Bull ESCALA PL420T & PL420R

Installation Guide

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Installation Guide

Hardware

February 2003

Suggestions and criticisms concerning the form, content, and presentation of this book are invited. A form is provided at the end of this book for this purpose.

To order additional copies of this book or other Bull Technical Publications, you are invited to use the Ordering Form also provided at the end of this book.

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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:

- iv
- 1-4
- 3-1
- 3-68

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:

- iv
- 1-4
- 1-14
- 1-17
- 1-33
- 3-1
- 3-64

Note: For a translation of these notices, see *System Unit Safety Information*, order number 86 X1 11WD.

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 capability of having two power supplies running simultaneously in the same I/O drawer or 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.

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.

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

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.

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 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.

Data Integrity and Verification

These 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 our support websites for updated information and fixes applicable to the system and related software.

About This Book

This book provides information about the PL420R and PL420T, specifically how to set up and cable the system, install and remove options, and verify system operations. PL420R is a rack mount system. PL420T is a deskside 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.

References to AIX Operating System

Note: 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 *PL420R and PL420T User's Guide*, order number 86 A1 41EG, contains information to help users use the system, use the service aids, and solve minor problems.

- The *PL420R and PL420T Service Guide*, order number 86 A1 42EG, contains reference information, maintenance analysis procedures (MAPs), error codes, removal and replacement procedures, and a parts catalog.

- The *Diagnostic Information for Multiple Bus Systems*, order number 86 A1 26HX , contains diagnostic information, service request numbers (SRNs), and failing function codes (FFCs).

- The *Adapters for Multiple Bus Systems*, order number 86 A1 27HX, contains information about adapters, devices, and cables for your system. This manual is intended to supplement the service information found in the *Diagnostic Information for Multiple Bus Systems*.

- The *Hardware Management Console Operations Guide*, order number 86 A1 83EF, contains information about using a hardware management console to manage a system.

- The *Site Preparation Guide for Rack Systems*, order number 86 A1 30PX, contains information to help you plan your installation for the rack systems.

- The *System Unit Safety Information*, order number 86 X1 11WD, contains translations of safety information used throughout this book.

- The *T00 and T42 Installation and Service Guide*, order number 86 A1 94KX, contains information regarding the Model T00 and T42 Rack, in which this system may be installed.

Table of Contents

Chapter 1. Setting Up the System

To set up your system, follow the procedures in this chapter.

Step 1. Check Your Inventory

PL420R and PL420T

- Books, CD–ROM and Other Media

- "About Your Machine" Document

- Power Cables (1 standard, 2 optional)
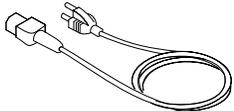
- 9–Pin to 25–Pin Serial Converters (2) (optional)
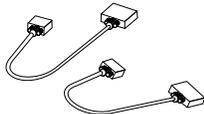
- ASCII Terminal (optional)
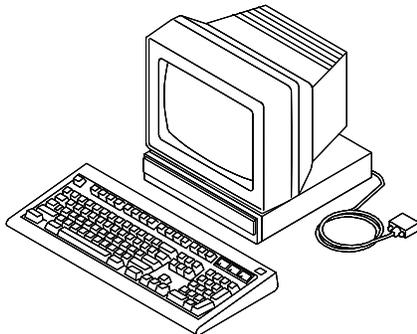
- Display, Cable (optional), and Cable Toroid (optional)
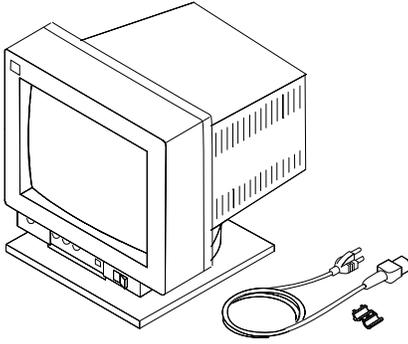
- Keyboard (optional), Wrist/Palm rest (optional)
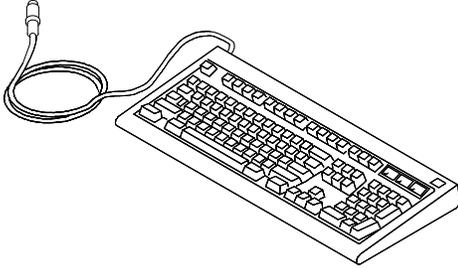
- Mouse (optional)
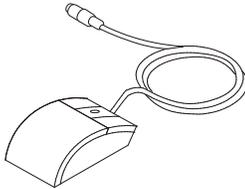
- PL420R
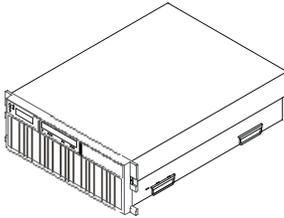
- PL420T
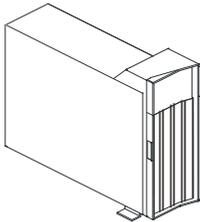
PL420R (Rack Mount) Only

- Rack–Mounting Template

- 2 Slide Rail Assemblies
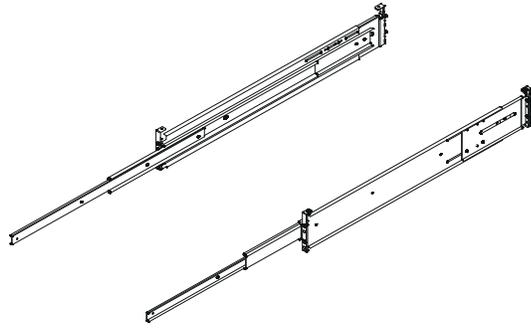
- Rack–Mounting Kit contains:

  – 8 system to rail screws

  – 8 rail to rack screws

  – 2 nut clips

  – 2 latch–mounting brackets

  – 2 system–retaining thumbscrews

  – alignment pin bracket kit

  – 8 assorted alignment pins

  – 1 strip of self–adhesive placement dots
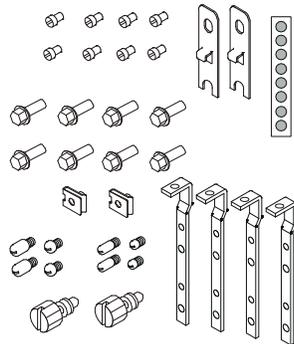
- Cable Management Arm
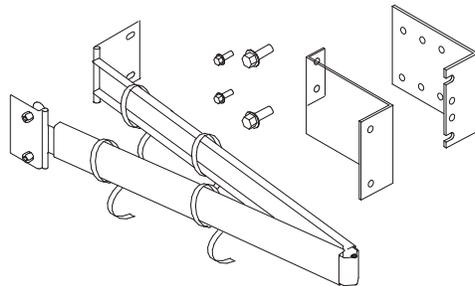
- RJ–48 to 9–Pin Converter Cable (1)
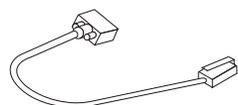
Step 2. Need Help?

If you encounter difficulties while setting up your system unit, contact your sales representative for assistance.

Step 3. Read the Safety Notices

Before continuing, read the following safety information. Do not plug any cables into the system, adapters, or electrical outlets until you have reviewed this information. Make sure none of the power cables are connected before continuing to the next step.

In the system you are about to set up:

- The ac power–interface connector is considered the main power disconnect device.

- This system has redundant power supply capabilities. Meaning your system has the capability of running two power supplies simultaneously. 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.

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.

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

Step 4. Are You Installing a PL420R (Rack Mount) or a PL420T (Deskside)?
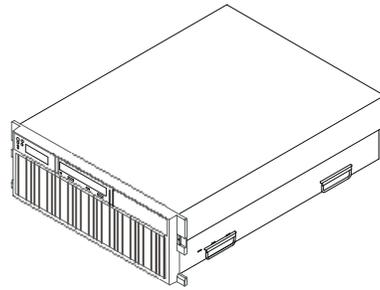
Model PL420R
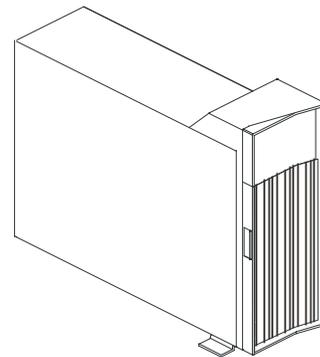
Model PL420T

- If you are installing a PL420R, continue to Step 5. Read the Rack Safety Instructions on page 1-5.

- If you are installing a PL420T, continue to Step 10. Are All of the Internal Options Installed? on page 1-23.

Step 5. Read the Rack Safety Instructions

Before continuing, make sure you review the following instructions for mounting the system drawer into the rack. If the system drawer was shipped already mounted in a rack, go to Chapter 3. Installing Options In the PL420R and PL420T.

Rack Safety Instructions

- Do not install this unit in a rack where the ambient temperatures will exceed 35 degrees C.

- Do not install this unit in a rack where the airflow is compromised. Any side, front or back of the unit used for airflow through the unit must not be in indirect contact with the rack.

- 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.

- Consider the connection of the equipment to the supply circuit so that the overloaded circuits do not compromise the supply wiring or over–current protection.

- 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.

When installing the PL420R, you will need the following items:

- Rack–Mounting Template

- 2 Slide Rail Assemblies

- Cable Management Arm

- Rack–Mounting Kit Envelope

- Screwdriver or similar tool (if available)

Step 6. Is Your PL420R Preinstalled into a Rack?

If your PL420R has not been preinstalled into a rack, go to Step 7. Attach the Mounting Hardware to the Rack Enclosure on page 1-7. If your PL420R has been preinstalled into a rack, remove the shipping bracket.

To remove the shipping bracket from the PL420R, do the following:

1. Remove the eight thumbscrews from the shipping bracket.

2. Remove the two rail–retaining screws that secure the shipping bracket to the rack EIA rails.

3. After you remove the shipping bracket, reinstall the two rail–retaining screws.

4. When necessary, reinstall the shipping bracket when moving the system.
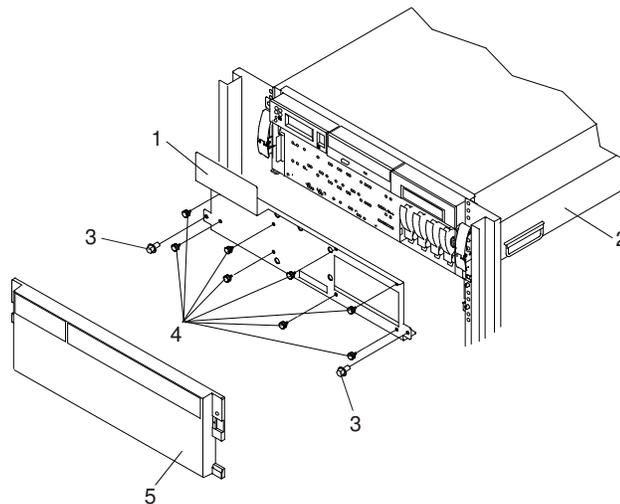
1 Shipping Bracket

2 PL420R

3 Rail–Retaining Screw

4 Shipping Bracket Retaining Screws

5 Front Bezel

5. Install the front bezel.

6. Go to Step 10. Are All of the Internal Options Installed? on page 1-23.

Step 7. Attach the Mounting Hardware to the Rack Enclosure

Before performing this procedure, read through each step and study the illustrations.

Attention: Mounting the rails is a complex procedure. To install the rack rails correctly, you must read, and then perform each procedure step in the order given. Failure to perform each step in the order given may cause rail failure.

To install the rack–mounting hardware into the rack, do the following:

1. Locate the rack–mounting hardware kit, rack–mounting template, and the system rails that were shipped with your system.
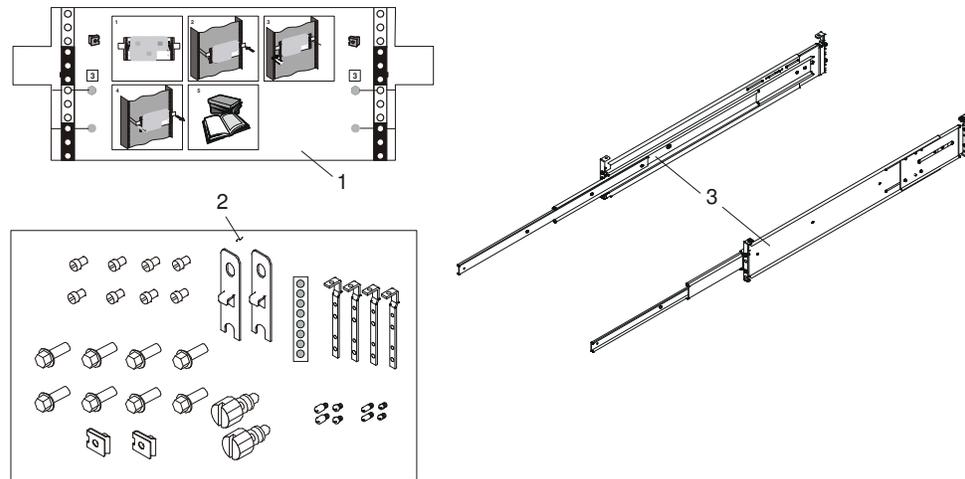
   1 Rack–Mounting Template

   2 Rack–Mounting Hardware Kit

   3 System Rail Assemblies

Notes:

a. The system rails are front–to–back and left–to–right side dependent when you are standing in the front of and facing the rack. The rails are labeled on the front lower corner, left or right. The back of the rails can be identified by the two large alignment pins and the rail–length adjusting plate. The top of the rails can be identified by the screws located on the top of the front and rear rail flange. See the following illustration.

b. The rack–mounting hardware kit has four changeable rail–alignment brackets and two sets of alignment pins. If the alignment pins that came adjoined to the rails do not fit your rack, remove the brackets from the rails. To remove the alignment–pin bracket from each of the rails, do the following:

   i. Remove the screw located on top of the rail–bracket assembly.

   ii. Slide the top of the alignment pin bracket from beneath the front–rail bracket.

   iii. Lift the bottom tab out of the front–rail bracket slot.

   After determining the correct size alignment pin to use, mount the alignment pins onto the replacement brackets. Install the replacement brackets onto the rails. Rail bracket assembly is the reverse of the removal procedure.

c. Always mount the brackets that contain the short alignment pins onto the front of the rail.
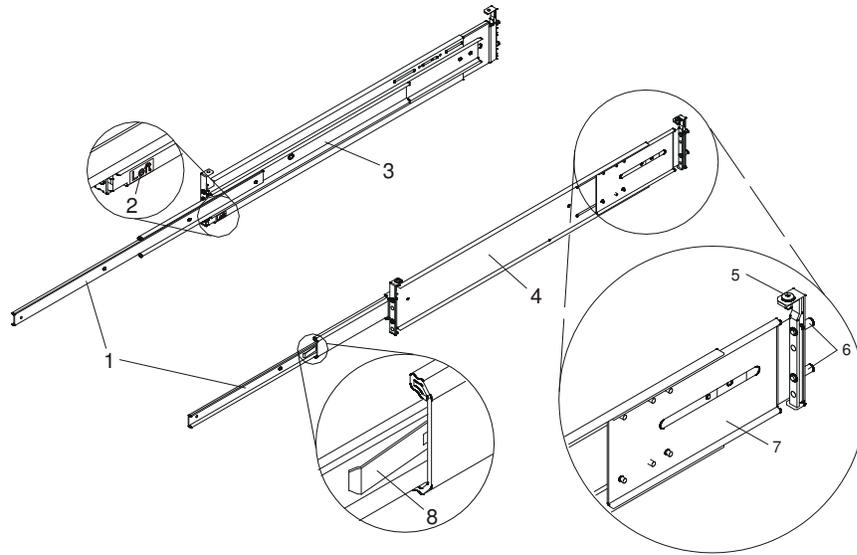
1	Left and Right Inner Rails	**5**	Top–Rail Flange Screw (Rear)
2	Left Rail Label	**6**	Rear–Rail Alignment Pins
3	Left Rail Assembly	**7**	Rail–Length Adjusting Plate
4	Right Rail Assembly	**8**	Inner–Rail Safety Release Latch

2. Remove the front rack door, and if necessary, remove the rear rack door. For T00 and T42 racks, refer to , order number 86 A1 94KX, for information about removing the rack doors.

3. If you do not have a rack–mounting template, go to step 4. Using the rack–mounting template, determine where in the rack to place the system. Make note of the Electronics Industries Association (EIA) location number.

   Note: The rack–mounting template has printed illustrations located on the front of the template. Each illustration is designed to aid in identifying the EIA location holes used when planning to populate your rack. *Do not* use the rack–mounting template without reading and understanding the following substeps. Each step must be completed in its entirety.

   Attention: Mounting the rails is a complex procedure. To install the rack rails correctly, you must read, and then perform each procedure step in the order given. Failure to perform each step in the order given may cause rail failure.

4. Note the following when using the rack–mounting template:

   – Each black or white unit on the template is equal to 1 EIA section.

   – Each EIA unit consists of three holes.

   – The EIA sections illustrated on the template must be aligned with an EIA sections located on the rack.

– It is not necessary to align like–colored EIA sections. For example, a black EIA unit illustrated on the rack–mounting template does not have to be aligned with a black EIA unit located on the rack. A black EIA unit on the rack–mounting template can be aligned with a white EIA unit located on the rack. See the following illustration.
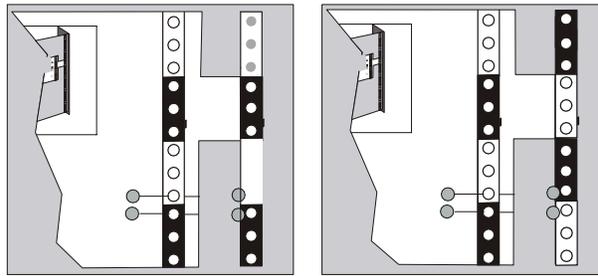
To use the rack mounting template, do the following:

a. Remove the protective coating from each adhesive strip located on the back of the rack–mounting template. Lightly press the template into position on the rack. Ensure that both the left and right sides are at the corresponding EIA locations.

b. Install the nut clips into the holes as indicated by the template. The nut clips aid in securing the system drawer to the rack while in transit.

Note: Whenever a populated rack is being moved, secure your system drawers with two retaining thumbscrews threaded through the nut clips. This action secures the system front bezel and system chassis to the rack.
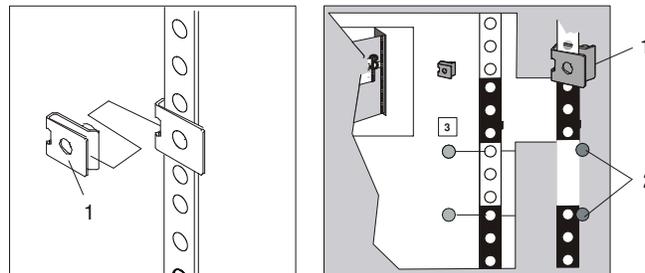
1 Nut Clip   **2** Self–Adhesive Dots

c. Locate the four dots, two printed on each side of the template. Place a self–adhesive dot directly across from the template's printed dots on or near the rack's EIA numbering strip. You will be using these dots to aid in correctly positioning the rail–alignment pins located on the front of each rail.

d. Remove the rack–mounting template from the front of the rack. The front of your rack should now contain two nut clips and four self–adhesive dots.

e. Mount the rack–mounting template to the rack's rear EIA flange. Place the rack–mounting template at the same EIA numbered location that was used on the front of the rack.

f. Wrap a self–adhesive dot directly across from the template's printed dots. Ensure that a portion of the self–adhesive dot wraps around the rack's flange so that it can be seen from the front of the rack.

g. Do not install any nut clips on the rack's rear flange as indicated by the rack mounting template.

h. Remove the rack–mounting template from the rear of the rack. The rear of your rack should now contain four self–adhesive dots that have been partially wrapped around the rack's rear flanges.

i. Continue to step 5.

The following illustration shows one EIA unit and four EIA units. Depending on the rack manufacturer, the EIA units may be separated either by color or by a line. Note the holes along the rail are not evenly spaced. If your rack has no color or line separation between EIA units, assume that each EIA unit begins where the hole spacing is closest together.
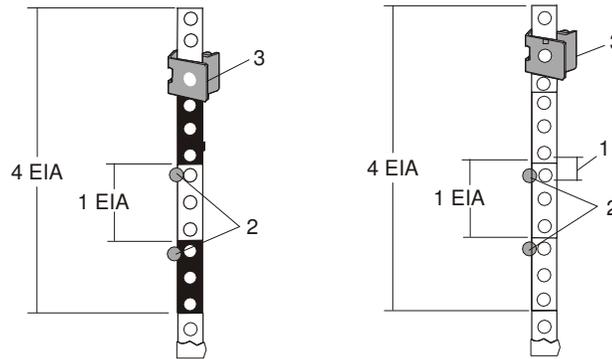
1	Self–Adhesive Dot Placement	**3**	Nut Clip
2	EIA Unit Hole Spacing		

5. If you do not have a rack–mounting template, do the following:

   a. Determine where in the rack to place the system. The system you are about to install measures 4 EIA units high. Make note of the EIA location number.

      Note: An EIA unit on your rack consists of a grouping of three holes.

   b. Facing the front of the rack and working from the right side, place a supplied self–adhesive dot next to the top hole of the bottom EIA unit.

      Note: The self–adhesive dots are used to aid in identifying locations on the rack. If you no longer have any of the dots, use some other form of marking tool to aid you in identifying hole locations (for example, tape, a marker, or pencil).

   c. Place another self–adhesive dot next to the top hole of the above EIA unit.

      Note: If you are counting the holes, begin with the hole identified by the first dot and count up four holes. Place the second dot next to the fourth hole.

   d. Secure a nut clip to the rack, four holes up from the top dot (bottom hole of the top EIA unit). The nut clip aids in securing your system drawer to the rack while in transit.

      Notes:

      i. If you are counting the holes, begin with the hole identified by the top dot and count up four holes. Place the nut clip next to the fourth hole.

      ii. Whenever a populated rack is being moved, secure the system drawers with two retaining thumbscrews threaded through the nut clips. This action secures the system front bezel and system chassis to the rack.

      iii. When counting from the nut clip to the bottom dot, there is an 8–hole span .

   e. Repeat substeps a through d to corresponding holes located on the left side of the rack.

6. Before installing the system rail assemblies into your rack, you must first determine the type of system rail assembly shipped with your PL420R. To determine the system rail assembly type, do the following:

   a. Unpack the system rail assemblies.

b. Fully extend the inner and middle rail sections of each rail assembly.

c. Does the middle rail section of each system rail assembly have a retaining screw clearance hole drilled through it as shown in the following illustration? If so, go to System Rail Assembly (Type 1) on page 1-12.
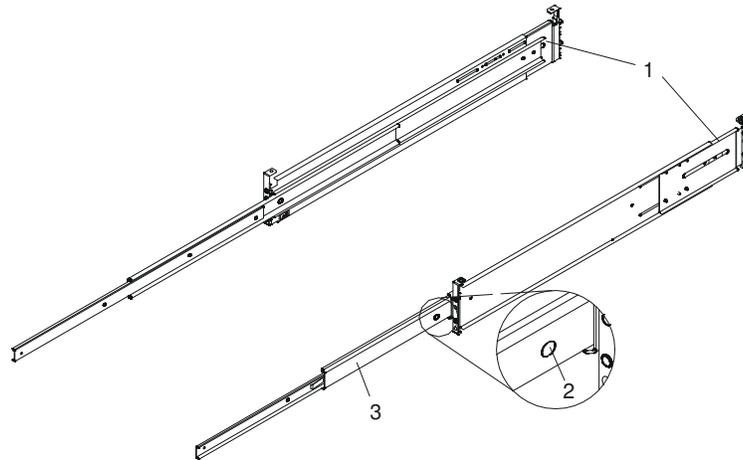
1	System Rail Assembly (Type 1)	**3**	Middle Rail Section
2	Rail to System Retaining Screw Clearance Hole		

d. Go to System Rail Assembly (Type 2) on page 1-15 if your system rail assemblies *do not* have a clearance hole drilled through the middle rail section, as shown in the following illustration.
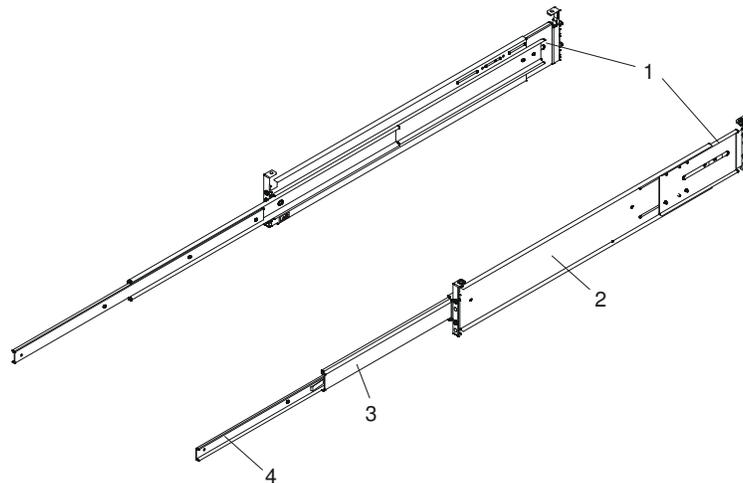
1	System Rail Assembly (Type 2)	**3**	Middle Rail Section
2	Outer Rail Section	**4**	Inner Rail Section

System Rail Assembly (Type 1)

Attention: Mounting the rails is a complex procedure. To install the rack rails correctly, you must read, and then perform each procedure step in the order given. Failure to perform each step in the order given may cause rail failure.

To install the system rail assembly (type 1), do the following:

1. Select the right slide rail.
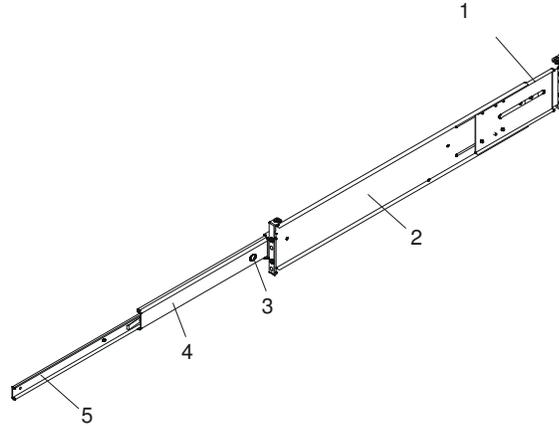
1	Right Rail Assembly (Type 1)	**4**	Middle Rail Section
2	Outer Rail Section	**5**	Inner Rail Section
3	Rail to System Retaining Screw Clearance Hole		

> **Note:** The system rails are front–to–back and left–to–right side dependent when you are standing in the front of and facing the rack. The rails are labeled on the front lower corner, left or right. The back of the rails can be identified by the two large alignment pins and the rail–length adjusting plate. The top of the rails can be identified by the screws located on the top of the front and rear rail flange.

2. Position yourself at the front of the rack.

3. Facing the rack, insert the rail's rear–alignment pins into the rack's rear flange holes identified by the self–adhesive placement dots previously installed.

4. Insert the rail's front–alignment pins into the rack front flange holes identified by the self–adhesive placement dots previously installed. Ensure that the EIA location is the same from front to back and the rails are level from front to rear.

5. Loosely thread one of the rail–retaining screws into the rail's bottom screw hole. The screw hole is located one position below the bottom alignment pin.

6. Locate one of the latch brackets, and place the bottom slot of the latch bracket over the rail–retaining screw.

1 Front Slide Rail Alignment Pin

2 Retaining Screws

3 Latch Bracket

7. Finger–tighten a second retaining screw through the top screw hole of the latch bracket. After the latch bracket is in place, ensure that both screws are finger–tight.

    Attention: Do not tighten any of the screws more than finger–tight until instructed to do so. Tightening the screws prevents the rails from self–aligning when the system drawer is attached.

8. Go to the back of the rack.

9. Loosen, but *do not remove*, the six retaining screws that secure the rail–length adjusting plate to the rail.

    Note: The rail–length adjusting plate should not move freely when loosened.

1 Rail–Length Adjusting Plate

2 Retaining Screws for Rail–Length Adjusting Plate

10. Facing the back of the rack, ensure that the right rail's two alignment pins are positioned in the correct EIA unit's holes. Use two rack retaining screws to attach the rail brackets to the rack flanges. Finger–tighten both screws.

11. Using a screwdriver, tighten the six screws that secure the rail–length adjusting plate.

    1 Rail Assembly (Labeled "Left" in the Front Lower Corner)

    2 Rack to Cable Management Arm Bracket

    3 Top Rear Alignment Pin

    4 Bottom Screw

    5 Top Screw

12. Locate the bracket that attaches the cable management arm to the rack flange.

13. Repeat substeps 1 through 11 when installing the left rail.

14. Position the bracket's bottom hole over the rail's top alignment pin.

    Note: The bracket's bottom slot should now align with the top screw hole of the rail flange.

15. Attach a second retaining screw through the screw hole located below the top alignment pin. Finger–tighten the screw.

16. Using a screwdriver, tighten the six screws that secure the rail–length adjusting plate.

17. After both rails have been installed, ensure that none of the rail's front retaining screws are more than finger–tight. The rails must be level from front to back and from left to right.

18. The rails are now completely installed. All screws used to attach the rails to the rack must be finger–tight only.

    Notes:

    a. Both slide rails *must* be completely retracted into the rack.

    b. The rails *must* be level from front to back and from left to right.

19. Read and understand the following caution notices, then go to Step 8. Install the PL420R into the Rack Enclosure on page 1-18.

    Caution:
    The stabilizer must be firmly attached to the bottom rear of the rack to prevent the rack from turning over when the drawers are pulled out of the rack. Do not pull out or install any drawer or feature if the stabilizer is not attached to the rack.

    Caution:
    This unit weighs between 32 kg (70.5 pounds) and 55 kg (121.2 pounds). Three persons are required to safely move it. Using less than three persons to move it can result in injury.

System Rail Assembly (Type 2)

Attention: Mounting the rails is a complex procedure. To install the rack rails correctly, you must read, and then perform each procedure step in the order given. Failure to perform each step in the order given may cause rail failure.

To install the system rail assembly (type 2), do the following:

1. Beginning with the right slide rail, remove the right inner rail, as shown in the following illustration.
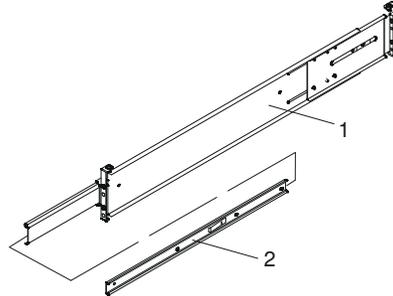
    1 Right Outer Rail Assembly

    2 Right Inner Rail

2. Position yourself at the front of the rack.

3. Facing the rack, note the EIA position of the previously installed self–adhesive dots. Insert the rail's rear–alignment pins into the corresponding EIA unit holes located on the rear flange.

4. Insert the rail's front–alignment pins into the rack front flange holes that have been identified by the self–adhesive placement dots. Ensure that the EIA location is the same from front to back.

5. Loosely thread one of the rail–retaining screws into the rail's bottom screw hole. The screw hole is located one position below the bottom alignment pin.

6. Locate one of the latch brackets, and place the bottom slot of the latch bracket over the rail–retaining screw. Finger–tighten the screw.

1 Front Slide Rail Alignment Pin

2 Retaining Screws

3 Latch Bracket

7. Finger–tighten a second retaining screw through the top screw hole of the latch bracket. After the latch bracket is in place, ensure that both screws are finger–tight.

   Attention: Do not tighten any of the screws more than finger–tight until instructed to do so. Tightening the screws prevents the rails from self–aligning when the system drawer is attached.

8. Go to the back of the rack.

9. Loosen, but *do not remove*, the six retaining screws that secure the rail–length adjusting plate to the rail.

   Note: The rail–length adjusting plate should not move freely when loosened.

1 Rail–Length Adjusting Plate

2 Retaining Screws for Rail–Length Adjusting Plate

10. Facing the back of the rack, ensure that the right rail's two alignment pins are positioned in the correct EIA unit's holes. Use two rack retaining screws to attach the rail brackets to the rack flanges. Finger–tighten both screws.

11. Using a screwdriver, tighten the six screws that secure the rail–length adjusting plate.

12. Locate the bracket that attaches the cable management arm to the rack flange.

13. Repeat substeps 1 through 11 when installing the left rail.
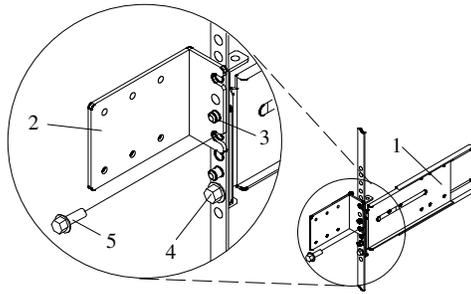
1 Rail Assembly (Labeled "Left" in the Front Lower Corner)
2 Rack to Cable Management Arm Bracket
3 Top Rear Alignment Pin
4 Bottom Screw
5 Top Screw

14. Position the bracket's bottom hole over the rail's top alignment pin.

   Note: The bracket's bottom slot should now align with the top screw hole of the rail flange.

15. Attach a second retaining screw through the screw hole located below the top alignment pin. Finger–tighten the screw.

16. Using a screwdriver, tighten the six screws that secure the rail–length adjusting plate.

17. After both rails have been installed, ensure that none of the rail's front retaining screws are more than finger–tight. The rails must be level from front to back and from left to right.

18. The rails are now completely installed. All screws used to attach the rails to the rack must be finger–tight only.

   Notes:

   a. Both slide rails *must* be completely retracted into the rack.

   b. The rails *must* be level from front to back and from left to right.

19. Before continuing to the next step, be sure to read and understand the following caution notices:

   Caution:
   The stabilizer must be firmly attached to the bottom rear of the rack to prevent the rack from turning over when the drawers are pulled out of the rack. Do not pull out or install any drawer or feature if the stabilizer is not attached to the rack.

   Caution:
   This unit weighs between 32 kg (70.5 pounds) and 55 kg (121.2 pounds). Three persons are required to safely move it. Using less than three persons to move it can result in injury.

Step 8. Install the PL420R into the Rack Enclosure

Attention: When installing this system drawer into a rack, ensure that a hazardous condition is not created due to uneven mechanical loading. If your rack uses a stabilizer bar, it must be firmly attached before installing or removing this system.

Choose one of the following system installation procedures. The installation procedure you choose depends on the type of system rail assembly that was installed into your rack.

- If your system rail assemblies are type 1, go to Install the PL420R onto a System Rail Assembly (Type 1) on page 1-18.

- If your system rail assemblies are type 2, go to Install the PL420R onto a System Rail Assembly (Type 2) on page 1-20.

Install the PL420R onto a System Rail Assembly (Type 1)

Attention: When installing this unit in a rack, care should be taken to ensure that a hazardous condition is not created due to uneven mechanical loading. If your rack uses a stabilizer bar, it must be firmly attached before installing or removing this system.

To install the PL420R onto a system rail assembly (type 1), do the following:

1. Ensure both rails are in the retracted position in the rack.

2. Using three persons, grasp the two handles located on each side of the system drawer, and lift the system drawer.

3. Place the system drawer on top of the retracted slide rails.

    Note: Built–in ledges located on each side of the system prevent the system from falling past the slide rails.

4. Push the system all the way into the rack.

5. Pull the system out of the rack until you can see the second screw hole located on the inner rail. Notice that the inner rails followed the system drawer out of the rack.

6. Align the second screw hole, located on the inner rail, with the second threaded screw hole, located on the side of the system drawer. Secure the system drawer to the inner rail with M3 screws.

7. Align the front screw holes of each rail with the threaded screw holes on the system drawer. Secure each screw hole with M3 screws.

8. To secure the third and fourth M3 retaining screws to the system, do the following:

    a. Pull the system drawer from the rack.

    Attention: *Do not* pull the system drawer out past the safety latches.

    b. Align the rail to system retaining–screw access hole located on the middle rail to the third retaining screw hole located on the inner rail.

    c. Secure an M3 screw into each rail's third position retaining screw hole.

    d. Align the rail to system retaining–screw access hole located on the middle rail to the fourth retaining screw hole located on the inner rail.

e. Secure an M3 screw into each rail's fourth position retaining screw hole.
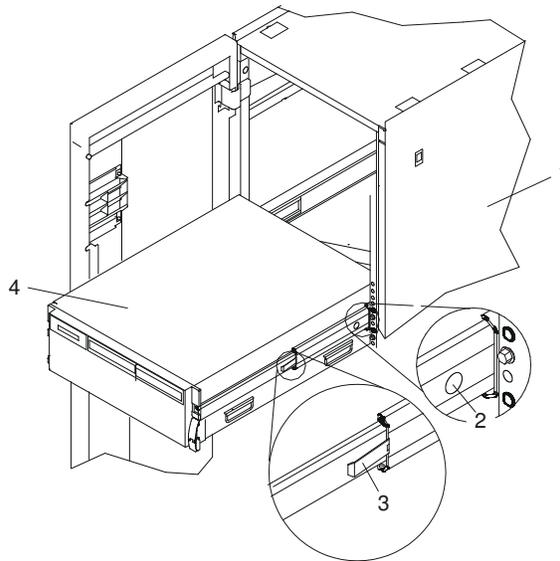
1	Rack Enclosure	**3**	Safety Release Latch
2	System Retaining–Screw Access Hole	**4**	PL420R

9. Tighten all eight M3 screws, securing the inner rail to the system drawer side.

10. Push the system drawer about halfway back into the rack. Use a screwdriver or similar tool to tighten the front four M7 16–mm screws that secure the system rail assemblies to the rack's front flange.

11. Push the system drawer completely into the rack. Use a screwdriver or similar tool to tighten the rear four M7 16–mm screws that secure the system rail assemblies to the rack's rear flange.

>   **Note:** After the system rail assemblies are installed, do not extend each rail section past its safety release latch. The safety release latches stop the rails from overextending and separating. This action prevents the system drawer from being accidentally pulled out too far and dropped.

12. Tighten the two M3 screws that secure each rail–length adjusting plate.

13. Slowly slide the system drawer back and forth on the rails, watching for any signs of binding.

14. For additional stability needed when transporting the rack, fasten the system drawer to the rack enclosure by inserting an M8 16–mm thumbscrew through the bezel and chassis bracket, and screwing it to the rack flange with a screw clip nut.
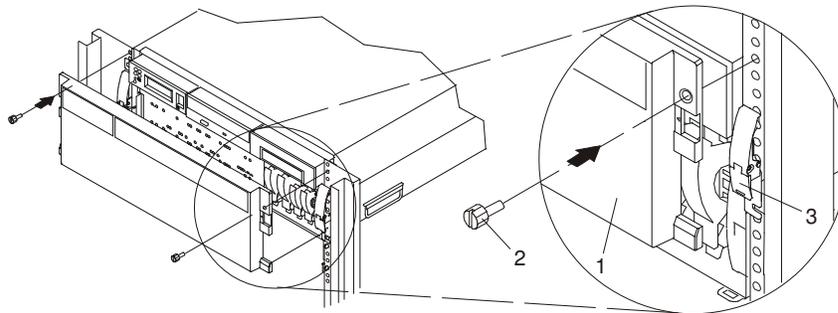
1 PL420R Front Bezel

2 M8 16–mm retaining screw

3 System Drawer Release Latch

Install the PL420R onto a System Rail Assembly (Type 2)

To install the PL420R onto a system rail assembly (type 2), do the following:

1. Using eight M3 rail to system retaining screws, four on each side, mount the inner rails to each side of the system drawer. Tighten each of the screws with a screwdriver or similar tool.
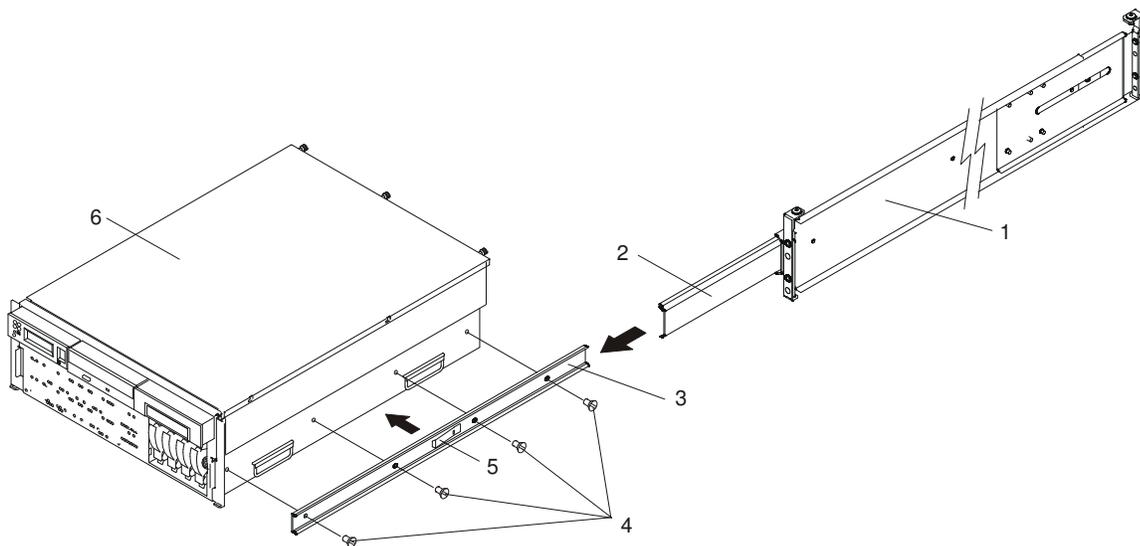
1 Outer Rail Section	**4** M3 Rail to System Retaining Screws
2 Middle Rail Section	**5** Safety Latch
3 Inner Rail Section	**6** PL420R

Note: The safety release latch, located on each inner rail, is mounted onto the side of the system facing away from the system drawer. See illustration on page 1-8.

2. Using three persons, grasp the two handles located on each side of the system drawer, and lift the system drawer.

3. Insert the inner rails located on the system drawer into the rails mounted in the rack.

   Attention: When matching the inner rails to the outer rails, ensure that both rail faceplates glide past each other. *Do not*, under any circumstances, force the rails. If the system drawer does not glide freely into the rack, completely remove the drawer from the outer rails. After the drawer is clear of the outer rails, reposition the system, then reinsert the inner rails. Repeat this process until the system drawer glides freely into the rack.

4. Simultaneously depress the safety latches, located on each side of the system drawer, and push the system into the rack.
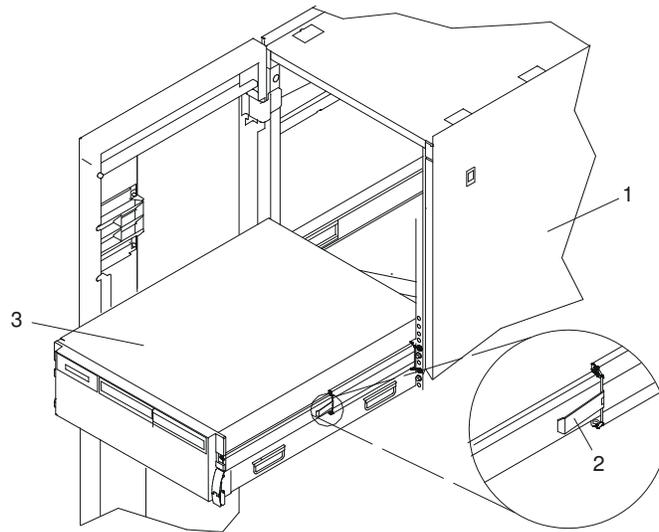
1	Rack Enclosure	**3**	Safety Release Latch
2	System Retaining–Screw Access Hole	**4**	PL420R

5. Slide the system drawer in and out of the rack two or three times. This action aligns the system drawer to the rails. The system drawer should glide on the rails.

6. Push the system drawer back into the rack. Using a screwdriver or similar tool, tighten the rear four retaining screws that secure the slide rails to the rack's rear flange.

7. Slide the system drawer about halfway out of the rack.

8. Using a screwdriver or similar tool, tighten the front four retaining screws that secure the slide rails to the rack's front flange.

   Note: After the system rails are installed, do not extend them past their safety latches. The safety release latches stop the rails from overextending and separating. This action prevents the system drawer from being accidentally pulled out too far and dropped.

   Attention: If any binding is detected, loosen the eight rail–retaining screws (front and rear), and repeat substeps 4 through 7.

9. For additional stability needed when transporting the rack, fasten the system drawer to the rack enclosure by inserting an M8 16–mm thumbscrew through the bezel and chassis bracket, and screwing it to the rack flange with a screw clip nut.
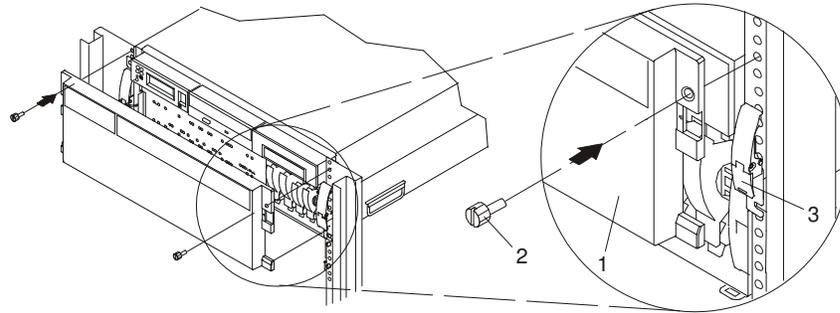
1 PL420R Front Bezel

2 Transport Retaining Screw for System Drawer

Step 9. Install the Cable Management Arm

To install the PL420R cable management arm, do the following:

1. Attach the cable carrier support bracket to the back of the chassis with two cable carrier–support bracket mounting screws.

2. Place the two captive snap buttons, located on the cable management arm, into the unlocked (pulled out) position.

3. Align and insert the two captive snap buttons into the holes located on the cable carrier support bracket. Push in on the head of the snap buttons to lock them into position.
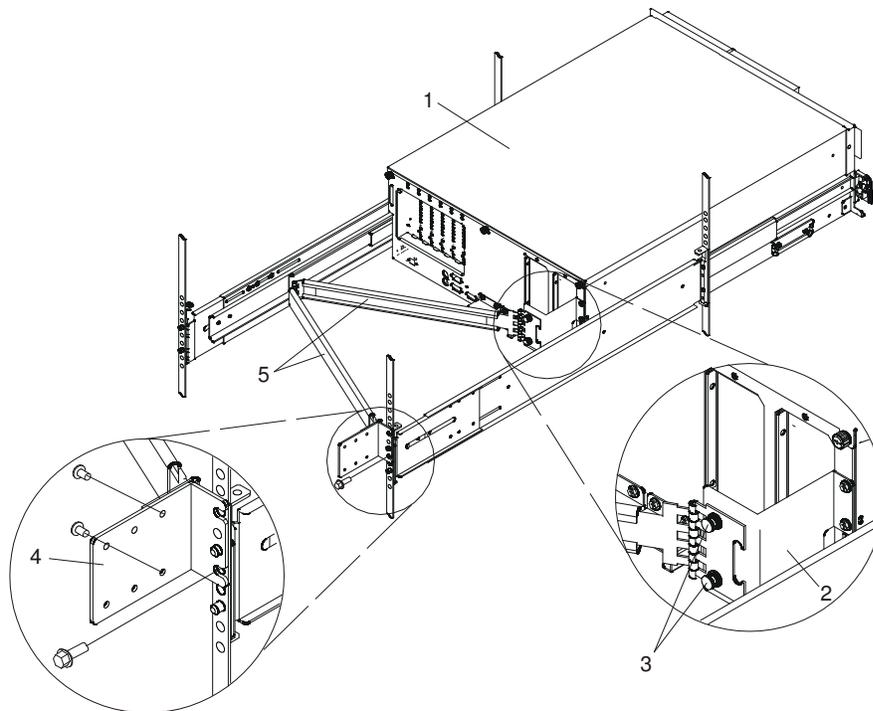
1 PL420R

2 Cable Carrier Support Bracket

3 Captive Snap Button (Qty 2)

4 Rack–Flange Mounting Bracket

5 Cable Management Arm

4. Open the cable management arm so that the hinged mounting plate lies flat against the rack–flange mounting bracket.

5. Align the holes, located on the cable management arm mounting plate, with the threaded holes on the rack–flange mounting bracket. Secure the bracket with two cable management arm mounting screws.

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

Step 10. Are All of the Internal Options Installed?

These instructions are for systems that have internal options (such as adapters, disk drives, or memory upgrades) already installed.

If you have internal options that are not installed, install them now. Refer to Chapter 3. Installing Options In the PL420R and PL420T, and then return here.

Step 11. Position the PL420T and Display

If you are setting up a PL420R, continue on to Step 12. Check Your Display or Console Type on page 1-24.

Position the PL420T system unit and display (optional) at or near their installed location.

Observe the following guidelines when you are positioning the system unit:

- This unit weighs between 32 kg (70.5 pounds) and 55 kg (121.2 pounds). Three persons are required to safely move it. Using fewer than three persons to move it can result in injury.

- Displays and ASCII terminals can weigh as much as 35 kg (77 pounds). Use caution when lifting or moving the display or ASCII terminal.

- Leave enough space around the system unit to safely and easily complete the setup procedures.

- Observe standard ergonomic guidelines while arranging your system unit so that you can work comfortably and safely. .

- Be sure to maintain at least 51 mm (2 inches) of space on the sides of the system unit and 152 mm (6 inches) at the rear of the system unit to allow the system unit to cool properly. The front of the system requires a minimum of 76 mm (3 inches) of space. Blocking the air vents can cause overheating, which might result in a malfunction or permanent damage to the system unit.

- Place the system unit in a location where it can safely and easily reach any necessary power outlets and network connections.

- Place the display or ASCII terminal in a stable and sturdy location.

Step 12. Check Your Display or Console Type

Notes:

1. If you are using an ASCII terminal with a keyboard as the console for this system, and do not have a graphics display to connect, refer to Step 17. Connect the Serial and Parallel Devices on page 1-28.

2. If you are using a graphics display with a keyboard and mouse, continue with Step 14. Attach the Display Cable Toroid on page 1-26.

3. If you are connecting to a Hardware Management Console (HMC), continue on to Step 13. Are You Connecting to a Hardware Management Console (HMC)? on page 1-25.

If you ordered a graphics display with your system unit, the graphics adapter has been set to use the highest display resolution and refresh rate available for that display. If you want to:

- Attach another display to your system unit

OR

- Change the default display resolution or refresh rate

After completing the installation steps, refer to the *Customer Installable Options Library* CD–ROM for the documentation for your graphics adapter.

As shown in Step 14. Attach the Display Cable Toroid on page 1-26, connect the graphics display cable to the back of the display and to the graphics adapter connector. Consult the "About Your Machine" document for the locations of installed adapters.

For more information about your display, refer to the documentation included with the display.

Step 13. Are You Connecting to a Hardware Management Console (HMC)?

If your HMC is already connected, continue with this step. If your HMC has not been previously installed, refer to Install the Hardware Management Console (HMC) on page 3-23. After completing the HMC installation procedure, return here and complete this step.

Notes:

1. Before doing this step, read and understand Step 3. Read the Safety Notices on page 1-4.

2. This system drawer is equipped with two HMC connectors located on the back of the system. The connectors are labeled HMC1 and HMC2.

To connect your HMC to the PL420R or PL420T, connect the HMC serial cable to the HMC1 connector. If this is the second HMC being connected to the PL420R or PL420T, connect the HMC serial connector to the HMC2 connector.

After connecting the HMC, go to Step 17. Connect the Serial and Parallel Devices on page 1-28.
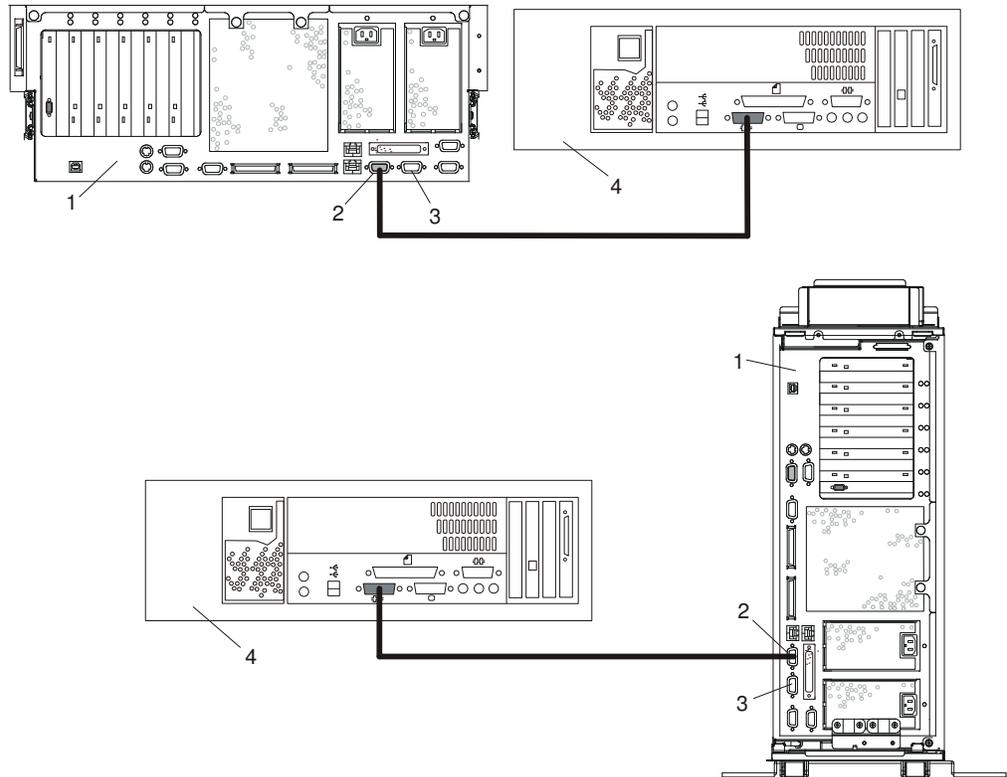
1	PL420R or PL420T	**3**	HMC2 Connector
2	HMC1 Connector	**4**	Hardware Management Console (HMC)

Step 14. Attach the Display Cable Toroid

If the cable for your display does not include a toroid, locate the toroid shipped with your system and follow the installation instructions included with the toroid.
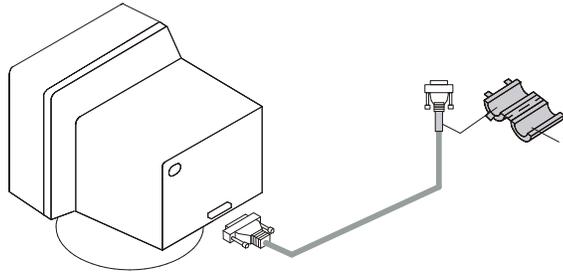
1 Display Cable Toroid

Step 15. Connect the Graphics Display

Note: If you are using an ASCII terminal as the console for this system, and do not have a graphics display to connect, continue with Step 17. Connect the Serial and Parallel Devices on page 1-28.

As shown in Step 14. Attach the Display Cable Toroid on page 1-26, connect the graphics display cable to the back of the display and to the graphics adapter connector. For the locations of installed adapters, consult the "About Your Machine" document.

For more information about your display, refer to the documentation included with the display.

Notes:

1. A PCI 2D graphics adapter can be installed in any of the six PCI slots.

2. Some displays require an additional cable.

3. If you have an ASCII terminal, it is preferable to connect it to the serial port S1; however, it can also be connected to serial ports S2 or S3.

Model 420R — Rear View

Model 420T — Rear View
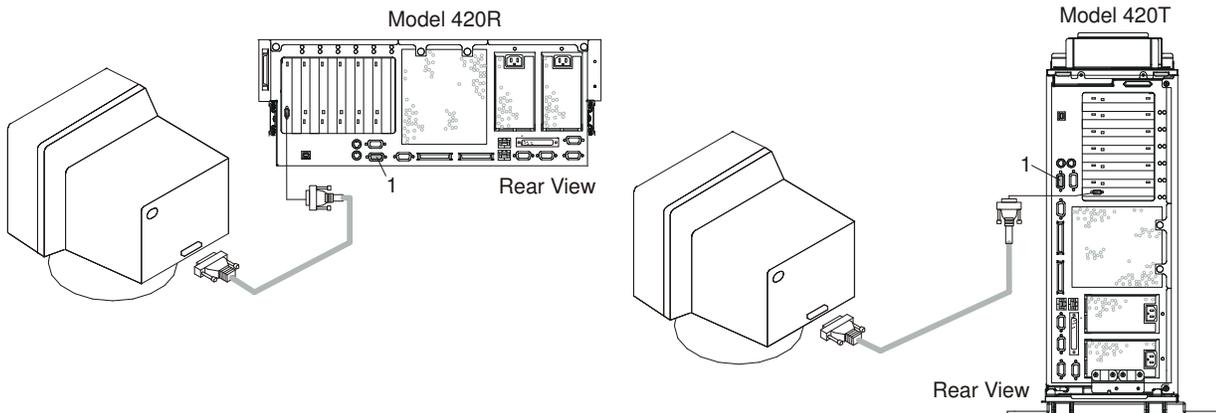
1 Serial Connector S1

Step 16. Connect the Keyboard and Mouse (When Using a Graphics Display)

Note: Before doing this step, read and understand Step 3. Read the Safety Notices on page 1-4.

If a wrist/palm rest was included with your keyboard and you want to attach it, refer to the keyboard documentation for installation instructions.

As shown in the following illustration, connect the keyboard and mouse to the connectors on the rear of the system unit.
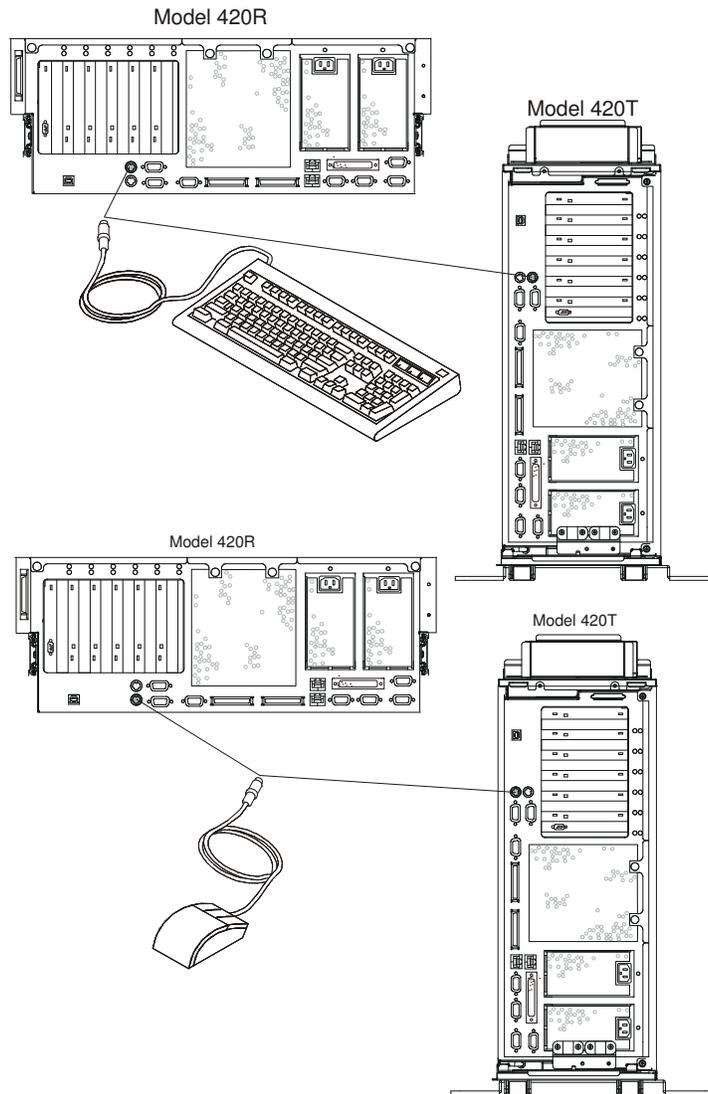
Step 17. Connect the Serial and Parallel Devices

Notes:

1. Before doing this step, read and understand Step 3. Read the Safety Notices on page 1-4.

2. This system drawer is equipped with serial port 1 located in the front (FS1) and rear (S1) of the system.

3. Use an RJ–48 to 9–pin converter cable to access the front serial port FS1.

4. When using FS1, the rear serial port 1 is deactivated.

5. Use a 9–pin to 25–pin serial converter cable when activating the rear serial port 1. The 9–pin to 25–pin serial converters are a customer–purchased option.

6. If you have a remote ASCII terminal, connect it through an external modem to serial connector S1, and connect a local ASCII terminal to serial connector S2 or serial connector S3.

If you have a local ASCII terminal or a single serial device, connect it to serial connector S1.

You can connect additional serial devices to the two remaining serial ports (S2 and S3) that are located at the rear of the system.

If you have a parallel device (such as a printer), connect it to the parallel connector.
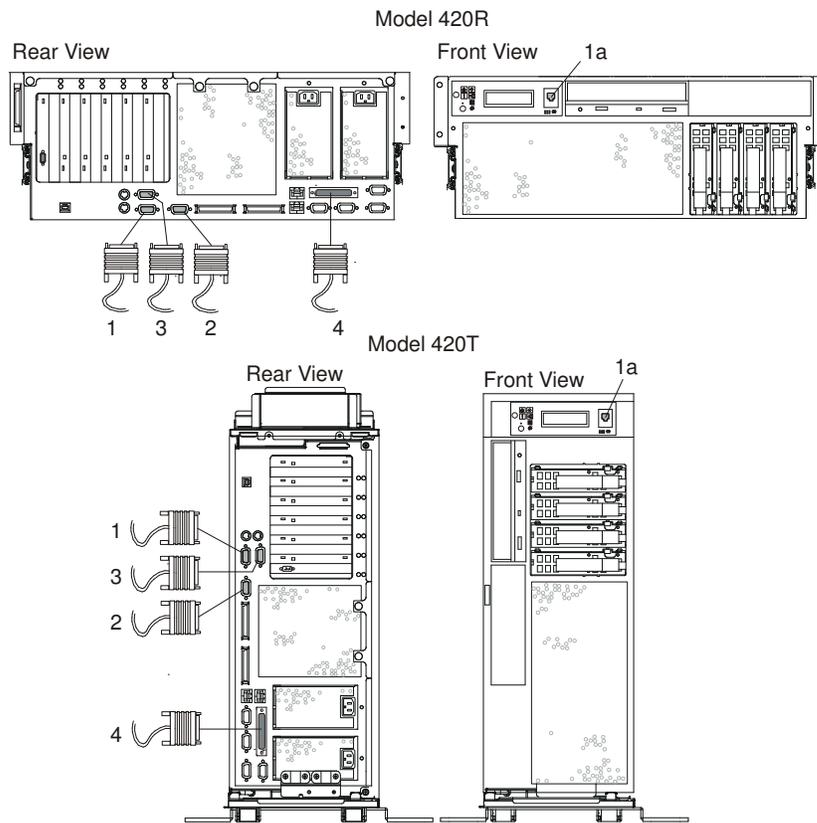
1	Serial Port 1 Connector
1a	Serial Port 1 Front Connector (RJ–48)
2	Serial Port 2 Connector
3	Serial Port 3 Connector
4	Parallel Connector

The current usage for the serial port connectors is as follows:

Serial Port Number	Location	Examples of Applicable Usage
Serial Port 1 (S1 Front)	Operator Panel	Service Agent, PDA system management applications (for example: handheld devices, laptop systems), Service Processor menus, ASCII Terminal for AIX Console, and Modems
Serial Port 1 (S1 Rear)	Rear of the System	Service Processor menus, Service Agent, PDA system management applications (interface cable required), ASCII Terminal for AIX Console, and Modems
Serial Port 2 (S2)	Rear of the System	Service Processor menus, HACMP, ASCII Terminal for AIX Console, and Modems
Serial Port 3 (S3)	Rear of the System	HACMP, UPS (uninterruptible power supply), ASCII Terminal for AIX Console, and Modems

Note: Serial port S1 is never used to run HACMP or to attach a UPS. If you are configuring your system to run HACMP with a UPS attached, you must connect the HACMP cable to serial port S2 and the UPS cable to serial port S3. *Do not* run a UPS connected to serial port S2. If you decide to disconnect HACMP, you *must* reset the service processor using the pinhole reset switch before running another application. The service processor pinhole reset switch is located on the operator panel.

Step 18. Connect the Adapter Cables

Note: Before doing this step, read and understand Step 3. Read the Safety Notices on page 1-4.

If you are using any optional adapters (such as token ring or 8–port EIA–232), connect the cables to the appropriate adapter connectors in the PCI slots of your machine. For the locations of installed adapters, consult the "About Your Machine" document.

Model 420T

Model 420R

Rear View

Rear View
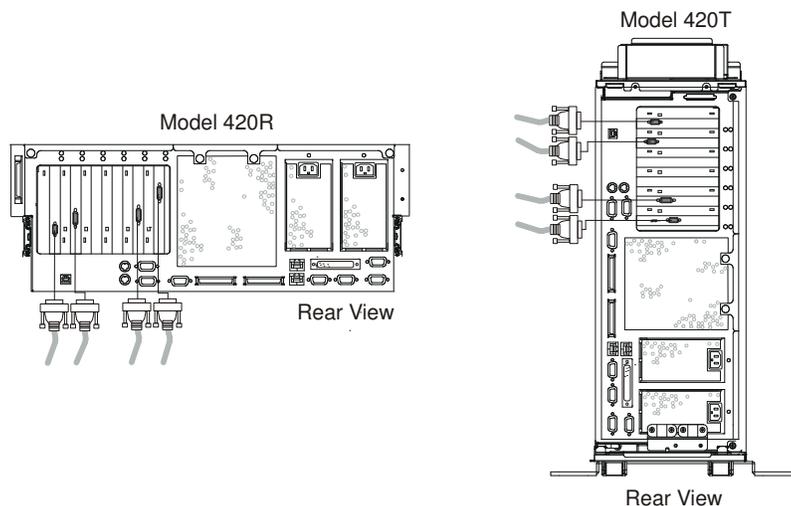
Step 19. Connect the First External SCSI Device

1. Connect the SCSI cable to the SCSI connector.

2. Connect the other end of the SCSI cable to the SCSI device.

3. If this is the last device connected, connect the SCSI device terminator. If this is not the last device connected, go to the next step.

   Note: The built–in SCSI interface is Ultra 3 SCSI. When a cable is not attached to the SCSI connector on the system, the SCSI bus is automatically terminated.

4. To set the SCSI device address, refer to the SCSI device documentation. For future reference, you can record the address in Appendix E, System Records.
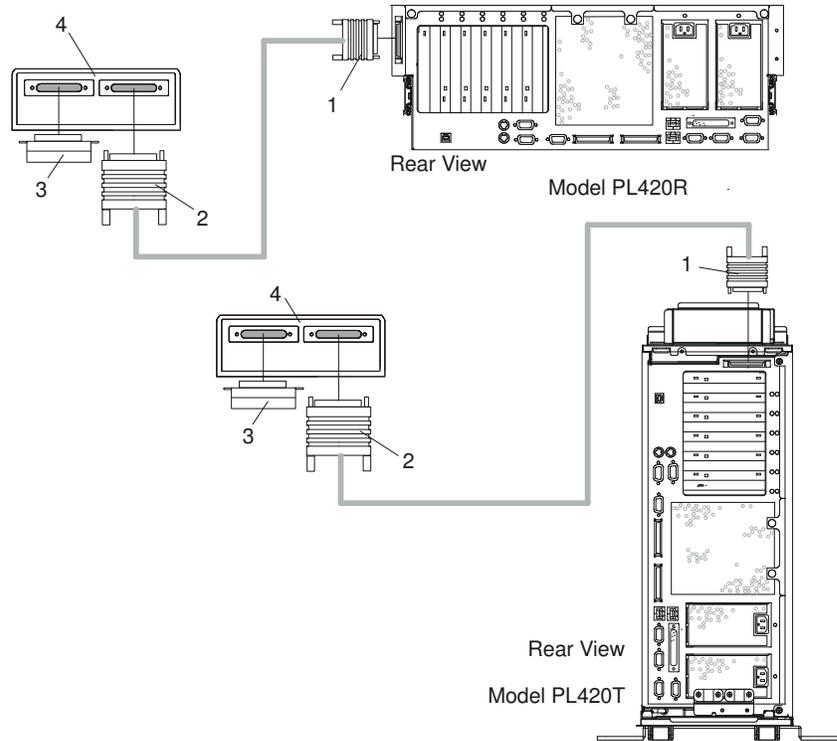
1 External SCSI Connector   **3** SCSI Terminator
2 SCSI Cable to SCSI Device   **4** SCSI Device

Step 20. Connect Any Additional External SCSI Devices

1. Locate the last SCSI device in the chain from the system.

2. Remove the SCSI terminator (**1**) from the last SCSI device in the chain.

3. Connect the new SCSI cable (**2**) to the SCSI connector on the last SCSI device.

4. Connect the other end of the SCSI cable (**3**) to the new SCSI device.

5. Repeat substeps 1, 2, and 3 for each additional SCSI device that you attach.

6. Connect the SCSI device terminator (**4**) to the last SCSI device (**5**).

7. Refer to the SCSI device documentation to set the SCSI device address. For future reference, you can record the address in Appendix E, System Records.

Model PL420R
Rear View

Rear View

Model PL420T
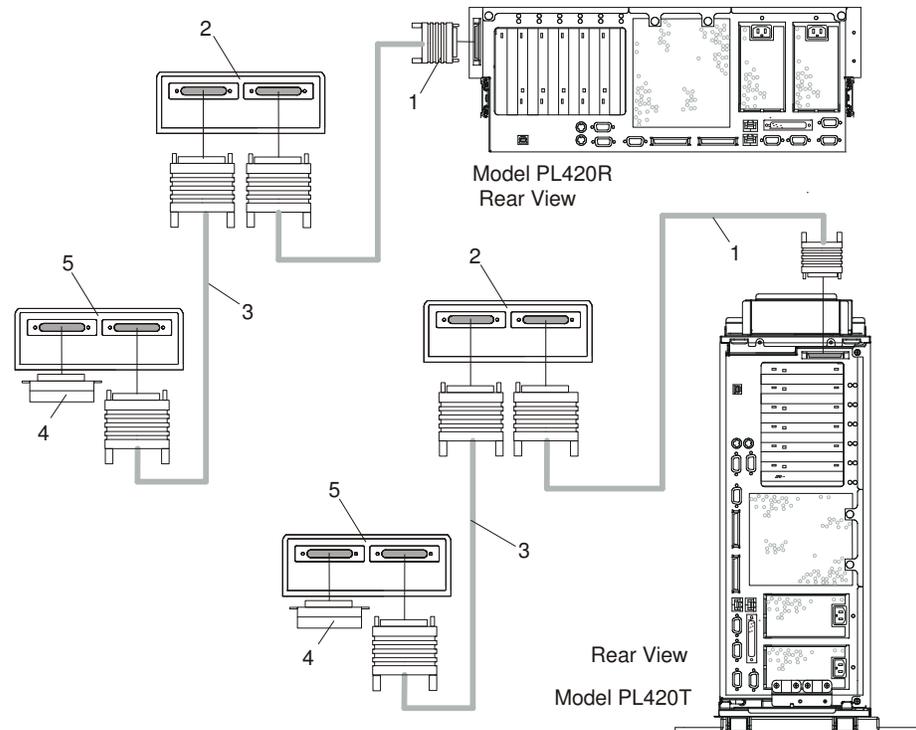
1	System Unit to First SCSI Device Cable	**4**	SCSI Terminator
2	First External SCSI Device	**5**	Last SCSI Device
3	SCSI Cable to Last SCSI Device		

Step 21. Are You Using the Rack Indicator Feature?

The rack indicator feature signals when a drawer installed in a rack has a failure. If you are unsure whether you are using the rack indicator feature, ask your system administrator. If you are not using the rack indicator feature, continue to Step 22. Are You Using an Ethernet Connection? on page 1-32.

Connect the rack indicator cable as shown in the following illustration.

Model PL420R

Rear View

Rear View
Model PL420T
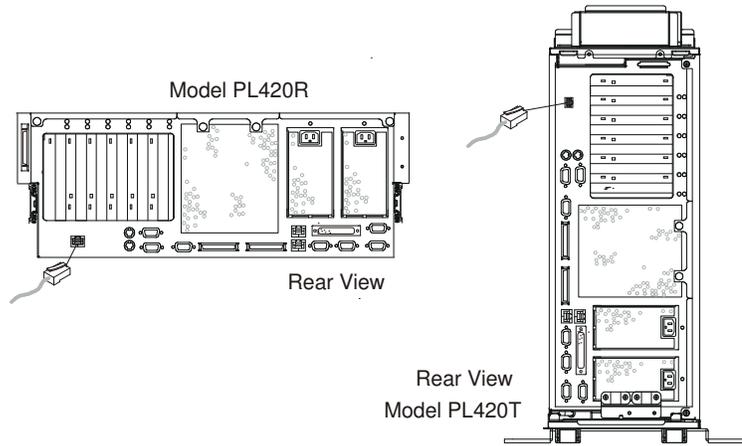
Step 22. Are You Using an Ethernet Connection?

If you are unsure whether you are using an Ethernet connection, ask your system administrator. If you are not using Ethernet or you have already connected your Ethernet to an adapter, continue to Step 23. Connect the Power Cables to the System on page 1-33.

To connect the Ethernet cable, do the following:

Note: The twisted–pair connector is compatible with the IEEE 802.3 Ethernet network 10/100 Base T link.

1. Connect the twisted–pair cable to one of two RJ–45 connectors located on the rear of the system drawer. For RJ–45 connector locations, see the following illustration.

2. The twisted–pair Ethernet cable is now installed. Continue with Step 23. Connect the Power Cables to the System on page 1-33.

Model PL420R

Rear View

Rear View
Model PL420T
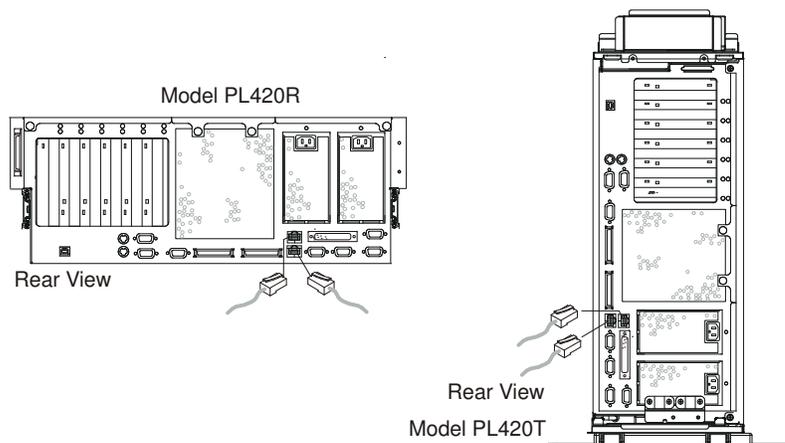
Step 23. Connect the Power Cables to the System

Plug the power cables into the system, display, and attached devices.

Notes:

1. This system drawer could be equipped with two power supplies. Each power supply needs its own power cable.

2. If your system is equipped with one power supply, connect the power cable to the power receptacle. A second power receptacle is present when a second (redundant) power supply has been added to the system drawer. See the following illustration.
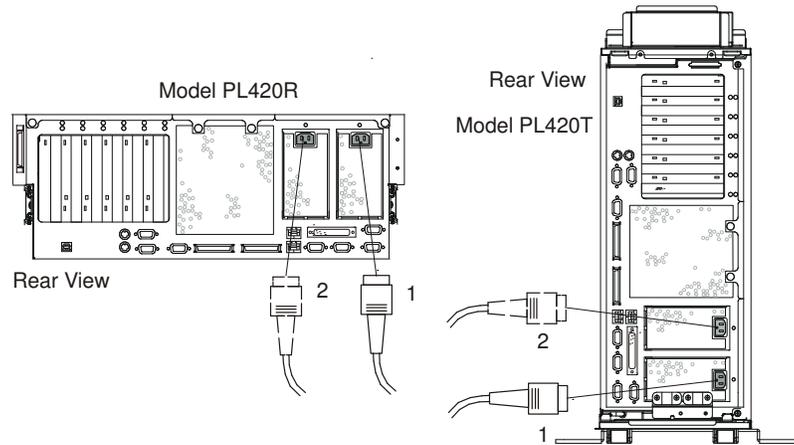
1 Default Power Supply Cable

2 Redundant Power Supply Cable

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.

Step 24. Attach Cables to the PL420R Cable Management Arm

To attach the external cables to the cable management arm, do the following:

1. Put the system into the service position. Refer to Placing the PL420R into the Service Position on page 3-7.

   Note: The rails lock in the fully extended position with a click.
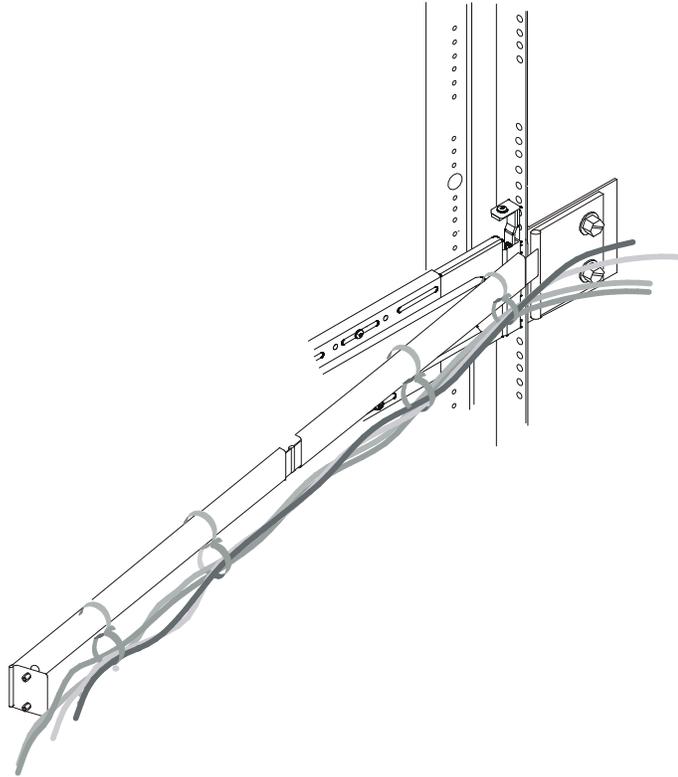
2. Loosely wrap the hook–and–loop fastener strips around the external cables. The hook–and–loop fastener strip was already premounted on your cable management arm.

   Note: To allow for cable movement, *do not* tightly wrap the hook–and–loop fastener strip around the cables.

3. After attaching the cables to the cable management arm, go to the front of the rack and move the system drawer in and out. Observe cable and cable management arm movement to verify that the cable is not binding.

Step 25. Connect the PL420R Power Cables to Electrical Outlets

Connect the power source to the system unit.

Before you press the power button on your operator panel, observe the following:

- The power LED is slowly blinking.

- An `OK` prompt is visible in the operator panel display.

After you press the power button located on the operator panel, observe the following:

1. The power LED begins to blink visibly faster.

2. The system cooling fans are activated and can be heard accelerating to operating speed.

3. The power LED stays on solid. Progress indicators, also referred to as *checkpoints*, are visible on the operator panel display.

If the system is operating under AIX, type the `shutdown` command to power off the system. If you cannot use this method, you can power off the system by pressing the operator–panel power button.

Attention: Using the operator–panel power button to power off the system can cause unpredictable results in the data files, and the next IPL will take longer to complete.

The following illustration shows the operator panel in standby mode with the `OK` displayed in the operator panel.
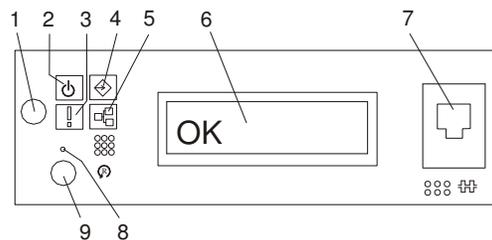
1	Power–On Button	**6**	Operator Panel Display
2	Power LED	**7**	(FS1) Front Serial Connector (RJ–48 Connector)
3	Attention LED	**8**	Service Processor Reset Switch (Pinhole)
4	SCSI Port Activity	**9**	System Reset Button
5	Ethernet Port Activity		

If your system does not stop in standby mode, check all cables for good connection. If you cannot find a problem, call your support center for assistance.

Step 26. Your PL420R is Now Set Up

Arrange your system unit and attached devices so that you can use them comfortably.

If an operating system has been preinstalled in your system, see the documentation provided with your operating system.

If you plan to install the operating system now, see the installation instructions provided with your operating system.

Installation of the operating system can be handled in one of the following ways:

- Preinstalled at the manufacturing facility.

- Installed from a CD (if a CD–ROM drive is installed). On the PL420R and PL420T, the CD–ROM drive is a customer–installable option.

- If you are installing the AIX operating system, AIX can be installed from a Network Installation Management (NIM) server. For information about installing AIX from a NIM server, see the *AIX 5L Installation Guide and Reference* .

Step 27. Start Your PL420R or PL420T

To power on the system, do the following:

1. On a PL420R, open the front rack door.

   On a PL420T, open the bezel door.

2. Connect the power source to the system unit.

   Before you press the power button on your operator panel, observe the following:

   – The power LED is slowly blinking.

   – An `OK` prompt is visible in the operator panel display.
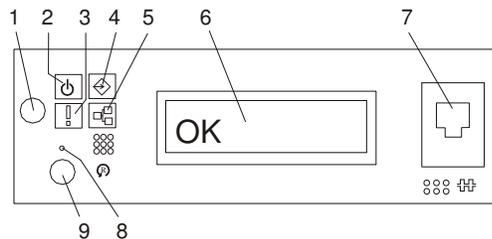
1	Power–On Button	**6**	Operator Panel Display
2	Power LED	**7**	(FS1) Front Serial Connector (RJ–48 Connector)
3	Attention LED	**8**	Service Processor Reset Switch (Pinhole)
4	SCSI Port Activity	**9**	System Reset Button
5	Ethernet Port Activity		

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

   After you press the power button located on the operator panel, observe the following:

   a. The power LED begins to blink visibly faster.

   b. The system cooling fans are activated and can be heard accelerating to operating speed.

> **Note:** 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).

   c. The power LED stays on solid. Progress indicators, also referred to as *checkpoints*, are visible on the operator panel display.

If you just completed installing, or are not going to install a D20 I/O drawer, run system verification. Refer to Step 30. Run System Verification on page 1-40. If you are installing a D20, go to Step 29. Cable the D20 to a PL420R on page 1-37.

Step 28. Access the System Documentation

If you are installing this system and another person is the system administrator, deliver this book to the system administrator when the installation is complete. Ensure that the system administrator reads the following information and is aware of the options to access the documentation for the new system.

Step 29. Cable the D20 to a PL420R

Before connecting the RIO–G (Remote Input Output) and SPCN (System Power Control Network) cables to the D20, do the following:

1. Ensure that your PL420R is running the latest level firmware. Refer to Appendix G, Firmware Updates for information about checking or upgrading the firmware level of your PL420R.

2. Turn off the power and disconnect the PL420R power cables from the power source.

3. Connect the RIO–G and SPCN cables. For RIO–G and SPCN cable configurations, refer to the following illustrations.

4. After connecting the RIO–G and SPCN cables from the D20 to your system, reconnect the system's power cables to the power source, and refer to Step 27. Start Your PL420R or PL420T on page 1-36.

5. Run system verification. See Step 30. Run System Verification on page 1-40.

Your PL420R is expandable when it is connected to two D20 I/O drawers. Each D20 can contain up to seven I/O PCI adapter slots and two 6–pack disk drive (DASD) bays.

RIO (Remote Input Output) Cabling

The following rules apply to RIO cable connections:

- To connect to a D20, use the RIO–G and SPCN connectors and cables. The RIO–G and SPCN cables provide two functions, remote data bus connection and power control.

- The I/O drawers must be connected in a loop fashion for both the RIO–G and SPCN cables. The loop connection provides redundant paths so that if a failure occurs in part of a cable, the system will continue to operate. If a failure does occur, a message is displayed on the system console; however, the system does continue to operate. See the following illustrations for possible cabling configurations.

PL420R Attached to One I/O Drawer
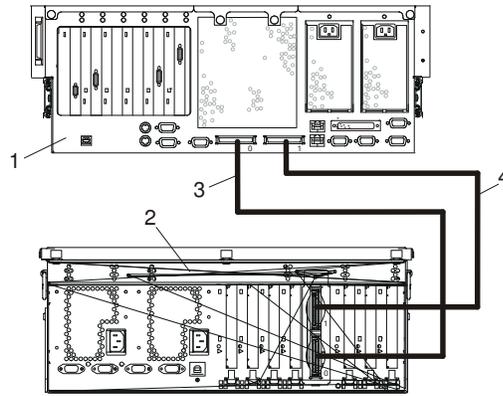
1	PL420R	**3**	RIO–G 0 to RIO–G 0 Cable
2	D20	**4**	RIO–G 1 to RIO–G 1 Cable

PL420R Attached to Two I/O Drawers
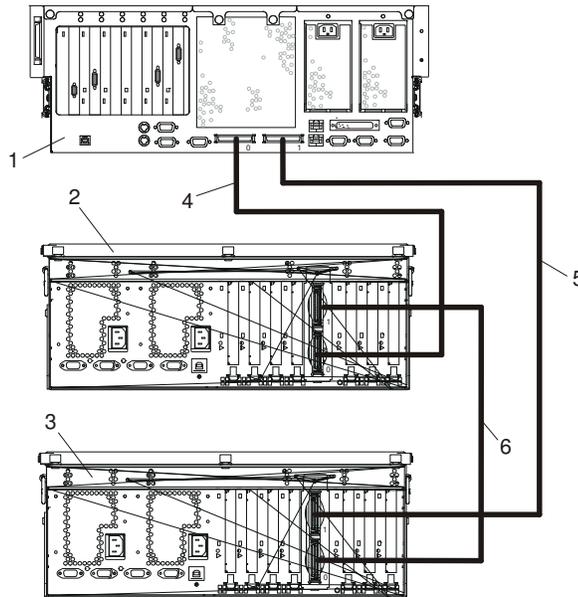
1	PL420R	**4**	RIO–G 0 to RIO–G 0 Cable
2	D20 I/O Drawer	**5**	RIO–G 1 to RIO–G 1 Cable
3	D20 I/O Drawer	**6**	RIO–G 1 to RIO–G 0 Cable

SPCN (System Power Control Network) Cabling

The following illustrations provide cabling examples for all valid cabling configurations.
Match your configuration to the correct figure and connect your SPCN cables as shown.

PL420R Attached to One I/O Drawer
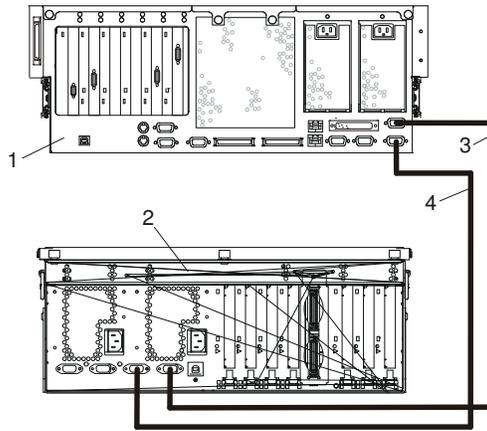
1	PL420R	**3**	SPCN 2 to SPCN 2 Cable
2	D20	**4**	SPCN 1 to SPCN 1 Cable

PL420R Attached to Two I/O Drawers
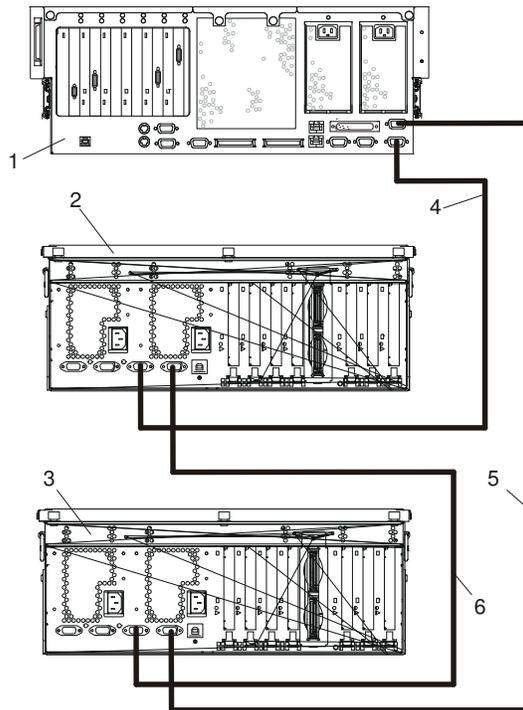
1	PL420R	**4**	SPCN 1 to SPCN 1 Cable
2	D20 I/O Drawer	**5**	SPCN 2 to SPCN 2 Cable
3	D20 I/O Drawer	**6**	SPCN 2 to SPCN 1 Cable

Step 30. Run System Verification

1. If your system displays the login prompt and you want to test your hardware, go to Verifying the Hardware Operation on page 1-40.

2. If the login prompt does not display, recheck your installation procedures and try starting your system again.

3. If your system fails, call your service representative.

Chapter 2. Verifying the Hardware Operation

The system verification procedure checks the system for correct hardware operation. If you have a problem with your system in the future, use this procedure to test the system hardware to help you determine if you have a hardware problem. Run the system verification procedure as described in the following steps.

Running System Verification When Not Connected to a Hardware Management Console (HMC)

If you are not connected to an HMC, perform the following procedure. If you are connected to an HMC, go to Running System Verification When Connected to an HMC on page 2-3.

Step 1. Considerations Before Running This Procedure

Read the following before using this procedure:

- An operating system must be installed on your system before this procedure is performed.

- If this system unit is directly attached to another system unit or attached to a network, be sure communication with the other systems is stopped.

- This procedure requires use of all of the system resources. No other activity can be running on the system while you are performing this procedure.

- This procedure requires a display connected to a graphics adapter, an ASCII terminal attached to the S1 port, or an HMC connected to an HMC port on the system.

- This procedure runs the AIX online diagnostics in service mode. If the system console is an ASCII terminal, see the documentation for your type of ASCII terminal to find the key sequences you need in order to respond to the diagnostics.

- If a console display is not selected, the diagnostics stop. The instructions for selecting a console display are displayed on all of the graphic displays and any terminal attached to the S1 port. Follow the displayed instructions to select a console display.

- If your system is connected to an HMC, refer to Step 1. Run Online Diagnostics in Service Mode on page 2-3.

Step 2. Load the Diagnostics

Note: If the system is in standby mode (Power–On LED on the operator panel is slowly blinking and the operator panel displays `OK`), or if your system is not running and is not connected to an HMC, go to step 4. If you are connected to an HMC, go to Step 1. Run Online Diagnostics in Service Mode on page 2-3 .

To load the diagnostics on a system that is not connected to an HMC, do the following:

1. Stop all application programs running on the operating system.

2. Stop the operating system by logging in as root user and typing `shutdown`.

3. Wait for the system to go into standby mode.

   - The operator panel LED starts to blink at a slow rate.

   - The `OK` message displays in the operator panel. The following figure shows the operator panel and the locations of operator panel components that are referred to in this procedure.
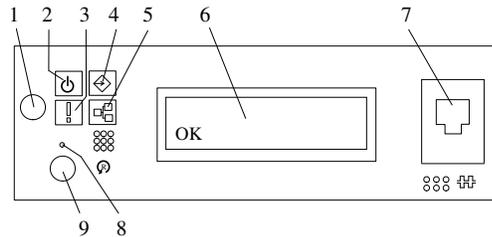
1	Power–On Button	**6**	Operator Panel Display
2	Power–On LED	**7**	(FS1) Front Serial Connector (RJ–48 Connector)
3	Attention LED	**8**	Service Processor Reset Switch (Pinhole)
4	SCSI Port Activity	**9**	System Reset Button
5	Ethernet Port Activity		

4. Turn on the system unit power.

5. After the **keyboard** POST indicator displays on the firmware console and before the last POST indicator (**speaker**) displays, press the numeric 6 key on either the directly attached keyboard or the ASCII terminal to indicate that a service mode boot should be initiated using the customized service mode boot list.

6. Enter any requested password.

   Note: If you are unable to load the diagnostics to the point when the `DIAGNOSTIC OPERATING INSTRUCTIONS` display, call your support center for assistance.

Step 3. Run the Verification Procedure

When the Diagnostic Operating Instructions display, do the following to run system verification:

1. Press Enter.

2. If the terminal type has not been defined, you must use the **Initialize Terminal** option on the Function Selection menu to initialize the operating system environment before you can continue with the diagnostics.

3. If you want to do a general checkout, with minimal operator action, select the **Diagnostic Routines** option on the Function Selection menu.

   If you want to do a more complete checkout, including the use of wrap plugs, select the **Advanced Diagnostics** option on the Function Selection menu. The advanced diagnostics are primarily for the service representative; the diagnostics may instruct you to install wrap plugs to better isolate a problem.

4. Select the **System Verification** option on the Diagnostic Mode Selection menu.

5. If you want to run a general checkout of all installed resources, select the **All Resource** option on the Diagnostic Selection menu.

   If you want to check one particular resource, select that resource on the Diagnostic Selection menu.

The checkout programs end with either of the following results:

- The Testing Complete menu displays with a message stating `No trouble was found`.

- The A Problem Was Detected On (Time Stamp) menu displays, with either a service request number (SRN) or an error code. Make a note of any codes displayed on the display or operator panel.

Step 4. Perform Additional System Verification

To perform additional system verification, do the following:

1. Press Enter to return to the Diagnostic Selection menu.

2. To check other resources, select the resource. When you have checked all of the resources you need to check, go to Step 5. Stop the Diagnostics on page 2-3.

Step 5. Stop the Diagnostics

To stop the diagnostics, do the following:

1. To exit the diagnostics, press the F3 key (from a defined terminal) or press 99 (from an undefined terminal).

2. If you changed any attributes on your ASCII terminal to run the diagnostics, change the settings back to normal.

3. This completes the system verification. If you received an error code, record the code and report it to the service organization.

If the system passed all the diagnostic tests, the verification process is complete and your system is ready to use.

Running System Verification When Connected to an HMC

Run the following procedure only if you are connected to an HMC.

Step 1. Run Online Diagnostics in Service Mode

To run the online diagnostics in service mode from the boot hard disk, do the following:

1. From the HMC, select the **Partition Manager**.

2. Right–click on the mouse and select **Open Terminal Window**.

3. From the Service Processor Menu on the VTERM, select Option 2 **System Power Control**.

4. Select option 6. Verify that the state changes to `currently disabled`. Disabling fast system boot automatically enables slow boot.

5. Select Option 98 to exit the system power control menu.

6. Use the HMC to power on the managed system in a full system partition by selecting the managed system in the Contents area.

7. Right–click or select the desired system in the Contents area. Next, on the menu, choose **Selected**.

8. Select **Power On**.

9. Select the **Power on Diagnostic Stored Boot list** option, see ”Full System Management Tasks” in the *Hardware Management Console Operations Guide*, order number SA38–0590, for more information about full system partitions).

10. Make sure that there are no media in the devices in the media subsystem.

11. Enter any passwords, if requested.

   Note: If you are unable to load the diagnostics to the point when the `DIAGNOSTIC OPERATING INSTRUCTIONS` display, call your support center for assistance.

Step 2. Run the Verification Procedure

When the Diagnostic Operating Instructions display, do the following to run system verification:

1. Press Enter.

2. If the terminal type has not been defined, you must use the **Initialize Terminal** option on the Function Selection menu to initialize the operating system environment before you can continue with the diagnostics.

3. If you want to do a general checkout, with minimal operator action, select the **Diagnostic Routines** option on the Function Selection menu.

   If you want to do a more complete checkout, including the use of wrap plugs, select the **Advanced Diagnostics** option on the Function Selection menu. The advanced diagnostics are primarily for the service representative; the diagnostics may instruct you to install wrap plugs to better isolate a problem.

4. Select the **System Verification** option on the Diagnostic Mode Selection menu.

5. If you want to run a general checkout of all installed resources, select the **All Resource** option on the Diagnostic Selection menu.

   If you want to check one particular resource, select that resource on the Diagnostic Selection menu.

The checkout programs end with either of the following results:

- The Testing Complete menu displays with a message stating `No trouble was found`.

- The A Problem Was Detected On (Time Stamp) menu displays, with either a service request number (SRN) or an error code. Make a note of any codes displayed on the display or operator panel.

Step 3. Perform Additional System Verification

To perform additional system verification, do the following:

1. Press Enter to return to the Diagnostic Selection menu.

2. To check other resources, select the resource. When you have checked all of the resources you need to check, go to Step 4. Stop the Diagnostics on page 2-4.

Step 4. Stop the Diagnostics

To stop the diagnostics, do the following:

1. To exit the diagnostics, press the F3 key (from a defined terminal) or press 99 (from an undefined terminal).

2. If you changed any attributes on your ASCII terminal to run the diagnostics, change the settings back to normal.

3. This completes the system verification. If you received an error code, record the code and report it to the service organization.

If the system passed all the diagnostic tests, the verification process is complete and your system is ready to use.

Chapter 3. Installing Options In the PL420R and PL420T

This chapter provides instructions to help you add options to your system. Some option removal instructions are provided, in case you need to remove one option to install another. If you have several internal options to install, these instructions enable you to add them all at one time.

Before performing any of the installation or removal procedures in this chapter, read the following notice.

Safety Considerations

Observe the following safety precautions anytime you work with this system unit.

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 capability of having 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.

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.

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

Notes:

1. If the redundant power supply feature is installed, this unit will have two power cables.

2. Servicing of the PL420T can be performed with the system either in the vertical or horizontal position. Servicing of the PL420R is performed with the system in the rack and placed into the service position. The service position for the PL420R is described in Placing the PL420R into the Service Position on page 3-7.

3. A highlighted number in a procedure step refers to the numbered components found in the illustration for that particular procedure.

Handling Static–Sensitive Devices

Attention: Electronic boards, diskette 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 a 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.

Options and Task List

Option/Task	Option/Task Name and Page Location
Adapters	PCI Adapters on page 3-29
Battery	Replacing the Battery on page 3-64
Bezels	Bezels on page 3-21
Bezel Door	Bezel Door (PL420T) on page 3-20
CD–ROM Drive	Media Drives (Diskette, CD–ROM, Tape, or Disk Drive) on page 3-48
Covers	Covers on page 3-9
Disk Drive	Hot–Plug Disk Drives on page 3-51
Disk Drive Configuration or Deconfiguration	Deconfiguring (Removing) or Configuring a Disk Drive on page 3-51
Diskette Drive	Media Drives (Diskette, CD–ROM, Tape, or Disk Drive) on page 3-48
Fans	Fans on page 3-45
HMC Installation	Install the Hardware Management Console (HMC) on page 3-23
Media Drives	Media Drives (Diskette, CD–ROM, Tape, or Disk Drive) on page 3-48
Memory DIMMs	Memory DIMMs on page 3-59
Operating Position	Returning the PL420R to the Operating Position on page 3-8
Power Supply	Power Supplies on page 3-68
Processor Card	Processor Card on page 3-54
Release Latch and Brackets	PL420R Drawer–Release Latch and Brackets on page 3-5
Service Position	Placing the PL420R into the Service Position on page 3-7
Starting the System	Starting the System Without an HMC Attached on page 3-3
Static–Sensitive Devices	Handling Static–Sensitive Devices on page 3-2
Stopping the System	Stopping the System Without an HMC Attached on page 3-3

Stopping the System Without an HMC Attached

Attention: When shutting down your system to install options, 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. 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. Have your system administrator stop all applications that are running on the system.

3. At a command line, type `shutdown` to stop the operating system.

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

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

Also, it the system is operating in a full system partition under 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 button on the media subsystem operator panel.

Attention: Using the power button on the operator panel to power off the system can cause unpredictable results in the data files, and the next IPL will take longer to complete.

Starting the System Without an HMC Attached

To power on the system, perform the following steps in sequence.

1. On a PL420R, open the front rack door.

   On a PL420T, open the bezel door.

2. Connect the power source to the system unit.

   Before you press the power button on your 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 button located on the operator panel, observe the following:

   a. The power LED begins to blink visibly faster.

   b. The system cooling fans are activated and begin to accelerate up to operating speed.

   Note: 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).

   c. The power LED stays on solid and progress indicators, also referred to as *checkpoints*, are visible on the operator panel display.
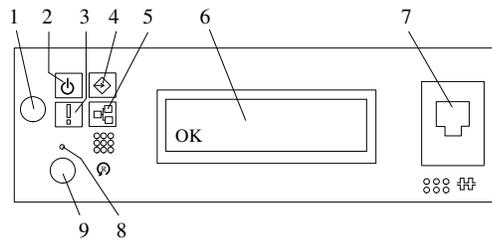
1	Power–On Button	**6**	Operator Panel Display
2	Power LED	**7**	(FS1) Front Serial Connector (RJ–48 Connector)
3	Attention LED	**8**	Service Processor Reset Switch (Pinhole)
4	SCSI Port Activity	**9**	System Reset Button
5	Ethernet Port Activity		

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 button on the operator panel can be pushed to initialize the system but the preferred method is to use the HMC if booting logical partitions. 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 base system stops blinking and stays on, indicating the system power is on.

The base system and I/O subsystems are powered on through the system power control network (SPCN). When power is applied, the power LEDs on the base system go from blinking to continuous, and the power LEDs on the I/O subsystem(s) come on and stay on. This indicates that power levels are satisfactory in the subsystems.

PL420R Drawer–Release Latch and Brackets

The following procedure covers the removal and replacement of the system's drawer–release latch.

Drawer–Release Latch Removal

To remove one of the PL420R drawer–release latches, do the following:

1. Open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

2. Remove the retaining screw located on the side of the release latch.

3. Pull the release latch off the latch bracket post.
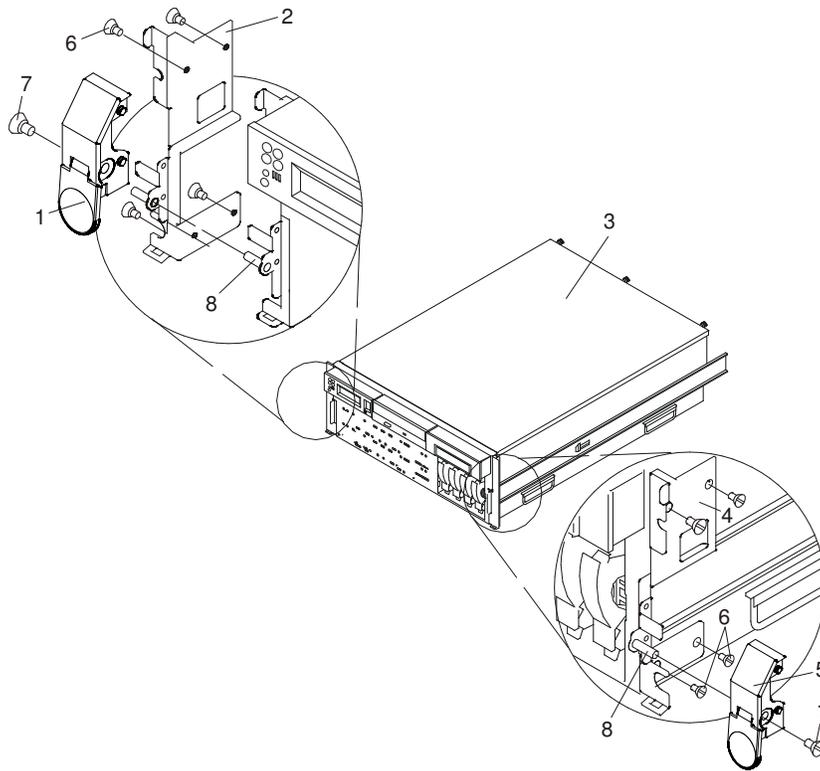
1	System Drawer–Release Latch	**5**	System Drawer–Release Latch
2	System Drawer–Release Latch Bracket (Right)	**6**	Retaining Screws
3	PL420R	**7**	Release Latch Retaining Screw
4	System Drawer–Release Latch Bracket (Left)	**8**	Latch Bracket Post

Drawer–Release Latch Replacement

To replace one of the PL420R drawer–release latches, do the following:

1. If you have not already done so, open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

2. Push the release latch onto the latch bracket post.

3. Secure the drawer–release latch onto the latch bracket post with a release latch retaining screw.

4. Place the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

Drawer–Release Latch Bracket Removal

To remove the PL420R drawer–release latch brackets, do the following:

1. Open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

2. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21.

3. Remove the drawer–release latch as described in Drawer–Release Latch Removal on page 3-5.

4. Remove the retaining screws that secure the latch bracket to the side of the PL420R.
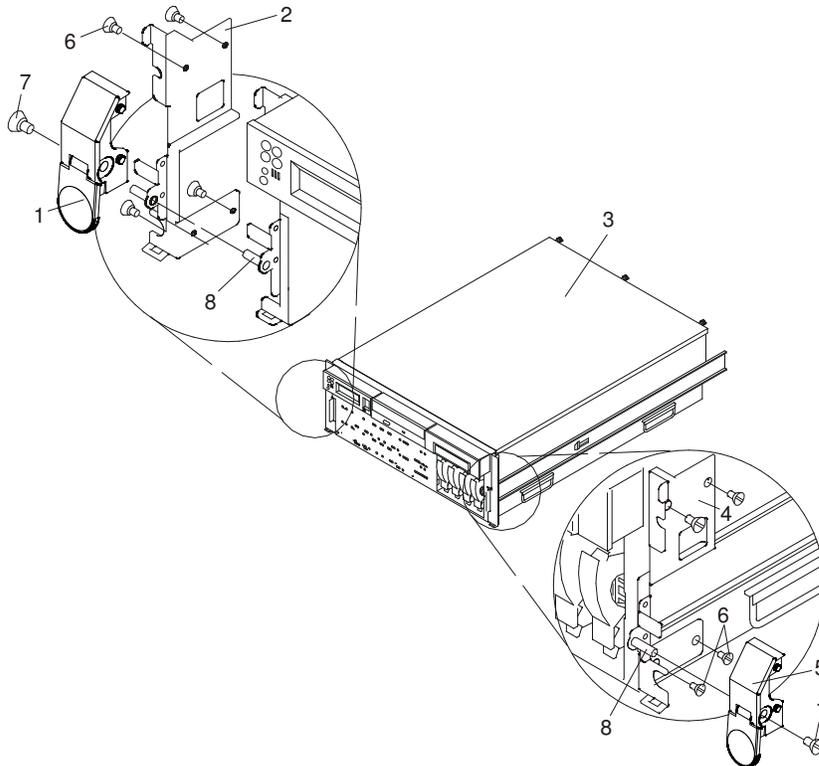
1 System Drawer Release Latch	**5** System Drawer Release Latch
2 System Drawer Release Latch Bracket (Right)	**6** Retaining Screws
3 PL420R	**7** Release Latch Retaining Screw
4 System Drawer Release Latch Bracket (Left)	**8** Latch Bracket Post

Drawer Release Latch Bracket Replacement

To replace the PL420R drawer–release latch brackets, do the following:

1. If you have not already done so, open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

2. Using the supplied retaining screws, secure the latch brackets to the side of the PL420R.

   Note: The latch brackets are right–side and left–side dependent.

3. Replace the release latch as described in Drawer–Release Latch Replacement on page 3-6.

4. Replace the front bezel as described in Front Bezel Replacement (PL420R) on page 3-21.

5. Place the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

Placing the PL420R into the Service Position

Attention: When placing the PL420R into the service position, it is essential that all stability plates are firmly in position to prevent the rack from toppling. Ensure that only one system drawer at a time is in the service position.

Before doing any service actions inside the PL420R, you must place the system into the service position. To place the system into 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.
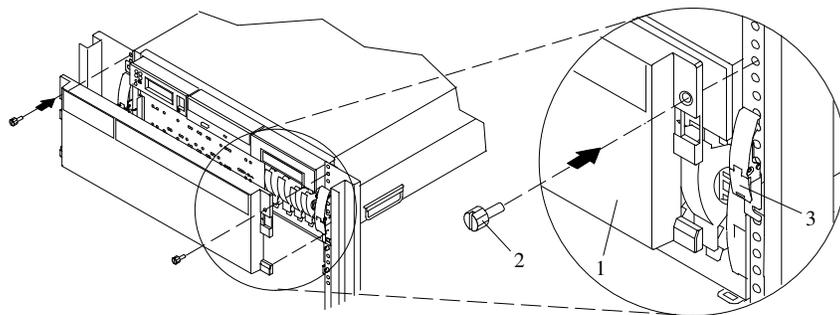
      1 PL420R Front Bezel

      2 M5 16–mm Retaining Screw

      3 System Drawer Release Latch

3. Release the system 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: When the system rails are fully extended, safety latches on the slide rails lock into place. This prevents the system from being accidentally pulled out too far and dropped. The following illustration shows a system drawer in the service position.
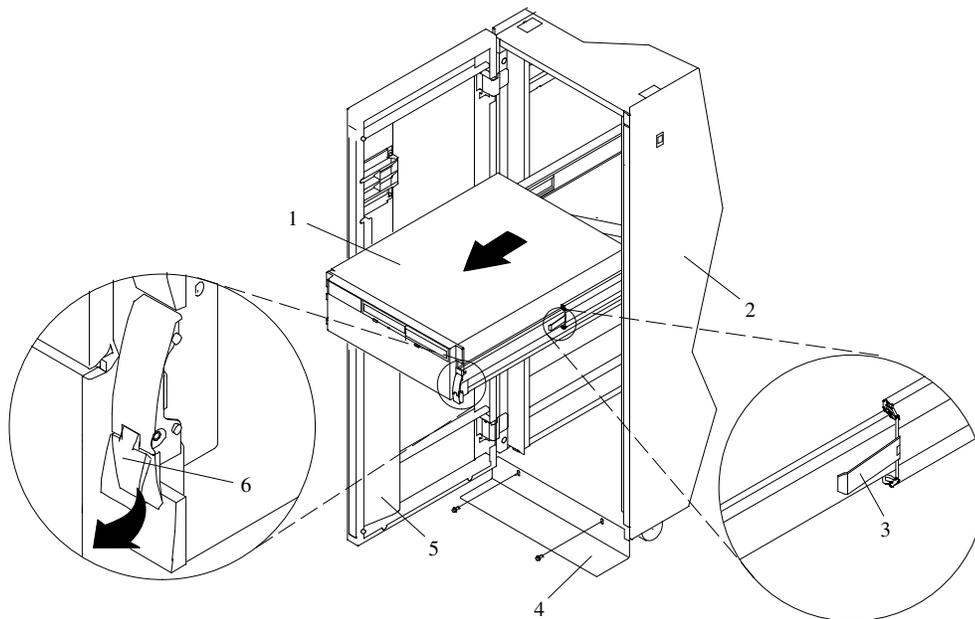
1	PL420R	**4**	Stabilizing Bar
2	19–Inch Rack	**5**	Front Rack Door
3	Extension Rail Safety Release Tab	**6**	System Drawer Release Latch

After completing the service actions, return the system to the operating position.

Returning the PL420R to the Operating Position

To return the PL420R to the operating position, do the following:

1. Press in on both spring–loaded release tabs, located on each rail. See the illustration on page *** on page 3-7 for the location of the release tabs.

2. Ensure the system drawer release latches, located on the system drawer, are in the open position. See the illustration on page *** on page 3-7 for the location of the system drawer release latches.

3. Push the system drawer straight back into the rack until both system drawer release latches have locked into position.

4. If you removed two thumbscrews from the bezel front, replace them at this time.

5. Close the front rack door.

Covers

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

Service Access Cover Removal (PL420R)

To remove the service access cover, do the following:

1. Ensure that the rack has been correctly stabilized before opening the front and rear rack doors.

2. Open the front rack door and place the PL420R into the service position as described in Placing the PL420R into the Service Position on page 3-7.

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

4. Placing both hands on each side of the cover, 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.
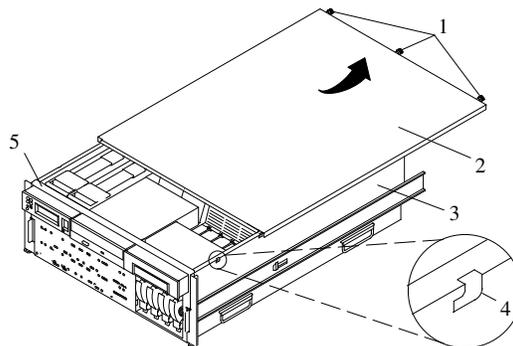
1	Thumbscrews	**4**	Access Cover Locking Tab
2	Service Access Cover	**5**	Upper Chassis Ledge
3	PL420R		

Service Access Cover Replacement (PL420R)

To replace the service access cover, do the following:

1. Align the service access cover with the top of the system, about 25 mm (1 inch) from the front of the system. The flanges on the left and right sides of the cover should be on the outside of the system chassis.

2. Hold the service access cover against the system drawer, slide it toward the front of the system. The front edge of the service access cover slides beneath the upper chassis ledge.

3. Tighten the three thumbscrews located on the rear of the cover.

Top Cap Removal (PL420T)

To remove the top cap, do the following:

1. Remove the bezel door as described in Bezel Door Removal on page 3-20.

2. Remove the front bezel as described in Front Bezel Removal (PL420T) on page 3-21.

3. From the front of the top cap, grasp the two lower side edges and pry out to release the lower front tabs.

4. Pivot the cover up to release the two rear locking tabs.

5. Lift the top cap up and off of the system.
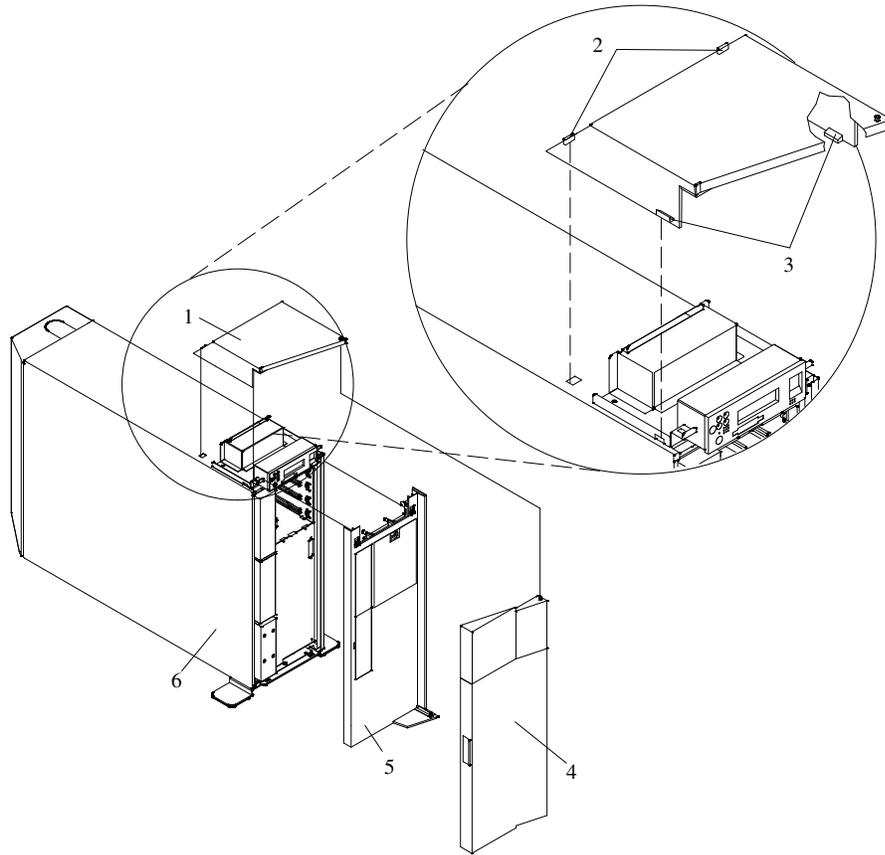
1	Top Cap	**4**	Bezel Door
2	Top Cap Rear Locking Tabs	**5**	Bezel
3	Top Cap Front Locking Tabs	**6**	PL420T

Top Cap Replacement (PL420T)

To replace the top cap, do the following:

1. Align, and then insert the two tabs located on the rear–bottom edge of the top cap with the two mating slots located on the top cover.

2. Rotate the cover down, snapping the two lower front tabs into place on the operator panel bracket.

3. Replace the front bezel as described in Front Bezel Replacement (PL420T) on page 3-22.

4. Replace the bezel door as described in Bezel Door Replacement on page 3-20.

Top Cover Removal (PL420T)

To remove the top cover, do the following:

1. Remove the bezel door as described in Bezel Door Removal on page 3-20.

2. Remove the front bezel as described in Front Bezel Removal (PL420T) on page 3-21.

3. Remove the top cap as described in Top Cap Removal (PL420T) on page 3-10.

4. Remove the two screws that secure the operator panel to the system.

5. Disconnect the power and signal cable from the rear of operator panel.

6. Remove the two retaining screws that secure the operator–panel EMC bracket to the operator–panel bracket.

7. Remove the four retaining screws that secure the operator–panel bracket to the top cover.

8. Remove the four retaining screws that secure the top cover to the system chassis.

9. Remove the front screw that secures the top cover to the right panel assembly. This screw is located on the front inside edge of the system, just below the top cover.

10. Remove the back cover as described in Back Cover Removal (PL420T) on page 3-16.

11. From the back of the system, remove the rear screw that secures the top cover to the right panel assembly. This screw is located on the rear inside edge of the system, just below the top cover.

12. From the back of the system, remove the two retaining screws that secure the top cover to the system top–cover rear bracket.

13. Lift the top cover up and off the system chassis.
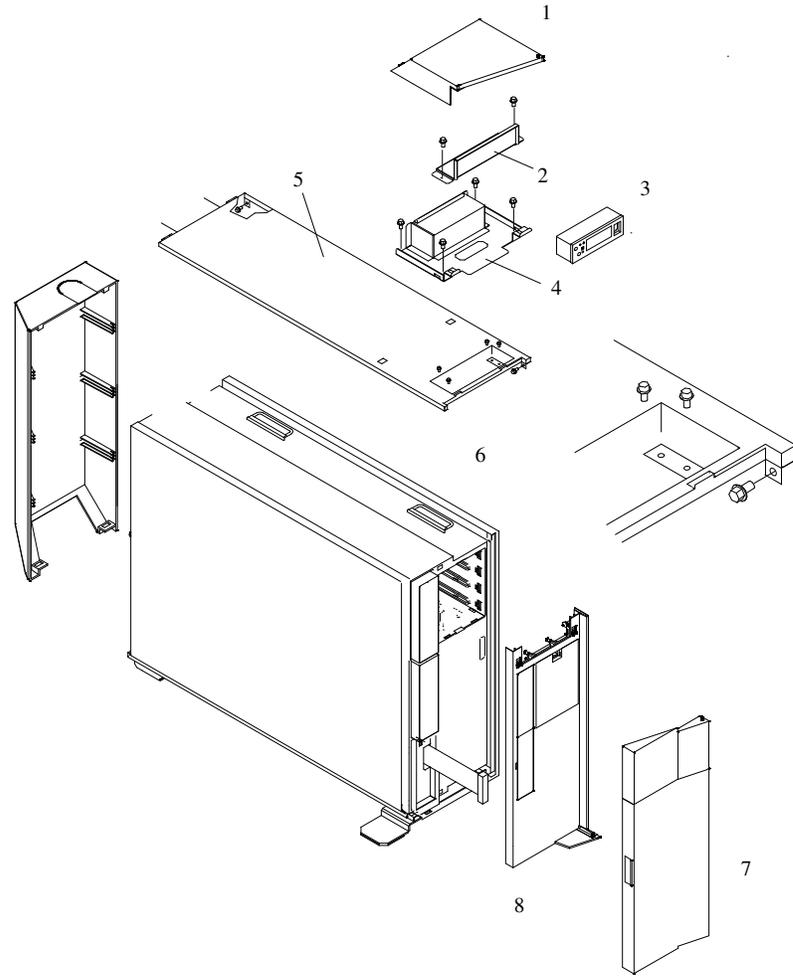
1	Top Cap	**6**	PL420T
2	Operator Panel EMC Bracket	**7**	Bezel Door
3	Operator Panel	**8**	Bezel
4	Operator Panel Bracket	**9**	Rear Top Cover Mounting Bracket
5	Top Cover	**10**	Rear Cover

Top Cover Replacement (PL420T)

To replace the top cover, do the following:

1. Ensure that the rear top cover bracket is in place. If the rear top cover bracket has not been installed, install it now with two retaining screws.

2. Mount, and then align the top cover onto the system chassis.

3. Replace the four retaining screws that secure the top cover to the system chassis.

   Note: *Do not* tighten the screws at this time.

4. Replace the front screw that secures the top cover to the right panel assembly. This screw is located on the front inside edge of the system, just below the top cover.

5. At the back of the system, replace the rear screw that secures the top cover to the right panel assembly. This screw is located on the rear inside edge of the system, just below the top cover.

6. At the back of the system, replace the two retaining screws that secure the top cover to the rear top–cover bracket.

7. Tighten all the screws replaced in step 3, then tighten the screws that were replaced in steps 4 through 6.

8. Replace the back cover as described in Back Cover Replacement (PL420T) on page 3-16.

9. Mount, and then align the operator–panel bracket, ensuring that the operator–panel bracket screw–clearance holes are exactly centered over their mating screw holes, located on the top cover.

10. With a retaining screw, secure one of the operator–panel bracket corners. Repeat this step, securing a second corner on the operator–panel bracket, located diagonally across from the first.

    Note: Ensure that the four remaining clearance holes on the operator–panel bracket are exactly centered over their mating screw holes. If not, loosen one of the screws and realign the clearance holes to the screw holes.

11. With two retaining screws, secure the two remaining corners of the operator–panel bracket.

12. Mount, and then secure with two retaining screws, the operator–panel EMC bracket onto the operator–panel bracket.

13. Replace the power and signal cable to the rear of the operator panel.

14. Secure the operator panel with the two screws previously removed from the bottom edge of the operator panel.

15. Replace the top cap as described in Top Cap Replacement (PL420T) on page 3-11.

16. Replace the front bezel as described in Front Bezel Replacement (PL420T) on page 3-22.

17. Replace the bezel door as described in Bezel Door Replacement on page 3-20.

Outer Side Cover Removal (PL420T)

To remove the outer side cover, do the following:

1. Loosen the thumbscrew on the rear of the cover. See the following illustration for the thumbscrew location.

2. Slide the cover toward the rear of the system to release the four locking tab slots located on the top flange of the outer side cover.

3. Grasp the top back corner of the outer side cover.

4. Pull out the top edge of the outer side cover.

   Note: The top edge of the outer side cover must be clear of the top cover.

5. Pull up to release the bottom edge of the outer side cover.

6. Put the cover in a safe place.
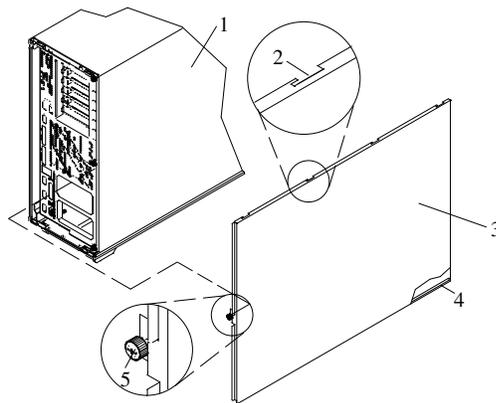
1	PL420T	**3**	Outer Side Cover
2	Locking Tab Slot for Outer Side Cover	**4**	Cover Retaining Slot
		5	Thumbscrew

Outer Side Cover Replacement (PL420T)

To replace the outer side cover, do the following:

1. Place the bottom edge retaining slot of the outer side cover over the outer edge of the system base.

2. Pivot the outer side cover up toward the top of the system.

3. Align the four top locking tabs slots, located on the outer side cover, with the locking tabs, located on the bottom side of the top cover.

4. Push the cover in. When correctly seated, push the outer side cover forward, toward the front of the chassis. The four top locking tabs are now locked in place.

5. Align the thumbscrew, located on the rear of the outer side cover, with the screw hole located on the back of the chassis.

6. Tighten the thumbscrew.

Service Access Cover Removal (PL420T)

To remove the service access cover, do the following:

1. Remove the PL420T's outer side cover as described in Outer Side Cover Removal (PL420T) on page 3-14.

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

3. Slide the cover toward the rear of the system drawer. After the front of the service access cover has cleared the front chassis ledge, lift the cover out of the system.

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.
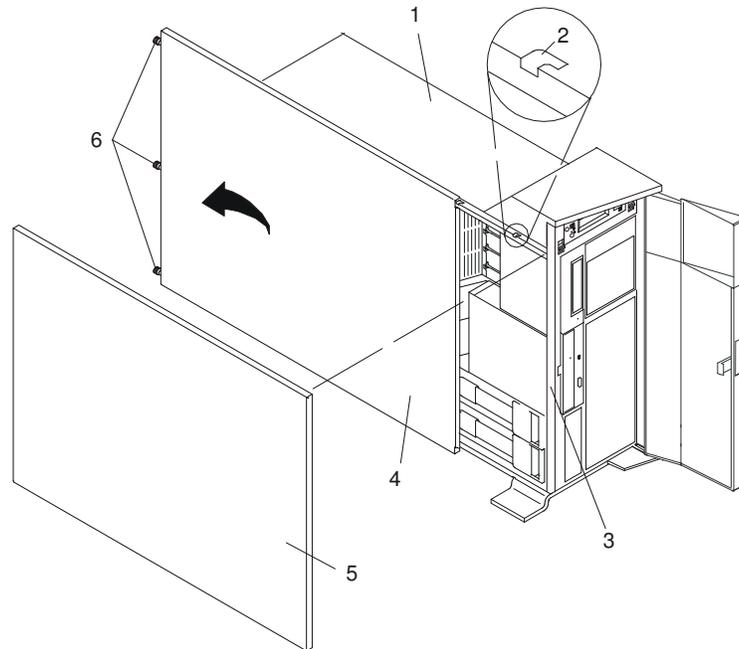
1	PL420T	**4**	Service Access Cover
2	Service Access Cover Locking Tab	**5**	Outer Side Cover
3	Front Chassis Ledge	**6**	Thumbscrews

Service Access Cover Replacement (PL420T)

To replace the service access cover, do the following:

1. Align the service access cover with the side of the system, about 25 mm (1 inch) from the front of 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. The front edge of the service access cover slides beneath the chassis ledge.

3. Tighten the three thumbscrews located on the rear of the cover.

Back Cover Removal (PL420T)

To remove the back cover, do the following:

1. Grasp each side of the back cover and pull straight up then away from the system. This action releases the two top and two bottom tabs that secure the cover to the back of the system. See the following illustration for the tab locations.

2. Put the back cover in a safe place.
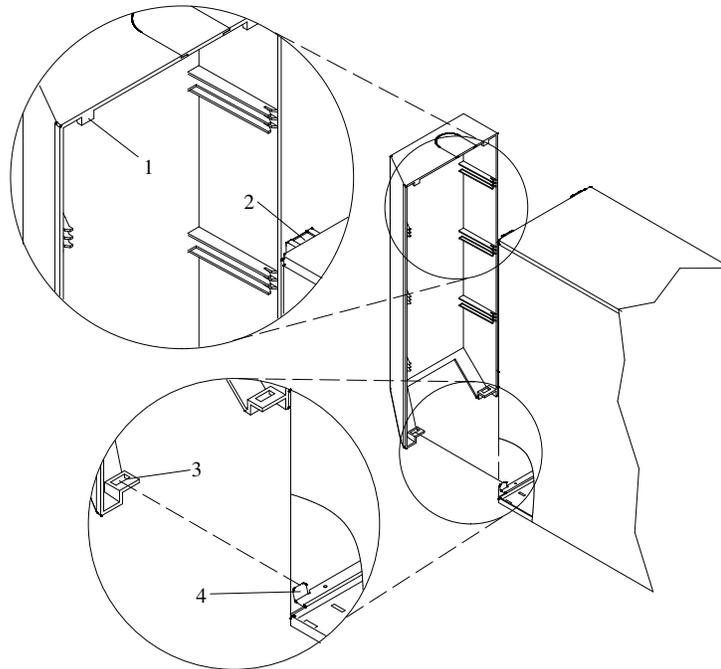
1	Back Cover Top Retaining Tab (Quantity 2)	**3**	Back Cover Bottom Locking Slot (Quantity 2)
2	Back Cover Top Locking Slot (Quantity 2)	**4**	Back Cover Bottom Retaining Tab (Quantity 2)

Back Cover Replacement (PL420T)

To replace the back cover, do the following:

1. Ensure all cables have been connected and are correctly seated.

2. Align the back cover side edges with the side edges of the system chassis back.

3. Raise the back cover about 1 inch higher than the system, ensuring tab to slot clearance.

4. Push the back cover straight down. This seats the tabs into their retaining slots.

Disk Drive Access Cover Removal (PL420T)

To remove the disk drive access cover, do the following:

1. Open the bezel door.

2. Locate the disk drive access cover on the front bezel of the system, as shown in the following illustration.

3. Press down on the release tab located at the top of the access cover.

4. Gently pull the top of the access cover out and away from the system.

   Note: The two alignment tabs that are located on the bottom front edge of the access cover must be lifted up and then out of their slots.

5. Put the cover in a safe place.
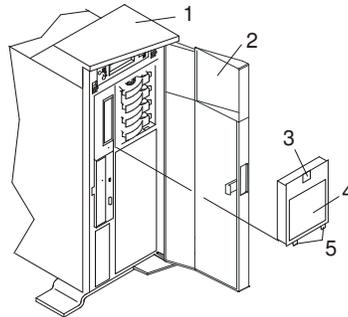
1 PL420T	**4** Disk Drive Access Cover
2 Bezel Door	**5** Alignment Tabs
3 Disk Drive Access Cover Release Tab	

Disk Drive Access Cover Replacement (PL420T)

To replace the disk drive access cover, do the following:

1. Insert the two alignment tabs, located on the bottom front edge of the access cover, into the two slots located on the front bezel.

2. After inserting the alignment tabs into the slots, pivot the access cover up until the release tab clicks into the closed position.

3. Close the bezel door.

Right Side Cover (System Base) Removal (PL420T)

To remove the right side cover (system base), do the following:

1. Remove the bezel door as described in Bezel Door Removal on page 3-20.

2. Remove the front bezel as described in Front Bezel Removal (PL420T) on page 3-21.

3. Remove the top cap as described in Top Cap Removal (PL420T) on page 3-10.

4. Remove the back cover as described in Back Cover Removal (PL420T) on page 3-16.

5. Remove the outer service access cover as described in Outer Side Cover Removal (PL420T) on page 3-14.

6. Remove the top cover as described in Top Cover Removal (PL420T) on page 3-11.

7. Remove the four retaining screws that secure the system chassis to the system base.

8. Use three people to lift the system up and off the alignment pins.

9. To remove the system base plate, lay the system onto its side and remove the four retaining screws.
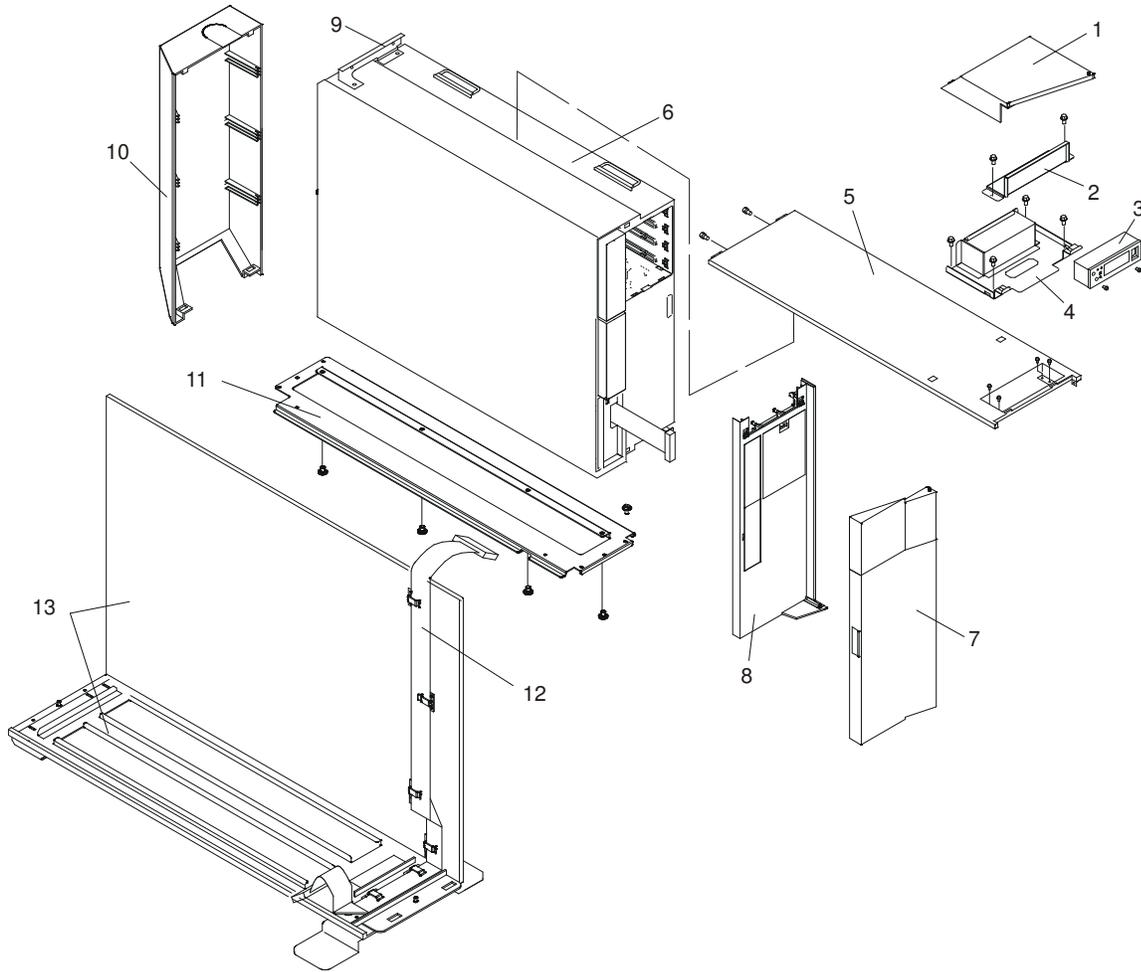
1	Top Cap	**8**	Bezel
2	Operator Panel EMC Bracket	**9**	Rear Top Cover Mounting Bracket
3	Operator Panel	**10**	Rear Cover
4	Operator Panel Bracket	**11**	System Base Plate
5	Top Cover	**12**	Operator Panel Extension Cable
6	PL420T	**13**	Right Side Cover (System Base)
7	Bezel Door		

Right Side Cover (System Base) Replacement (PL420T)

To replace the right side cover (system base), do the following:

1. Ensure that the system base plate is secured to the system chassis. If the system base plate has not been secured to the system chassis, lay the system chassis onto its side and secure the system base plate with four retaining screws.

2. Use three people, lift the system up, and seat the system chassis and the attached mounting plate over the two alignment pins. The alignment pins are located at each end of the system base.

3. Using four retaining screws, secure the system chassis to the system base.

4. Replace the top cover as described in Top Cover Replacement (PL420T) on page 3-13.

5. Replace the outer service access cover as described in Outer Side Cover Replacement (PL420T) on page 3-14.

6. Replace the back cover as described in Back Cover Replacement (PL420T) on page 3-16.

7. Replace the top cap as described in Top Cap Replacement (PL420T) on page 3-11.

8. Replace the top cover as described in Top Cover Replacement (PL420T) on page 3-13.

9. Replace the front bezel as described in Front Bezel Replacement (PL420T) on page 3-22.

10. Replace the bezel door as described in Bezel Door Replacement on page 3-20.

Bezel Door (PL420T)

The following procedure covers removal and replacement of the bezel door.

Bezel Door Removal

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.
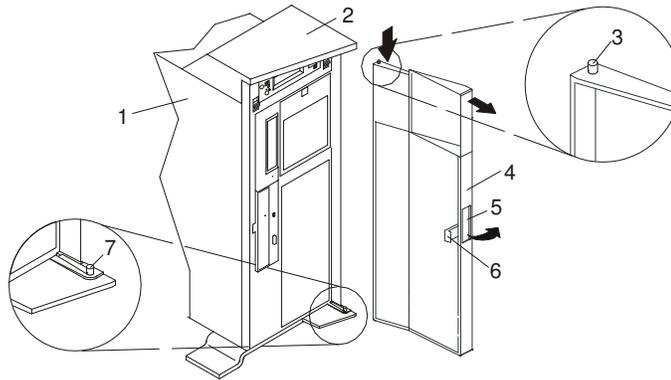
1	PL420T	**4**	Bezel Door
2	System Handle Assembly	**5**	Bezel Door Handle
3	Bezel Door Top Retaining Post	**6**	Bezel Door Lock Tab
		7	Bezel Door Lower Retaining Post

Bezel Door Replacement

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.

   Note: The mating hole for the top post is located on the bottom side of the system handle assembly.

4. Close the bezel door.

Bezels

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

Front Bezel Removal (PL420R)

To remove the bezel, do the following:

1. Open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

2. Press in on both bezel–release tabs at the same time. See the following illustration for bezel–release tab locations.

3. Gently pull the bezel away from the system.

4. Put the bezel in a safe place.
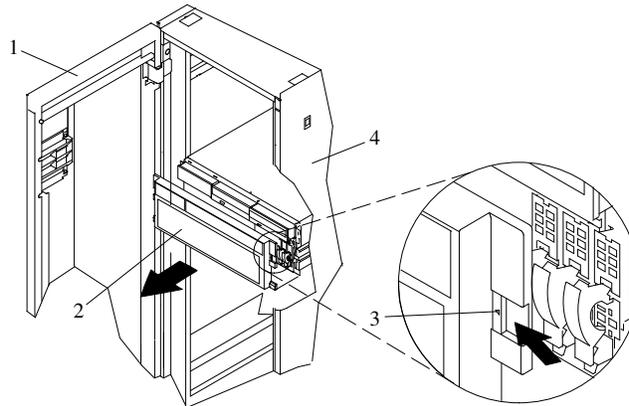
| **1** Rack Door | **3** Bezel–Release Tab (Located on each side of bezel) |
| **2** Bezel | **4** 19–Inch Rack |

Front Bezel Replacement (PL420R)

To replace the front bezel, do the following:

1. Open the front rack door and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

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. Push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

6. Close the rack door.

Front Bezel Removal (PL420T)

Refer to the following illustrations while you perform the steps in this procedure.

To remove the front bezel, do the following:

1. Remove the bezel door as described in Bezel Door (PL420T) on page 3-20.

2. Press down on the two bezel–release levers.

3. Pull the top of the bezel out and away from the system chassis.

4. Gently pull the bezel up off the base, releasing the lower bezel locking tabs.

5. Put the bezel and bezel door in a safe place.
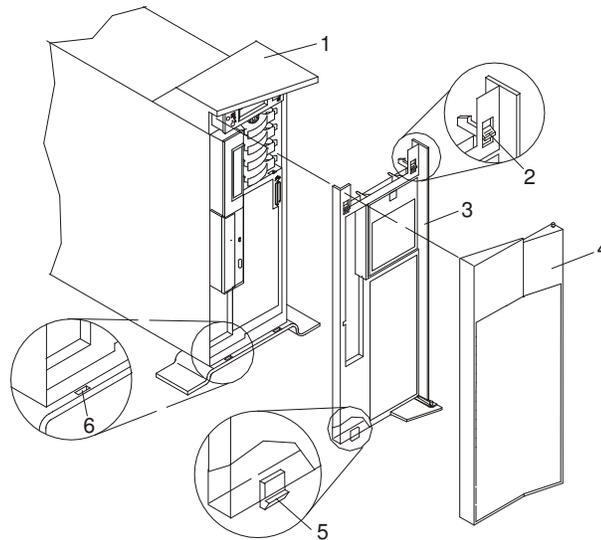
1	PL420T	**4**	Front Door
2	Bezel–release lever	**5**	Lower Bezel Locking Tab (Quantity 2)
3	Front Bezel	**6**	Lower Bezel Retaining Slots (Quantity 2)

Front Bezel Replacement (PL420T)

To replace the front bezel, do the following:

1. Place the two lower bezel locking tabs into the retaining slots located on the chassis base.

2. Rotate the bezel up toward the top of the chassis, ensuring that the aligning pins are aligned with their mating holes located on the chassis.

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 (PL420T) on page 3-20.

Install the Hardware Management Console (HMC)

The Hardware Management Console (HMC) user interface provides the functions needed to create and maintain a multiple–partitioned environment. For more information about the HMC, see the *Hardware Management Console Operations Guide*.

Position the HMC and Monitor

Position the HMC and monitor at or near their desired location.

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

- Monitors can weigh as much as 35 kg (77 pounds). Use caution when lifting or moving the monitor.

- Leave enough space around the HMC to safely and easily complete the setup procedures.

- Observe standard ergonomic guidelines while arranging your system unit so that you can work comfortably and safely. For more information on arranging your workstation, contact your system supplier.

- Be sure to maintain at least 51 mm (2 inches) of space on the sides of the system unit and 152 mm (6 inches) at the rear of the system unit to allow the system unit to cool properly. The front of the system requires a minimum of 76 mm (3 inches) of space. Blocking the air vents can cause overheating, which might result in a malfunction or permanent damage to the system unit.

- Put the HMC in a location where all necessary power outlets and network connections can safely be reached.

- Put the display in a stable and sturdy location.

Connect the Cables

Use the following steps to connect the cables to your HMC. Look for the small icons on the back of your HMC that show where to attach the keyboard, mouse and display cables.

1. Attach the monitor cable to the monitor connector and tighten the screws.
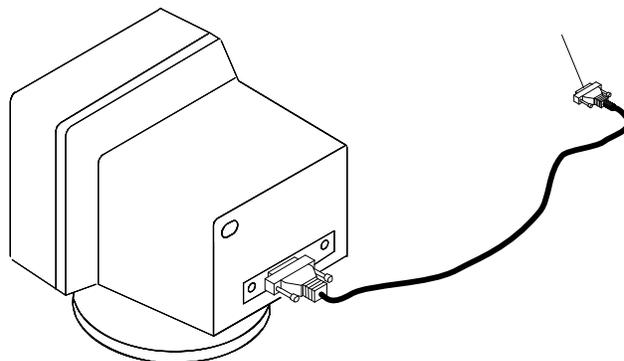
2. If a label for the monitor was provided with your system, attach the label to the lower–right corner of the monitor.

3. Attach the power cables to the monitor (**1**). If the HMC has a voltage switch, ensure that it is in the correct position for the supply voltage.

   Attention: *Do not* plug the power cables into an electrical outlet at this point.
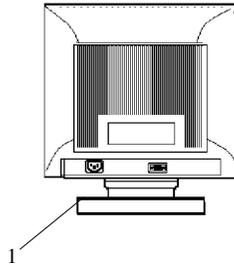
1 Power Cable Receptacle

4. Connect the mouse and keyboard to their connectors, as shown in the following illustration.
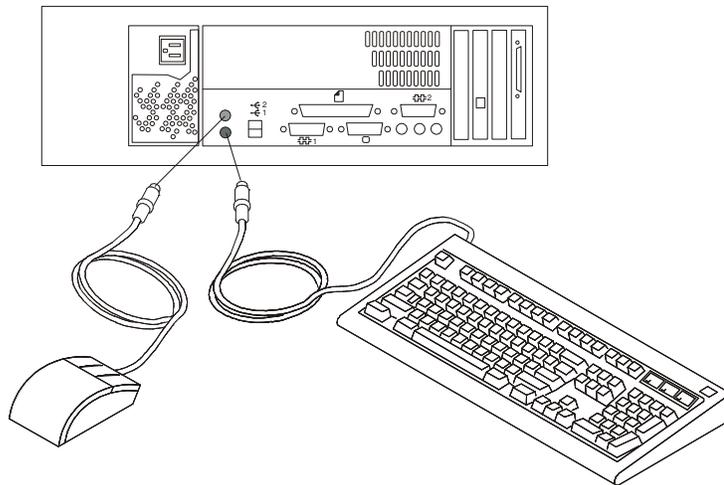
5. Connect the HMC serial cable into the HMC1 connector, located on the back of your system unit. For two HMCs, connect the redundant HMC serial cable into the HMC2 connector, located on the back of your system unit. The following illustration shows the location of the serial ports on the back of the HMC and the HMC1 and HMC2 connectors located on back of your system unit.
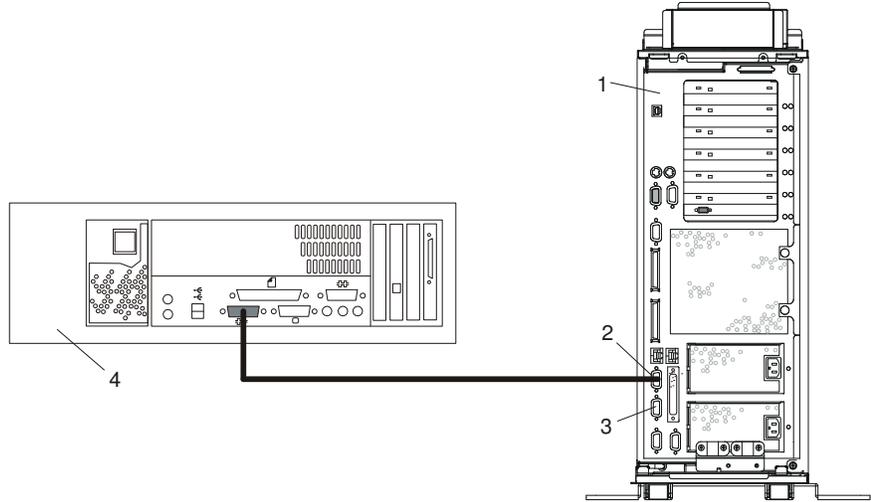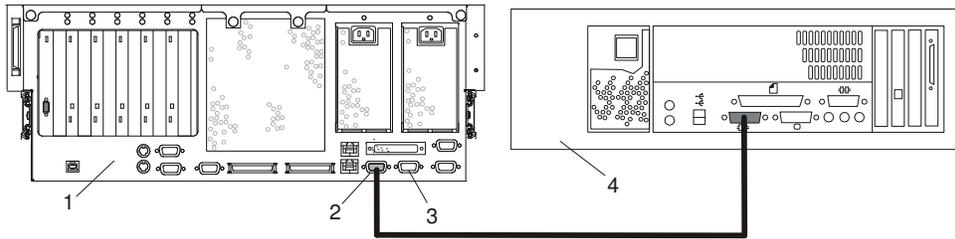
1 PL420R or PL420T

2 HMC1 Connector

3 HMC2 Connector

4 Hardware Management Console (HMC)

To order the correct–length serial cables to connect the PL420R and PL420T to the HMC, call your service representative.

Connect the 8–Port Adapter Cables

If you are using any optional 8–port adapters, connect the cables to the appropriate connectors in slots 1 through 4.
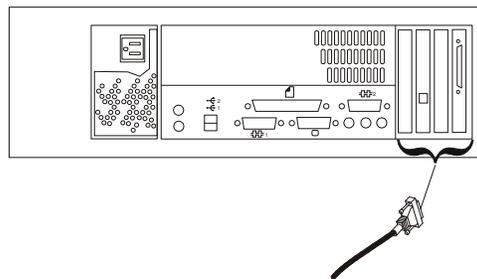
Connect the External Modem

To connect the external HMC modem, do the following:

1. Connect the modem cable to the external HMC modem (1).

2. Connect the other end of the modem cable to serial port 2.

3. Connect the phone cable line port of the external modem (2).

4. Connect the other end of the phone cable to the analog jack on your wall.
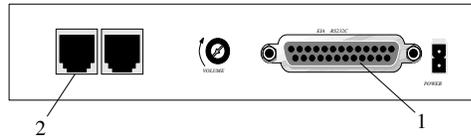
Check the Microswitch Setting on the Modem

Check the microswitch settings on the modem. The settings should be set as follows:

Switch	Position	Function
1	Up	Force DTR
2	Up	Flow Control &E4
3	Down	Result Codes Enabled
4	Up	Modem Emulation Disabled
5	*Down	Auto Answer Enabled
6	Up	Maximum Throughput Enabled
7	Up	RTS Normal Functions
8	Down	Enable Command Mode
9	Down	Remote Digital Loopback Test Enabled
10	Up	Dial–Up Line Enabled
11	Down	AT Responses Enabled (Extended Responses Disabled)
12	*Down	Asynchronous Operation
13	UP	28.8KB Line Speed
14	Up	
15	Up	CD and DSR Normal Functions
16	Up	2–Wire Leased Line Enabled

Note:
 * Only switches 5 and 12 are changed from the factory default settings.

Connect the LAN Cable (If Applicable)

The LAN cable is recommended because each active partition reports errors to the HMC's Service Focal Point application through the LAN network. The HMC must be attached to the system's LAN, and each partition should have a LAN adapter assigned as a resource. The LAN connection is also used to manage dynamic LPAR operations.

Connect the LAN to the adapters assigned to each partition and to the LAN connection on the HMC system hardware.

Plug in the HMC Power Cable

1. Plug in the power cable, as shown in the following illustration.
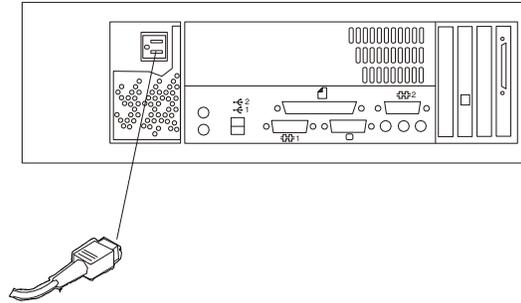
2. Plug the power cables for the monitor, HMC, and modem into electrical outlets.

Configure the Network

To configure the network, do the following:

1. Log in to the (HMC) using the user ID `hscroot` and password `abc123`.

   Note: User IDs and passwords are case–sensitive. Enter the user ID and password exactly as shown.

2. Select the **System Configuration** Application in the Navigation area.

3. Select **Customize Network Settings** in the Contents area.

4. Type the appropriate network information in the **IP Address**, **Name Services**, and **Routing** tabs on the Network Configuration window.

5. Select **OK**.

For more information on configuring the network, refer to the *Hardware Management Console Operations Guide*.

Configure Inventory Scout Services

Inventory Scout Services is an AIX tool that surveys managed systems for hardware and software information.

To set up Inventory Scout Services for each system managed by the HMC, and for each logical partition running an instance of AIX, all partitions must be configured in order to conduct microcode surveys or collect Vital Product Data (VPD).

To set up Inventory Scout Services for each managed system and partition, you must be a member of one of the following roles:

• System Administrator

• Advanced Operator

• Service Representative

Refer to the *Hardware Management Console Operations Guide* for more information on the previous roles.

Note:

   • The partition password requested in step 7 of the following procedure is the password for Inventory Scout (invscout) User ID password on the AIX images.

   • The Inventory Scout listening port is set by starting the **invscout** daemon on the AIX images. This port will default to 808.

   • If a system has been powered on using the Full System Partition power–on option, you must configure the Full System Partition to use Inventory Scout Services.

To set up Inventory Scout Services for each managed system and partition, do the following:

1. In the Navigation area, double–click the **Inventory Scout Services** icon.
2. In the Contents area, select **Inventory Scout Profile Configuration.**
3. From the list, select a managed system.
4. Select **Next**.
5. From the list, select the partition you want to configure.
6. Select **Next**.
7. The next window identifies the selected partition. Type the following:
   - Partition password
   - Inventory Scout listening port
   - IP address of the AIX partition

If you have completed configuration of all partitions, click **Finish**.

OR

To continue to configure additional partitions until all are configured, click **Back**.

Collect Vital Product Data Information

Use this task to collect the Vital Product Data (VPD) for the specified managed system into a file.

To collect the managed system's VPD, you must be a member of one of the following roles:

- System Administrator
- Advanced Operator
- Service Representative

To collect the managed systems VPD, do the following:

1. In the Navigation area, double–click the **Inventory Scout Services** icon.
2. In the Contents area, select **Collect VPD Information**.
3. From the list, select the name of the managed system for which you want to collect the Vital Product Data.
4. Select **Next**.
5. The wizard requests confirmation about the managed system, and then prompts you to insert a blank, DOS–formatted diskette into the HMC diskette drive.
6. Click **Finish**. This file is then copied to the diskette in the specified drive.

To conduct a microcode survey, see the *Hardware Management Console Operations Guide*.

PCI Adapters

Before performing this procedure, read Safety Notices on page iii.

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 in this system unit, you *must* remove the blue handle or support from the card.

2. With this system, you can install 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.

Before you install the adapter, determine if the PCI adapter you are installing is hot–pluggable. See Appendix C: *PCI Adapter Placement Reference.*

If you are removing a PCI adapter that is:

- Non–hot–pluggable, go to Non–Hot–Pluggable PCI Adapter Removal on page 3-31.

- Hot–pluggable, go to Hot–Pluggable PCI Adapter Removal on page 3-31.

PCI Hot–Plug Manager Access

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

Note: A PCI adapter is only hot–pluggable if the PCI adapter is supported for hot–plug applications. See Appendix C: *PCI Adapter Placement Reference*, for complete information regarding your PCI adapter.

Accessing Hot–Plug 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*.

This publication is also contained on the AIX Documentation CD. The documentation is made accessible by loading the ”Hypertext Library for AIX 5.1” CD-ROM onto the hard disk or by mounting the CD in the CD–ROM drive.

To access the hot–plug menus, do the following:

1. Log in as root user.

2. At the command line, type `smitty`.

3. Select **Devices**.

4. Select **PCI Hot Plug Manager** and press Enter.

5. The PCI Hot–Plug Manager menu displays. Return to the procedure that directed you here. The following section describes the menu options.

PCI Hot–Plug Manager Menu

The following options are available from the PCI Hot Plug Manager menu:

Note: For information about the PCI slot LED states, see Component LEDs on page D-2.

List PCI Hot–Plug Slots

Provides a descriptive list of all slots that support PCI hot–plug 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–Plug Adapter

Allows the user to add a new PCI hot–plug–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–Plug Adapter

Allows the user to remove an existing adapter, or replace an existing adapter with an identical one. For this option to work, 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–Plug Slot

Allows the user to identify a PCI slot. The selected PCI slot will go into the Identify state. See Component LEDs on page D-2.

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, the customer 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, remove, and replace 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. Consult with your system administrator or software support to determine the correct method to configure the replacement device.

Non–Hot–Pluggable PCI Adapter Removal

To remove a PCI adapter, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

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 has been completely disconnected.

4. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9. See the following illustration.

5. Determine which adapters you plan to remove, then label and disconnect all cables attached to that adapter.

6. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system unit.

7. Before handling any card, board, or memory DIMM, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

8. If you are removing a long adapter, make note of how the back edge of the adapter slides into the molded grooves located on the back wall of the PCI cooling fan bracket.
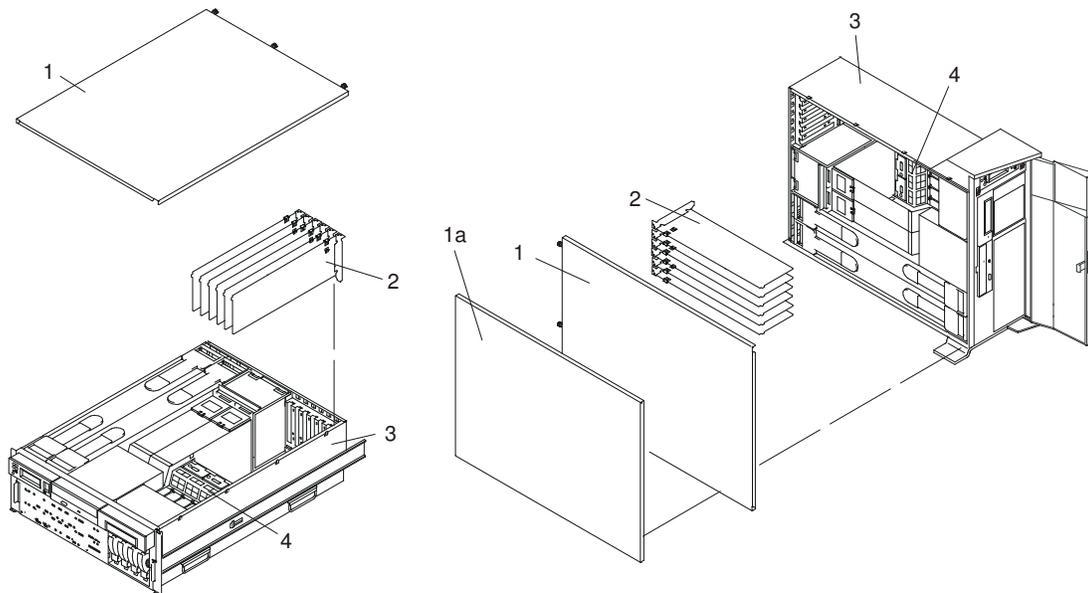
1	Service Access Cover	**3**	System Unit
1a	Outer Access Cover	**4**	PCI Cooling Fan Bracket
2	PCI Adapters		

9. Rotate the adapter retainer clip counterclockwise, as shown in the following illustration.

1 PL420R or PL420T
2 Adapter Retainer Assembly

3 Adapter Retainer Assembly (retainer seat down and the retainer clip in the locked position)
4 Adapter Retainer Assembly (retainer seat down and the retainer clip in the unlocked position)

5 PCI adapter faceplate (dotted lines)
6 Adapter Retainer Assembly (in the unlocked position)
7 PCI Adapter

10. The tab resting on the adapter retention bracket should spring to a vertical position, coming to a rest next to the adapter retention latch.

11. 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.

12. 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 Adding or Replacing a Non–Hot–Pluggable PCI Adapter on page 3-33.

13. If you have other options to install, refer to Options and Task List on page 3-2. If you do not have other options to install, continue on to the next step.

14. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.
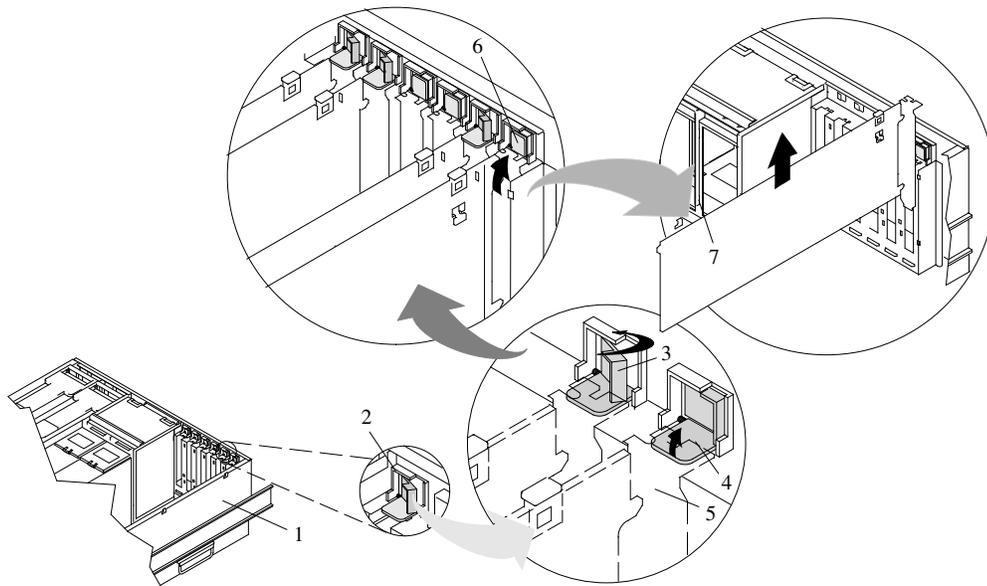
15. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

16. Connect the adapter cables.

17. Reconnect the power source to the system.

18. On a PL420R, route the cables through the cable–management arm.

19. Power on the system as described in Starting the System Without an HMC Attached on page 3-3.

20. On a PL420R, close the rack doors.

On a PL420T, close the bezel door.

Adding or Replacing a Non–Hot–Pluggable PCI Adapter

To add or install an adapter, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

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 has been completely disconnected from its power source.

4. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

5. Refer to the BkSym.PCIAdapter for information regarding slot restrictions for adapters that can be used in this system.

6. If necessary, open the adapter retainer assembly and remove the adapter expansion slot shield.

7. Before handling any card, board, or memory DIMM, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

8. If necessary, remove the adapter from the antistatic package.

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

9. Place the adapter, component–side up, on a flat, static–protective surface.

10. Set any jumpers or switches as instructed by the adapter's manufacturer.

11. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the PCI riser card.

12. 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 located on the PCI riser card. Inserting and seating the adapter card improperly might cause damage to the PCI riser card or the adapter.

13. Lower the tab onto the PCI adapter EMC shield/connector faceplate. Rotate the adapter retainer clip clockwise until it covers the tab at approximately a 45–degree angle. See the following illustration.

1 System Unit

2 Adapter Retainer Assembly (in the unlocked position)

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

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

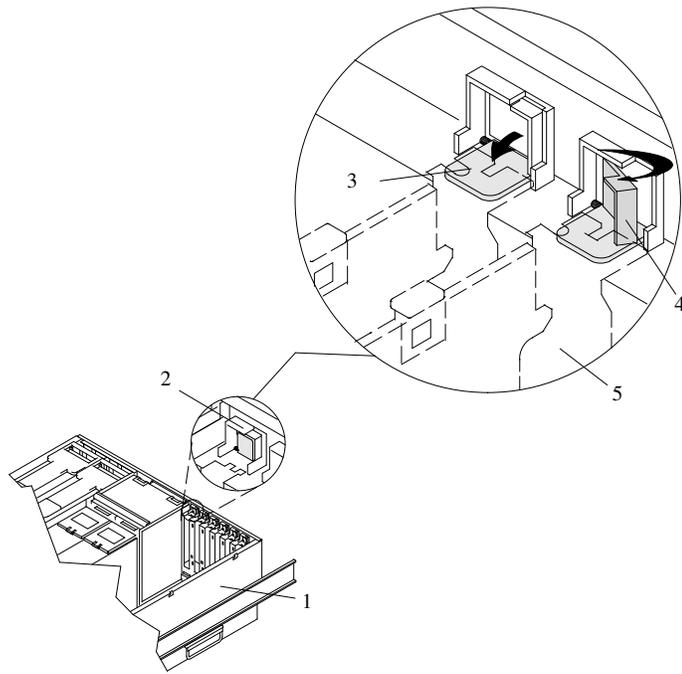**5** PCI adapter faceplate (dotted lines)

14. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

15. If you are servicing a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

16. Connect the adapter cables.

17. Reconnect the power source to the system.

18. If you are servicing a PL420R, route the cables through the cable–management arm.

19. Power on the system as described in Starting the System Without an HMC Attached on page 3-3.

20. On a PL420R, close the rack doors.

   On a PL420T, close the bezel door.

Hot–Pluggable PCI Adapter Removal

Note: Removing a hot–pluggable PCI adapter requires 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 also be taken offline. 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*.

This publication is also contained on the AIX Documentation CD. The documentation is made accessible by loading the "Hypertext Library for AIX 5.1" CD-ROM onto the hard disk or by mounting the CD in the CD–ROM drive.

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

1. On a PL420R, open the front and rear rack doors, and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

3. Determine which adapters you plan to remove.

4. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system unit.

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

6. Refer to PCI Hot–Plug Manager Access on page 3-29, and follow the steps in the access procedure to select **PCI Hot Plug Manager**. Then return here to continue.

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

8. Press F4 to display the Device Names menu.

9. Select the adapter you are removing.

10. Use the Tab key to answer NO to **Keep Definition** and YES to **Unconfigure Child Devices**. Press Enter.

11. 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.

12. Label and disconnect all cables attached to that adapter.

13. Press F3 to return to the PCI Hot–Plug Manager menu.

14. Select **Replace/Remove a PCI Hot–Plug Adapter** and press Enter. The Replace/Remove a PCI Hot–Plug Adapter menu displays.

    Note: If the PCI Hot–Plug Adapter menu indicates that the slot for the just–replaced adapter is reading `empty`, do the following:

    a. From the Replace/Remove a PCI Hot–Plug Adapter menu, select **F3** to cancel.

    b. Select **Add PCI Hot–Plug Adapter**, and press Enter. The display screen indicates that the PCI slot is empty.

    c. On the display screen, select the indicated empty slot. Look at the adapter you intend to replace. A slow blinking amber LED located next to the adapter on the PCI riser card is indicating that the slot has been identified. Press Enter. The adapter has been put into the action state.

d. Completely remove the hot–plug adapter from the slot. The LED goes off.

e. Reinstall the adapter, ensuring that it is correctly seated. Press Enter.

f. Select **F3** to return to the PCI Hot–Plug Adapter Menu.

g. Select **Install/Configure Devices Added after IPL**.

h. At the display screen, identify the PCI hot–plug slot that your adapter is using. If it still shows as being empty, redo steps a through g. However, before you reinstall the adapter, test it. If the adapter fails the test, redo steps a through g with a new adapter.

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, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

19. If you are removing a long adapter, make note of how the back edge of the adapter slides into the molded grooves located on the back wall of the PCI cooling fan bracket.
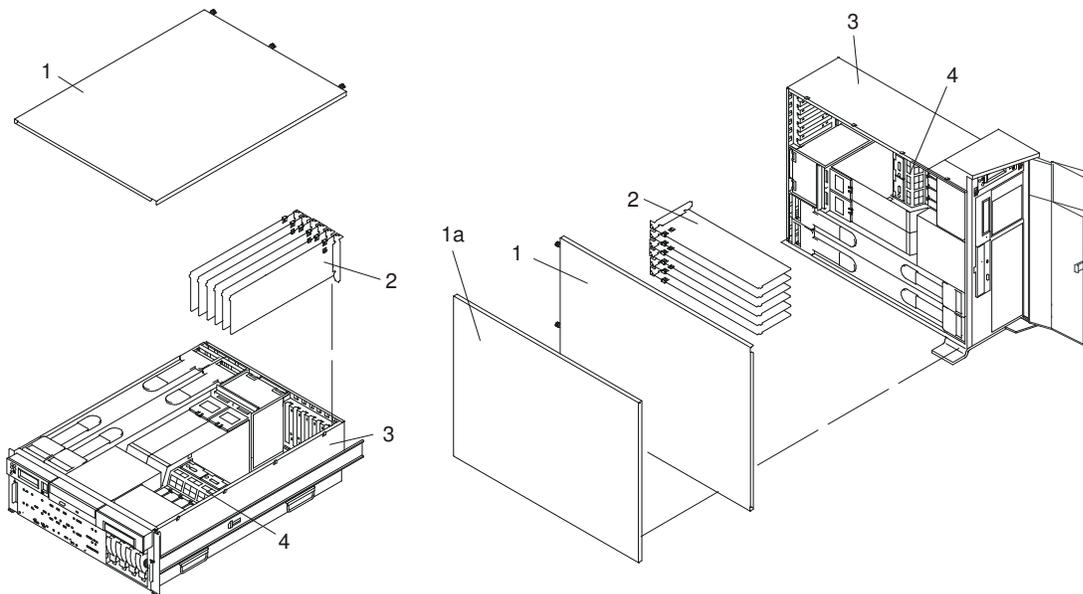
1	Service Access Cover	**3**	System Unit
1a	Outer Side Cover	**4**	PCI Cooling Fan Bracket
2	PCI Adapters		

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

1	System Unit	**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 retainer clip in the locked position)	**7**	PCI Adapter
4	Adapter Retainer Assembly (retainer seat down and the retainer clip in the unlocked position)		

21.Carefully grasp the adapter by the edges and pull it straight out from the PCI riser card.

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 the F3 key to return to the PCI Hot–Plug Manager menu and then return to step 14 on page 3-35.

27.Press F10 to exit the Hot–Plug Manager.

28.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.

29.If you have other options to install, refer to Options and Task List on page 3-2. If you do not have other options to install, continue on to the next substep.

30.Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

31. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

32. Connect the adapter cables.

33. On a PL420R, route the cables through the cable–management arm.

34. On a PL420R, close the rack doors.

    On a PL420T, close the bezel door.

Replacing a Hot–Pluggable PCI Adapter

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 Hot–Pluggable PCI Adapter Removal on page 3-31 and Installing a Hot–Pluggable PCI Adapter on page 3-33.

2. Removing a hot–pluggable PCI adapter requires 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.

   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*.

   This publication is also contained on the AIX Documentation CD. The documentation is made accessible by loading the "Hypertext Library for AIX 5.1" CD-ROM onto the hard disk or by mounting the CD in the CD–ROM drive.
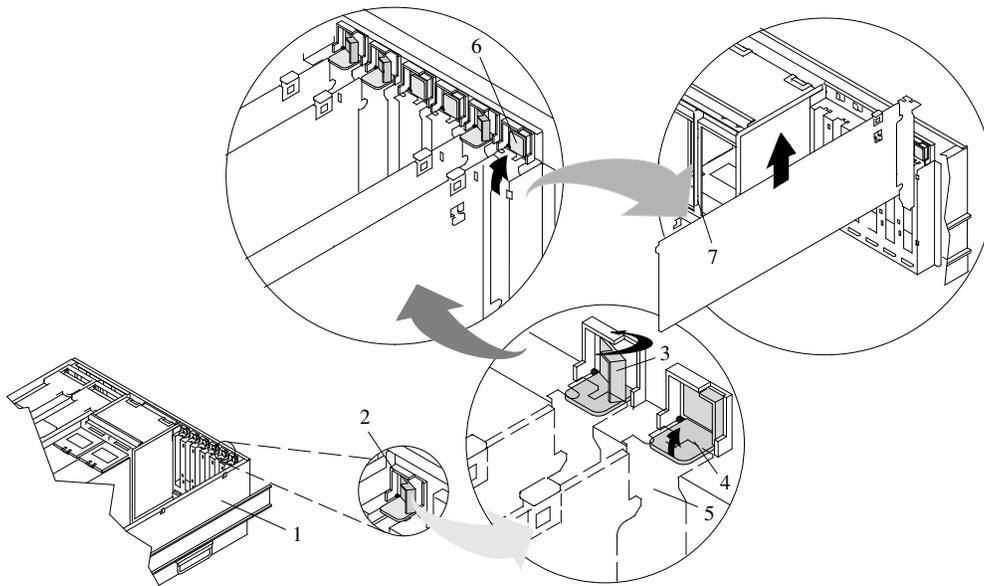
To replace a hot–plug PCI adapter, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

3. Refer to Appendix C for information regarding slot restrictions for adapters that can be used in this system.

4. Before handling any card, board, or memory DIMM, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

5. Determine the slot from which you are removing the adapter.

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

7. Refer to PCI Hot–Plug Manager Access on page 3-29, and follow the steps in the access procedure to select **PCI Hot Plug 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–plug, it must be replaced by shutting down the system. Go to Adding or Replacing a Non–Hot–Pluggable PCI Adapter on page 3-33.

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–Plug Manager menu.

14. Select **Replace/Remove a PCI Hot–Plug Adapter** and press Enter. The Replace/Remove a PCI Hot–Plug Adapter menu displays.

> **Note:** If the PCI Hot–Plug Adapter menu indicates that the slot for the just–replaced adapter is reading `empty`, do the following:

   a. From the Replace/Remove a PCI Hot–Plug Adapter menu, select **F3** to cancel.

   b. Select **Add PCI Hot–Plug Adapter**, and press Enter. The display screen indicates that the PCI slot is empty.

   c. On the display screen, select the indicated empty slot. Look at the adapter you intend to replace. A slow blinking amber LED located on the PCI riser card is indicating that the slot has been identified. Press Enter. The adapter has been put into the action state.

   d. Completely remove the hot–plug adapter from the slot. The LED goes off.

   e. Reinstall the adapter, ensuring that it is correctly seated. Press Enter.

   f. Select **F3** to return to the PCI Hot–Plug Adapter Menu.

   g. Select **Install/Configure Devices Added after IPL**.

   h. At the display screen, identify the PCI hot–plug slot that your adapter is using. If it still shows as being empty, redo steps a through g. However, before you reinstall the adapter, test it. If the adapter fails the test, redo steps a through g with a new adapter.

15. Move the cursor to select the adapter that you are removing, and press Enter.

16. 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.

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

19. Carefully grasp the adapter by the edges, and pull it straight out from the PCI riser card.

1	System Unit	**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 retainer clip in the locked position)	**7**	PCI Adapter
4	Adapter Retainer Assembly (retainer seat down and the retainer clip in the unlocked position)		

20. If necessary, remove the replacement adapter from the antistatic package.

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

21. Place the adapter, component–side up, on a flat, static–protective surface.

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

23. 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. If you are installing a full–length adapter, ensure that both ends of the adapter engage the card guides.

24. Lower the plastic retaining seat over the PCI adapter faceplate (dotted lines). Rotate the locking latch clockwise until it clicks into the locked position. Some full–length cards can be supported by rotating the blue adapter latch on the right end of the adapter counterclockwise.
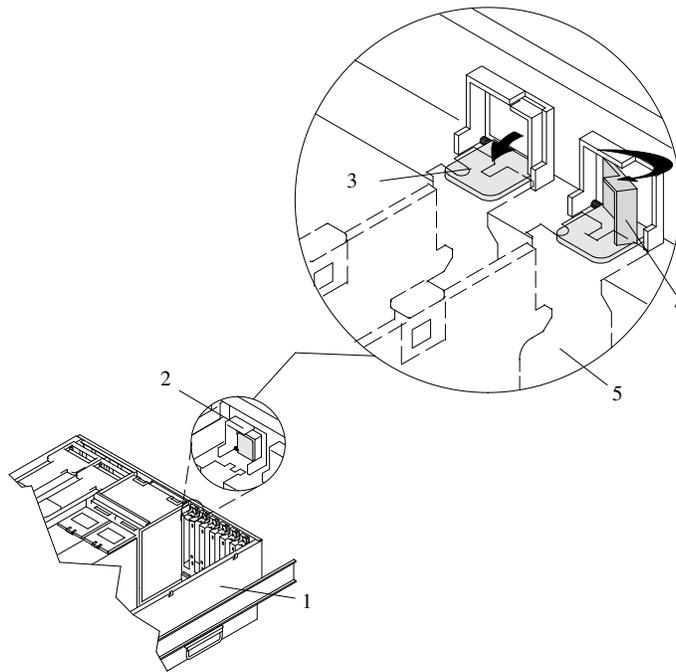
1 System Unit

2 Adapter Retainer Assembly (in the unlocked position)

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

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

5 PCI adapter faceplate (dotted lines)

25. Connect appropriate cables and devices to the adapter.

26. 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.

27. Press the F3 key to return to the PCI Hot–Plug Manager menu.

28. 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. Consult with your system administrator or software support to determine the correct method to configure the replacement device.

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

   OR

   If you have other adapters to replace, press the F3 key to return to the PCI Hot–Plug Manager menu and then return to step 14 on page 3-39.

30. Press F10 to exit the Hot–Plug 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.

31. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.
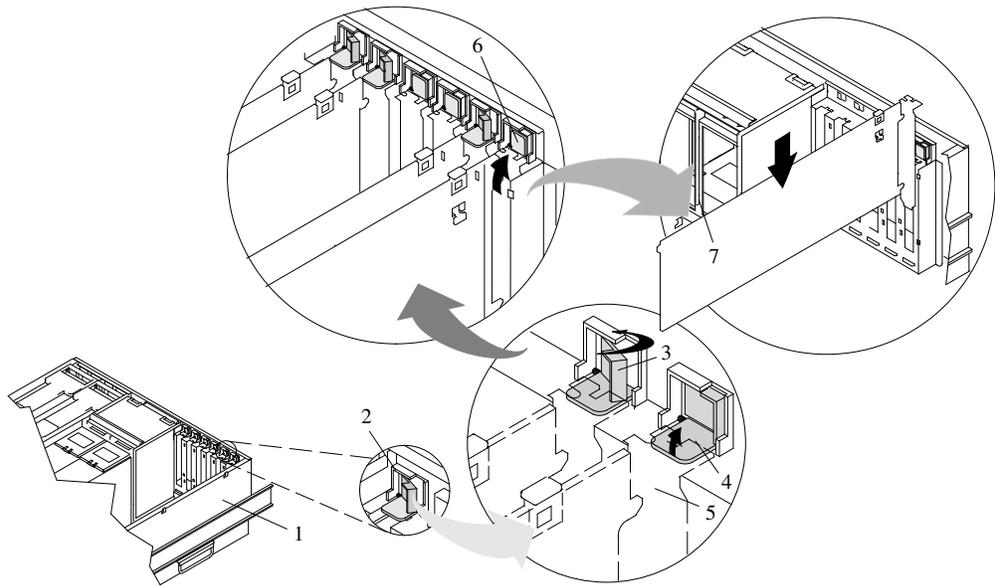
32. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

33. Connect the adapter cables.

34. On a PL420R, route the cables through the cable–management arm.

35. On a PL420R, close the rack doors.

    On a PL420T, close the bezel door.

Installing a Hot–Pluggable PCI Adapter

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 add or install an adapter, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Remove the service access cover (**1**) as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

3. Refer to Appendix C for information regarding slot restrictions for adapters that can be used in this system.

4. If necessary, remove the adapter expansion slot shield.

5. Before handling any card, board, or memory DIMM, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

6. If necessary, remove the adapter from the antistatic package.

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

7. Place the adapter, component–side up, on a flat, static–protective surface.

8. Set any jumpers or switches as described by the adapter's manufacturer.

9. Refer to PCI Hot–Plug Manager Access on page 3-29, and follow the steps in the access procedure to select **PCI Hot Plug Manager**. Then return here to continue.

10. From the PCI Hot–Plug Manager menu, select **Add a PCI Hot–Plug Adapter** and press Enter. The Add a Hot–Plug Adapter window displays.

11. See Appendix C for adapter placement information. Then select an empty PCI slot for the adapter.

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

13. Rotate the locking retainer clip, lift the plastic stop, and remove the expansion slot cover.

1 System Unit	**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 retainer clip in the locked position)	**7** PCI Adapter
4 Adapter Retainer Assembly (retainer seat down and the retainer clip in the unlocked position)	

14. Follow the instructions on the screen to install the adapter until the LED for the specified PCI slot is set to the Action state. See Component LEDs on page D-2.

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 face plate. Rotate the adapter retainer clip clockwise until it covers the tab at approximately a 45–degree angle. See the following illustration.
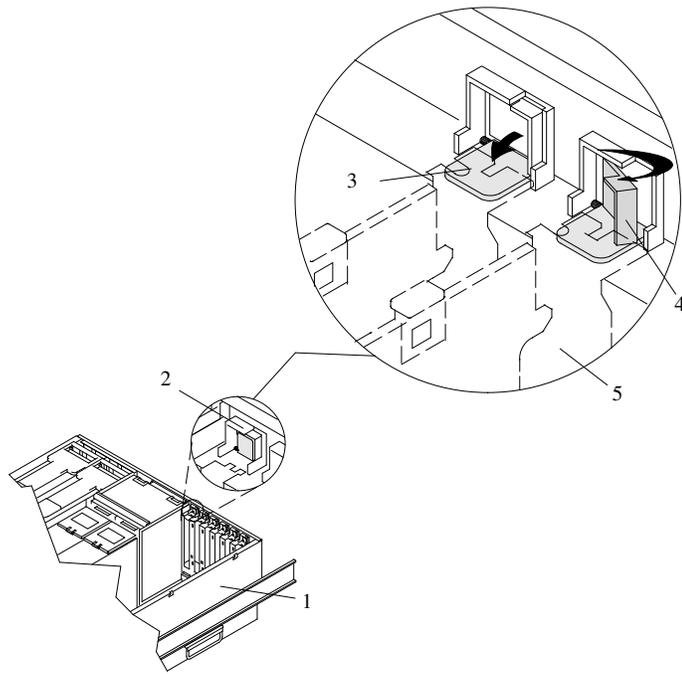
1 System Unit

2 Adapter Retainer Assembly (in the unlocked position)

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

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

5 PCI adapter face plate (dotted lines)

17. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

18. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

19. Connect the adapter cables.

20. On a PL420R, route the cables through the cable–management arm.

21. On a PL420R, close the rack doors.

    On a PL420T, close the bezel door.

Fans

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

Optional Hot–Swap Processor Fan Installation

When installing a hot–swap processor cooling fan, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7. On a PL420T, open the bezel door.

2. If you are installing a processor cooling fan into a PL420R, remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9. If you are installing a processor cooling fan into a PL420T, remove the outer side cover as described in Outer Side Cover Removal (PL420T) on page 3-14, then remove the service access cover as cescribed in Service Access Cover Removal (PL420T) on page 3-9.

3. Locate the processor cooling fan assemblies, as shown in the following illustration.

4. Lift the processor fan access cover.

5. Place your thumb and index finger into the two holes located on the top of the replacement fan.

6. Align the connector located on the fan assembly with the docking connector located on the CEC backplane.

7. Insert the processor fan and firmly press it into its docking connector.

8. Verify that the fan's amber LED is not lit. If the fan LED is lit, reseat the fan or the fan cable.

9. For proper cooling of the processor, ensure the processor cooling fan access cover springs back to the closed position.

10. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

11. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8 and close the rack doors.

   On a PL420T, close the bezel door.

PL420R
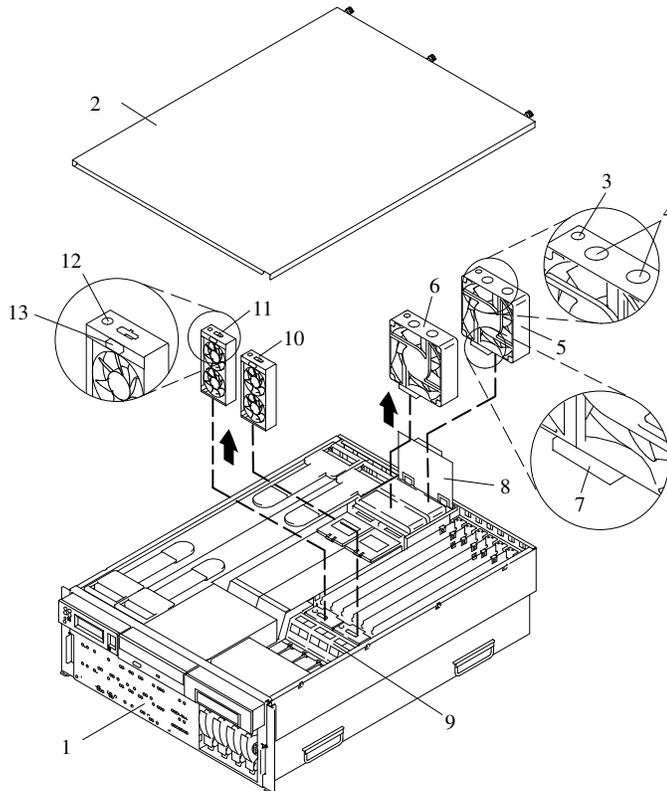
1	PL420R	**7**	Processor Fan Bottom Connector
2	Service Access Cover	**8**	Processor Cooling Fans Access Cover
3	Processor Fan Amber LED	**9**	Adapter Cooling Fan Retaining Bracket
4	Finger Holes	**10**	PCI Adapter Cooling Fan Assembly (Fan #4)
5	Processor Card Cooling Fan (Fan #1)	**11**	PCI Adapter Cooling Fan Assembly (Fan #3)
6	Processor Card Cooling Fan (Fan #2)	**12**	PCI Adapter Fan Amber LED
		13	Adapter Cooling Fan Front Connector

PL420T
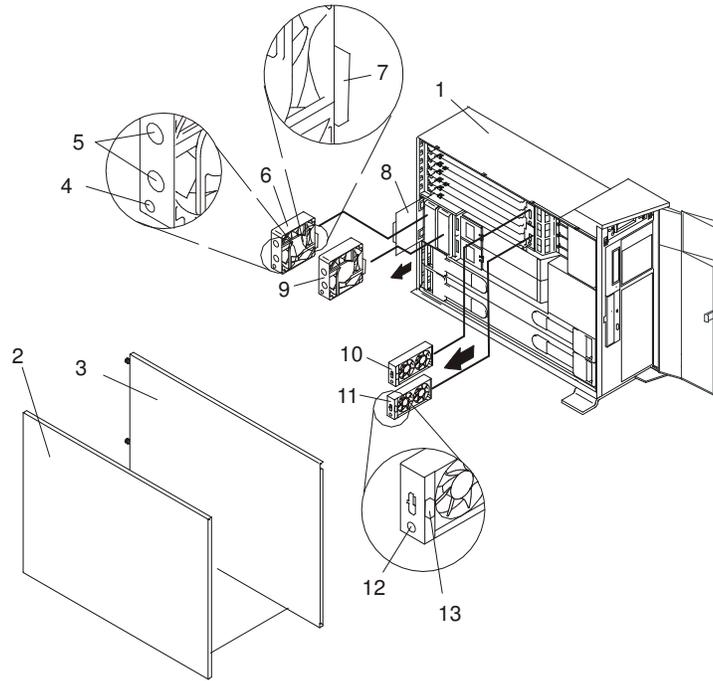
1	PL420T	**8**	Processor Cooling Fans Access Cover
2	Outer Side Cover	**9**	Processor Card Cooling Fan (Fan #2)
3	Service Access Cover	**10**	Adapter Cooling Fan Assembly (Fan #4)
4	Processor Fan Amber LED	**11**	Adapter Cooling Fan Assembly (Fan #3)
5	Finger Holes	**12**	PCI Adapter Fan Amber LED
6	Processor Card Cooling Fan (Fan #1)	**13**	PCI Adapter Cooling Fan Front Connector
7	Processor Fan Bottom Connector		

Media Drives (Diskette, CD–ROM, Tape, or Disk Drive)

Note: The two media bays can be used to house an IDE CD–ROM, IDE DVDROM, SCSI DVDRAM, tape drive, or diskette drive. See the illustrations on pages 3-49 and 3-50 for the location of the two media bays. However, if your system has an IDE device, it should be placed in media bay 1.

Before performing this procedure, read the following:

- Safety Notices on page iii

- Laser Safety Information on page iv

Media Removal

To remove any of the media drives located in either media bay 1 or media bay 2, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

    On a PL420T, open the bezel door.

2. If you are servicing a PL420T, open the bezel door.

3. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

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 power source to the system has been completely disconnected.

5. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

6. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21 or Front Bezel Removal (PL420T) on page 3-21.

7. Disconnect the power and signal cables from the media device that you are servicing.

8. Grasping the top front of the media device, depress the release tab located on the bottom center of the media drive and slide the media drive out of the media bay.

9. Remove the four retaining screws that hold the carrier tray assembly to the media drive.

10. Put the media drive and carrier tray assembly in a safe place.

PL420R
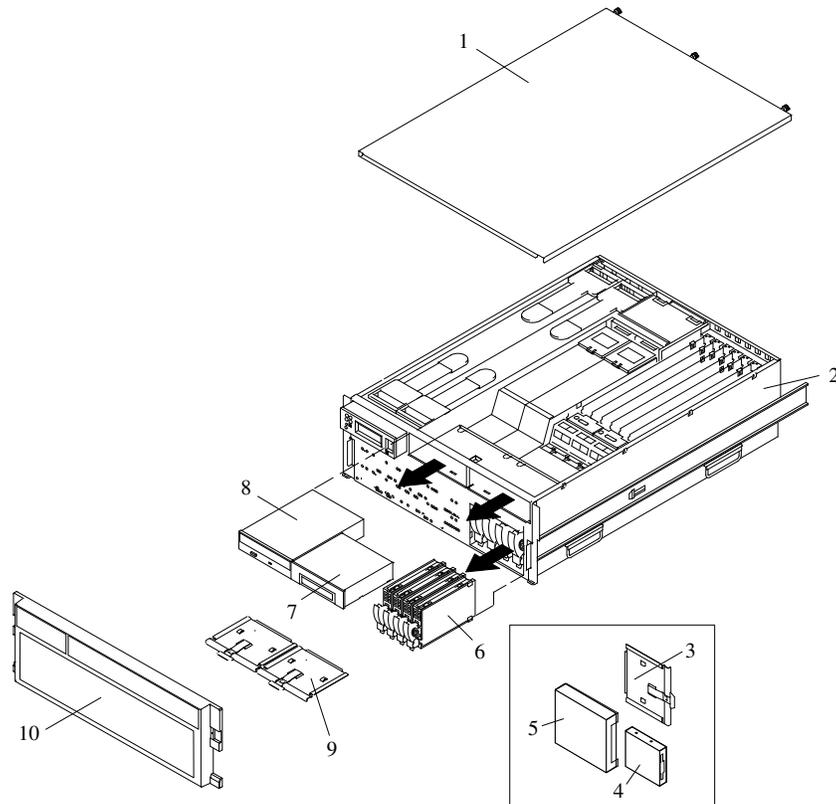
1	Service Access Cover	**6**	Disk Drive (4 Pack)
2	PL420R	**7**	Optional Media Device (for example: Tape Drive, DVD, CD–ROM, Diskette Drive)
3	Media Carrier Tray	**8**	IDE CD–ROM
4	Diskette Drive (Optional)	**9**	Media Carrier Trays
5	Diskette Drive Cage (Optional)	**10**	Front Bezel

PL420T
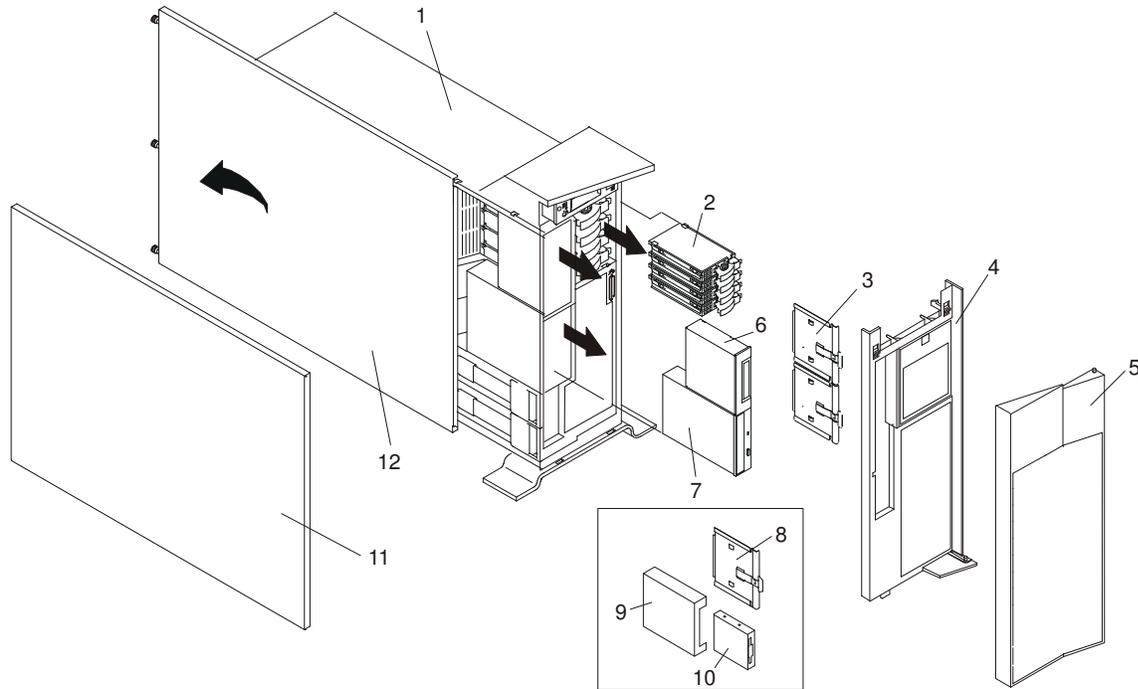
1	PL420T	**7**	IDE CD–ROM
2	Disk Drive (4 Pack)	**8**	Diskette Drive Carrier (Optional)
3	Media Carrier Trays	**9**	Diskette Drive Cage (Optional)
4	Front Bezel	**10**	Diskette Drive (Optional)
5	Bezel Door	**11**	Outer Side Cover
6	Optional Media Device (for example: Tape Drive, DVD, CD–ROM, Diskette Drive)	**12**	Service Access Cover

Media Drive Replacement

To replace a media drive, do the following:

1. Before handling any card, board, or memory DIMM, be sure to use your electrostatic discharge strap to minimize static–electric discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

2. Set any jumpers or switches on the device according to the documentation provided with the drive.

3. Using four retaining screws, secure the media carrier tray to the bottom of the media drive.

4. Insert the media drive into the media bay, pushing the drive in until the release tab clicks into the locked position.

5. Connect the media signal and power cables to the drive.

6. Replace the bezel as described in Front Bezel Replacement (PL420R) on page 3-21 or Front Bezel Replacement (PL420T) on page 3-22.

7. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

8. If you are servicing a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

9. Reconnect the power source to the system.

10. Power on the system as described in Starting the System Without an HMC Attached on page 3-3.

11. After the PL420R has successfully powered on, close the rack doors.

After the PL420T has successfully powered on, close the bezel door.

Hot–Plug Disk Drives

Before performing the following procedure, read Safety Notices on page iii.

Note: You do not have to power off the system to remove a hot–plug disk drive. Before you perform these procedures, ensure that the customer has taken 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–plug disk drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption.

Deconfiguring (Removing) or Configuring a Disk Drive

Use this procedure if you are removing or replacing a drive while the system power is turned on.

Deconfiguring (Removing)

Before removing a disk drive from a volume group, do the following:

1. Log in as root user.

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

3. At the command line, type `smitty`.

4. Select **System Storage Manager (Physical and Logical Storage)** and press Enter.

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

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

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

8. Select **Remove a Physical Volume from a Volume Group**.

9. Press F4 to list the available volume groups, then select the volume group name and press Enter.

10. Press F4 to select a physical volume, and follow the instructions on the screen to select the physical volume. Then press Enter.

11. Go back to the first menu and select **System Storage Management (Physical and Logical Storage)**.

12. Select **Removable Disk Management**.

13. Select **Remove a Disk**.

14. Select the desired disk from the list on the screen and press Enter.

15. Follow the instructions on the screen to remove the drive.

16. When you are asked "Are you sure?," press Enter. The power LED on the drive that you selected will remain on.

17. Remove the disk drive by pulling the disk drive lever toward you until it is completely open. 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.

18. Press F10 to exit **smitty**.

Configuring (Replacing)

To replace a disk drive into a volume group, do the following:

1. Remove the disk drive from its protective packaging, and open the drive latch handle.

2. Install the disk drive in the drive slot. Align the disk drive with the drive slot rails, and slide the disk drive into the slot until it contacts the backplane at the rear of the drive bay. The drive should be in far enough for the latch handle to engage the latch. Push the disk drive lever up and to the rear to lock the disk drive. The LED above the slot will turn on.

3. Log in as root user.

4. At the command line, type `smitty`.

5. Select **Devices**.

6. 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

7. Go back to the first menu and select **System Storage Management (Physical and Logical Storage)** and press Enter.

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

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

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

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

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

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

14. Press F10 to exit **smitty**.

Hot–Plug Disk Drive Removal

Attention: Before you perform the following procedure, ensure that the customer has taken 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–plug drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption. Refer to Deconfiguring (Removing) or Configuring a Disk Drive on page 3-51.

To remove a hot–plug 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 (Removing) or Configuring a Disk Drive on page 3-51.

3. On a PL420R, open the rack front door.

   On a PL420T, open the front bezel door.

4. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21 or the disk drive access cover as described in Disk Drive Access Cover Removal (PL420T) on page 3-17.

5. Locate the hot–plug disk drive you plan to remove. If you are removing a faulty disk drive, a lit amber LED located at the front right side of each disk drive will help you isolate the faulty drive.

6. Log in as root user.

7. At the command line, type `smitty`.

8. Select **System Storage Management (Physical and Logical Storage)**.

9. Select **Removable Disk Management**.

10. Select **Remove a Disk**.

11. Select the desired disk from the list on the screen and press Enter.

12. Remove the disk drive by placing the handle on the disk drive into the open position (perpendicular to the drive) and pulling the hot–plug disk drive away from the bay. The lit LED on the disk drive will turn off when the disk drive is removed.
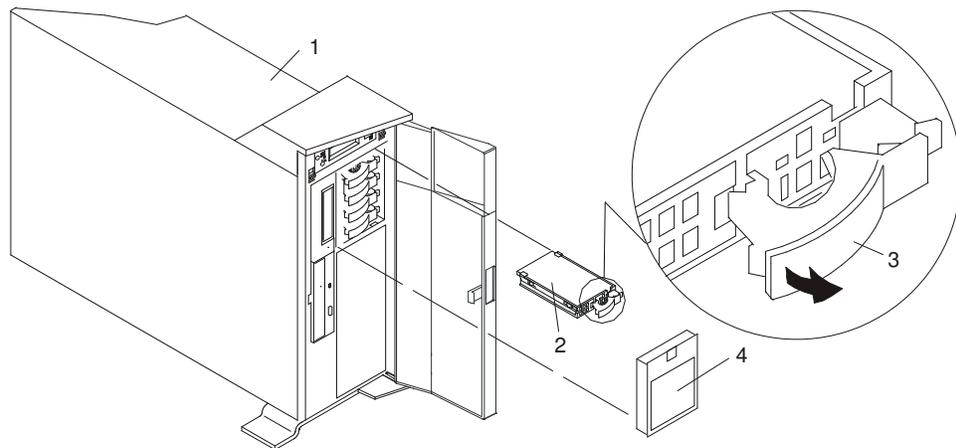
| **1** | PL420R | **3** | Disk Drive Release Handle |
| **2** | Disk Drive | **4** | Front Bezel |

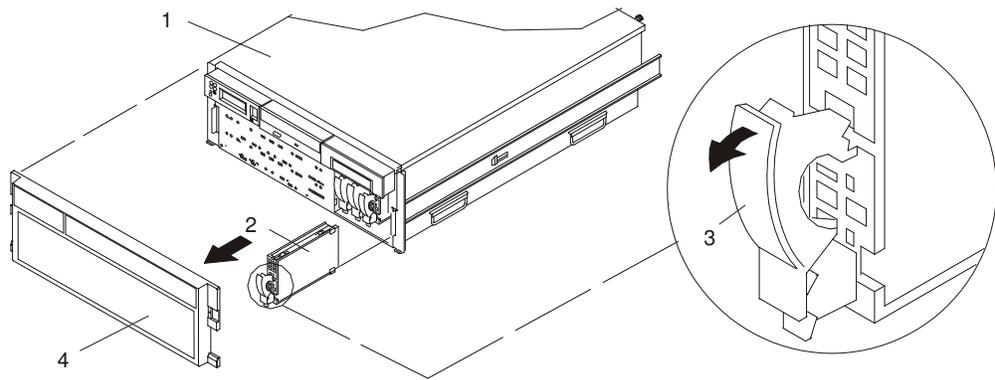| **1** | PL420T | **3** | Disk Drive Release Handle |
| **2** | Disk Drive | **4** | Disk Drive Access Cover |

13. Press F10 to exit **smitty**.

Hot–Plug Disk Drive Replacement

Attention: Before you perform these procedures, ensure that the customer has taken 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–plug drive from the system before it has been removed from the system configuration can cause unrecoverable data corruption. Refer to Deconfiguring (Removing) or Configuring a Disk Drive on page 3-51.

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

1. To install a hot–plug disk drive, do the following:

   a. Ensure the tray handle is open (perpendicular to the drive).

   b. Align the drive/tray assembly so that it engages the guide rails in the bay.

   c. Push the drive assembly into the bay until the tray handle engages the lock mechanism.

   d. Push the tray handle in until it locks. The lit LED on the disk drive will turn on.

2. Log in as root user.

3. At the command line, type `smitty`.

4. Select **Devices**.

5. 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.

6. Press F10 to exit **smitty**.

7. Replace the front bezel as described in Front Bezel Replacement (PL420R) on page 3-21 or Disk Drive Access Cover Replacement (PL420T) on page 3-17.

8. On a PL420R, close the rack doors.

   On a PL420T, close the bezel door.

Processor Card

Before performing the following procedure, read Safety Notices on page iii.

Processor Card Removal

To remove the processor card, do the following:

1. On a PL420R, open the front and rear rack doors and put the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

3. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

4. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21 or Front Bezel Removal (PL420T) on page 3-21.

5. Disconnect all power and signal cables from the media drives, located in media bay 1 and media bay 2. Then remove the media drives as described in Media Removal on page 3-48.

6. Remove the media device support shelf by loosening the thumbscrew and grasping the back edge of the shelf, sliding it back, then lifting it up and out of the system chassis.

   Note: The support leg located on the bottom of the support shelf is used to deactivate a microswitch. The microswitch is located on the CEC backplane and when deactivated, cuts off power to many of the components and connectors located on the CEC backplane. This support shelf must be correctly seated and secured in position after any new FRU is added to the system and you perform a system boot.

7. Before handling any card, board, or memory DIMM, touch any metal surface of the chassis with one hand to minimize static electricity discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

8. Grasp the ends of both processor assembly release handles. Lift each handle until it is perpendicular (90 degrees) to the top of the processor assembly. By placing the handle perpendicular to the top of the processor assembly, the base or hinged portion of each handle acts as a cam and will gently pry the processor card connector from the docking connector located on the CEC backplane.

9. Remove the processor assembly from the system unit.

   Attention: To prevent damage to the card and the card connectors, open or close the retention latches at the same time.

10. Lay the processor assembly, cover–side up, on a flat, static–protective surface.

11. From the bottom of the processor assembly, lift the side access cover. Four hinges hold the cover to the top of the processor assembly. Pivot the cover up to reveal the memory DIMMs or DIMM connectors.

12. Remove all memory DIMMs as described in Memory DIMM Removal on page 3-59. Put the DIMMs in a safe place (you will need to install these DIMMs onto the new processor card).
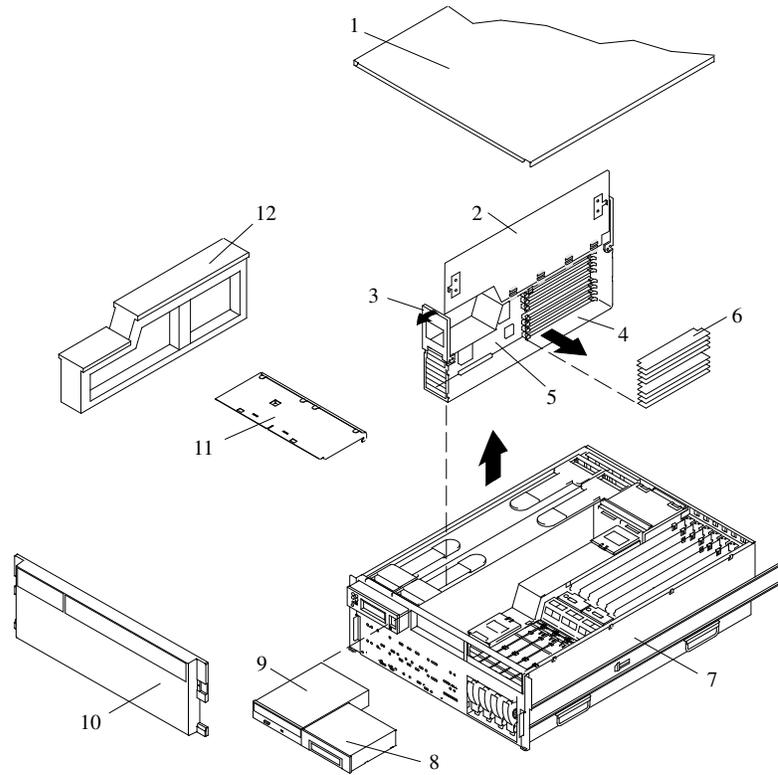
PL420R

1	Service Access Cover	**7**	PL420R
2	Processor Access Cover	**8**	Optional Media Device (for example: Diskette Drive or Tape Drive)
3	Processor Assembly Lifting and Release Handles	**9**	IDE CD–ROM Drive
4	Processor Assembly	**10**	Front Bezel
5	Processor Card	**11**	Media Device Support Shelf
6	Memory DIMMs	**12**	Processor Filler

PL420T

1	PL420T	**9**	Service Access Cover
2	Media Device Support Shelf	**10**	Outer Side Cover
3	Media Carrier Trays	**11**	Processor Access Cover
4	Optional Media Device (for example: Diskette Drive or Tape Drive)	**12**	Processor Assembly Lifting and Release Handles
5	IDE CD–ROM Drive	**13**	Processor Card
6	Front Bezel	**14**	Processor Assembly
7	Bezel Door	**15**	Memory DIMMs
8	Processor Filler		

Adding or Replacing a Processor Card

Notes:

1. Adding an additional processor card or installing a new processor card into your system may require the updating of the system firmware.

2. Before handling any card, board, or memory DIMM, touch any metal surface of the chassis with one hand to minimize static electricity discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

3. If your system is configured with one processor card, place the card into location U0.1–P1–C1 on the CEC backplane. The remaining processor connector must have the processor filler panel in place. The filler panel protects the connector located on the CEC backplane from dust or damage and assists in airflow and cooling.

4. If a second processor is to be added to your system, remove the protective filler panel from the system, and install the new processor assembly into the secondary processor bay location U0.1–P1–C2.

To add or replace a processor card, do the following:

1. From the bottom of the processor assembly, lift the processor assembly cover. Four hinges hold the cover to the top of the processor assembly. Pivot the cover up to reveal the memory DIMMs or DIMM connectors. Install the memory DIMMs as described in Memory DIMMs on page 3-59.

2. Pivot the processor assembly cover back into the closed position.

3. Grasp the release handles located on top of the processor assembly. Pivot the handle upward to 90 degrees. This action puts the handle cams into the correct position to help seat the processor card connector into the docking connector located on the CEC backplane.

   Attention: To prevent damage to the processor assembly and the processor card connector, open or close both release handles at the same time.

4. Align the processor card connector with the docking connector located on the CEC backplane.

5. Carefully insert the processor assembly into the system.

6. As the processor connector is seated into its CEC backplane docking connector, begin lowering the processor assembly release handles. This action correctly seats and locks the processor assembly to the CEC backplane.

7. If necessary, replace the processor filler panel.

8. Replace the media device support shelf. Tighten the thumbscrew located on the support shelf.

   Note: When replacing the media device support shelf, ensure that the lower support leg, located on the bottom side of the support shelf, activates the microswitch located on the CEC backplane. Failure to do so results in the system not being able to power on.

9. Replace all removed media drives, ensuring that the media drives removed are returned to the same media bay locations from which they were removed. Refer to Media Drive Replacement on page 3-50.

10. Reconnect all power and signal cables to their respective media drives.

11. Replace the front bezel as described in Front Bezel Replacement (PL420R) on page 3-21 or Front Bezel Replacement (PL420T) on page 3-22.

12. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

13. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

14. Power on the system as described in Starting the System Without an HMC Attached on page 3-3.

15. If the PL420R has successfully powered on, close the rack doors.

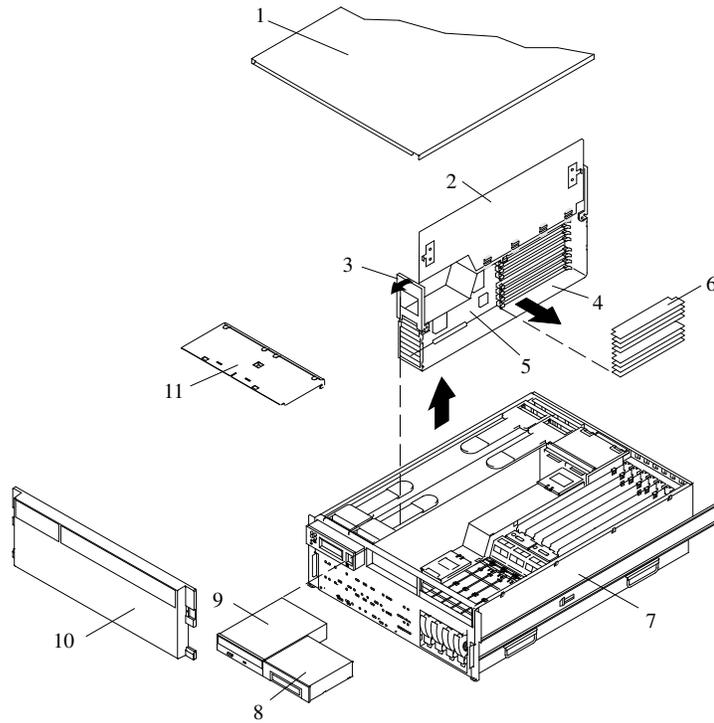   If the PL420T has successfully powered on, close the bezel door.

Memory DIMMs

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

Memory DIMM Removal
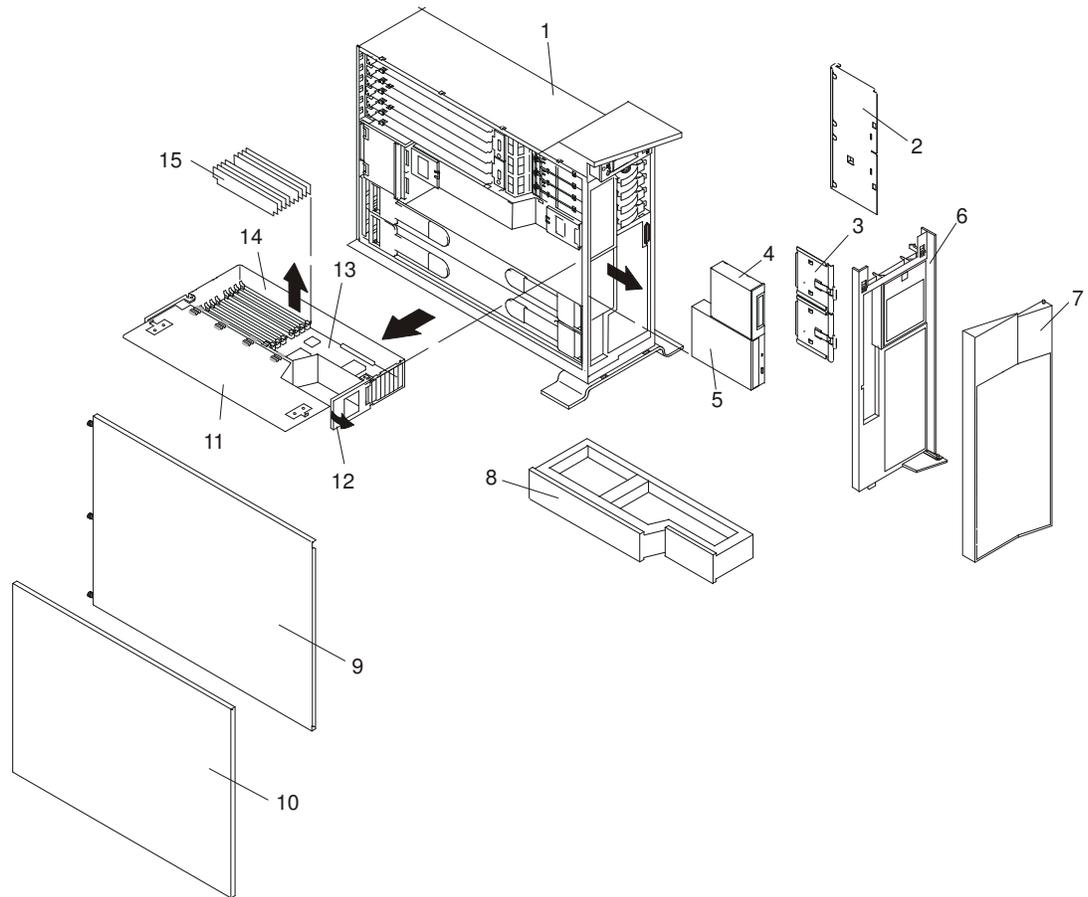
To remove the memory DIMMs, do the following:

1. On a PL420R, open the front and rear rack doors and put the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

3. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

4. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21 or Front Bezel Removal (PL420T) on page 3-21.

5. Disconnect all power and signal cables from the media drives, located in media bay 1 and media bay 2. Remove the media drives as described in Media Removal on page 3-48.

6. Remove the media device support shelf by loosening the thumbscrew and grasping the back edge of the shelf, sliding it back, then lifting it up and out of the system chassis.

   Note: The support leg located on the bottom of the support shelf is used to deactivate a microswitch. The microswitch is located on the CEC backplane and when deactivated, cuts off power to many of the components and connectors located on the CEC backplane. This support shelf must be correctly seated and secured in position after any new FRU is added to the system and you perform a system boot.

7. Before handling any card, board, or memory DIMM, touch any metal surface of the chassis with one hand to minimize static electricity discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

8. Grasp the end of both processor assembly release handles. Lift each handle until it is perpendicular (90 degrees) to the top of the processor assembly. By placing the handle perpendicular to the top of the processor assembly, the base or hinged portion of each handle acts as a cam and will gently pry the processor card connector from the docking connector located on the CEC backplane.

9. Remove the processor assembly from the system unit.

10. Lay the processor assembly, cover–side up, on a flat, static–protective surface.

11. From the bottom of the processor assembly, lift the side access cover. Four hinges hold the cover to the top of the processor assembly. Pivot the cover up to reveal the memory DIMMs or DIMM connectors.

PL420R

1. Service Access Cover
2. Processor Access Cover
3. Processor Assembly Lifting and Release Handle
4. Processor Assembly
5. Processor Card
6. Memory DIMMs
7. PL420R
8. Optional Media Device (for example: Diskette Drive, Tape Drive)
9. IDE CD–ROM Drive
10. Front Bezel
11. Media Device Support Shelf

PL420T

1	PL420T	**9**	Service Access Cover
2	Media Device Support Shelf	**10**	Outer Side Cover
3	Media Carrier Trays	**11**	Processor Access Cover
4	Optional Media Device (for example: Diskette Drive or Tape Drive)	**12**	Processor Assembly Lifting and Release Handles
5	IDE CD–ROM Drive	**13**	Processor Card
6	Front Bezel	**14**	Processor Assembly
7	Bezel Door	**15**	Memory DIMMs
8	Processor Filler		

12. Locate the memory DIMMs, and determine which DIMM you want to remove.

   Note: Memory DIMMs must be installed in quads (groups of 4) and in the correct slot. The only two valid slot combinations that you can use are 1, 3, 6, and 8 OR 2, 4, 5, and 7. See the following illustration.
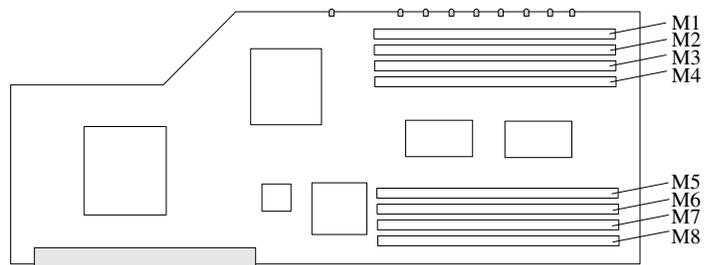
Number	Description	Location Code
M1	Memory slot 1 (J2A)	U0.1–P1–C1–M1
M2	Memory slot 2 (J2B)	U0.1–P1–C1–M2
M3	Memory slot 3 (J3A)	U0.1–P1–C1–M3
M4	Memory slot 4 (J3B)	U0.1–P1–C1–M4
M5	Memory slot 5 (J1B)	U0.1–P1–C1–M5
M6	Memory slot 6 (J1A)	U0.1–P1–C1–M6
M7	Memory slot 7 (J0B)	U0.1–P1–C1–M7
M8	Memory slot 8 (J0A)	U0.1–P1–C1–M8

Note:

The location code column indicates the location codes for processor card 1. If your system is configured for processor card 2, substitute C2 in place of C1.

Attention: To prevent damage to the memory DIMM and the memory DIMM connectors, open or close the retention latches at the same time.

13. Remove the memory DIMM by pushing the tabs out and then down. The tabs' camming action forces the memory DIMM out of the connector.

14. Pull the memory DIMM out of the connector as shown in the following illustration.
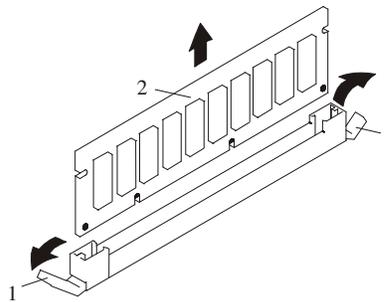
1 Connector Tabs (unlocked position)

2 Memory DIMM

Memory DIMM Replacement

To replace a memory DIMM, do the following:

1. Before handling any card, board, or memory DIMM, touch any metal surface of the chassis with one hand to minimize static electricity discharge. Refer to Handling Static–Sensitive Devices on page 3-2.

2. If necessary, remove the memory DIMM from its antistatic package.

3. Ensure that the connector locking tabs are pushed out in the unlocked position before installing a new memory DIMM, as shown in the following illustration.

4. Carefully grasp the memory DIMM along two edges and align the connector.

5. Insert the memory card firmly into the connector.

6. Secure the memory DIMM with the locking tabs located at each end of the DIMM connector, as shown in the following illustration.

    Note: Memory DIMMs must be installed in groups of 4 (quads).
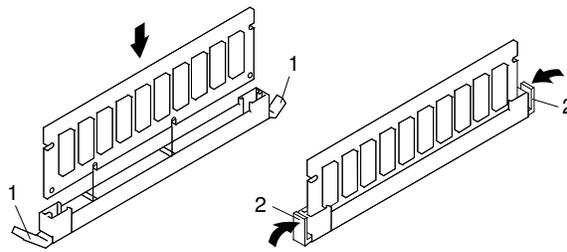
   1   Locking Tabs (unlocked position)
   2   Locking Tabs (locked position)

7. Pivot the processor assembly cover back into the closed position.

8. Grasp the release handles located on top of the processor assembly. Pivot the handle upward to 90 degrees. This action puts the handle cams into the correct position to help seat the processor card connector into the docking connector located on the CEC backplane.

    Attention: To prevent damage to the processor assembly and the processor card connector, open or close both release handles at the same time.

9. Align the processor card connector with the docking connector located on the CEC backplane.

10. Carefully insert the processor assembly into the system.

11. As the processor connector is seated into its CEC backplane docking connector, begin lowering the processor assembly release handles. This action correctly seats and locks the processor assembly to the CEC backplane.

12. If necessary, replace the processor filler panel.

13. Replace the media device support shelf. Tighten the thumbscrew located on the support shelf.

    Note: When replacing the support shelf, ensure that the lower support leg activates the microswitch located on the CEC backplane. Failure to do so results in the system not being able to power on.

14. Replace all removed media drives, ensuring that the media drives removed are returned to the same media bay locations from which they were removed. Refer to Media Drive Replacement on page 3-50.

15. Reconnect all power and signal cables to their respective media drives.

16. Replace the front bezel as described in Front Bezel Replacement (PL420R) on page 3-21 or Front Bezel Replacement (PL420T) on page 3-22.

17. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

18. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

19. Power on the system as described in Starting the System Without an HMC Attached on page 3-3.

20. If the PL420R has successfully powered on, close the rack doors.

If the PL420T has successfully powered on, close the bezel door.

Replacing the Battery

Before performing the following procedure, read Safety Notices on page iii.

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.

To replace the system's battery, do the following:

1. On a PL420R, open the front and rear rack doors and put the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

3. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

4. Remove the front bezel as described in Front Bezel Removal (PL420R) on page 3-21 or Front Bezel Removal (PL420T) on page 3-21.

5. Disconnect and label all power and signal cables from the media drives, located in media bay 1 and media bay 2. Then remove the media drives as described in Media Removal on page 3-48. Note the location of each media drive removed.

6. Remove the media device support shelf by loosening the thumbscrew and grasping the back edge of the shelf, sliding it back, then lifting it up and out of the system chassis.

   Note: The support leg located on the bottom of the support shelf is used to deactivate a microswitch. The microswitch is located on the CEC backplane and when deactivated, cuts off power to many of the components and connectors located on the CEC backplane. This support shelf must be correctly seated and secured in position after any new FRU is added to the system and you perform a system boot.

7. Remove processor assembly 1 as described in Processor Card Removal on page 3-54.

   Note: Processor assembly 1 is the processor assembly that is closest to the power supplies. See the following illustration.

PL420R
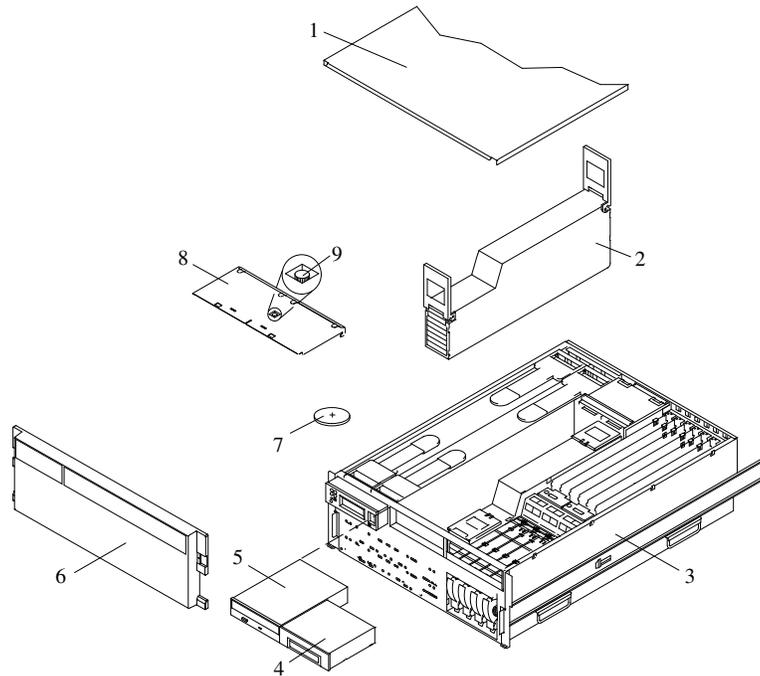
1	Service Access Cover	**6**	Front Bezel
2	Processor Assembly 1	**7**	Battery (positive (+) side facing up)
3	PL420R	**8**	Media Device Support Shelf
4	Media Device (for example: Tape Drive or Diskette Drive)	**9**	Captive Thumbscrew
5	IDE CD–ROM Drive		

PL420T
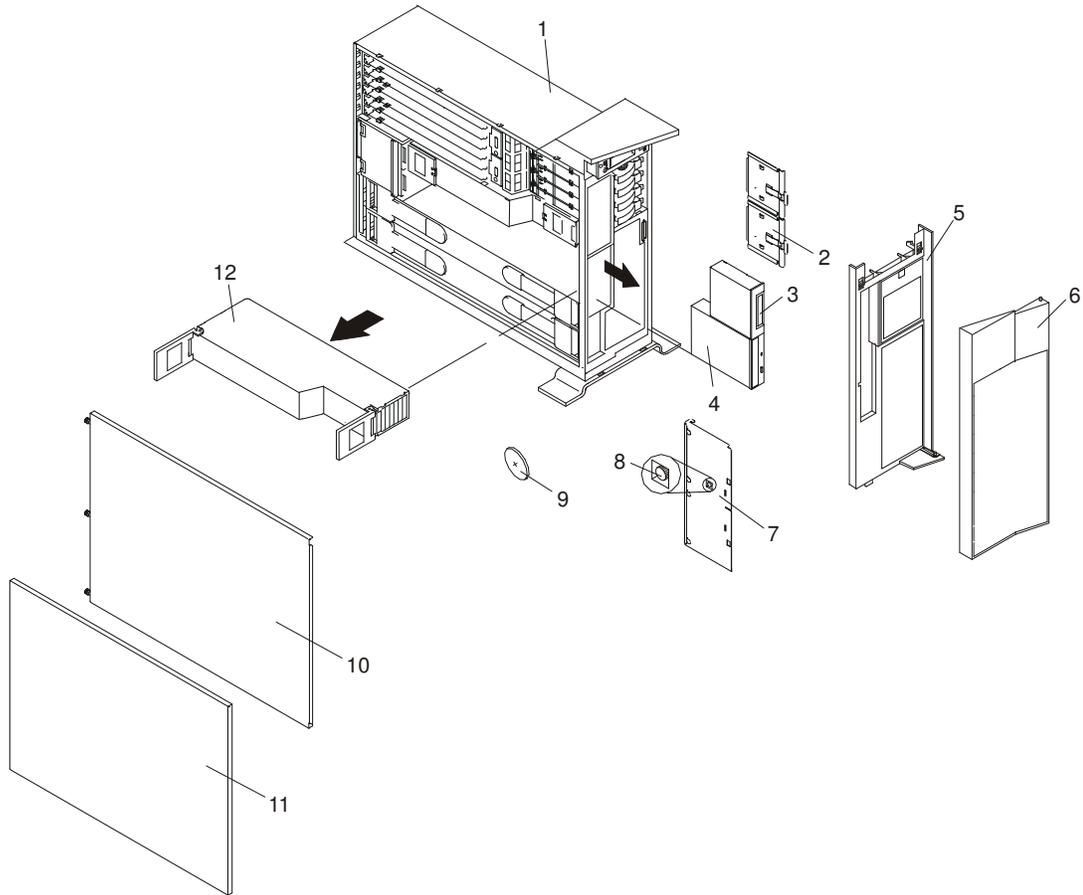
1	PL420T	**7**	Media Device Support Shelf
2	Media Carrier Trays	**8**	Captive Thumbscrew
3	Media Device (for example: Tape Drive or Diskette Drive)	**9**	Battery (positive (+) side facing up)
4	IDE CD–ROM Drive	**10**	Service Access Cover
5	Front Bezel	**11**	Outer Side Cover
6	Bezel Door	**12**	Processor Assembly

8. Locate the battery on the CEC backplane as shown in the following illustration.

9. 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 it up and away from the CEC backplane.
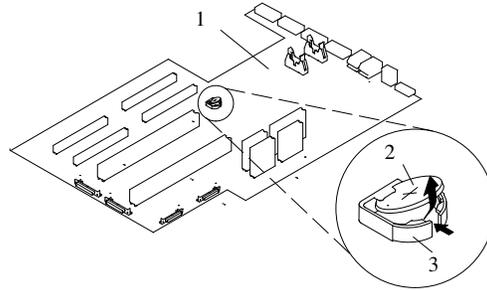
1 CEC backplane

2 Battery

3 Battery Plastic Mount

10. Replace the battery with (FRU) part number 00P3903 or equivalent.

11. 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.

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

13. Replace processor assembly 1 as described in Adding or Replacing a Processor Card on page 3-58.

14. Replace the media device support shelf. Tighten the thumbscrew located on the support shelf.

> **Note:** When replacing the support shelf, ensure that the lower support leg activates the microswitch located on the CEC backplane. Failure to do so results in the system not being able to power on.

15. Replace all media drives, ensuring that the media drives removed are returned to the same media bay from which they were removed as described in Media Drive Replacement on page 3-50.

16. Reconnect all power and signal cables to their respective media drives.

17. Replace the front bezel as described in Front Bezel Replacement (PL420R) on page 3-21 or Front Bezel Replacement (PL420T) on page 3-22.

18. Replace the service access cover, as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15.

19. If you are servicing a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

20. Turn on the system power.

21. 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.

Power Supplies

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.

This system drawer has power supplies that have hot–swap capabilities. To use this feature, you *must* have two power supplies in place.

Before performing any of the following procedures, read and understand all of the safety notices beginning with Safety Notices on page iii.

Non–Hot–Swap Power Supply Removal

If you are servicing a system that has only one power supply installed, you must follow the non–hot–swap power supply removal procedure. Systems that were configured with one power supply at the factory have a power supply filler panel. The filler panel protects the vacant power supply connector from dust or damage.

To remove a non–hot–swap power supply, do the following:

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Shut down the system as described in Stopping the System Without an HMC Attached on page 3-3.

3. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

4. Remove the power cable from the rear of the power supply.

5. Wait at least 10 seconds before performing the next step.

6. Grasp the ends of both power supply handles, and slide the retractable spring–activated portion of each handle toward its hinged base. This action releases the locking tab located on the bottom side of each release handle. See the following illustration.

1 Power Supply

2 Locking Tab Receiver Hole

3 Retractable Spring–Activated Portion of the Handle

7. Lift the handle until it is perpendicular (90 degrees) to the top of the power supply. By placing the handle perpendicular to the top of the power supply, the base or hinged portion of each handle acts as a cam and will gently pry the power supply from its connector located on the CEC backplane.

1a Outer Side Cover (PL420T Only)	**4** Power Supply Filler Panel
1 Service Access Cover	**5a** PL420R
2 Power Supply #1 (Primary)	**5b** PL420T
3 Power Supply Release Handle	

8. After the power supply is released from its connector, pull the power supply out of the system.

Note: During normal operation, each power–supply bay must have either a power supply or filler panel installed for proper cooling.

Non–Hot–Swap Power Supply Replacement

To replace a non–hot–swap power supply, do the following:

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

2. Carefully insert the new power supply into the bay originally used by the faulty power supply.

3. Lower the power supply release handles, carefully pressing the power supply into the connector. The spring latch located on the underside of each handle snaps into place, indicating that the power supply is seated correctly and locked into position.

   Note: Improper operation of the spring–activated portion of the power supply handles can result in the following:

   – The retractable spring remains compressed – This condition keeps the handle from locking the power supply in its seated position. To eliminate this problem, lower the handle into the locked position, and push the spring–activated handle end toward the locking tab. This action forces the spring latch to mate with the locking tab in the spring latch receiver hole.

   – The locking tab receiver is bent – Before lowering the handle to lock the power supply into the seated position, ensure that the locking tab located on top of the power supply in the receiver hole is not bent. Before the spring latch will seat onto the locking tab, the locking tab, if bent, must be straightened.

1	Spring Latch	**4**	Power Supply
2	Spring–Activated Handle End	**5**	Spring Latch Receiver Hole
3	Power Supply Release Handle	**6**	Locking Tab

4. Plug the power cable into the back of the power supply.

5. Reconnect the power source to the system.

6. The green AC Good LED located on the power supply comes on solid.

7. Replace the service access cover as described in Service Access Cover Replacement (PL420R) on page 3-9 or Service Access Cover Replacement (PL420T) on page 3-15. If you are servicing a PL420T, go to step 10 below.

   If you are servicing a PL420R, go to step 8.

8. Push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

9. Route the cables through the cable–management arm.

10. Power on the system drawer as described in Starting the System Without an HMC Attached on page 3-3.

11. After the PL420R has successfully powered on, close the rack doors.

   After the PL420T has successfully powered on, close the bezel door.

Hot–Swap Power Supply Removal

Before performing this procedure, read the following Safety Notices on page iii.

If you are servicing a system that has two power supplies installed, you can replace each power supply (one at a time) without shutting down the system.

To remove a hot–swap power supply, do the following:

Note: You do not need to turn off the power to the system to install hot–swap power supplies.

1. On a PL420R, open the front and rear rack doors and place the system into the service position as described in Placing the PL420R into the Service Position on page 3-7.

   On a PL420T, open the bezel door.

2. Visually check the power supply LEDs. If the amber LED is lit, suspect that power supply to be faulty.

3. Remove the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

4. Remove the power cable from the rear of the faulty power supply.

5. Wait at least 10 seconds before performing the next step.

6. Grasp the ends of both power supply handles, and slide the retractable spring–activated portion of each handle toward its hinged base. This action releases the locking tab located on the bottom side of each release handle. See the following illustration.

   1 Power Supply
   2 Locking Tab Receiver Hole
   3 Retractable Spring–Activated Portion of the Handle

7. Lift the handle until it is perpendicular (90 degrees) to the top of the power supply. By placing the handle perpendicular to the top of the power supply, the base or hinged portion of each handle acts as a cam and will gently pry the power supply from its connector located on the CEC backplane.

8. After the power supply is released from its connector, pull the power supply out of the system.

9. If you are not replacing the power supply, do the following:

   a. Install a power–supply filler panel.

      Note: During normal operation, each power–supply bay must have either a power supply or filler panel installed for proper cooling.
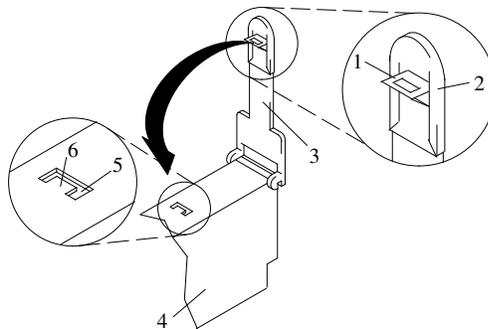
b. Disconnect the removed power supply's power cable from either the power distribution panel or electric outlet.

10. Verify that the green DC Good LED on the remaining power supply is lit. The green LED indicates that the power supply is operating correctly.

11. Replace the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

12. On a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

13. On a PL420R, close the rack doors.
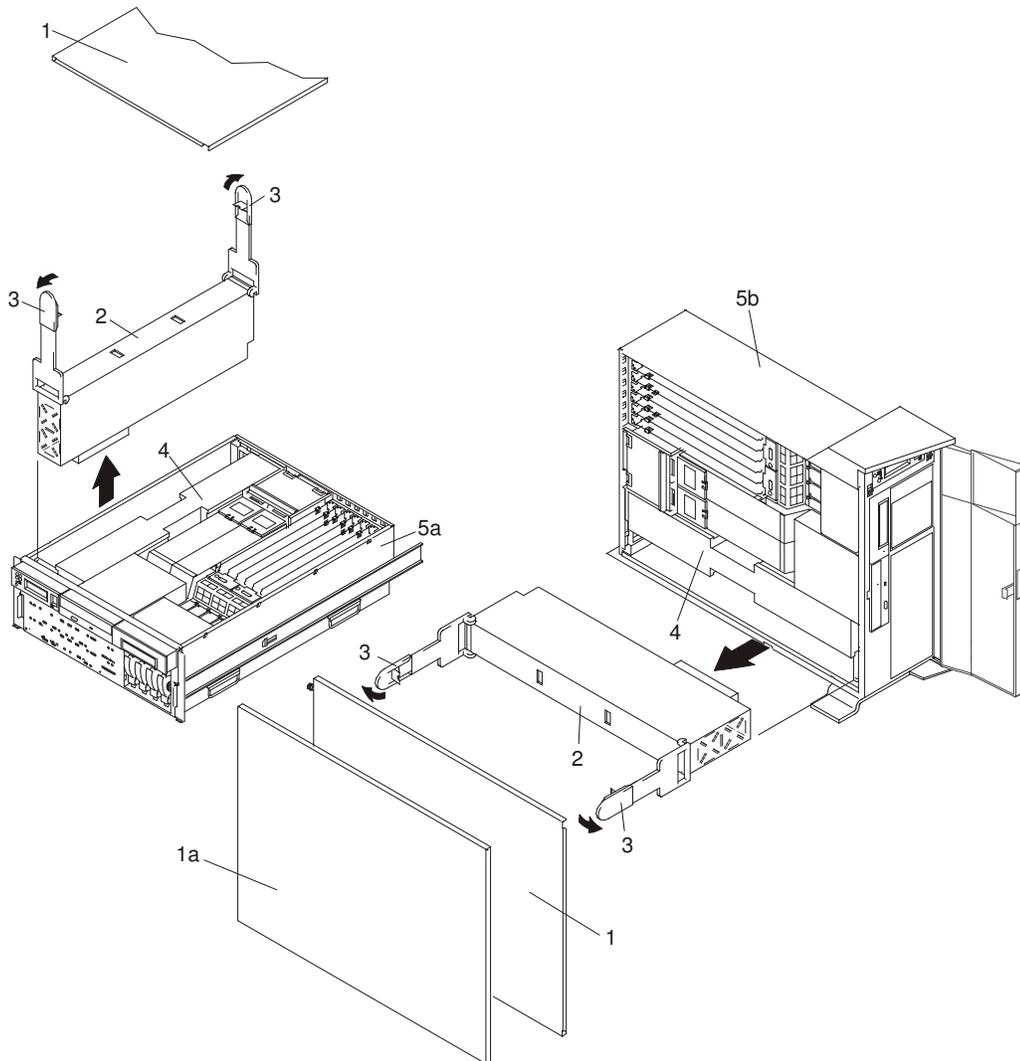
On a PL420T, close the bezel door.

1a	Outer Side Cover (PL420T Only)	**4**	Power Supply Filler Panel
1	Service Access Cover	**5a**	PL420R
2	Power Supply #1 (Primary)	**5b**	PL420T
3	Power Supply Release Handle		

Hot–Swap Power Supply Replacement

Note: If a power supply is being replaced for a redundant failure, after the service repair action is completed, ask the customer to check the **crontab** file for any power/cooling warning messages. When a power or cooling error is encountered, AIX adds an entry to the **crontab** file to "wall" a warning message every 12 hours, to alert or remind the customer of the problem. Replacing the faulty part does not clear this **crontab** entry, so unless the **crontab** file is edited to remove this entry, the customer continues to be reminded of the failure despite its having been repaired. Use the **crontab –l** command to read the **crontab** file to determine if an entry exists. Use the **crontab –e** command to edit the file.

To replace a hot–swap power supply, do the following:

1. If you are adding a new power supply to a system that was configured with only one power supply installed, remove the power–supply filler panel from power supply #2 bay.

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

3. Carefully insert the power supply into the same power supply bay from which the faulty power supply was just removed.

4. 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.

   Note: Improper operation of the spring activated portion of the power supply handles can result in the following:

   – The retractable spring remains compressed – This condition keeps the handle from locking the power supply in its seated position. To eliminate this problem, lower the handle into the locked position, and push the spring–activated handle end toward the locking tab. This action forces the spring latch to mate with the locking tab in the spring latch receiver hole.

   – The locking tab receiver is bent – Before lowering the handle to lock the power supply into the seated position, ensure that the locking tab located on top of the power supply in the receiver hole is not bent. Before the spring latch will seat onto the locking tab, the locking tab, if bent, must be straightened.

1	Spring Latch	**4**	Power Supply
2	Spring–Activated Handle End	**5**	Spring Latch Receiver Hole
3	Power Supply Release Handle	**6**	Locking Tab

5. Plug the power cable for the added power supply into the power cable connector located on the back of the power supply.

6. Reconnect the power source to the system. The green AC Good LED located on the power supply should come on solid.

7. Verify that the green DC Good LED on the power supply is lit. The green LED indicates that the power supply is operating correctly.

8. Replace the service access cover as described in Service Access Cover Removal (PL420R) on page 3-9 or Service Access Cover Removal (PL420T) on page 3-9.

9. If you are servicing a PL420R, push the system drawer back into the operating position as described in Returning the PL420R to the Operating Position on page 3-8.

10. On a PL420R, close the rack doors.

   On a PL420T, close the bezel door.

Appendix A. Communications Statements

This appendix contains EMC and safety regulatory statements for the following:

- PL420R, a rack mounted drawer that is Class A compliant
- PL420T, a deskside system that is Class A compliant.

The following statements apply to the PL420R and PL420T. Statements for other products intended for use with this product appears in their accompanying documentation.

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider nor the manufacturer is responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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

European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non–recommended modification of the product, including the fitting of option cards supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

United Kingdom Telecommunications Safety Requirements

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB–003 du Canada.

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES–003.

VCCI Statement

この装置は、クラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。　　　　ＶＣＣＩ－Ａ

The following is a summary of the VCCI Japanese statement in the box above.

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Electromagnetic Interference (EMI) Statement – Taiwan

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

The following is a summary of the EMI Taiwan statement above.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

Radio Protection for Germany

Dieses Gerät ist berechtigt in Übereinstimmung mit Dem deutschen EMVG vom 9.Nov.92 das EG–Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse A. Für diese von Geräten gilt folgende Bestimmung nach dem EMVG:

Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministers für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind.

(Auszug aus dem EMVG vom 9.Nov.92, Para.3, Abs.4)

Hinweis

Dieses Genehmigungsverfahren ist von der Deutschen Bundespost noch nicht veröffentlicht worden.

Appendix B. Environmental Notices

Product Recycling and Disposal

Components of the system unit, such as structural parts and circuit boards, can be recycled where recycling facilities exist. Companies are available to disassemble, reutilize, recycle, or dispose of electronic products. Contact your account representative for more information. This system unit contains parts 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, these materials must be removed and recycled or discarded according to applicable regulations. This book contains specific information on each battery type where applicable.

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.

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)		Declared A–Weighted Sound Pressure Level, $< LpAm >$(dB) at 1 meter Bystander Position	
	Operating	Idling	Operating	Idling
6E4 (Deskside)	6.0	5.9	42	41
6C4 (Rack Drawer)	6.1	6.0	44	43

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. PL420T levels apply to the following system configurations: 2 way 1 gigahertz processor, 2 disk drives, 2048 GB of RAM, non–redundant power supply (One power supply, 1 processor fan).

4. PL420R levels apply to the following hardware configurations: 2 way 1 gigahertz processor, 2 disk drives, 2048 GB of RAM, redundant power supply (Two 645 watt power supplies, 2 processor fans).

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

Appendix C. PCI Adapter Placement Reference

This system is designed for customers to install adapters. Use this guide to determine if there are specific slot requirements for adapters that you may be installing.

Some adapters must be placed in specific system unit slots to function correctly at optimum performance. Use the information in the following sections of this chapter to determine where to install adapters in your system unit.

Logical Partition (LPAR) Considerations

Place redundant devices in separate I/O drawers for best availability performance. Place non–redundant devices in the same I/O drawer. If you place non–redundant devices in one drawer, the system is less exposed to other–drawer failures.

Some devices do not have enhanced error handling (EEH) capabilities built in to their device drivers. If these devices fail, the PCI Host Bridge (PHB) in which they are placed will be affected. If the I/O subsystem encounters a severe error, all slots in the PHB are also affected. To clear this condition, you may reboot the system. In addition, it is also possible to remove the failed PCI slots on an affected PHB from the partition profile or profiles that include these PCI slots, and reboot the partition or partitions that terminated at the time of the error.

To avoid PHB errors related to non–EEH adapters, it is strongly recommended that if a non–EEH adapter is used, then all slots on that PHB should be assigned to a single LPAR. Refer to the tables in this chapter for additional information about LPAR (logical partitioning) considerations.

PL420T and PL420R Adapter Placement Guide
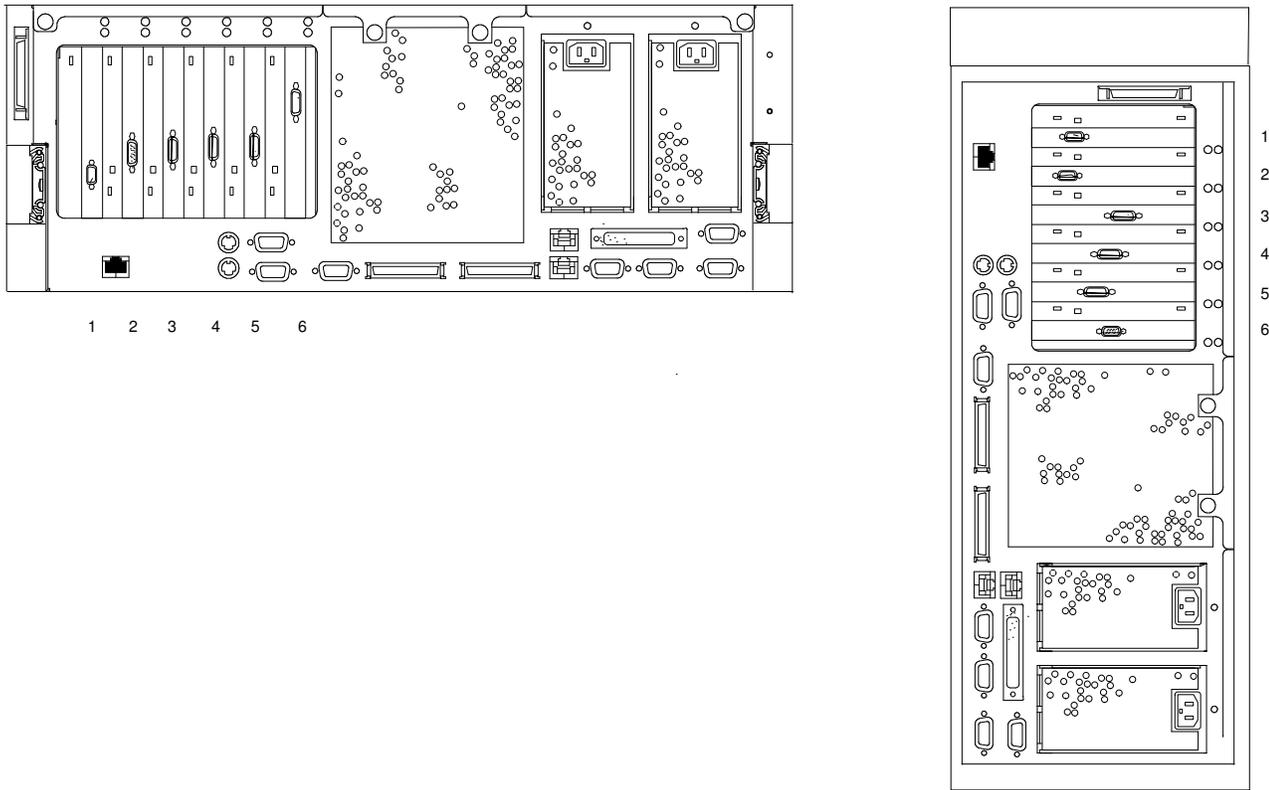
System Unit Rear View with 4–Slot PCI Riser Numbered Slots

Table 1. Slot Location Reference

Slot	PHB	Planar	Loc. Code	Slot Characteristics
1	1	1	Ux.y–P2–I1	64–bit 3.3V, 66 MHz
2	1	1	Ux.y–P2–I2	64–bit 3.3V, 66 MHz
3	1	1	Ux.y–P2–I3	64–bit 3.3V, 133 MHz
4	1	1	Ux.y–P2–I4	64–bit 3.3V, 133 MHz
5	1	1	Ux.y–P2–I5	64–bit 3.3V, 133 MHz
6	1	1	Ux.y–P2–I6	64–bit 3.3V, 133 MHz

Note: In Table 1, Ux.y represents the Hardware Management Console (HMC) location code where x is the rack location and y is the drawer position.

Use the following table to identify specific slot location options for the following adapters in your ESCALA PL420 system.

Table 2. Slot Location Options

Pri	Adapter Type	Label	FC	MI	PCI Slot Location (see note 1) (B) Base (E) Expansion	Max per Riser/ system	Max per LPAR	EEH	Hot–plug
1	Gigabit Ethernet 1000 Base– SX Ethernet 10 /100/1000 Base–TX		5700 5701	DCCG163– 0000 DCCG164– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	4/20	20	Y	Y
2	PCI 64 Bits Fibre Chan- nel 2 Gb/s (see note 2)	6228	Bull	DCCG155– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	4/18	18	Y	Y
2	PCI 4 Chan- nel Ultra3 SCSI RAID (see note 2)	4–X	2498	MSCG047– 0000	(B) 3, 4, 5, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	3/11	11	Y	Y
2	PCI 2 Chan- nel Ultra3 SCSI RAID (see note 2)	4–Y	6203	MSCG048– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 7, 4, 1, 5, 2, 6, 3	6/20	20	N	Y
3	PCI Univer- sal Differen- cial Ultra SCSI	4–U	6204	MSCG044– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y
4	10/100 Mbps 4 Ports Ethernet PCI	A–E	4961	DCCG162– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y
5	Power GXT135P	1–X	2848	GTFG050– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	4/4	1	Y	N
6	8 Port Asyn. EIA–232E/R S–422A PCI	3–B	2943	DCCG160– 0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y

7	X25 2 port Multiprotocol com.	B2–L	2962	DCCG140–0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y
8	10/100 Mbps Ethernet PCI	A–F	4962	DCCG161–0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y
9	High Speed Token Ring PCI	B5–R	4959	DCCG135–0000	(B) 3, 4, 5, 6, 1, 2 (E) 1, 5, 2, 6, 3, 7, 4	6/20	20	Y	Y

Notes:

1. IO Configuration

   – Base I/O Drawer: 6 basic PCI–X slots. Up to 2 expansion I/O drawers.

   – Expansion I/O Drawer 0 to 2 I/O Drawers Max. (7 PCI–X slots)

2. High–speed adapters:

   The high–speed adapters have the same priority.

   In an I/O Drawer, limitations are: :

   – 6 high–speed adapters max., except for PCI 4 Channel Ultra2 SCSI RAID (MSCG050–0000) limited to 4 adapters by I/O drawer.

Appendix D. Fault and Attention LEDs

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

Operator Panel Display

If a failing component is detected in your system, an amber–colored attention LED is turned on solid (not blinking).
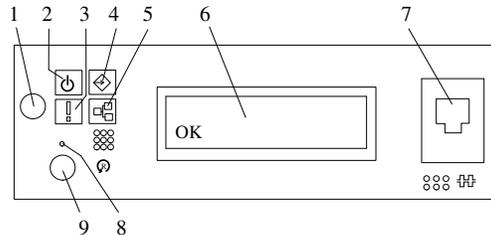
1	Power–On Button	**6**	Operator Panel Display
2	Power LED	**7**	(FS1) Front Serial Connector (RJ–48 Connector)
3	Attention LED	**8**	Service Processor Reset Switch (Pinhole)
4	SCSI Port Activity	**9**	System Reset Button
5	Ethernet Port Activity		

Number	Component Name	Component Description
1	Power–On Button	Turns the system power on and off.
2	Power LED	Blinking – When connected to the power source (System is in standby mode). Solid – When power button has been pressed. **Note:** There is approximately a 30–second transition period from the time the power 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.
3	Attention LED	Normal State – LED is off.
4	SCSI Port Activity	Normal State – LED is on when there is SCSI activity.
5	Ethernet Port Activity	Normal State – LED is on when there is Ethernet activity.
6	Operator Panel Display	Displays current status of system startup, or diagnostic information in the event of a hardware problem.
7	Front Serial Connector (FS1)	Serial port uses RJ48 connector. Use to plug in external devices at the front of the system unit.

8	Service Processor Reset Switch (Pinhole)	Service Personnel Use				
9	System Reset Button	Resets the system				

Component LEDs

Individual LEDs are located on or near the failing components. 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 occurring 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	LED Color	OFF	ON	Blink
Power and Packaging LEDs						
Rack Indicator	Drawer Sum	Top of Rack	Amber (1x)	Normal	Fault	Identify
	AC Input		Green (1x)	No Input	AC Good	N/A
System Unit	Attention	Operator Panel + Rear	Amber (2x)	Normal	Fault	Identify
	Power	Operator Panel + Rear	Green (2x)	No AC	System Powered On	• Standby • Transition of Power from Standby to Power–On (Blinking intervals may accelerat before remaining on solid)

Unit (FRU)	LED Function	Location	LED Color	OFF	ON	Blink
Fans	Identify	Fan Top	Amber (4x)	Normal	Fault	N/A
Power Supply (AC)	Input Source	Power Supply Front + Top	Green (1x)	No Input	AC Input Good	N/A
	Fault	Power Supply Front + Top	Amber (1x)	Normal	Fault	Fast Blink – Identify Slow Blink – SPCN communicati on failure .25 Hz
	DC Output Good	Power Supply Front + Top	Green (1x)	DC Off	DC Good	Standby
Disk Drives (DASD)	Activity	DASD Board	Green (4x)	No Activity	Activity	N/A
	Remove Identify	DASD Board	Amber (4x)	Normal	Action	Identify
Optional Media	No LED					

Electronics Component LEDs						
PCI Adapter Connectors (Slots)	Activity	Chassis Rear, Inside System Next to Adapter	Green	Refer to the PCI Adapter Table on page D-6.		
	Identify	Chassis Rear, Inside System Next to Adapter	Amber	Refer to the PCI Adapter Table on page D-6.		
Memory DIMMs	Identify	Processor Housing (Top)	Amber (8x)	Normal	Identify	
CEC Backplane	Identify	CEC Backplane	Amber (1x)	Normal	Identify	
Processor Board	Identify	Processor Housing (Top)	Amber (1x)	Normal	Identify	
PCI Riser Card	Identify	PCI Riser Card	Amber (1x)	Normal	Identify	
Disk Drive Backplane	No LED					

Component	LED Function	Location	LED Color	OFF	ON	Blink
Port LED Indicators						
RIO Port	Identify	CEC Backplane	Amber (2x)	Normal	N/A	Identify
SCSI Port	Activity	Operator Panel	Green (1x)	No Activity	Activity	
Ethernet Port Ethernet 1, Ethernet 2	Mode	Chassis Rear	Green (2x)	10 Mbit Mode	100 Mbit Mode	
	Activity	Chassis Rear	Green (2x)	No Activity	Activity	
	Activity	Operator Panel	Green (1x)	No Activity	Activity	

See the following illustration for Ethernet LED location on the rear of the PL420R and PL420T.
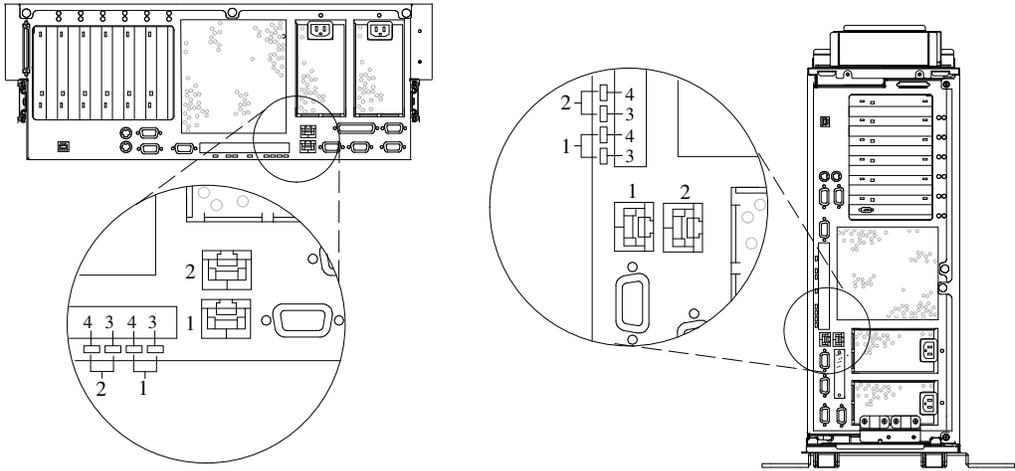
1 Ethernet 1 Connector and LED

2 Ethernet 2 Connector and LED

3 Mode LED
10 Mbit – Off
100 Mbit – On

4 Activity LED
On – Receiving Information
Off – Not Receiving Information

See the following illustration for RIO connector LED locations on the rear of the PL420R and PL420T.
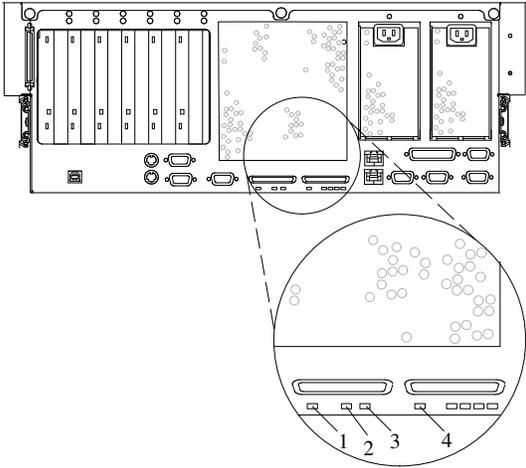
1 RIO–G 0 Identify LED

2 System Drawer Rear Power LED

3 System Drawer Rear Attention LED

4 RIO–G 1 Identify LED

The following table explains the meaning of the on and off status of the PCI–X adapter LEDs.

PCI Adapter Table				
LED	**Inactivity**	**Active**	**Identify**	**Action**
Green + Amber (2 LEDs)	Green – Off Amber – Off	Green – On Amber – Off	Green – On Amber – Blinking	Green – Off Amber – Blinking

Resetting the LEDs

After the repair action is completed, do the following:

1. Log in as root user.

2. At the command line, type diag.

3. Select **Task Selection**.

4. Select **Log Repair Action**.

5. Select the device that was repaired.

6. Press F10 to exit diagnostics.

If the Attention LED remains on after you have completed the repair action and reset the LEDs, call for service support.

Appendix E. System Records

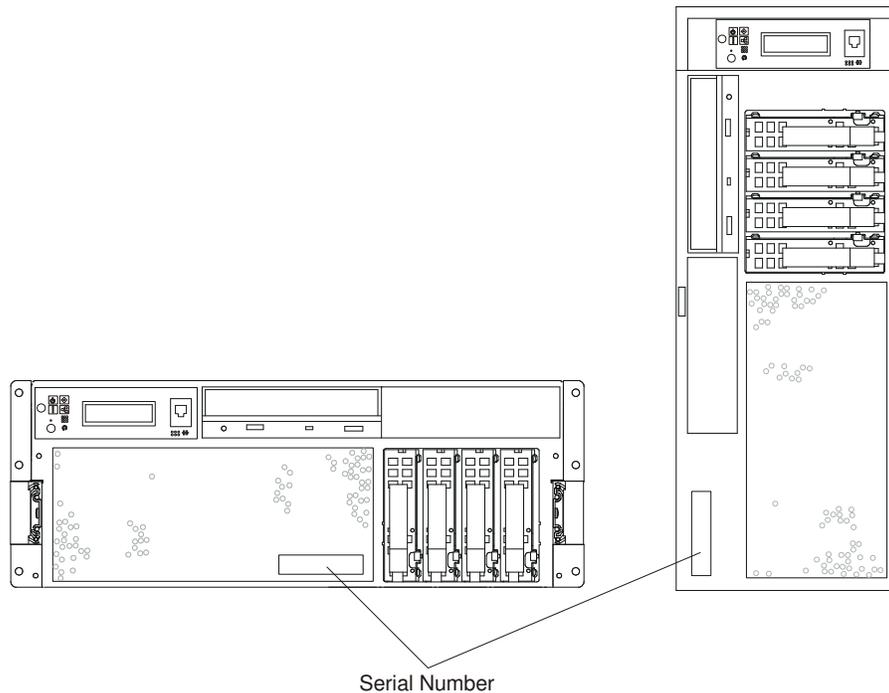Use this appendix to keep a record of the system's identification information.

Identification Numbers

Record and retain the following information:

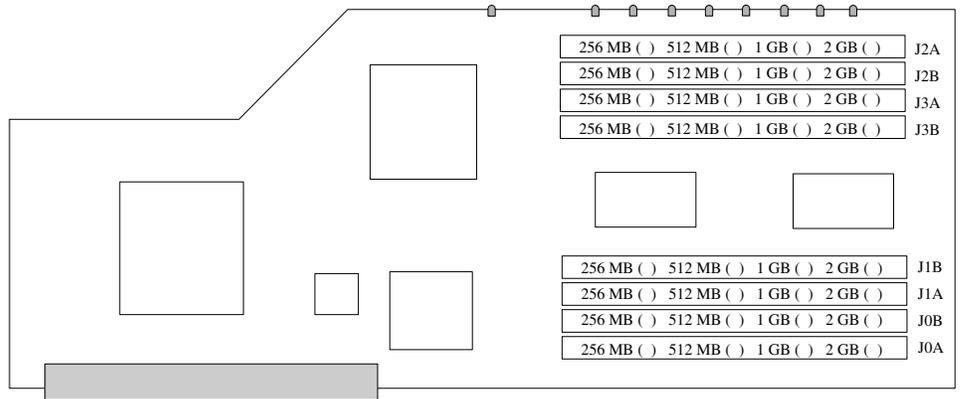|	
Product Name	**PL420R and PL420T**
Serial Number	_____
Key Serial Number	_____

The system unit's identification numbers are located on the front of the machine, as shown in the following illustration:

Serial Number

Device Records

Use the following tables to keep a record of the options installed in or attached to your system. This information can be helpful when you install additional options in your system or if your system needs service.
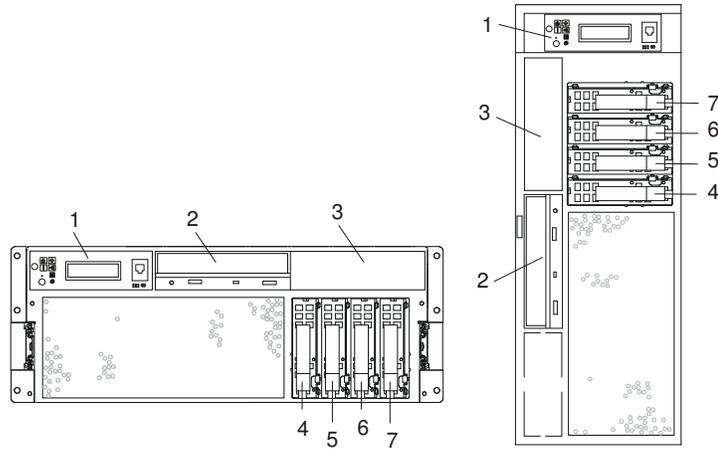
Memory DIMM Configuration Record

256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J2A
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J2B
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J3A
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J3B
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J1B
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J1A
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J0B
256 MB ( )	512 MB ( )	1 GB ( )	2 GB ( )	J0A

Options

Location	Option Description
Mouse Connector	<u>Mouse </u>&box. Other:_____
Keyboard Connector	<u>Space Saving </u>&box. @U>Enhanced &box. Other:_____
Expansion Slot 6	_____
Expansion Slot 5	_____
Expansion Slot 4	_____
Expansion Slot 3	_____
Expansion Slot 2	_____
Expansion Slot 1	_____
Parallel Port	_____
Serial Port 1	_____
Serial Port 2	_____
Serial Port 3	_____
External SCSI	_____
Ethernet 1	_____
Ethernet 2	_____
	_____

SCSI IDs and Bay Locations

Index	Bay Location	Drive Name	SCSI ID
1		Operator Panel	
2	D01	IDE CD–ROM IDE DVD–ROM	IDE (Non–SCSI)
2	D01	Tape Drive SCSI DVD–RAM	The SCSI ID can be any number 0 through 15, with the exception of 7, which is reserved for the adapter.
3	D02	Tape Drive SCSI DVD–RAM Diskette Drive	The SCSI ID can be any number 0 through 15, with the exception of 7, which is reserved for the adapter.
4	D10	Disk Drive	SCSI ID 8
5	D11	Disk Drive	SCSI ID 9
6	D12	Disk Drive	SCSI ID 10
7	D13	Disk Drive	SCSI ID 11

If you install a disk drive or other media device in your system, record the definition in the drive description field in the following table.

Drive	Location	SCSI ID	Drive Description
IDE CD–ROM Drive IDE DVD–ROM	Bay D01	IDE (Non–SCSI)	_____
Media Device	Bay D02	The SCSI ID can be any number 0 through 15, with the exception of 7, which is reserved for the adapter.	_____
Diskette Drive (Optional)	Bay D02		_____
Hot–Plug	Disk Bay 10	8	_____
Hot–Plug	Disk Bay 11	9	_____
Hot–Plug	Disk Bay 12	10	_____
Hot–Plug	Disk Bay 13	11	_____

Appendix G. Firmware Updates

Determining the Level of Firmware on the System

The firmware level is denoted by XXYYMMDD, where XX = model designation, YY = year, MM = month, and DD = day of the release.

The firmware level can be determined by either of the following methods:

- On the AIX command line, by typing:

```
lscfg -vp|grep -p Platform
```

A line that begins with `ROM level (alterable)..` displays the firmware level that is currently on the system.

- Looking at the top of the service processor main menu.

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Please ask your Bull representative. / Merci de demander à votre contact Bull.

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LEFT CORNER

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Use the cut marks to get the labels.

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