retainer Assembly (in the unlocked position)
3 Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)	**7** PCI Adapter
4 Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)	

10. Follow the instructions displayed in the Add a PCI Hot-Swap Adapter window to install the adapter until the LED for the specified PCI slot is set to the *Action* state.
11. If necessary, remove the adapter from the antistatic package.

    Attention: Avoid touching the components and gold-edge connectors on the adapter.

12. Place the adapter, component-side up, on a flat, static-protective surface.
13. Set any jumpers or switches as described by the adapter's manufacturer.
14. If you are installing a short adapter, continue to the next step.

    If you are installing a long adapter, do the following:

    a. Unlatch and open the PCI adapter light-pipe plate attached to the fan tray.

    b. Note the guide grooves located towards the front of the system in the disk drive backplane, and align the adapter properly.

15. When you are instructed to install the adapter in the adapter slot, carefully grasp the adapter by the edges and align the adapter in the slot guides. Insert the adapter fully into the adapter slot connector. If you are installing a full-length adapter, ensure that both ends of the adapter engage the card guides.

16. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latch clockwise until it covers the tab at approximately a 45-degree angle. See the following illustration.

1	Model 6C3 or Model 6E3	**4**	Adapter Retainer Assembly (retainer seat down and the locking latch in the locked position)
2	Adapter Retainer Assembly (in the unlocked position)	**5**	PCI adapter faceplate (dotted lines)
3	Adapter Retainer Assembly (retainer seat down and the locking latch in the unlocked position)		

17. If you are installing a short adapter, continue to the next step.

    If you are installing a long adapter, do the following:

    a. Close and latch the PCI adapter light-pipe plate attached to the fan tray.

    b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.

18. Connect the adapter cables.

19. On a Model 6C3, route the cables through the cable-management arm.

20. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

21. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

22. On a Model 6C3, close the rear rack door.

23. Select **Install/Configure Devices Added After IPL** and press Enter. Follow the instructions on the screen. Successful replacement is indicated by the OK message displayed next to the **Command** field at the top of the screen.

    Do not use **Install/Configure Devices Added After IPL** if your system is set up to run HACMP clustering. To determine the correct method to configure the replacement device, consult with your system administrator or software support.

Accessing the PCI Hot-Swap Manager

The installation instructions for hot-pluggable PCI adapters refer you to these procedures when it is appropriate to perform them.

Attention: The Linux operating system does not support these hot-pluggable procedures. Also, Linux does not support hot-swapping any hot-pluggable PCI adapters. The system with Linux installed must be shut down and powered off before replacing any PCI adapter. Follow the non-hot-pluggable adapter procedures when replacing a PCI adapter in a system with the Linux operating system installed.

Note: A PCI adapter is only hot-pluggable if the PCI adapter is supported for hot-swap applications. See the *RS/6000 and eServer pSeries PCI Adapter Placement Reference*, order number SA38-0538, for complete information regarding your PCI adapter.

Accessing PCI Hot-Swap Management Functions

Note: Removing or installing a hot-pluggable PCI adapter requires the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

For additional information about taking an adapter offline or removing it from the system configuration, see the *AIX System Management Guide: Operating System and Devices*.

Documentation for the AIX operating system is available from the IBM @server pSeries Information Center at http://publib16.boulder.ibm.com/pseries/en_US/infocenter/base. Select **AIX documentation**. The *AIX Documentation* CD contains the base set of publications for the operating system, including system-management and end-user documentation.

This publication is also contained on the AIX Documentation CD. The documentation is made accessible by loading the documentation CD onto the hard disk or by mounting the CD in the CD-ROM drive.

To access the hot-swap manager menus, do the following:
1. Log in as root user.
2. At the command line, type `smitty`.
3. Select **Devices**.
4. Select **PCI Hot Swap Manager** and press Enter.
5. The PCI Hot-Swap Manager menu displays. The following section describes the menu options.
6. If you were directed here from a hot-swap procedure in this book, return to the procedure.

Using the PCI Hot-Swap Manager Menu
The following options are available from the PCI Hot Swap Manager menu:

Note: For information about the PCI slot LED states, see Appendix D, "Component and Attention LEDs", on page 99.

List PCI Hot-Swap Slots

Provides a descriptive list of all slots that support PCI hot-swap capability. If the listing for a slot indicates it holds an unknown device, select the **Install/Configure Devices Added after IPL** to configure the adapter in that slot.

Add a PCI Hot-Slot Adapter

Allows the user to add a new PCI hot-swap-capable adapter to the slot with the system turned on. You will be asked to identify the PCI slot that you have selected prior to the actual operation. The selected PCI slot will go into the *Action* state and finally into the *On* state.

Note: The system will indicate the slot holds an unknown device until you perform the **Install/Configure Devices Added After IPL** option to configure the adapter.

Replace/Remove a PCI Hot-Swap Adapter

Allows the user to remove an existing adapter, or replace an existing adapter with an identical one. Before performing this task, the adapter must be in the *Defined* state (see the **Unconfigure a Device** option).

You will be asked to identify the PCI slot prior to the actual operation. The selected PCI slot will go into the *Action* state.

Identify a PCI Hot-Swap Slot

Allows the user to identify a PCI slot. The selected PCI slot will go into the *Identify* state.

Unconfigure a Device

Allows the user to put an existing PCI adapter into the *Defined* state if the device is no longer in use.

This step must be completed successfully before starting any removal or replacement operation. If this step fails, you must take action to release the device.

Configure a Defined Device

Allows a new PCI adapter to be configured into the system if software support is already available for the adapter. The selected PCI slot will go into the *On* state.

Install/Configure Devices Added After IPL

The system attempts to configure any new devices and tries to find and install any required software from a user-selected source.

The add, removal, and replacement functions return information to the user indicating whether the operation was successful. If additional instructions are provided on the screen, complete the recommended actions. If the instructions do not resolve the problem, do the following:

- If the adapter is listed as Unknown, perform the **Install/Configure Devices Added After IPL** option to configure the adapter.
- If you receive a warning indicating that needed device packages are not installed, the system administrator must install the specified packages before you can configure or diagnose the adapter.
- If you receive a failure message indicating a hardware error, the problem might be either the adapter or the PCI slot. Isolate the problem by retrying the operation in a different PCI slot, or trying a different adapter in the slot. If you determine that you have failing hardware, call your service representative.
- *Do not* use **Install/Configure Devices Added After IPL** if your system is set up to run HACMP clustering. To determine the correct method to configure the replacement device, consult with your system administrator or software support.

PCI Adapter Dividers and Light Pipes

The following procedures describe the removal and replacement of PCI adapter dividers and light pipes. Before performing the following procedures, read the "Safety Notices" on page vii.
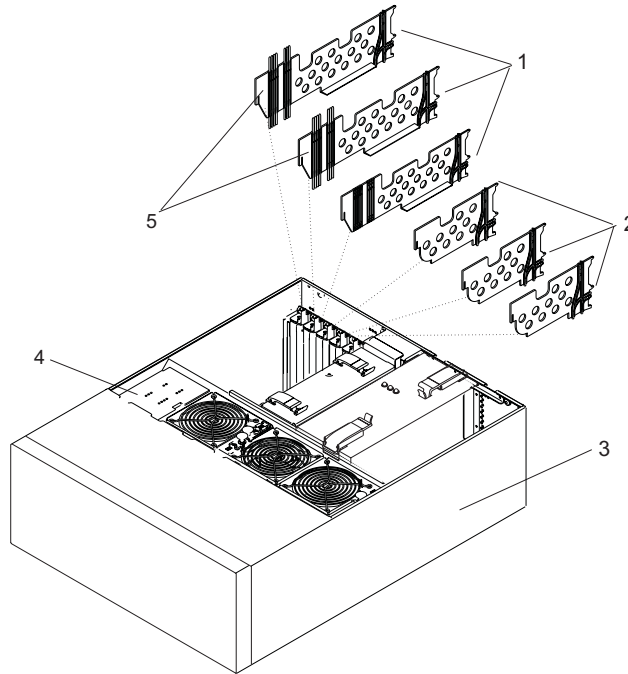
Removing a PCI Adapter Divider

To remove a PCI adapter divider, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. Disconnect the power source to the system.

    Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the system power source is completely disconnected.

4. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13. See the following illustration.
5. Because the PCI adapter dividers are near to the PCI adapters, refer to "Handling Static-Sensitive Devices" on page 4. If the PCI adapter divider you are removing has PCI adapters adjacent to it, remove the adjacent PCI adapters as described in "Removing a Non-Hot-Pluggable PCI Adapter" on page 18
6. Locate the PCI adapter divider you want to remove.
7. If you are removing a short adapter divider, continue to the next step. If you are removing a long adapter divider, do the following:
    a. Unlatch and open the PCI adapter light-pipe plate attached to the fan tray.
    b. Note the guide grooves located toward the front of the system in the disk drive backplane for correct alignment.
8. Lift the PCI adapter divider from the system.
9. If you are removing a long PCI adapter divider that contains light pipes, do the following:
    a. Note the location of each light pipe.
    b. Carefully remove the light pipes from the long PCI adapter divider.

1 PCI Adapter Dividers (Long)
2 PCI Adapter Dividers (Short)
3 System in Service Position

4 Fan Tray Light-Pipe Plate
5 Light Pipes
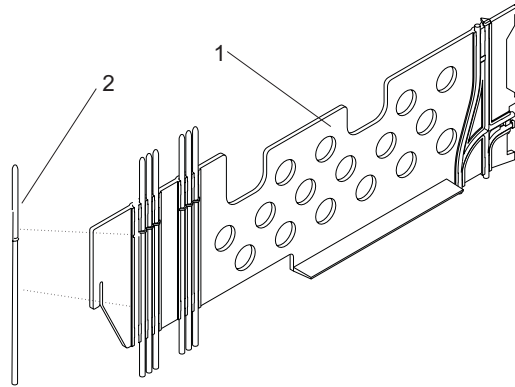
Replacing a PCI Adapter Divider

To replace an adapter divider, do the following:

1. If you are replacing a long PCI adapter divider that should contain light pipes, do the following:

   a. Identify the correct slots for the light pipes on long PCI adapter divider.

   b. Carefully place the light pipes into the correct slots of the long PCI adapter divider.

2. Locate the PCI adapter divider slot you want to use.

3. Carefully grasp the adapter divider by its top edge, and align the adapter divider with the grooves at the front and rear of the system.

4. Press the adapter divider into place.

5. If necessary, replace the PCI adapter cards as described in "Replacing or Installing a Non-Hot-Pluggable PCI Adapter" on page 20.

6. If you are replacing or installing a short adapter divider, continue to the next step. If you are replacing or installing a long adapter, do the following:

   a. Close and latch the PCI adapter light-pipe plate attached to the fan tray.

   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter divider correctly.

7. Reconnect the power source to the system.

8. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

9. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

10. Start the system as described in "Starting the System" on page 8.

Removing the PCI-Adapter-Divider Light Pipes

To remove a PCI-adapter-divider light pipe, do the following:

1. Remove the PCI adapter divider as described in "Removing a PCI Adapter Divider" on page 33.
2. Locate the light pipe you want to remove and note the location.
3. Pull the light pipe out of the PCI adapter divider.

1 PCI Adapter (Long)   **2** Light Pipe

Replacing the PCI-Adapter-Divider Light Pipes

To replace an PCI-adapter-divider light pipe, do the following:

1. Locate the light-pipe slot in the PCI adapter divider you want to use.
2. Place the light pipe into the slot, and press it into place.
3. Replace the PCI adapter divider as described in "Replacing a PCI Adapter Divider" on page 34.

Service Processor Assembly

The following procedures describe the removal and replacement of the service processor assembly. Before performing the following procedures, read "Safety Notices" on page vii.

Removing the Service Processor Assembly

To remove the service processor assembly, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. Write down the information displayed on the operator panel.
4. Disconnect the power source from the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.
5. Label and disconnect all cables connected to the service processor assembly.
6. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
7. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.
8. Locate the service processor assembly as shown in the following illustration.
9. Grasp the ends of the service processor assembly handles, and press the retractable spring-activated portion of each handle. This action releases the spring latch located on the bottom side of each handle.
10. Lift the service processor assembly handles until they are perpendicular (90 degrees) to the top of the assembly. By placing the handles perpendicular to the top of the service processor assembly, the base or hinged portion of each handle acts as a cam and helps pry the service processor assembly from its connector located on the system backplane.
11. Place the service processor assembly in a safe place.
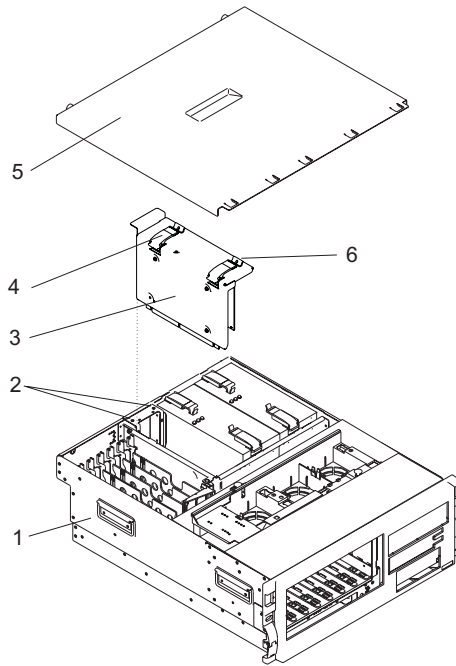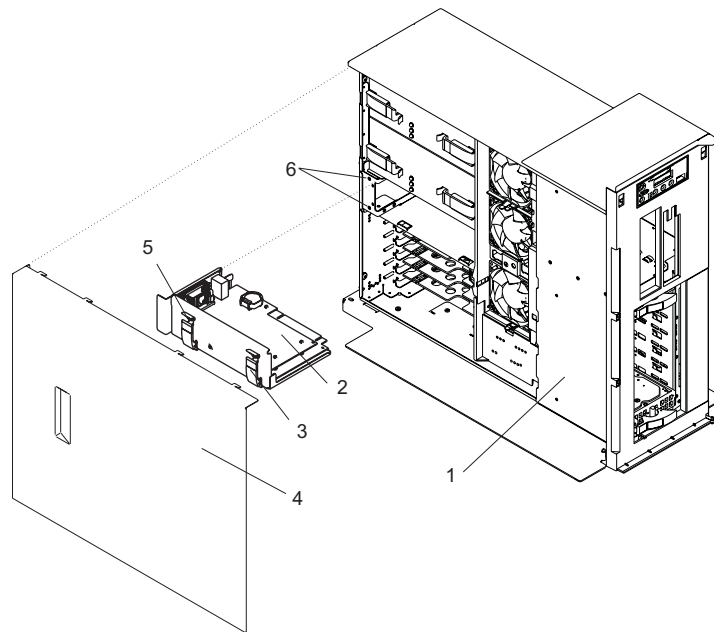
1 Model 6C3

2 Service Processor Assembly
Alignment Pin Holes

3 Service Processor Assembly

4 Service Processor Assembly Handle
(2)

5 Service Access Cover

6 Spring Latch

1 Model 6E3

2 Service Processor Assembly

3 Service Processor Assembly
Handle (2)

4 Service Access Cover

5 Spring Latch

6 Service Processor Assembly
Alignment Pin Holes

Replacing the Service Processor Assembly

To replace the service processor assembly, do the following:

1. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.

2. Grasp the service processor assembly handles located on top of the new service processor assembly. Pivot the service processor handles upward to 90 degrees. This action puts the handle cams into the correct position to help seat the assembly into its connector.

3. Align the service processor assembly with the slot in the system chassis.

4. While holding the service processor assembly by the handles, lower the service processor assembly into place.

   Note: Ensure that the two pins on the top flange of the service processor assembly align with the corresponding service processor assembly alignment pin holes in the rear bulkhead while you press the service processor assembly into place.

5. Press firmly on the top of the service processor assembly until you feel it lock into place.

6. Rotate the service processor assembly handles downward until they lock into place.

7. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12.

8. Reconnect cables to the service processor assembly.

9. Reconnect all system power cables.

10. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

11. Start the system as described in "Starting the System" on page 8.

Battery

The following procedures describe the removal and replacement of the system battery. Before performing the following procedures, read the "Safety Notices" on page vii.

CAUTION:
A lithium battery can cause fire, explosion, or severe burn. Do not recharge, disassemble, heat above 100°C (212°F), solder directly to the cell, incinerate, or expose cell contents to water. Keep away from children. Replace only with the part number specified for your system. Use of another battery may present a risk of fire or explosion.

The battery connector is polarized; do not attempt to reverse polarity.

Dispose of the battery according to local regulations.

Removing and Replacing the Battery

To remove and replace the battery, do the following:

1. Remove the service processor assembly as described in "Removing the Service Processor Assembly" on page 36.

2. Locate the battery on the service processor assembly.

3. Use your fingernail to pry the battery out of its plastic mount. After the bottom of the battery has cleared the top edge of the plastic mount, pull the battery up and away from the plastic mount.
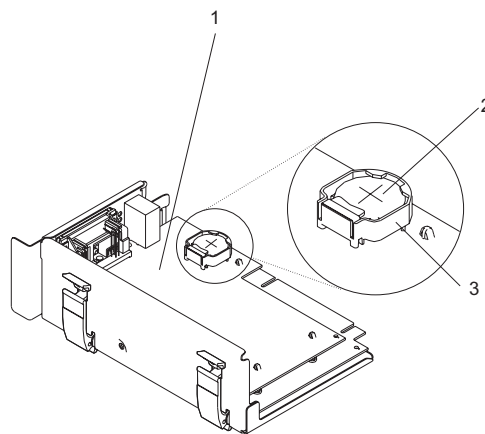
   1 Service processor assembly
   2 Battery
   3 Battery plastic mount

4. Replace the battery with the correct part. For the battery part number, see "System Parts" on page 72.

5. When installing the new battery, ensure that the battery polarity is correct. For this system, the positive (+) side of the battery should be facing up in its plastic mount.

6. Gently insert the new battery into its plastic mount.

7. Replace the service processor assembly in the system unit as described in "Replacing the Service Processor Assembly" on page 38.The system may stop and restart in order to reboot.

8. If you are running AIX, the **bootlist** command may need to be run while logged in as root user. This action rebuilds the customized boot list. IP (Internet protocol) parameters may also need to be reentered.

Hot-Swap System Fans

The following procedures describe the removal and replacement of the hot-swap system fans. Before performing the following procedures, read the "Safety Notices" on page vii.

This system supports hot-swap and redundant cooling. The system electronics are cooled with three system cooling fans.

Note: Each fan unit has two LEDs on the top cover. The green LED indicates the fan is operating properly. The amber LED indicates a fan failure.

Removing a Hot-Swap System Fan

To remove a hot-swap system fan, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
2. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12, or "Removing the Model 6E3 Service Access Cover" on page 13
3. Locate the system fans, as shown in the following illustration.
4. Pull on the orange locking knob of the failing fan until you feel it unlock.
5. Press and hold the plastic tab attached to the fan tray away from the system fan.
6. Pull on the locking knob of the failing fan again until you feel the fan pull away from its connector.
7. Lift the failing fan unit out of the fan tray.
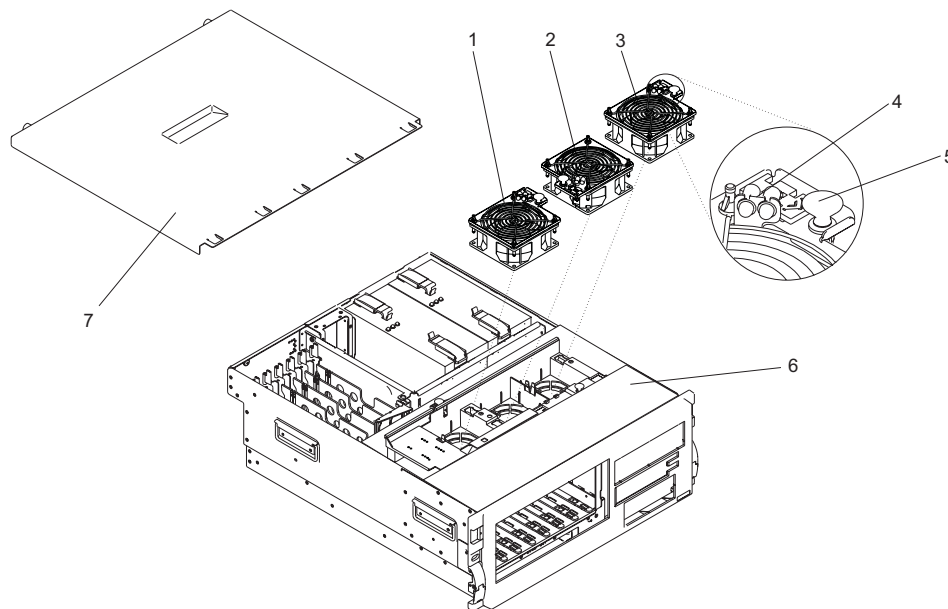
1	System Fan 1	**5**	Orange Locking Knob
2	System Fan 2	**6**	Model 6C3
3	System Fan 3	**7**	Service Access Cover
4	System Fan LEDs		
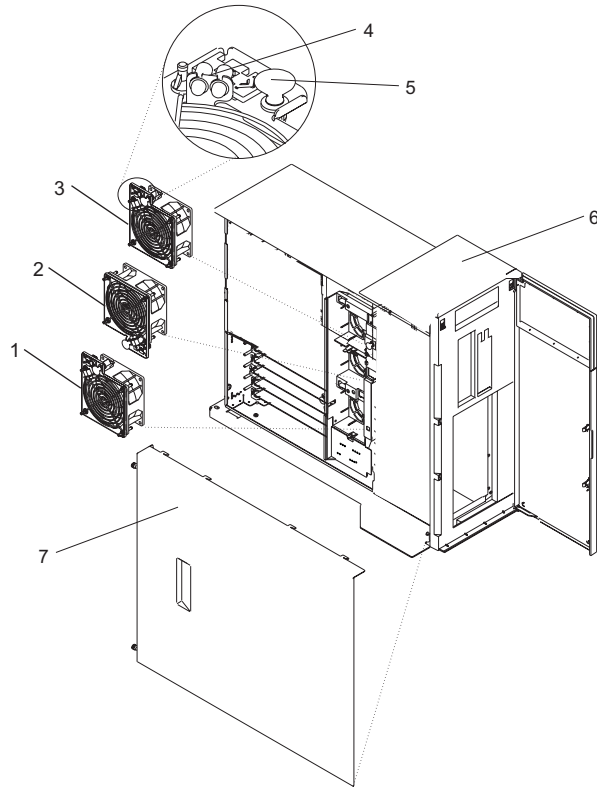
1 System Fan 1		**5** Orange Locking Knob	
2 System Fan 2		**6** Model 6E3	
3 System Fan 3		**7** Service Access Cover	
4 System Fan LEDs			

Replacing a Hot-Swap System Fan

To replace a hot-swap system fan, do the following:

1. Pull up on the orange locking knob on the replacement fan to ensure that it is in the unlocked position.

2. Align the fan with the slot in the fan tray assembly with the fan power plug over the connector.

3. Place the fan into the fan tray.

4. Press down on the fan to ensure that the power plug is connected.

   Note: The fan starts to run when the power plug connects.

5. Press the locking knob down until you feel it lock into place.

6. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

7. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

Fan Tray Assembly

The following procedures describe the removal and replacement of the fan tray assembly. Before performing the following procedures, read the "Safety Notices" on page vii.

The three system cooling fans rest in a fan tray. The fans can remain in the tray while the tray is removed or replaced.

Removing the Fan Tray Assembly

To remove the fan tray assembly, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. Disconnect the power source from the system.

    Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system is completely disconnected.

4. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
5. If your system does not contain a SCSI media device in the SCSI media-device bay, go to the next step. To identify the SCSI media device locations, see Appendix C, "System Locations", on page 85. If your system does contain SCSI media device, do the following:
    a. Remove the front bezel as described in "Removing the Model 6C3 Front Bezel" on page 15 or "Removing the Model 6E3 Front Bezel" on page 16.
    b. Press the blue media-bay-chassis latches and pull the media bay chassis forward in the system chassis but do not remove it from the system chassis. To identify the media-bay-chassis latches, see the illustrations in "Removing the Media Bay Chassis" on page 59.
6. Locate the fan tray, as shown in the following illustration.
7. Release the LED light-pipe plate attached to the fan tray by pressing the latch attached to the disk drive backplane and rotating the plate up and off of the LED light pipes.
8. Pull up on the two blue locking knobs located at either end of the fan tray until you feel them unlock.
9. While holding the blue plastic tab on the back of the disk drive backplane, lift up on the end of the fan tray that is next to the tab until it clears the tab.
10. Using the two blue locking knobs at either end of the fan tray assembly, lift it straight up and out of the system unit.
11. If you are removing the fan tray as part of another procedure, return to that procedure. If you are removing the fan tray because the fan tray itself is damaged or failing to operate correctly, remove the three hot-swap system fans from the fan tray as described in "Removing a Hot-Swap System Fan" on page 40.
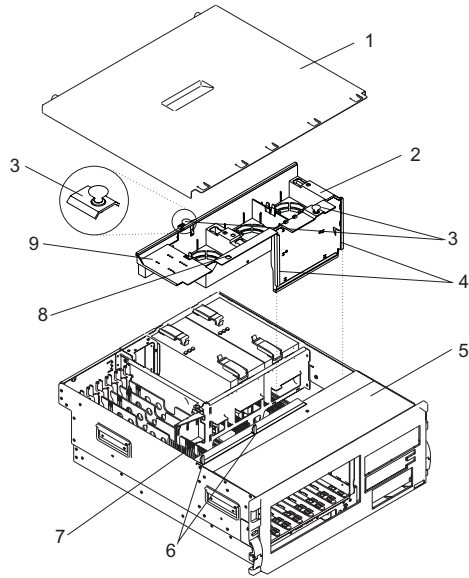
1	Service Access Cover	**6**	Latches (Attached to Disk Drive Backplane or Filler)
2	Fan Tray	**7**	LED Light Pipes
3	Blue Locking Knobs	**8**	Disk Drive Backplane Latch Hole
4	Fan Tray Guides	**9**	Fan Tray Light-Pipe Plate
5	Model 6C3 (Shown Without a SCSI Media Device)		

1 LED Light Pipes
2 Disk Drive Backplane Latch Hole
3 Service Access Cover
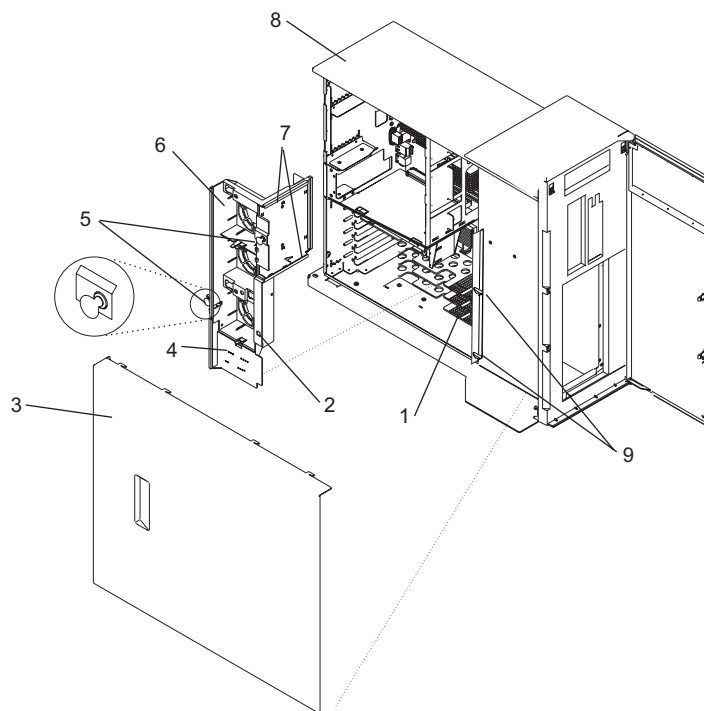
4 Fan Tray Light-Pipe Plate

5 Blue Locking Knobs

6 Fan Tray
7 Fan Tray Guides
8 Model 6E3 (Shown Without a SCSI Media Device)

9 Latches (Attached to Disk Drive Backplane or Filler)

Replacing the Fan Tray Assembly

To replace the fan tray, do the following:

1. If you are placing the fan tray assembly into the system as part of another procedure, continue to the next step. If you are replacing a failing or damaged fan tray with a new fan tray, place the three hot-swap system fans into the fan tray as described in "Replacing a Hot-Swap System Fan" on page 41 before you continue to the next step.

2. Confirm that the blue locking knobs on the fan tray are in the unlocked position.

3. Align the guides on the front of the fan tray with the guide rails in the system chassis.

4. Lower the fan tray into the system, with the LED light-pipe cover plate toward the LED light pipes, and press it down into place.

5. Press the blue locking knobs down until you feel them lock.

6. Press the LED light-pipe cover plate down over the latch and LED light pipes until you feel it lock into place. Ensure the LED light pipes align with the appropriate holes in the LED light-pipe plate.

7. If your system does not contain a SCSI media device, go to the next step. If your system does contain SCSI media device, do the following:

    a. Press the media bay chassis back into place until you feel the latches lock (see the illustrations in "Removing the Media Bay Chassis" on page 59 to identify the media-bay-chassis latches).

    b. Replace the front bezel as described in "Replacing the Model 6C3 Front Bezel" on page 15 or "Replacing the Model 6E3 Front Bezel" on page 16

8. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12.

9. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

10. Start the system as described in "Starting the System" on page 8.

Media Devices

The following procedures describe the removal and replacement of the media devices. Before performing the following procedures, read the "Safety Notices" on page vii.

Notes:

1. The two Slimline media bays can be used to house a CD-ROM, DVD-ROM, or diskette device. For the location of the two media bays, see Appendix C, "System Locations", on page 85. However, if your system has a CD-ROM device, place it in media bay 3. The optional media device bay can house a SCSI media device, such as a DVD-RAM or tape drive.

2. Hot-swap devices are not supported in the media device bays.

Before performing this procedure, read the following:
* "Safety Notices" on page vii
* "Laser Safety Information" on page ix

Slimline Media Devices

The following procedures describe the removal and replacement of the Slimline media devices.

If the Slimline media device is a DVD-RAM, then a single-ended cable will be connected to the rear of the media-bay-chassis backplane and routed through the system to a single-ended (SE) SCSI adapter. See the following illustrations.

Notes:

1. If a Slimline diskette device is installed, it must be placed in the lower device slot on the Model 6C3 or in the right device slot on the Model 6E3. Having two diskette devices installed will result in an error.

2. Slimline media devices are not hot-swappable.

Removing a Slimline Media Device

To remove a Slimline media device, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. Disconnect the power source from the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system is completely disconnected.
4. Remove the front bezel as described in "Removing the Model 6C3 Front Bezel" on page 15 or "Removing the Model 6E3 Front Bezel" on page 16.
5. Push the blue plastic retaining tab away from the Slimline media device.
6. While holding the blue plastic retaining tab, grasp the device and pull it out of the system.
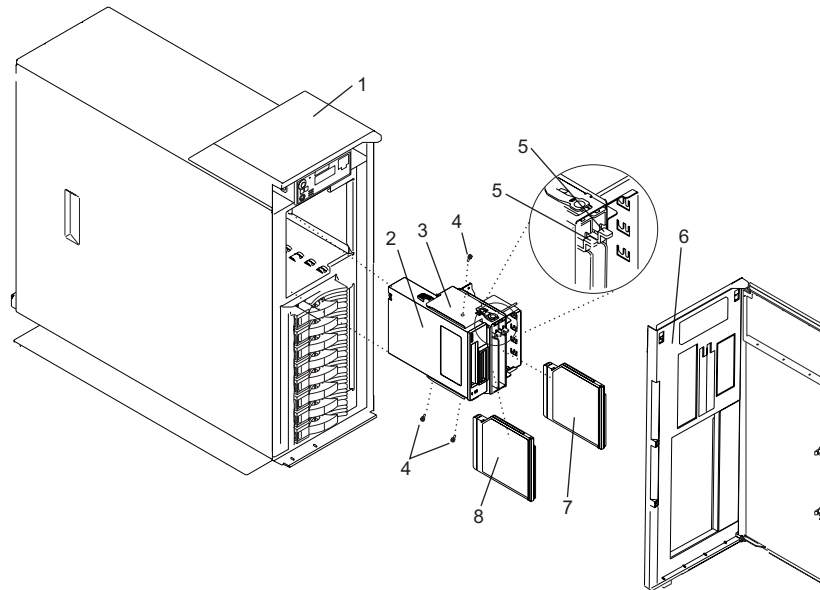
Replacing or Installing a Slimline Media Device

To replace or install a Slimline media device, do the following:

1. If necessary, while holding the blue plastic retaining tab, pull the filler panel out of the system.
2. Align the device with the Slimline media bay and push it into the system.
3. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
4. Replace the front bezel as described in "Replacing the Model 6C3 Front Bezel" on page 15 or "Replacing the Model 6E3 Front Bezel" on page 16
5. Start the system as described in "Starting the System" on page 8.

1 Model 6C3

2 Optional SCSI Media Device
(Shown in Media Bay Chassis)

3 Optional SCSI Media Device
Screw (3)

4 Blue Retaining Tab (For Slimline
Devices)

5 Front Bezel

6 Slimline Optical Device

7 Slimline Diskette or Optical Device

8 Media Bay Chassis

1	Model 6E3	**5**	Blue Retaining Tab (For Slimline Devices)
2	Optional SCSI Media Device (Shown in Media Bay Chassis)	**6**	Front Bezel
3	Media Bay Chassis	**7**	Slimline Diskette or Optical Device
4	Optional SCSI Media Device Screw (3)	**8**	Slimline Optical Device

SCSI Media Devices

A SCSI media device can be placed in the SCSI media-device bay. If a SCSI media device is installed in the system, then a power cable and a SCSI cable will be connected to the rear of the SCSI media device and routed to the appropriate connectors on the rear of the media-bay-chassis backplane or PCI adapter. If the SCSI media device is connected to a audio card, then a cable will be connected to the rear of the SCSI media device and routed through the system to the audio card. If the SCSI media device is a DVD-RAM, then a single-ended cable will be connected to the rear of the DVD-RAM and routed through the system to a single-ended (SE) SCSI adapter. See the illustration on page 50.

Removing a SCSI Media Device

To remove a SCSI media device, do the following:

1. Shut down the system as described in "Stopping the System" on page 9.
2. Disconnect the power source from the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

3. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
4. Remove the front bezel as described in "Bezels" on page 15.
5. Remove the media bay chassis as described in "Media Bay Chassis" on page 59.

   Note: Look to see if any cables that are routed into the system are plugged into the connectors on the media bay chassis. If present, unplug the cables.

6. Unplug the SCSI cable and power cable from the rear of the SCSI media device and the backplane at the rear of the media bay chassis. If necessary, unplug any other cables from the rear of the SCSI media device or media bay chassis. To see the location and routing of the SCSI media-device cables, go to page 50.

7. Detach the SCSI media device from the media bay chassis by removing the SCSI media-device screws (see the illustrations on page"" on page 47).

8. Put the media device in a safe place.

Replacing or Installing a SCSI Media Device

To replace or install a SCSI media device, do the following:

1. Refer to "Removing a SCSI Media Device" on page 48 if a SCSI media device is present in the SCSI media-device bay.

2. Before handling any card, board, or memory DIMM, refer to "Handling Static-Sensitive Devices" on page 4.

3. Attach the SCSI media device to the media bay chassis using the SCSI media-device screws (see the illustrations on page"" on page 47).

4. Plug the SCSI cable and the power cable into rear of the SCSI media device and into the media bay-chassis backplane. If necessary, plug the audio card cable into the rear of the SCSI media device. To see the location and routing of the SCSI media-device cables, go to page 50.

5. Replace the media bay chassis as described in "Media Bay Chassis" on page 59.

   Note: Reconnect the cables that are routed into the system that were plugged into the connectors on the media bay chassis when it was removed.

6. Replace the bezel as described in "Replacing the Model 6C3 Front Bezel" on page 15 or "Replacing the Model 6E3 Front Bezel" on page 16.

7. Reconnect the power source to the system.

8. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

9. Start the system as described in "Starting the System" on page 8.

Removing SCSI Media-Device Cables

To remove a SCSI media-device cable, do the following:

1. Remove the media bay chassis as described in "Removing the Media Bay Chassis" on page 59.

2. Identify the cable you want to remove. See the following illustrations.

3. Unplug the cable from its connectors on the SCSI media device and on the media bay chassis or audio card. If you are removing a audio-card cable, note how the cable is routed through the system so that you can replace it correctly.

4. Remove the cable from the media bay chassis or the system.
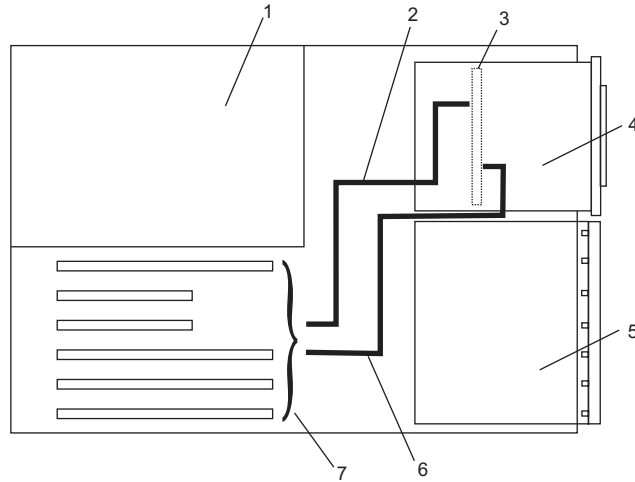
1	System Unit - Top View in Service Position	**5**	Disk Drive Bay
2	SCSI Single-Ended Cable	**6**	Audio Card Cable
3	Media-Bay-Chassis Backplane	**7**	PCI Adapter Slots
4	SCSI Media Device		
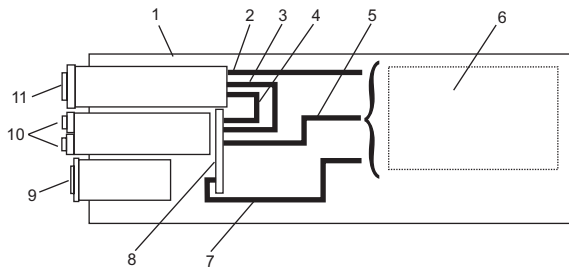
1	System Unit (Side View in Service Position)	**7**	Audio-Card Cable
2	DVD-RAM Cable (SCSI Media-Device)	**8**	Media Bay-Chassis Backplane
3	SCSI Media-Device Power Cable	**9**	Operator Panel or Filler
4	SCSI Media-Device SCSI Cable	**10**	Slimline Media Devices
5	DVD-RAM Cable (Slimline Media-Device)	**11**	SCSI Media Device
6	PCI Adapter Slots		

Replacing SCSI Media-Device Cables

To replace a SCSI media-device cable, do the following:

1. Identify the cable you want to replace.

2. Plug the cable into the appropriate connectors on the SCSI media device and on the media bay chassis or audio card. If you are replacing the audio-card cable, ensure that the cable is routed through the system properly.

3. Replace the SCSI media device as described in "Replacing the Media Bay Chassis" on page 60.

Disk Drive Bezels and Fillers

The following procedures describe the removal and replacement of disk drive bezels. Before performing the following procedures, read the "Safety Notices" on page vii. Each disk drive slot in the system must contain either a disk drive or the appropriate filler panel.

Removing a Disk Drive Bezel from a Disk Drive or Filler

To remove a disk drive bezel from a disk drive or filler, do the following:

1. Remove the filler panel from the disk drive slot, or follow the procedures for removing a disk drive described in "Hot-Swap Disk Drives" on page 53.
2. Remove the disk drive bezel from the front of the filler panel or disk drive. See the following illustration.
3. Attach the disk drive bezel to the front edge of the filler panel or replacement disk drive.
4. Place the filler panel in the empty disk drive slot, or follow the procedures for adding a disk drive as described in "Hot-Swap Disk Drives" on page 53.
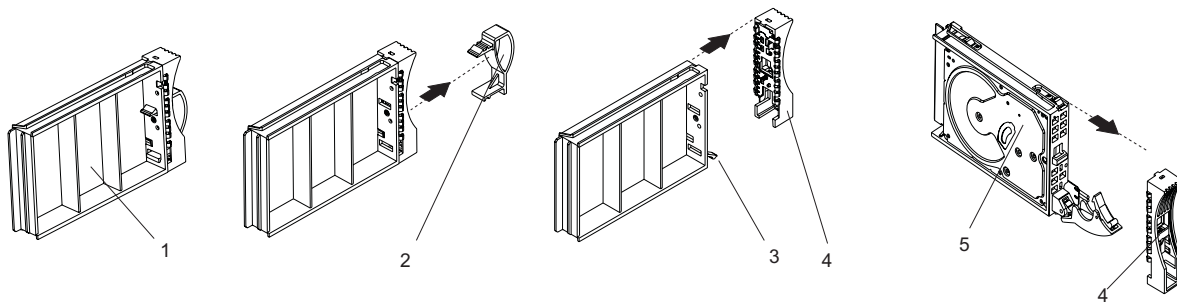
1	Filler Panel, Upside Down with Bezel Attached	**4**	Disk Drive Bezel
2	Disk Drive Bezel Handle	**5**	Disk Drive
3	Filler Panel Release Tab		

Replacing or Installing a Disk Drive Bezel onto a Disk Drive

To replace or install a disk drive bezel onto a disk drive or filler, do the following:

1. Remove the disk drive filler panel from the slot you want to use by pressing the filler release tab located at the top front edge of the filler panel and pulling the filler out of the system.

2. Remove the disk drive bezel plug from the front of the filler panel.

3. Remove the disk drive bezel from the front edge of the filler panel.

4. Attach the disk drive bezel to the front of the disk drive.

5. Follow the procedures for adding a disk drive as described in "Hot-Swap Disk Drives" on page 53.
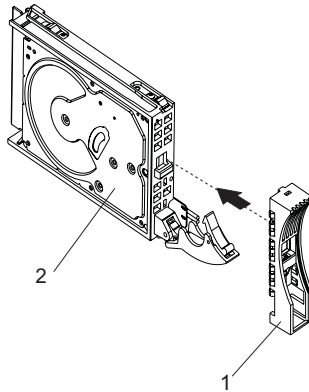
1 Disk Drive Bezel   **2** Disk Drive

Hot-Swap Disk Drives

The following procedures describe the removal, replacement, and installation of hot-swap disk drives. Before performing the following procedures, read the "Safety Notices" on page vii.

Note: You do not have to power off the system to remove a hot-swap disk drive. Before you perform these procedures, ensure that you have taken the appropriate actions to back up the data for the drive you are removing, and that the drive has been removed from the configuration. Physically removing a hot-swap disk drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption.

Attention: The Linux operating system does not support these hot-swappable procedures. Also, Linux does not support hot-swapping any hot-swappable disk drives. A system with Linux installed must be shut down and powered off before installing any disk drives. Use the procedures described in "Removing a Hot-Swap Disk Drive with the System Power Off" on page 58 and "Replacing or Installing a Hot-Swap Disk Drive with the System Power Off" on page 58 when replacing a disk drive with the Linux operating system installed.

Deconfiguring a Disk Drive for Removal

Before a disk is removed from a volume group, all data should be backed up and the data removed from the disk to be replaced. Use AIX Logical Volume Manager to perform this task.

Before removing a disk drive from a volume group, do the following:
 1. Log in as root user.
 2. At the command line, type `smitty`.
 3. Select **System Storage Manager (Physical and Logical Storage)** and press Enter.
 4. Select **Logical Volume Manager** and press Enter.
 5. Select **Volume Groups** and press Enter.
 6. Select **Set Characteristics of a Volume Group** and press Enter.
 7. Select **Remove a Physical Volume from a Volume Group**.
 8. Press F4 to list the available volume groups, then select the volume group name and press Enter.
 9. Press F4 to select a physical volume, and follow the instructions on the screen to select the physical volume. Press Enter.
10. Press F3 enough times to return to the first smitty menu. Select **System Storage Management (Physical and Logical Storage)**.
11. Select **Removable Disk Management**.
12. Select **Remove a Disk**.
13. Select the desired disk from the list on the screen and press Enter.
14. Follow the instructions on the screen to remove the drive.
15. When you are asked ″Are you sure?″, press Enter. The power LED on the drive that you selected will remain on.
16. Remove the disk drive by pulling the disk drive lever toward you until it is completely open (see the illustration in "Removing a Hot-Swap Disk Drive" on page 55). Then remove the disk drive from the slot. The LED on the top of the slot will turn off when the disk drive is removed.
17. Press F10 to exit smitty.

Configuring a Disk Drive after Replacement or Installation

To configure a disk drive, do the following:
 1. Log in as root user.
 2. At the command line, type `smitty`.

3. Select **Devices**.

4. Select **Install/Configure Devices Added After IPL** and press Enter. Successful configuration is indicated by the 0K message displayed next to the **Command** field at the top of the screen.

5. Press F3 to go back to the first menu and select **System Storage Management (Physical and Logical Storage)** and press Enter.

6. Select **Logical Volume Manager** and press Enter.

7. Select **Volume Groups** and press Enter.

8. Select **Set Characteristics of a Volume Group** and press Enter.

9. Select **Add a Physical Volume to a Volume Group**.

10. Fill in the fields for the drive you are adding to the system. Press F4 for a list of selections.

11. See the *AIX System Management Guide: Operating System and Devices* to finish the drive configuration.

12. Press F10 to exit smitty.

Removing a Hot-Swap Disk Drive

Attention: Before you perform the following procedure, back up the data for the drive you are removing, and ensure that the drive has been removed from the configuration. Physically removing a hot-swap drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption. Refer to "Deconfiguring a Disk Drive for Removal" on page 53.

Attention: The Linux operating system does not support these hot-swappable procedures. Also, Linux does not support hot-swapping any hot-swappable device. A system with Linux installed must be shut down and powered off before replacing any disk drive. Use the non-hot-swappable procedures when replacing a disk drive with the Linux operating system installed.

To remove a hot-swap disk drive, do the following:
1. Before removing the disk, ensure all data has been saved.
2. Deconfigure the drive you are removing from the system. See "Deconfiguring a Disk Drive for Removal" on page 53.
3. On a Model 6C3, open the rack front door.

   On a Model 6E3, open the front bezel door.
4. Locate the hot-swap disk drive you want to remove. Note the disk drive's bay location so that it can be replaced in the same slot. If you are removing a faulty disk drive, a lit amber LED located at the front of each disk drive will help you isolate the faulty drive.
5. Log in as root user.
6. At the command line, type `smitty`.
7. Select **System Storage Management (Physical and Logical Storage)**.
8. Select **Removable Disk Management**.
9. Select **Remove a Disk**.
10. Select the desired disk from the list on the screen and press Enter.
11. Remove the disk drive by placing the disk drive release handle into the open position (perpendicular to the drive) and pulling the hot-swap disk drive away from the bay. The lit LED on the disk drive will turn off when the disk drive is removed.
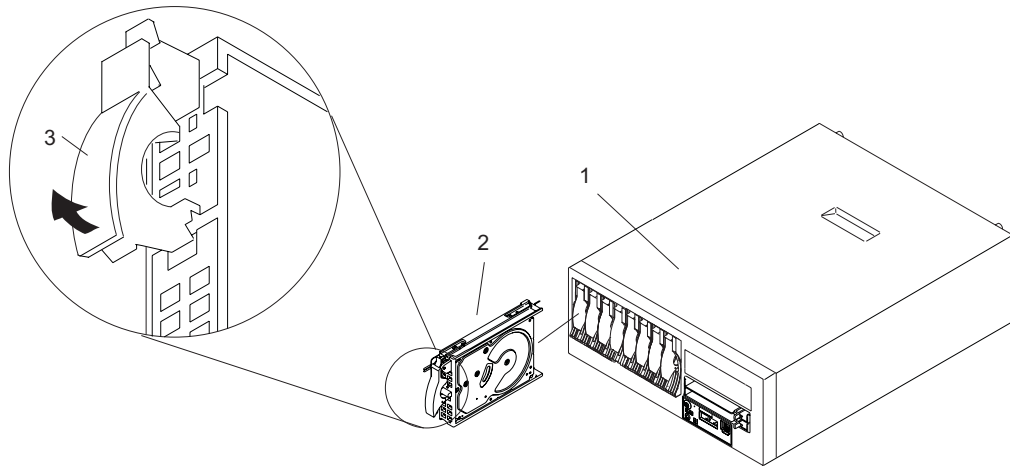
1 Model 6C3
2 Disk Drive

3 Disk Drive Release Handle
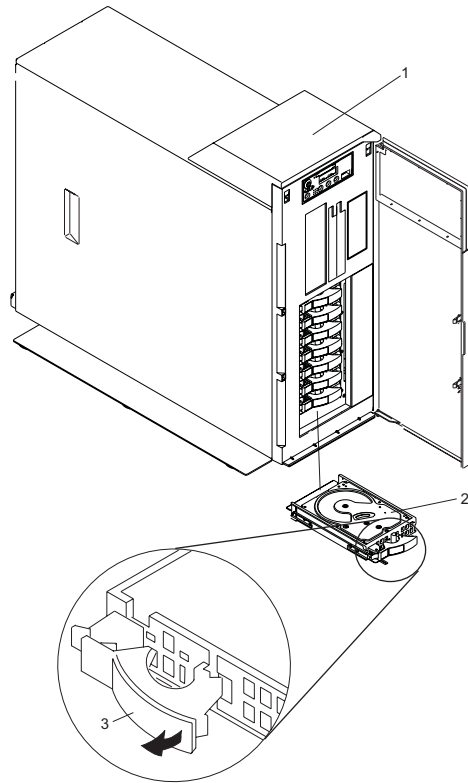
1 Model 6E3
2 Disk Drive

3 Disk Drive Release Handle

12. Press F10 to exit smitty.

Replacing or Installing a Hot-Swap Disk Drive

Attention: Before you perform the following procedure, back up the data for the drive you are removing and remove the drive from the configuration. Physically removing a hot-swap drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption. Refer to "Deconfiguring a Disk Drive for Removal" on page 53.

If your system is set up to run HACMP clustering, *do not* use **Install/Configure Devices Added After IPL**. To determine the correct configuration method to use for the replacement disk, consult with your system administrator or software support representative.

Attention: The Linux operating system does not support these hot-swappable procedures. Also, Linux does not support hot-swapping any hot-swappable device. A system with Linux installed must be shut down and powered off before replacing any disk drive. Use the non-hot-swappable procedures when replacing a disk drive with the Linux operating system installed.

To replace or install a hot-swap disk drive, see the illustration on page 56 and do the following:
1. Install the disk-drive bezel as described in "Disk Drive Bezels and Fillers" on page 51.
2. Ensure the handle on the front of the disk drive is open (perpendicular to the drive).
3. Align the drive assembly so that it engages the guide rails in the bay.
4. Push the drive assembly into the bay until the drive handle engages the lock mechanism.
5. Push the disk drive handle in until it locks. The LED on the disk drive will turn on.
6. Log in as root user.
7. At the command line, type `smitty`.
8. Select **Devices**.
9. Select **Install/Configure Devices Added After IPL** and press Enter. Successful configuration is indicated by the `OK` message displayed next to the **Command** field at the top of the screen.
10. Press F10 to exit **smitty**.
11. On a Model 6C3, close the rack doors.

    On a Model 6E3, close the bezel door.

Removing a Hot-Swap Disk Drive with the System Power Off

A hot-swap disk drive is removed from the system with the system power off when the system is running Linux or a system failure has occurred.

Attention: Before you perform the following procedure, if your system is operational, back up the data for the drive you are removing, and ensure that the drive has been removed from the configuration. Physically removing a hot-swap drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption. Refer to "Deconfiguring a Disk Drive for Removal" on page 53.

To remove a hot-swap disk drive with the system power off, see the illustration on page 56 and do the following:

1. If the system is operational, stop the system as described in "Stopping the System" on page 9. If the system is not operational, go to step 3.
2. Ensure all data on the disk has been saved.
3. On a Model 6C3, open the rack front door.

   On a Model 6E3, open the front bezel door.
4. Locate the hot-swap disk drive you want to remove. Note the disk drive's bay location so that it can be replaced in the same slot.
5. Remove the disk drive by placing the disk drive release handle into the open position (perpendicular to the drive) and pulling the hot-swap disk drive away from the bay. See the illustration on page 56

Replacing or Installing a Hot-Swap Disk Drive with the System Power Off

A hot-swap disk drive is replaced or installed into the system with the system power off when the system is running Linux or a system failure has occurred.

To replace or install a hot-swap disk drive with the system power off, see the illustration on page 56 and do the following:

1. Install the disk-drive bezel as described in "Disk Drive Bezels and Fillers" on page 51.
2. Ensure the handle on the front of the disk drive is open (perpendicular to the drive).
3. Align the drive assembly so that it engages the guide rails in the bay.
4. Push the drive assembly into the bay until the drive handle engages the lock mechanism.
5. Push the disk drive handle in until it locks.
6. If the system is operational, start the system as described in "Starting the System" on page 8.
7. On a Model 6C3, close the rack doors.

   On a Model 6E3, close the bezel door.

Media Bay Chassis

The following procedures describe the removal and replacement of the media bay chassis. Before performing the following procedures, read the "Safety Notices" on page vii.

Removing the Media Bay Chassis

To remove the media bay chassis, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. Disconnect the power source from the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

4. Remove the front bezel as described in "Bezels" on page 15.
5. Press the media bay chassis latches, and pull the bay chassis out of the system chassis.

   Note: If there is a SCSI media device installed in the SCSI media-device bay, a sound cable might be connected to the rear of SCSI media device. Look for the cable as you remove the media bay from the system chassis. If the cable is present, unplug it from the rear of the SCSI media device. For more information, see "Media Devices" on page 46.

6. If you are servicing a Model 6E3, unplug the operator panel cable from the media bay chassis as you remove the media bay chassis from the system chassis. If you are servicing a Model 6C3, the operator panel will remain in the media bay chassis as it is being removed.
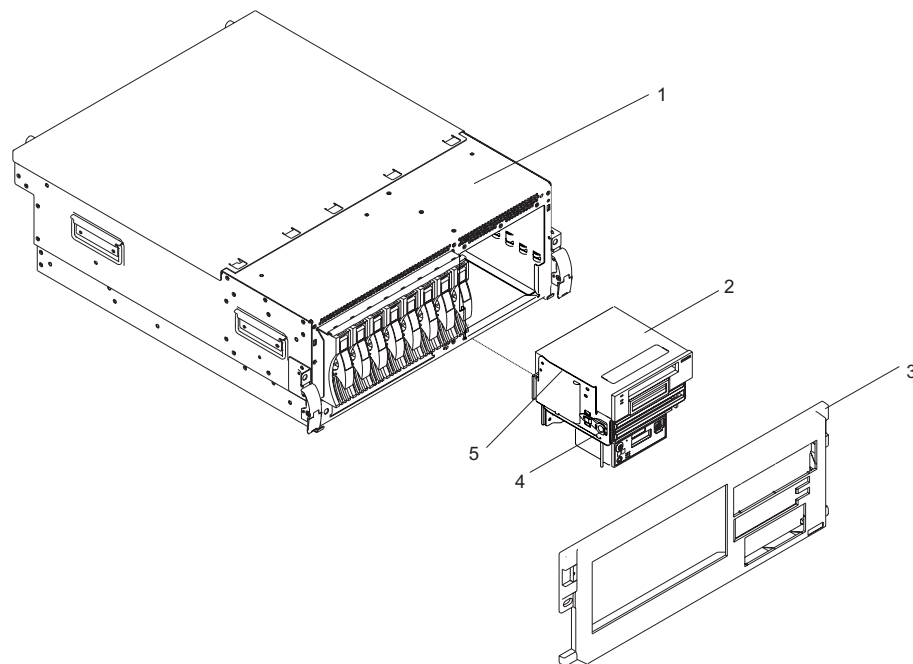
1	Model 6C3	**4**	Media Bay Chassis Latch (One on Each Side)
2	Media Bay Chassis (Drives Installed)	**5**	Guide Rails
3	Front Bezel		
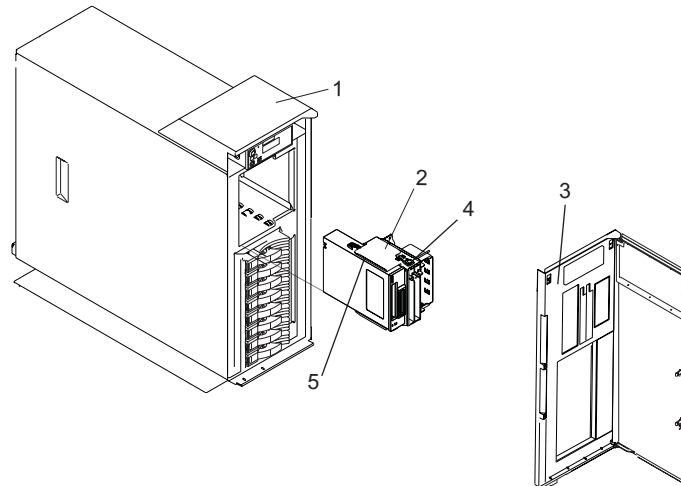
1	Model 6E3	**4**	Media Bay Chassis Latch (One on Each Side)
2	Media Bay Chassis (Drives Installed)	**5**	Guide Rails
3	Front Bezel		

Replacing the Media Bay Chassis

To replace the media bay chassis, do the following:

1. If you are servicing a Model 6C3, plug the operator panel cable into the media bay chassis as you replace the media bay chassis in the system chassis.

   Note: If a sound cable is present, plug it into the appropriate connector at the rear of the SCSI media device. For more information, see "Media Devices" on page 46.

2. Align the media bay chassis with the chassis opening and press into place until you feel the latches lock.

3. Replace the front bezel as described in "Bezels" on page 15.

4. Reconnect all system power cables.

5. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

6. Start the system as described in "Starting the System" on page 8.

Operator Panel Power Cable

The following procedures describe the removal and replacement of the operator panel power cable. Before performing the following procedures, read the "Safety Notices" on page vii.

Removing the Operator Panel Power Cable

To remove the operator panel power cable, do the following:

1. Stop the system as described in "Stopping the System" on page 9.

2. Disconnect the power source from the system.

   Note: This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

3. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

4. Remove the front bezel as described in "Removing the Model 6C3 Front Bezel" on page 15 or "Removing the Model 6E3 Front Bezel" on page 16.

5. Remove the media bay chassis as described in "Removing the Media Bay Chassis" on page 59.

6. Locate the operator panel, as shown in the following illustrations.

7. Remove the operator panel by pressing the locking tabs located on either side of the panel, grasping the edges of the panel, and pulling it out of its bay.

8. Disconnect the operator panel power cable from the rear of the operator panel.
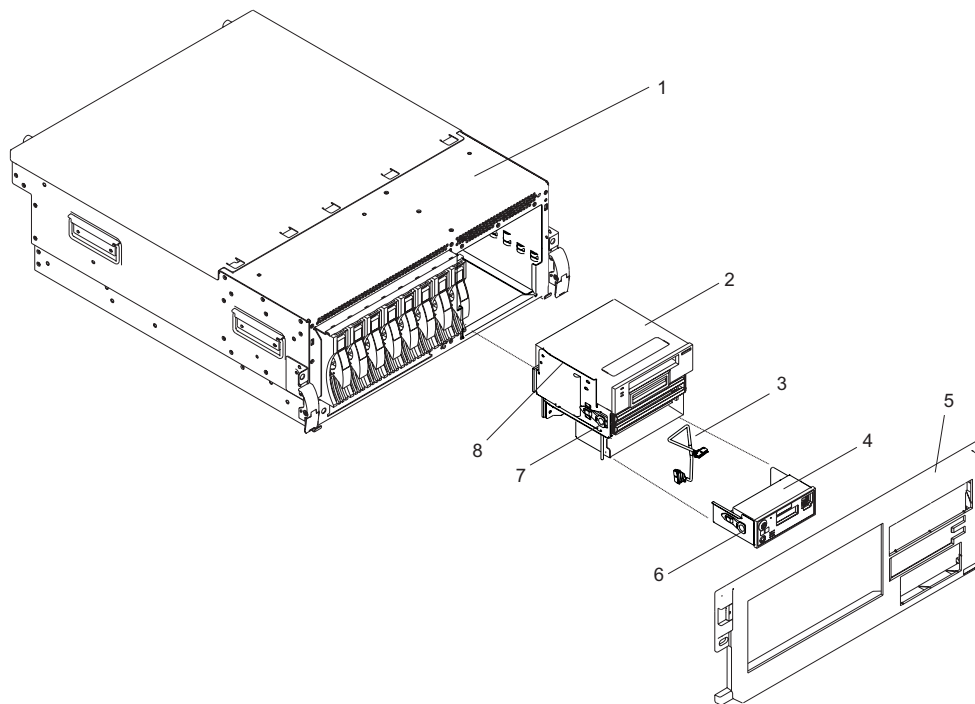
1	Model 6C3	**5**	Front Bezel
2	Media Bay Chassis (Shown With SCSI Media Drive Installed)	**6**	Operator Panel Locking Tab (2)
3	Operator Panel Power Cable	**7**	Media Bay Chassis Locking Tab (2)
4	Operator Panel	**8**	Media Bay Chassis Guide Rail

1	Model 6E3	**5**	Media Bay Chassis (Shown With SCSI Media Drive Installed)
2	Operator Panel Power Cable	**6**	Media Bay Chassis Locking Tab (2)
3	Operator Panel	**7**	Front Bezel
4	Operator Panel Locking Tab (2)	**8**	Media Bay Chassis Guide Rail

Replacing the Operator Panel Power Cable

To replace the operator panel power cable, do the following:

1. Connect the operator panel power cable to the connector at the rear of the operator panel.

2. Carefully slide the operator panel into the operator panel bay until you feel the locking tabs lock in place. If you are servicing the Model 6E3, note how the operator panel power cable must be routed through the system chassis before being connected to the media bay chassis.

3. Connect the the operator panel power cable to the media bay.

4. Replace the media bay chassis as described in "Replacing the Media Bay Chassis" on page 60.

5. Replace the front bezel as described in "Replacing the Model 6C3 Front Bezel" on page 15 or "Replacing the Model 6E3 Front Bezel" on page 16.

6. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

7. Reconnect the system to the power source .

8. Start the system as described in "Starting the System" on page 8.

Power Supply

The following procedures describe the removal, replacement, and installation of the power supply. This system can have up to two power supplies. The system power can remain on under the following conditions:

- When installing a second power supply.
- When one of two power supplies present in the system is replaced.

Before performing the following procedures, read the "Safety Notices" on page vii.

Use one of the following proceedures to remove, replace, or install a power supply:

- If you are installing an option that requires removal of the power supplies, go to "Removing a Power Supply with the System Power Off".
- If you are replacing the primary power supply, and it is the only power supply present in the system, go to "Removing a Power Supply with the System Power Off".
- If you are installing a second power supply, or replacing one of two power supplies present in the system, go to "Installing or Replacing a Power Supply with the System Power On" on page 68.

DANGER

> **Do not attempt to open the covers of the power supply. Power supplies are not serviceable and are to be replaced as a unit.**
> D02

Power Supply LEDs

The power supply has three LEDs; two green LEDs (ac power good and dc power good), and one amber LED, which indicate the power supply status. If both of the green LEDs are on solid (not blinking) and the amber LED is off, then the power supply is operating correctly. If the ac power good LED is on, the dc power good LED is blinking, and the amber LED is off, then the system is turned off, but the power supply is still connected to the power source. If the amber LED is active, then the power supply is not operating correctly.

Removing a Power Supply with the System Power Off

Before performing the following procedure, read and understand all of the safety notices beginning with "Safety Notices" on page vii.

To remove a power supply with the system power off, do the following:

1. Stop the system as described in "Stopping the System" on page 9.
2. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
3. On a Model 6C3, open the rear rack door.
4. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
5. Remove the power cable from the rear of the power supply you want to remove.
6. Wait at least 10 seconds before performing the next step.
7. Grasp the ends of the power supply handles, and press the retractable spring-activated portion of each handle. This action releases the spring latch located on the bottom side of each handle. See the following illustration.
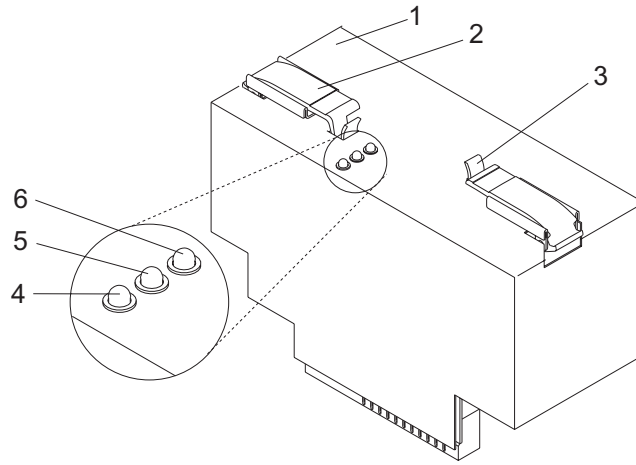
1 Power supply
2 Power supply handle (2)
3 Spring Latch (2)

4 Fault LED (Amber)
5 DC Good LED (Green)
6 AC Good LED (Green)

8. Lift the power supply release handles until they are perpendicular (90 degrees) to the top of the power supply. By placing the handles perpendicular to the top of the power supply, the base or hinged portion of each handle acts as a cam and helps pry the power supply from its connector located on the system backplane.
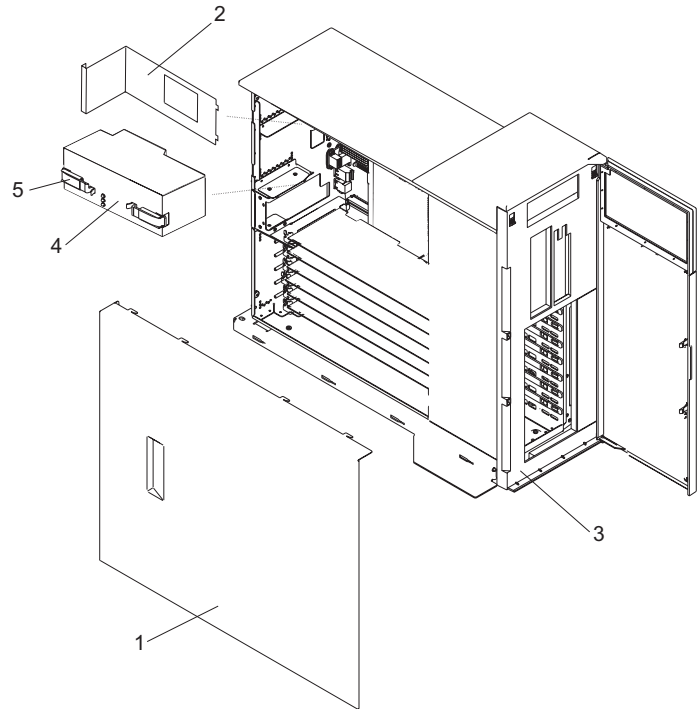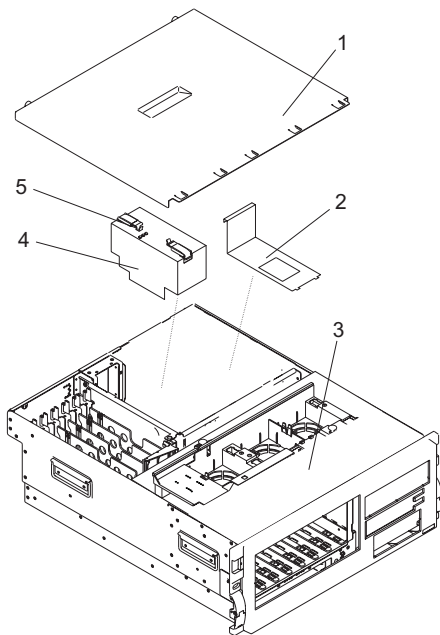
1	Service Access Cover	**4**	Power Supply #1 (Primary)
2	Power Supply Filler Panel	**5**	Power Supply Release Handle
3	System		

9. After the power supply is released from its connector, pull the power supply straight out from the system.

Replacing a Power Supply with the System Power Off

Before performing the following procedure, read and understand all of the safety notices beginning with "Safety Notices" on page vii.

Notes:

1. Do not connect the power cables to the power source until you are instructed to do so.
2. During normal operation, the secondary power-supply bay must have either a power supply or filler panel installed for proper cooling.

To replace a power supply, do the following:

1. Ensure the system is in the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
2. Ensure the service access cover has been removed as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.
3. Grasp the power supply handles located on top of the new power supply. Pivot the power supply handles upward to 90 degrees. This action puts the handle cams into the correct position to help seat the power supply into its connector.
4. Carefully insert the new power supply into the power supply bay.
5. Lower the power supply handles, carefully pressing the power supply into the connector. The spring latch located on the underside of each handle will snap into place, indicating that the power supply is seated correctly and locked into position.
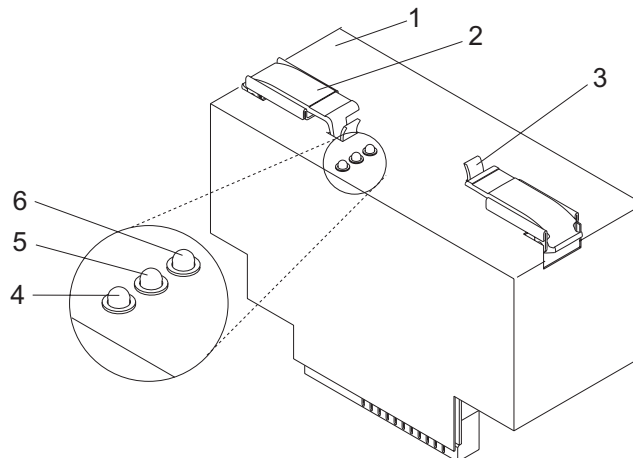
1 Power supply		**4** Fault LED (Amber)	
2 Power supply handle (2)		**5** DC Good LED (Green)	
3 Spring Latch (2)		**6** AC Good LED (Green)	

6. Plug the power cables into the rear of the power supply.
7. Note the state of the LEDs on the top of the power supply. If the LEDs indicate the power supply is operating normally, continue to the next step. If not, remove the power supply from the system and repeat the procedure starting with step 3. If, after repeating the procedure, the power supply in not operating normally, contact your service representative.
8. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13.

   If you are working on a Model 6E3, go to step 10 on page 67.

   If you are working on a Model 6C3, continue to the next step.
9. Ensure the system cables are routed through the cable-management arm correctly.

10. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.

11. Start the system as described in "Starting the System" on page 8.

Installing or Replacing a Power Supply with the System Power On

The system power can remain on when a second power supply installed or when one of two power supplies present in the system is replaced.

To install a second power supply, or to replace a failing power supply when two are present in the system, do the following:

1. Place the system into the service position as described in "Placing the Model 6C3 into the Service Position" on page 6 or "Placing the Model 6E3 into the Service and Operating Position" on page 7. On a Model 6C3, open the rear rack door.

2. Remove the service access cover as described in "Removing the Model 6C3 Service Access Cover" on page 12 or "Removing the Model 6E3 Service Access Cover" on page 13.

3. Ensure the power supply bay is empty by doing one of the following:

   a. Remove the power supply filler by grasping the handle and pulling the filler inward and then up and out of the system.

   b. Remove a failing power supply by doing the following:

      1) Remove the power cable from the rear of the failing power supply.

      2) Grasp the ends of the power supply handles, and press the retractable spring-activated portion of each handle. This action releases the spring latch located on the bottom side of each handle. See the following illustration.

      3) Lift the power supply release handles until they are perpendicular (90 degrees) to the top of the power supply. By placing the handles perpendicular to the top of the power supply, the base or hinged portion of each handle acts as a cam and helps pry the power supply from its connector located on the system backplane.

      4) After the power supply is released from its connector, pull the power supply straight out from the system.

4. Grasp the power supply handles located on top of the new power supply. Pivot the power supply handles upward to 90 degrees. This action puts the handle cams into the correct position to help seat the power supply into its connector.

5. Carefully insert the new power supply into the power supply bay.

6. Lower the power supply handles, carefully pressing the power supply into the connector. The spring latch located on the underside of each handle will snap into place, indicating that the power supply is seated correctly and locked into position.
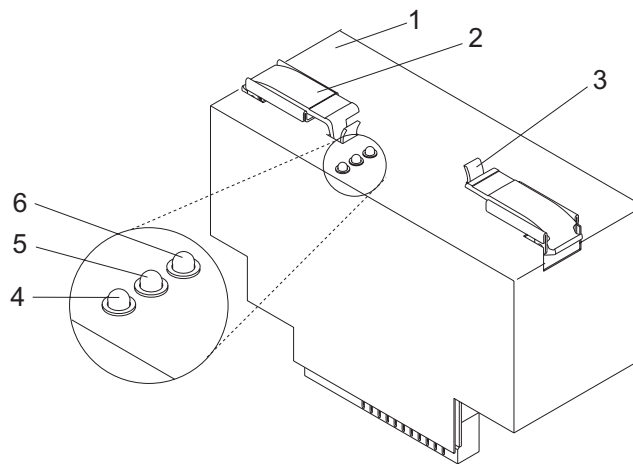
1	Power supply	**4**	Fault LED (Amber)
2	Power supply handle (2)	**5**	DC Good LED (Green)
3	Spring Latch (2)	**6**	AC Good LED (Green)

7. Plug the second power cable into the rear of the new power supply.

   Note: Do not connect the power cable to the power source until you are instructed to do so.
8. Connect the power source to the system.
9. Note the state of the LEDs on the top of the power supply. If the LEDs indicate the power supply is operating normally, continue to the next step. If not, remove the power supply from the system and repeat the procedure starting with step 5 on page 68. If, after repeating the procedure, the power supply in not operating normally, contact your service representative.
10. Replace the service access cover as described in "Replacing the Model 6C3 Service Access Cover" on page 12 or "Replacing the Model 6E3 Service Access Cover" on page 13. If you are servicing a Model 6E3, go to step 12.

    If you are servicing a Model 6C3, continue to the next step.
11. Route the cables through the cable-management arm.
12. Return the system to the operating position as described in "Returning the Model 6C3 to the Operating Position" on page 7 or "Placing the Model 6E3 into the Service and Operating Position" on page 7.
13. On a Model 6C3, close the rear rack door.

Chapter 3. Parts Information

This chapter contains parts information for the @server pSeries 615 Model 6C3 and Model 6E3.

System Parts
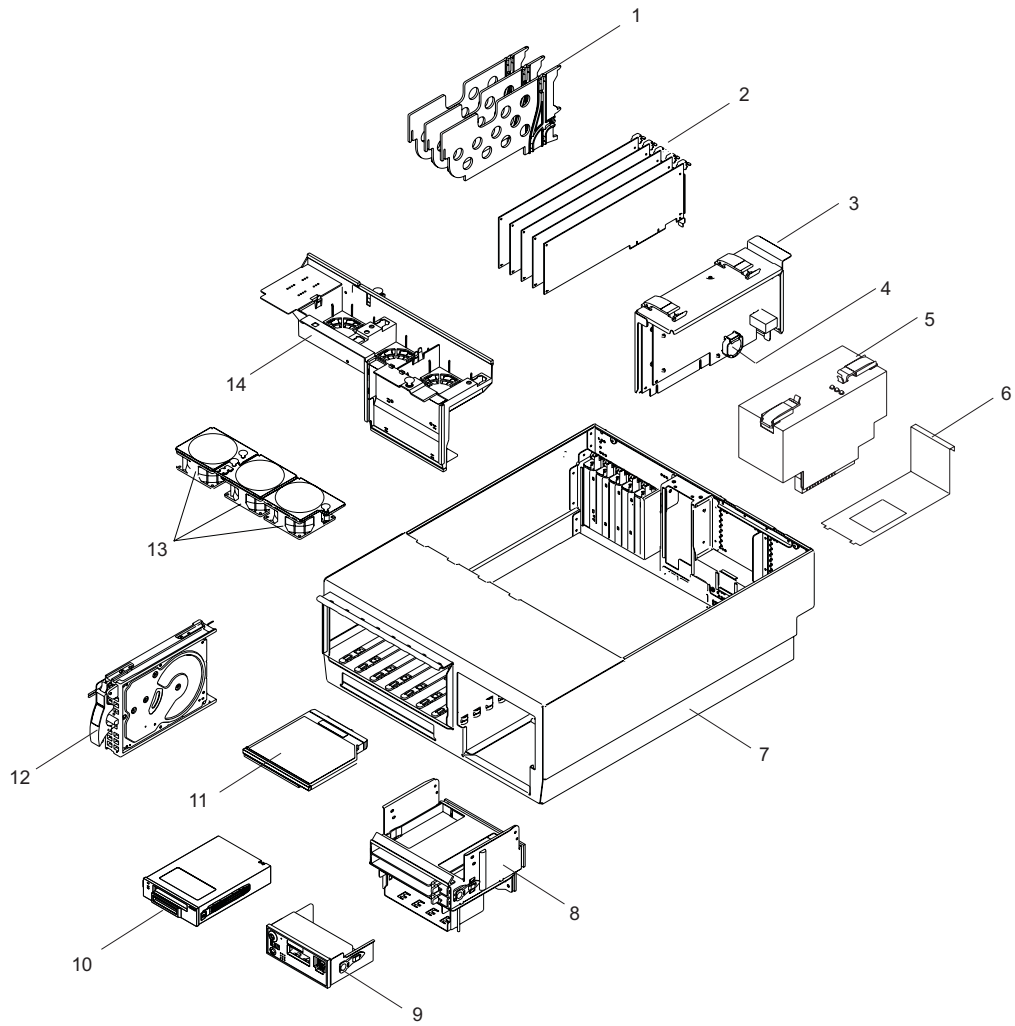
Index Number	FRU Part Number	Units Per Assembly	Description
1	53P4325	3	PCI Adapter Dividers (Short)
		2	PCI Plastic Light Pipe and Airflow Dividers (Long)
2		See note	PCI Adapters
3	80P2388	1	Service Processor Assembly
4	16G8095	1	Battery
5	53P5617	Up to 2	AC Power Supply
	53P5617	Up to 2	AC Power Supply (Redundant Power Supply is Optional)
Not Shown	42F6841	Up to 2	AC Power Cable (Power distribution bus to AC power supply, Model 6C3 only)
6		1	Power Supply Filler
7	53P4606	1	System Chassis assembly
8	97P2313	1	Media Bay Chassis
9	53P6230	1	Operator panel
10		1	Optional SCSI Media Device
11			Slimline Media Device
	00P4775	Up to 2	Slimline DVD-ROM
	27L4378	1	Slimline Diskette Device
	53P5867	1	Slimline Device Filler
12	See Note	8	Disk drives
13	53P4612	3	Fan
14	97P2304	1	Fan tray

Model 6C3 Parts
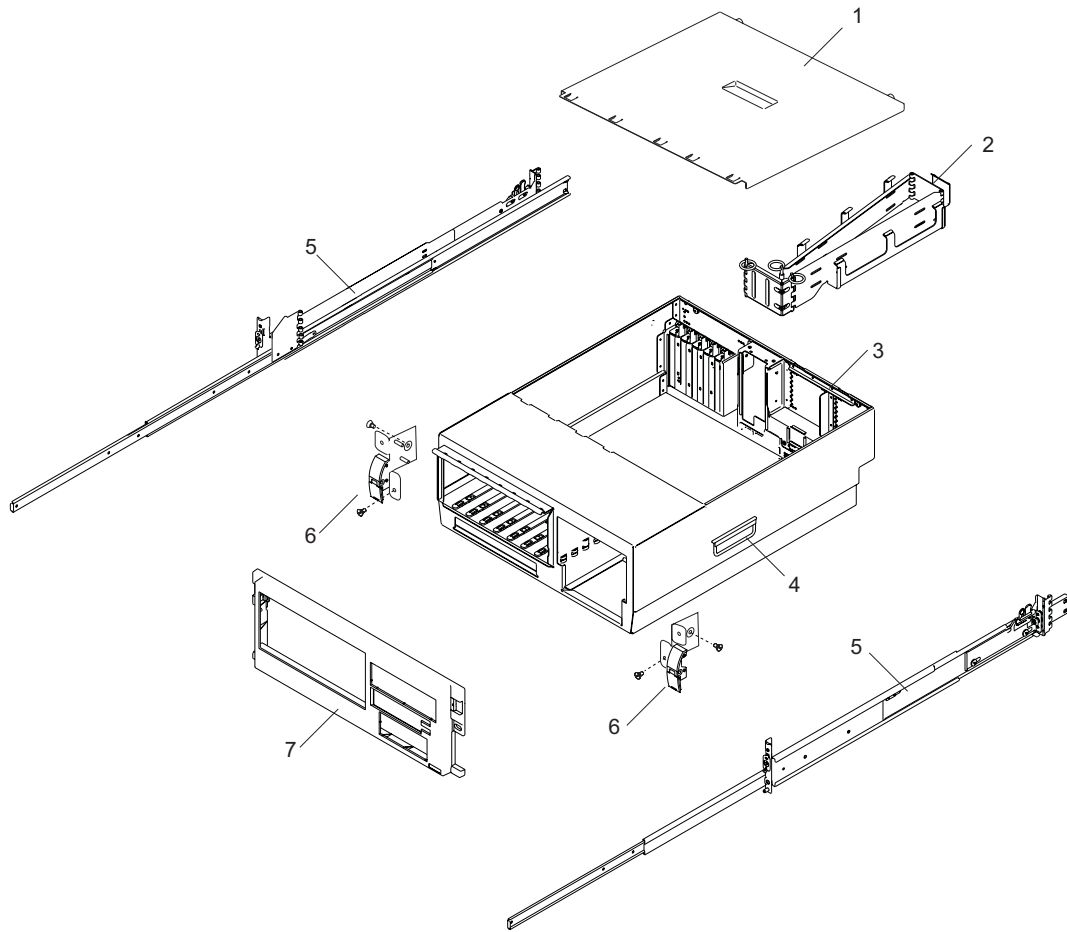
Index Number	Part Number	Units Per Assembly	Description
1	53P4402	1	Service Access Cover
2	97P2958	1	Cable Management Arm
3	53P4606	1	System Chassis
4	90H9196	3	System Handle
5		2	System Rails
	97P2529	2	Rail Kit
	97P3022		Right Rail Assembly
	97P3021		Left Rail Assembly
	7P28097		Guide Assembly
	0P25175		Slide Assembly
	97P2959		Rail Hardware
6		2	Rack Latch Bracket Assembly
	53P4517	1	Left Latch Bracket
	53P4519	1	Right Latch Bracket
7	53P4500	1	Front Cover

Model 6E3 Parts
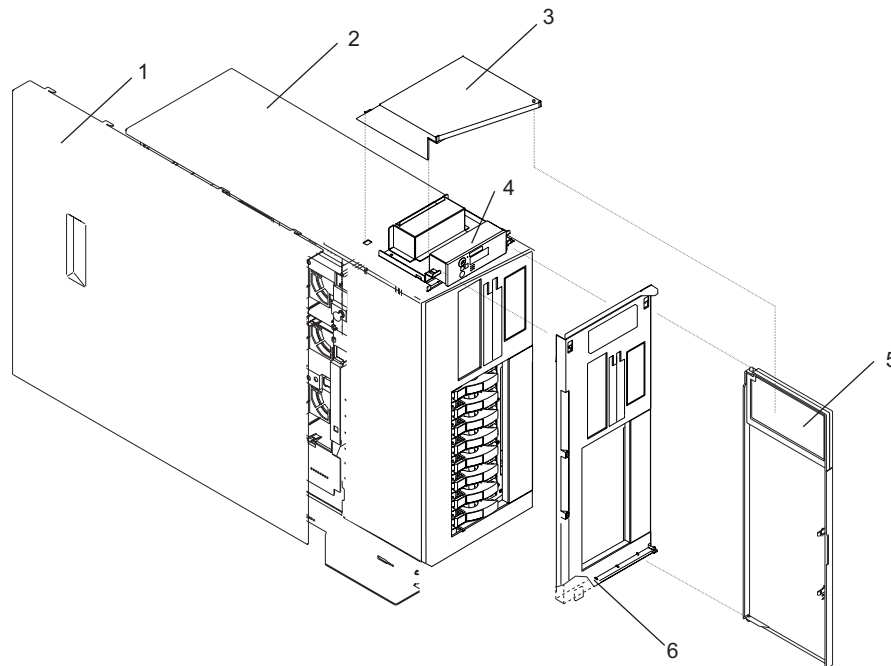
Index Number	Part Number	Units Per Assembly	Description
1	53P4402	1	Service Access Cover
2			Model 6E3
3	53P6139	1	Top Access Cover
4	53P6230	1	Operator Panel
5	53P6136	1	Front Bezel Door
6		1	Front Bezel

Internal Cables

The following diagram shows the system cable connections.
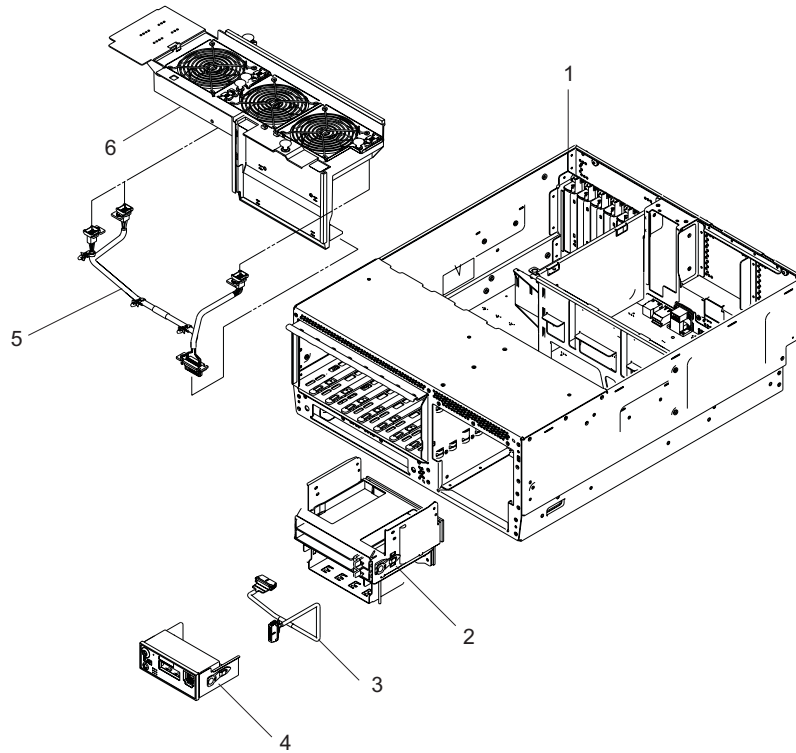
Index Number	FRU Part Number	Units Per Assembly	Description
1			System Unit
2	97P2313	1	Media Bay Chassis
3	53B4483	1	Operator Panel Power Cable
4	53P6230	1	Operator Panel
5	97P2342	1	Fan Cable
6	97P2304	1	Fan Tray

Power Cable
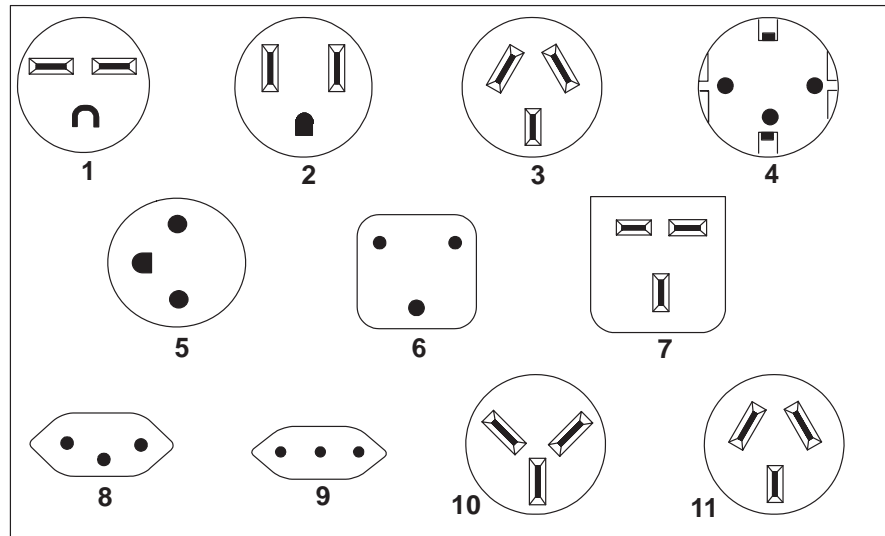
Index	Part Number	Country or Region
1	1838574	Bahamas, Barbados, Bolivia, Brazil, Canada, Costa Rica, Dominican Republic, El Salvador, Ecuador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Netherlands Antilles, Panama, Peru, Philippines, Taiwan, Thailand, Trinidad, Tobago, U.S.A. (except Chicago), Venezuela
2	86G7648	Bahamas, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Saudi Arabia, Suriname, Trinidad, Taiwan, U.S.A. (except Chicago), Venezuela
2	62X1045	Chicago, U.S.A.
3	6952311	Argentina, Australia, New Zealand
4	13F9979	Abu Dhabi, Austria, Belgium, Bulgaria, Botswana, China (Macau S.A.R), Egypt, Finland, France, Germany, Greece, Iceland, Indonesia, Korea (South), Lebanon, Luxembourg, Netherlands, Norway, Portugal, Saudi Arabia, Spain, Sudan, Sweden, Turkey, Yugoslavia
5	13F9997	Denmark
6	14F0015	Bangladesh, Burma, Pakistan, South Africa, Sri Lanka
7	14F0033	Bahrain, Bermuda, Brunei, Channel Islands, China (Hong Kong S.A.R), Cyprus, Ghana, India, Iraq, Ireland, Jordan, Kenya, Kuwait, Malawi, Malaysia, Nigeria, Oman, People's Republic of China, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Arab Emirates (Dubai), United Kingdom, Zambia
8	14F0051	Liechtenstein, Switzerland
9	14F0069	Chile, Ethiopia, Italy
10	14F0087	Israel
11	6952291	Paraguay, Colombia, Uruguay
	42F6841	AC Power Cable, (Power distribution bus to AC power supply, Model 6C3 only)

Keyboards and Mouse (White)
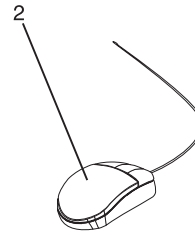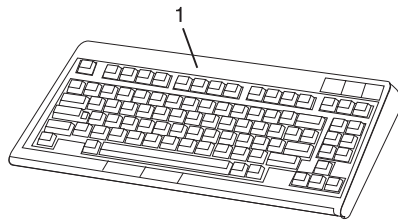
Index Number	Part Number	Units Per Assembly	Description
1	93H8120	1	Keyboard, 101 United States English (ID 103P)
	93H8123	1	Keyboard, 102 Spanish (ID 171)
	93H8125	1	Keyboard, 102 Arabic (ID 238)
	08L0904	1	Keyboard, 102 Belgium French (ID 120)
	08L0905	1	Keyboard, 102 Belgium (ID 120)
	08L0906	1	Keyboard, 102 Danish (ID 159)
	08L0908	1	Keyboard, 102 French (ID 189)
	08L0909	1	Keyboard, 102 German (ID 129)
	93H8134	1	Keyboard, 102 Greek (ID 319)
	93H8135	1	Keyboard, 101 Hebrew (ID 212)
	08L0911	1	Keyboard, 102 Italy (ID 142)
	08L0912	1	Keyboard, 102 Norwegian (ID 155)
	93H8143	1	Keyboard, 101 Russian (ID 443)
	08L0914	1	Keyboard, 102 Spanish (ID 172)
	08L0915	1	Keyboard, 102 Sweden/Finland (ID 153)
	08L0916	1	Keyboard, 105 Swiss F/G (ID 150)
	08L0917	1	Keyboard, 102 UK English (ID 166)
	93H8153	1	Keyboard, US English ISO9995 (ID 103P)
	93H8154	1	Keyboard, 106 Japan (ID 194)
	93H8155	1	Keyboard, 101 Chinese/US (ID 467)
	93H8156	1	Keyboard, 103 Korea (ID 413)
2	76H5084	1	Three Button Mouse

Keyboards and Mouse (Black)
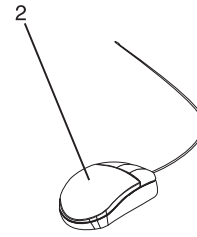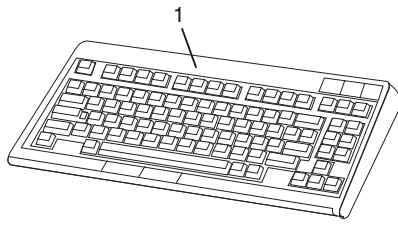
Index Number	Part Number	Units Per Assembly	Description
1	07L9446	1	Keyboard, 101 United States English (ID 103P)
	07L9447	1	Keyboard, 102 Canada French (ID 058)
	07L9448	1	Keyboard, 102 Canada French (ID 445)
	07L9449	1	Keyboard, 102 Spanish (ID 171)
	07L9450	1	Keyboard, 104 Brazil Portuguese (ID 275)
	07L9451	1	Keyboard, 102 Arabic (ID 238)
	07L9452	1	Keyboard, 102 Belgium French (ID 120)
	07L9453	1	Keyboard, 102 Belgium (ID 120)
	07L9454	1	Keyboard, 102 Bulgarian (ID 442)
	07L9455	1	Keyboard, 102 Czech (ID 243)
	07L9456	1	Keyboard, 102 Danish (ID 159)
	07L9457	1	Keyboard, 102 Dutch (ID 143)
	07L9458	1	Keyboard, 102 French (ID 189)
	07L9459	1	Keyboard, 102 German (ID 129)
	07L9460	1	Keyboard, 102 Greek (ID 319)
	07L9461	1	Keyboard, 101 Hebrew (ID 212)
	07L9462	1	Keyboard, 102 Hungarian (ID 208)
	07L9463	1	Keyboard, 102 Iceland (ID 197)
	07L9464	1	Keyboard, 102 Italy (ID 142)
	07L9465	1	Keyboard, 102 Norwegian (ID 155)
	07L9466	1	Keyboard, 102 Polish (ID 214)
	07L9467	1	Keyboard, 102 Portuguese (ID 163)
	07L9468	1	Keyboard, 102 Romainian (ID 446)
	07L9469	1	Keyboard, 101 Russian (ID 443)
	07L9470	1	Keyboard, 102 Serbian (ID 118)
	07L9471	1	Keyboard, 102 Slovak (ID 245)
	07L9472	1	Keyboard, 102 Spanish (ID 172)
	07L9473	1	Keyboard, 102 Sweden/Finland (ID 153)
	07L9474	1	Keyboard, 105 Swiss F/G (ID 150)
	07L9475	1	Keyboard, 102 Turkish (ID 179)
	07L9476	1	Keyboard, 102 Turkish (ID 440)
	07L9477	1	Keyboard, 102 UK English (ID 166)
	07L9478	1	Keyboard, 102 Latvia (ID 234)
	07L9479	1	Keyboard, US English ISO9995 (ID 103P)
	07L9480	1	Keyboard, 106 Japan (ID 194)
	07L9481	1	Keyboard, 101 Chinese/US (ID 467)
	07L9482	1	Keyboard, 103 Korea (ID 413)
	07L9483	1	Keyboard, 101 Thailand (ID 191)
2	08L0362	1	Three Button Mouse (Black)
	09P4455	1	Three Button Mouse (Black)

Appendix A. Environmental Notices

Product Recycling and Disposal

This unit contains materials such as circuit boards, cables, electromagnetic compatibility gaskets and connectors which may contain lead and copper/beryllium alloys that require special handling and disposal at end of life. Before this unit is disposed of, these materials must be removed and recycled or discarded according to applicable regulations. IBM offers product-return programs in several countries. For country specific instructions refer to the following web site: http://www.ibm.com/ibm/environment/products/prp.phtml

This product may contain a sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries, contact your local waste disposal facility.

In the United States, IBM has established a collection process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and other battery packs from IBM Equipment. For information on proper disposal of these batteries, please contact IBM at 1-800-426-4333. Have the IBM part number listed on the battery available prior to your call.

Environmental Design

The environmental efforts that have gone into the design of this system signify IBM's commitment to improve the quality of its products and processes. Some of these accomplishments include the elimination of the use of Class 1 ozone-depleting chemicals in the manufacturing process and reductions in manufacturing wastes. For more information, contact an IBM account representative.

Acoustical Noise Emissions

The equivalent continuous A-weighted sound pressure level at workstations (emission sound pressure level at the 1-meter bystander positions) does not exceed 70 dB(A).

Declared Acoustical Noise Emissions

Product Configuration	Declared A-Weighted Sound Power Level, *LWAd* (B)	
	Operating	**Idling**
6E3 (Deskside)	6.0	5.9
6C3 (Rack Drawer)	6.1	6.0

Notes:

1. ^{LWAd} is the declared (upper limit) sound power level for a random sample of machines. (1B = 10dB)

2. ^{LpAm} is the mean value of the A-weighted sound pressure level at the 1-meter bystander positions for a random sample of machines.

3. All measurements made in conformance with ISO 7779 and declared in conformance with ISO 9296.

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

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Appendix C. System Locations

Model 6C3

Front View

1	SCSI Media-Device Bay	**4**	Front Serial Port (RJ-45 Connector)
2	Slimline Media Bay	**5**	Operator Panel
3	Slimline Media Bay	**6**	Hot-Swap Disk Drives

Rear View
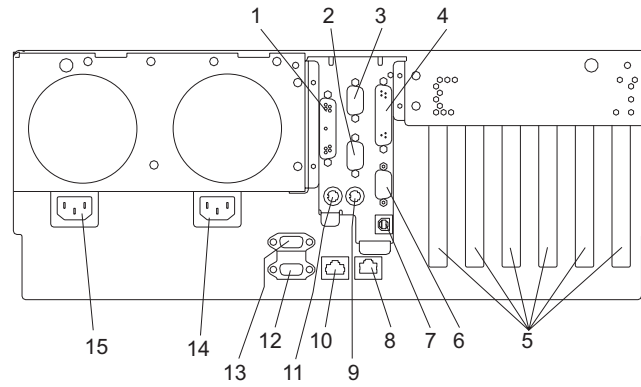
1 Parallel Connector	**9**	Mouse Connector
2 Serial Connector 3	**10**	10/100 Gb Ethernet Connector
3 Serial Connector 2	**11**	Keyboard Connector
4 Test Connector (For Manufacturing Use Only)	**12**	Hardware Management Console Connector 2
5 PCI-X Slot Access Locations	**13**	Hardware Management Console Connector 1
6 Serial Connector 1	**14**	Primary Power Supply V2 Receptacle
7 Rack Indicator Connector	**15**	Redundant Power Supply V1 Receptacle
8 1 Gb Ethernet Connector		

Model 6E3

Front View
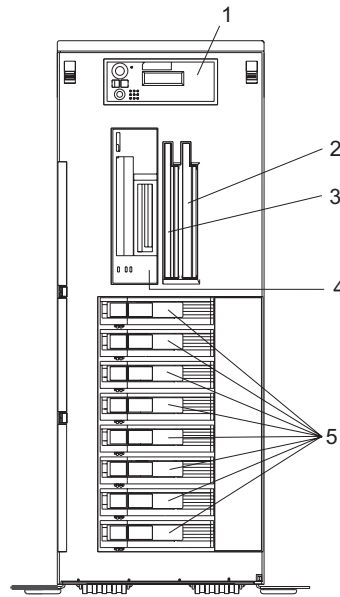
1 Operator Panel
2 Slimline Media Bay
3 Slimline Media Bay
4 SCSI Media-Device Bay
5 Hot-swap disk drives

Rear View
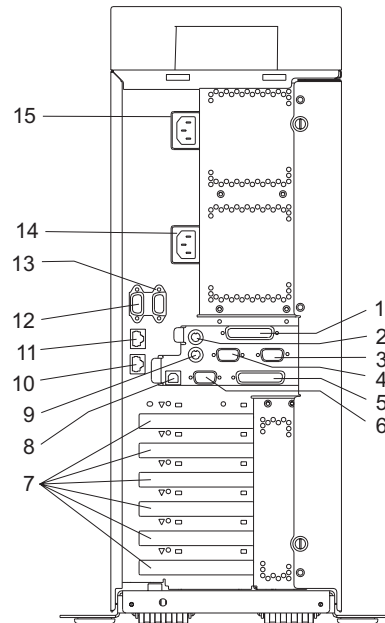
1	Parallel Connector	**9**	Mouse
2	Keyboard	**10**	1 Gb Ethernet Connector
3	Serial Connector 2	**11**	10/100 Gb Ethernet Connector
4	Serial Connector 3	**12**	Hardware Management Console Connector (HMC 2)
5	Test Connector (For Manufacturing Use Only)	**13**	Hardware Management Console Connector (HMC 1)
6	Serial Connector 1	**14**	Primary Power Supply V2 Receptacle
7	PCI-X Slot Access	**15**	Redundant Power Supply V1 Receptacle
8	Rack Indicator		

Power Supply Locations (Model 6C3 and Model 6E3)

Each power supply has three LEDs. The amber LED on the power supply indicates a problem with the power supply. If a power supply is diagnosed with a cooling problem, the entire power supply must be replaced.
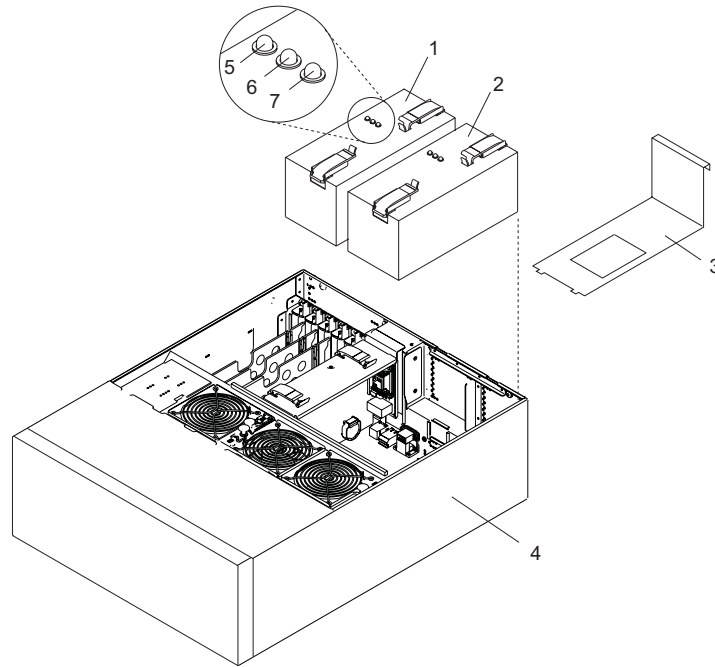
1 Primary Power Supply V2
2 Redundant Power Supply V1
3 Power Supply Filler (Required in place of redundant power supply)

4 System Unit (In Service Position)
5 Fault LED (Amber)
6 DC Good LED (Green)

7 AC Good LED (Green)

Fan Locations (Model 6C3 and Model 6E3)

The following illustration identifies the system cooling fans. Each fan has one green LED and one amber LED located on top of the fan. A lit amber LED indicates that the fan is not operating correctly.
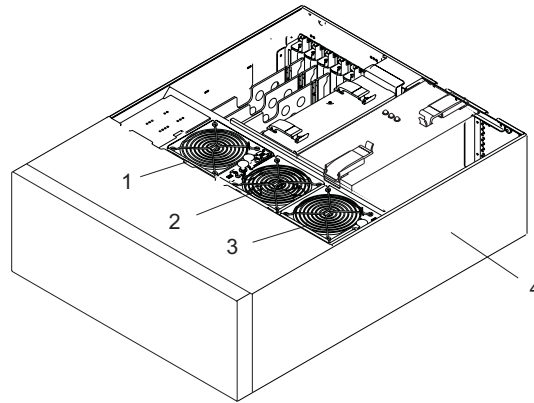
1 Cooling Fan 1   **3** Cooling Fan 3
2 Cooling Fan 2   **4** System Unit

System Backplane Locations (Model 6C3 and Model 6E3)

The following illustration of the system backplane identifies the primary connectors used in your system.

1 Media Backplane

2 Memory DIMM 5, J0A

3 Memory DIMM 6, J0B

4 Memory DIMM 7, J1A

5 Memory DIMM 8, J1B

6 DASD Backplane (Right)

7 (Reserved)

8 DASD Backplane (Left)

9 Memory DIMM 1, J3B

10 Memory DIMM 2, J3A

11 Memory DIMM 3, J2B

12 Memory DIMM 4, J2A

13 Redundant Power Supply V1
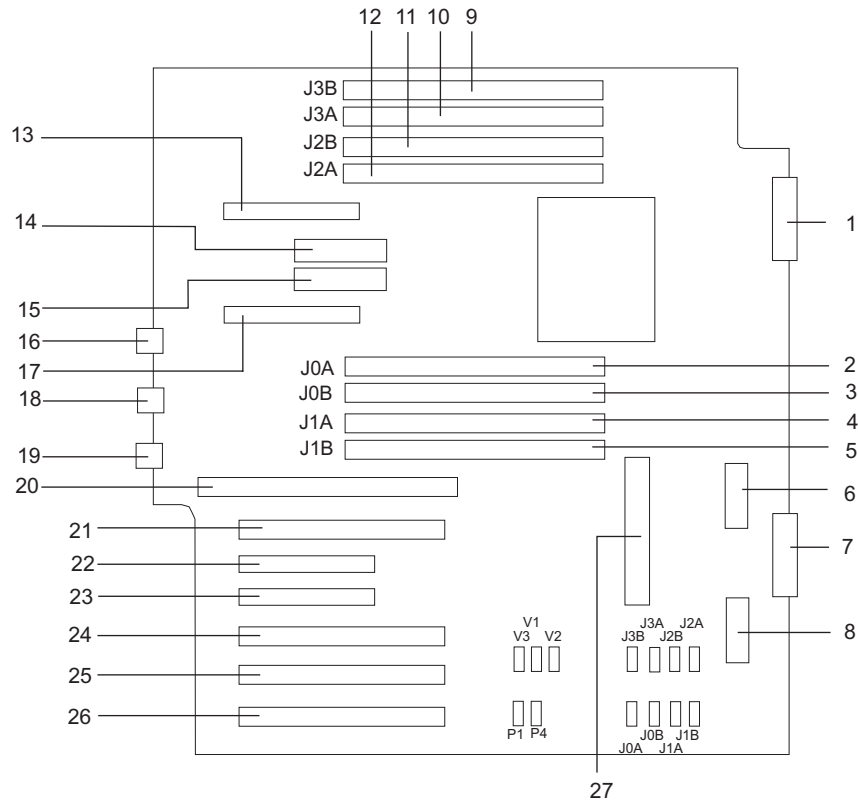
14 1.8V Voltage Regulator Module (V1)

15 2.5V Voltage Regulator Module (V2)

16 (Hardware Management Console)

17 Primary Power Supply V2

18 Ethernet #1 10/100

19 Ethernet #2 1GB

20 Service Processor Assembly

21 PCI-X Slot 1

22 PCI-X Slot 2

23 PCI-X Slot 3

24 PCI-X Slot 4

25 PCI-X Slot 5

26 PCI-X Slot 6

27 1.2V Voltage Regulator Module (V3)

PCI-X Slot Locations (Model 6C3 and Model 6E3)

Six PCI-X slots are available. Slots 1, 4, 5, and 6 are 64-bit capable at 133 MHz, 3.3 volts. Slots 2 and 3 are 32-bit capable at 66 MHz, 3.3 volts. All slots have hot-swap capabilities. The slots are numbered on the rear of the chassis from left to right, 1 through 6.

All PCI-X slots are capable of running either 64-bit or 32-bit adapters. However, a 32-bit adapter operates in a 32-bit mode and shows no performance advantage while running in a 64-bit slot. The following illustration shows the PCI adapter slot locations when viewing from the rear of the system.
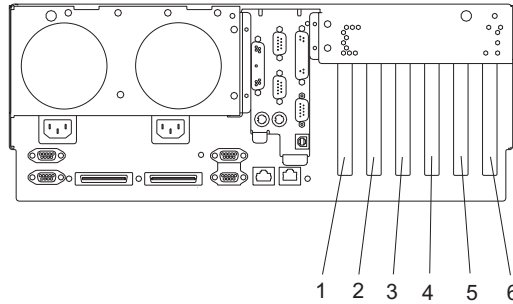
1	PCI-X Slot 1	**4**	PCI-X Slot 4
2	PCI-X Slot 2	**5**	PCI-X Slot 5
3	PCI-X Slot 3	**6**	PCI-X Slot 6

Memory DIMM Locations

The memory DIMMs used in the system are located on the system backplane. Your system contains 8 memory DIMM slots. Associated with each memory DIMM slot is an LED, which is located on the edge of the system backplane. A lit LED indicates a problem with a specific memory DIMM. For more information on the locations of the system LEDs, go to "System LED Locations" on page 98. The following rules must be followed when removing or installing memory DIMMs:

- Memory DIMMs must be installed in quads. However, you do not need to install four new DIMMs in a quad when you have a memory problem. Exchange each DIMM, starting the system after each change, until the faulty DIMM has been replaced.

  Notes:

  1. Memory DIMMs must be installed in quads and in the correct slots. A quad is a group of four memory DIMMs.
  2. Quads are populated in DIMM slots 1, 3, 6, 8 first, and then 2, 4, 5, 7. The only two valid slot combinations that you can use are 1, 3, 6, and 8 and 2, 4, 5, and 7.
  3. At least one quad of DIMMs is installed on the system backplane. See the following illustration.
  4. Each memory DIMM in a quad must be the same type and size. However, both quads on the system backplane are not required to be the same.

- The system must have at least four memory DIMMs installed (1 quad).

J3B (U0.1-P1-M1)
J3A (U0.1-P1-M2)
J2B (U0.1-P1-M3)
J2A (U0.1-P1-M4)

J0A (U0.1-P1-M5)
J0B (U0.1-P1-M6)
J1A (U0.1-P1-M7)
J1B (U0.1-P1-M8)

V1
V3 V2

J3A   J2A
J3B J2B

P1 P4

J0B   J1B
J0A   J1A
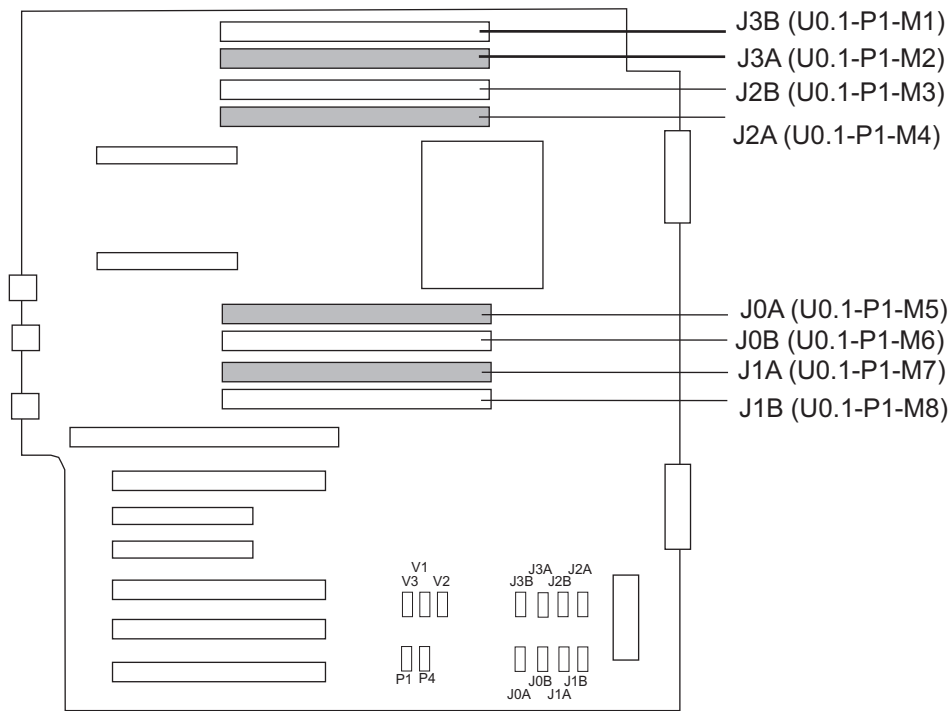
Number	Description	Location Code
M1	Memory slot 1 (J3B)	U0.1-P1-M1
M2	Memory slot 2 (J3A)	U0.1-P1-M2
M3	Memory slot 3 (J2B)	U0.1-P1-M3
M4	Memory slot 4 (J2A)	U0.1-P1-M4
M5	Memory slot 5 (J0A)	U0.1-P1-M5
M6	Memory slot 6 (J0B)	U0.1-P1-M6
M7	Memory slot 7 (J1A)	U0.1-P1-M7
M8	Memory slot 8 (J1B)	U0.1-P1-M8

Operator Panel Component Locations

The following illustration shows the component location on the operator panel.
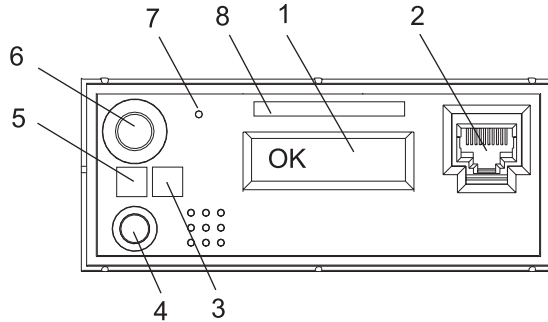
Number	Component Name	Component Description
1	Operator Panel Display	Displays current status of system startup, or diagnostic information in the event of a hardware problem.
2	Front Serial Connector (FS1) (Model 6C3 Only)	Serial port uses RJ-45 connector. Use to plug in external devices at the front of the system unit.
3	Attention LED	Normal State - LED is off
4	System Reset Button	Resets the system
5	Power LED	Blinking - When connected to the power source (System is in standby mode). Solid - When power-on button has been pressed. **Note:** There is approximately a 30-second transition period from the time the power-on button is pressed to when the power LED goes from blinking to on solid. During the transition period, you may observe the blinking intervals speed up.
6	Power-On Button	Turns the system power on and off.
7	Service Processor Reset Switch (Pinhole)	Service Personnel Use
8	Serial Number Label	Displays the system serial number

SCSI IDs and Bay Locations

The following illustrations show the SCSI bay locations for the @server pSeries 615 Model 6C3 and Model 6E3.

Note: One disk drive backplane is standard in the Model 6C3 and Model 6E3; a second backplane can be added. In the following figure, the systems are shown fully populated with two backplanes and eight disk drives.

Model 6C3

Index	Drive Name	SCSI ID	
1	Operator Panel		
2	Diskette Drive or IDE Optical Drive	Location code U0.1-P1-X1-D1 for a diskette drive or U0.1-P1-X1/Q6-A1 for an optical drive	
3	IDE CD-ROM (Default) or IDE DVD-ROM (Optional)	IDE (Non-SCSI) (U0.1-P1-X1/Q6-A0)	
4	Tape Drive (Optional)	SCSI ID 0	
	SCSI DVD-RAM (Optional)	SCSI ID 0	
5	Disk Drive 1	SCSI Bus 0	SCSI ID 3
6	Disk Drive 2		SCSI ID 4
7	Disk Drive 3		SCSI ID 5
8	Disk Drive 4		SCSI ID 8
9	Disk Drive 5	SCSI Bus 1	SCSI ID 3
10	Disk Drive 6		SCSI ID 4
11	Disk Drive 7		SCSI ID 5
12	Disk Drive 8		SCSI ID 8

Model 6E3

Index	Drive Name	SCSI ID	
1	Operator Panel		
2	Diskette Drive or IDE Optical Drive	Location code U0.1-P1-X1-D1 for a diskette drive or U0.1-P1-X1/Q6-A1 for an optical drive	
3	IDE CD-ROM (Default) or IDE DVD-ROM (Optional)	IDE (Non-SCSI)	
4	Tape Drive (Optional)	SCSI ID 0	
	SCSI DVD-RAM (Optional)	SCSI ID 0	
5	Disk Drive 1	SCSI Bus 0	SCSI ID 3
6	Disk Drive 2		SCSI ID 4
7	Disk Drive 3		SCSI ID 5
8	Disk Drive 4		SCSI ID 8
9	Disk Drive 5	SCSI Bus 1	SCSI ID 3
10	Disk Drive 6		SCSI ID 4
11	Disk Drive 7		SCSI ID 5
12	Disk Drive 8		SCSI ID 8

Notes:

1. The SCSI bus IDs are the recommended values and indicate how the IDs are set when the system is shipped from the factory. Field installations might not comply with these recommendations.
2. Media bay location D02 is designed to house one of the following optional devices:
   - IDE Optical Drive
   - Diskette Drive

   Any SCSI device used in media bay location D04 must be connected to a PCI SCSI adapter.

System LED Locations

The following illustration shows the system LED locations for the @server pSeries 615 Model 6C3 and Model 6E3. Pointers in the illustration to grey dots represent amber LEDs. Pointers to black dots represent green LEDs.

Front View

Rear View

Top View

● = Green LED
○ = Amber LED
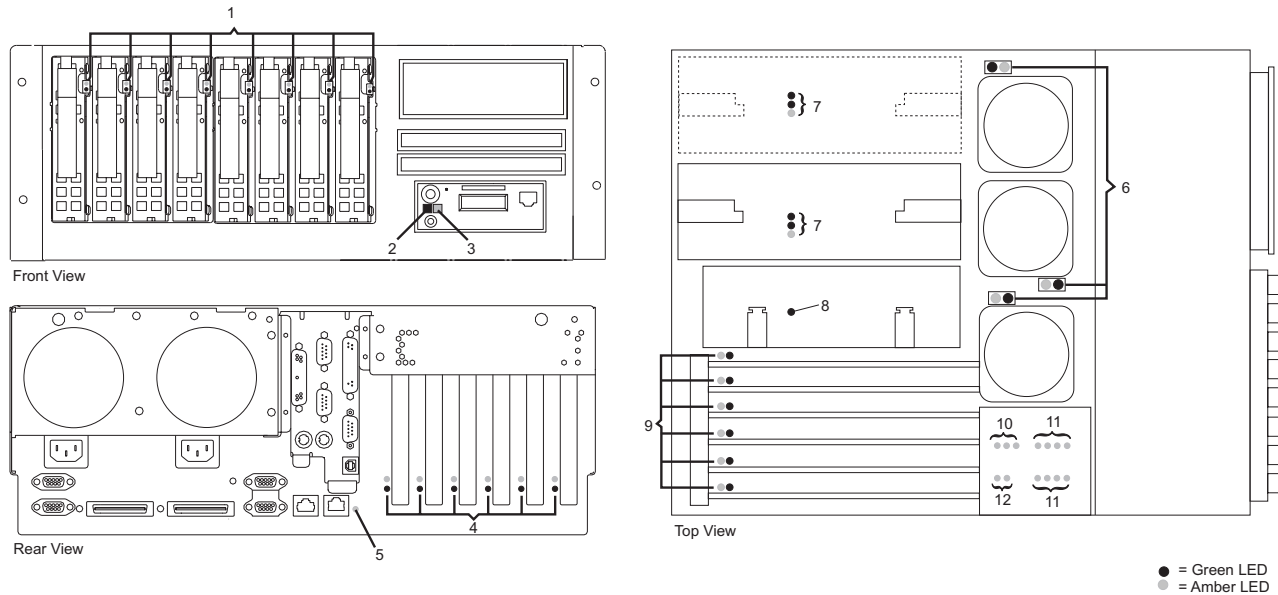
1	Disk Drive LEDs	**7**	Power Supply LEDs
2	Power LED	**8**	Service Processor Assembly LED
3	System AttentionLED	**9**	PCI Adapter LEDs
4	PCI Adapter LEDs	**10**	Voltage Regulator Modules LEDs
5	System Attention LED	**11**	Memory DIMM LEDs
6	Fan LEDs	**12**	Backplane LEDs

Appendix D. Component and Attention LEDs

This chapter contains information about component LEDs, which assist in identifying failing components in your system.

The LEDs are located either on the component itself or on the carrier of the component (for example, memory card, fan, memory module, CPU). LEDs are either green or amber.

Green LEDs indicate either of the following:
- Electrical power is present.
- Activity is occuring on a link. (The system could be sending or receiving information.)

Amber LEDs indicate a fault or identify condition. If your system or one of the components on your system has an amber LED turned on or blinking, identify the problem and take the appropriate action to restore the system to normal.

The following table identifies the location, color and status of your system component LEDs.

Unit (FRU)	LED Function	Location	Viewable Location	LED Color	OFF	ON	Blink
Power and Packaging LEDs							
System	Attention	Operator Panel and Rear	External Front and Rear	Amber	Normal	Fault	Identify
	Power			Green	No ac	System On	Standby
Fan	Identify	Part	Internal	Amber	Normal	N/A	Identify
Power Supply	AC Input Good	Part	External	Green	No Input	Input Good	N/A
	Fault /Identify	Part	External	Amber	Normal	Fault	1. Identify 2.Comm. Fault
	DC Output Good	Part	External	Green	All Pwr Sup Outs Off	All PS Outputs On	Blinj if PS micro or comm link failed
Disk Drives	Activity	DASD can	External	Green	No Activity	N/A	Activity
	Identify	DASD can	External	Amber	Normal	N/A	Identify
CARD LEDs							
PCI Slots	Power	Socket	External	Green	Off	Power	N/A
	Identify	Socket	External	Amber	Normal	N/A	Identify
Memory DIMMs	Identify	Memory Connector	Internal Only	Amber	Normal	N/A	Identify
System Backplane	Identify	Planar	Internal Only	Amber	Normal	N/A	Identify
DASD Backplane	Identify	Card	Internal	Amber	Normal	N/A	Identify
Media Backplane	Identify	Card	Internal	Amber	Normal	N/A	Identify
Service Processor Card	Identify	Card	Internal	Amber	Normal	N/A	Identify

Unit (FRU)	LED Function	Location	Viewable Location	LED Color	OFF	ON	Blink
Power and Packaging LEDs							
Voltage Regulator Module	Identify	Card	Internal	Amber	Normal	N/A	Identify

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Readers' Comments — We'd Like to Hear from You

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Your Guide to Removing, Replacing, and Installing Parts

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