

# **Internal Peripherals Installation Guide**

**D Class and R Class**

**HP 9000 Enterprise Servers**



**Part No. A3262-90005**

**Edition 5  
October 1998**

**E1098**

Printed in: USA

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# Contents

## 1. D Class Internal Peripherals Installation

Internal Peripherals Installation Overview .....	1-1
Installation Procedures .....	1-3
Peripherals Installation Verification .....	1-21
Peripherals Installation Verification Procedure .....	1-22

## 2. R Class Internal Peripherals Installation

Internal Peripherals Installation Overview .....	2-1
Installation Procedures .....	2-3
Peripherals Installation Verification .....	2-18
Peripherals Installation Verification Procedure .....	2-19

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## Contents

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## Printing History

The manual printing date and part number indicate its current edition. The printing date will change when a new edition is printed. Minor changes may be made at reprint without changing the printing date. the manual part number will change when extensive changes are made.

Manual updates may be issued between editions to correct errors or document product changes. To ensure that you receive the updated or new editions, you should subscribe to the appropriate product support service. See your HP sales representative for details.

First Edition: October, 1995

Second Edition: May, 1996 (European, Localized)

Third Edition: May, 1996

Fourth Edition: August, 1998

Fifth Edition: October, 1998

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### NOTE

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**SERIOUS ERRORS**, such as technical inaccuracies that may render a program or a hardware device inoperative, should be reported to your HP Response Center or directly to a Support Engineer.

## **Who Should Use this Guide**

The procedures in this guide are intended to be performed by a person who is qualified in the installation and servicing of computer equipment, and is trained to recognize the hazards involved. Internal peripherals are installed in an area of the product where energy levels considered hazardous may be produced.

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# 1 D Class Internal Peripherals Installation

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## Internal Peripherals Installation Overview

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**CAUTION**

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If you are adding the Fast/Wide SCSI (Hot-Swap) option to a Model D2xx server (step K in the list below), you must perform a full system backup before starting the installation procedures.

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**NOTE**

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Fast/Wide SCSI (Hot-Swap) disks are standard on Model D3xx servers, and are available as an option on Model D2xx servers. The hot-swap disk capability allows you to add Fast/Wide SCSI disks while power is on.

To install internal peripherals (other than Fast/Wide SCSI disks), you must turn off system power, and open the server cabinet to gain access to the cabinet interior. An overview of the procedures is given below:

- A. Install Fast/Wide SCSI (hot-swap) disks.
- B. Turn off power to the system.
- C. Remove the front bezel.
- D. Remove the side panel.
- E. Remove the EMI cover.
- F. Configure your peripheral, if necessary.
- G. Select the peripheral slot in the cabinet.
- H. Install the IDE floppy drive.
- I. Install removable media drives (CD-ROM, DDS or quarter-inch tape drives).
- J. Install Single-Ended SCSI disks (Model D2xx only).
- K. Install the Fast/Wide SCSI (hot-swap) disk option (Model D2xx only).
- L. Replace the EMI cover.
- M. Replace the side panel.
- N. Replace the front bezel.

D Class Internal Peripherals Installation  
**Internal Peripherals Installation Overview**

After completing the installation procedures, proceed to the **Peripherals Installation Verification** section (located after the installation procedures) for instructions on how to verify that internal peripherals have been correctly installed.

**Required Tools**

- Small flat-bladed screwdriver
- Torx driver, #15
- Torx driver, #10
- Phillips screwdriver

**Safety Considerations**

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**WARNING**

---

**Turn off the system power and disconnect the power cable before opening the system cabinet. Otherwise, personal injury may occur.**

**Electrostatic Discharge Precautions**

Electrostatic discharge can damage the integrated circuits on printed-circuit boards. To prevent such damage from occurring, be sure to observe the following precautions when handling and installing boards:

- Use a grounding mat and an anti-static wrist strap, such as those included in the ESD Field Service Kit (HP P/N A3024-80004).
- Wear the anti-static wrist strap to ensure that any accumulated electrostatic charge is discharged from you body to ground.
- Keep uninstalled printed-circuit boards in their protective anti-static bags until you are ready to install them.
- Handle printed-circuit boards by their edges after you have removed them from their protective anti-static bags.

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## Installation Procedures

### A. Install Fast/Wide SCSI Disks

Fast/Wide SCSI disks (or Hot-Swap disks) can be installed while system power is ON or OFF.

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#### CAUTION

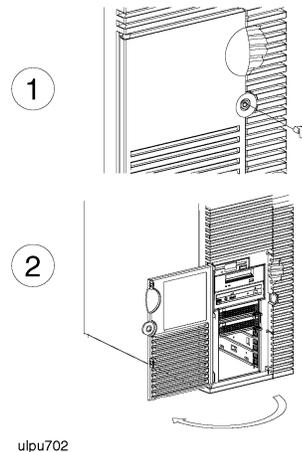
You must follow proper hot-swap procedures before adding or replacing a Fast/Wide SCSI disk. Refer to the *Hot-Swap Procedure Guide* for hot-swap procedures and information before performing the following installation procedure.

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#### NOTE

The hot-swap capability (up to five disks) is standard on Model D3xx servers, and is available as a two-disk option on Model D2xx servers. To add the optional hot-swap capability to your D2xx server, refer to the procedure described in step K of this manual, then return to step A to add the hot-swap disks.

1. Unlock the peripheral door using the key that was shipped with your server. Open the peripheral door.



2. Pull out the latch of the disk so that it is in the open position.
3. Insert the disk into the peripheral slot.

D Class Internal Peripherals Installation  
**Installation Procedures**

4. Push the disk all the way into the slot. The disk locking latch should click shut when the disk is completely inserted. If it does not click, gently push in the latch until you hear or feel the latch click into place.
5. After installing all disks, close the peripheral door.
6. If no more peripherals are to be added, lock the peripheral door with the key.

**B. Turn Off Power to the System**

To install any peripheral other than the Fast/Wide SCSI disks, follow the procedures starting here with step B.

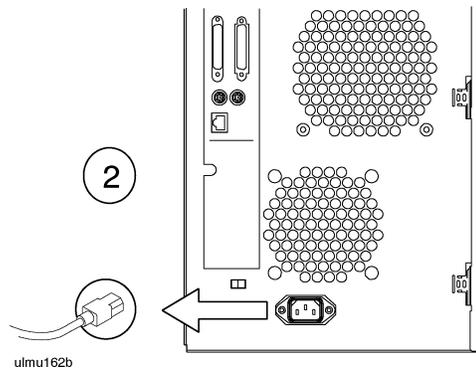
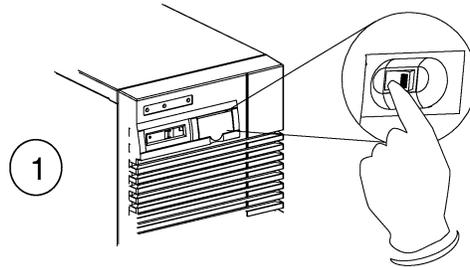
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**CAUTION**

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If you are adding the Fast/Wide SCSI (Hot-Swap) option to a Model D2xx server (step K in these procedures), you must perform a full system backup before turning off the server and opening the cabinet.

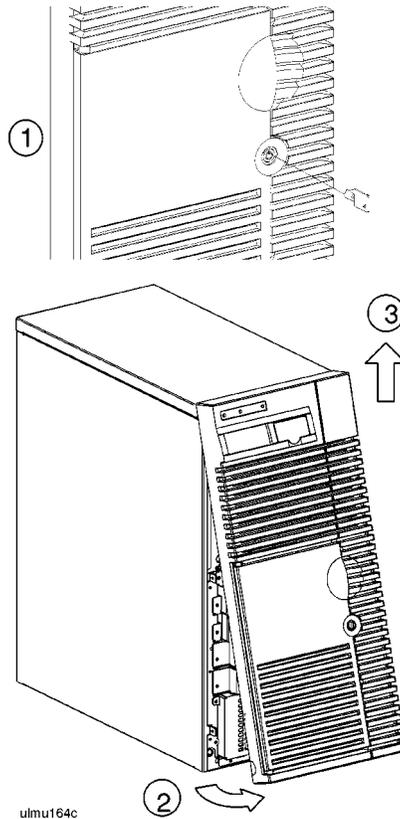
1. Set the front panel Power switch to OFF.
2. Disconnect the power cord from the server cabinet.



D Class Internal Peripherals Installation  
Installation Procedures

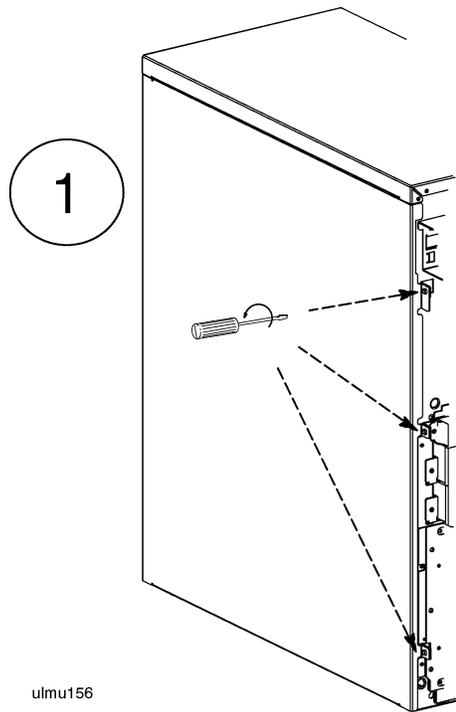
C. Remove the Front Bezel

1. Unlock the peripheral door using the key that was shipped with your server.
2. Grab the bottom sides of the front bezel, and pull the bottom of the bezel slightly out from the cabinet.
3. Carefully push the bezel up so that the top of the bezel comes loose from the top of the cabinet, then pull the bezel away from the cabinet.



**D. Remove the Side Panel**

1. Loosen three captive side panel screws with a #15 Torx driver.
2. Grasp the front edge of the side panel and swing it away from the system cabinet.
3. Lift the side panel so that its four hinge tabs come out of the slots at the rear of the cabinet.
4. Carefully set the panel aside.

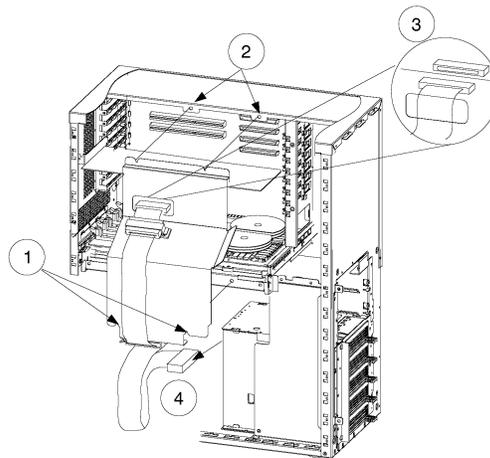


D Class Internal Peripherals Installation  
Installation Procedures

E. Remove the EMI Cover

D Class servers that have the Hot-Swap Module installed will have an EMI cover installed over the processor/memory card. To remove the EMI cover:

1. Loosen the two notches at the bottom of the EMI cover from the tabs on the processor/memory card by pushing up and slightly flexing the EMI cover until the notches come loose.
2. Pull the EMI cover down slightly until the two notches at the top of the cover come loose from the tabs at the top of the server cabinet.
3. Loosen and remove the SCSI ribbon cable from the Fast/Wide SCSI card.
4. Remove the other end of the SCSI ribbon cable from the connector on the hot- swap backplane, and set the EMI cover and ribbon cable aside.



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F. Configure Your Peripheral

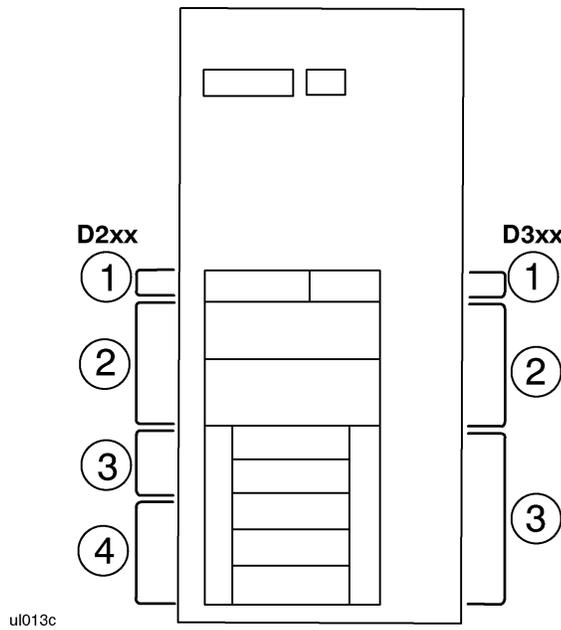
Before installing a peripheral, verify that it is configured correctly. Refer to the configuration information in the manual shipped with your peripheral device. After configuring the peripheral device, proceed to the following step.

**G. Select Peripheral Slot**

The location of internal peripherals differs between Model D2xx and Model D3xx servers. See the figure below for the proper location for your peripheral.

**NOTE**

*For the two removable media slots (item 2 in the figure below): If a CD-ROM is present, it must be installed in the upper of the two removable media slots. The lower removable media slot can contain a DDS or quarter-inch cartridge tape drive.*



Model D2xx	Model D3xx
1. One IDE floppy drive	1. One IDE floppy drive
2. Two removable media slots: DDS, CD-ROM, or quarter-inch cartridge tape drives (see note above).	2. Two removable media slots: DDS, CD-ROM, or quarter-inch cartridge tape drives (see note above).
3. Two single-ended SCSI disks, or 2 optional Fast/Wide SCSI (hot-swap) disks.	3. Five Fast/Wide SCSI disks
4. Not used	

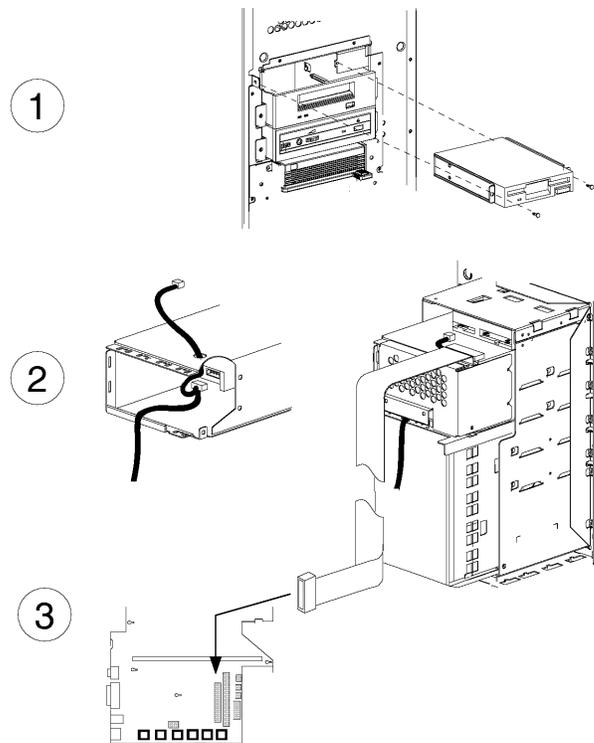
D Class Internal Peripherals Installation  
Installation Procedures

H. Install the IDE Floppy Drive

1. Install the IDE floppy drive in the top slot of the peripheral bay, and secure it with two (2) Torx #15 screws.
2. Connect the data cable (ribbon cable) and the power supply cable to the rear of the floppy drive assembly. The connector on the ribbon cable for the floppy is marked "This End to Floppy."
3. Connect the other end of the data cable (ribbon cable) to the internal IDE connector on the system board.

NOTE

The power supply cable for the floppy drive branches off from the main power supply cable for the peripheral located just underneath the floppy drive (inside the removable media bracket). Route the floppy power supply cable from inside the bracket through the hole in the top of the bracket, as shown in item 2 in the next diagram.



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**I. Install Removable  
Media Drives**

Removable media drive, such as CD-ROMs, or DDS and quarter-inch cartridge tapes, can all be installed in the first two full size slots underneath the IDE floppy drive slot.

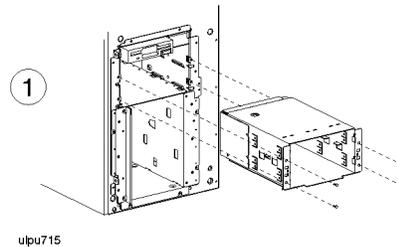
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**NOTE**

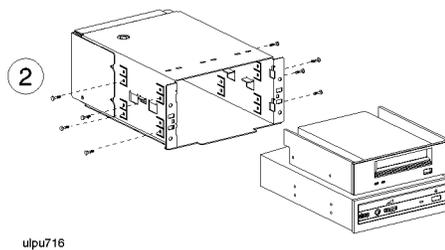
A DDS tape drive should be installed in the lower slot of the removable media bracket. The upper slot may contain a second DDS drive, a CD-ROM drive, or a quarter-inch tape drive.

If devices are already installed in the removable media bracket, you must remove the metal EMI shield from the rear of the removable media bracket and disconnect all data and power cables from the devices before performing the following procedure.

1. Remove four (4) screws that secure the removable media bracket to the cabinet chassis, and pull the bracket out of the cabinet.



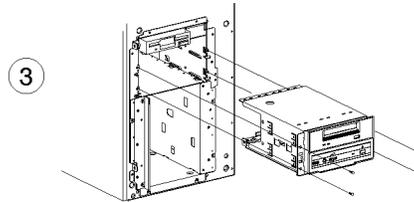
2. Insert the removable media drive mechanisms into the removable media bracket,



and secure the drives to the bracket with eight (8) screws (two on each side for each drive).

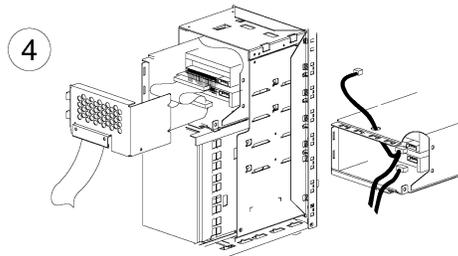
D Class Internal Peripherals Installation  
**Installation Procedures**

3. Insert the combined drive mechanism and bracket into the space immediately beneath the floppy drive in the server cabinet, and secure the bracket to the cabinet with four (4) screws.



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4. Remove the metal EMI shield from the rear of the bracket, and connect the SCSI ribbon cable and the power supply cables to the rear connectors of the installed drives. Reattach the shield when all cables have been connected to the rear of the drives.



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5. Connect the other end of the SCSI ribbon cable to the internal single-ended SCSI connector on the system board.

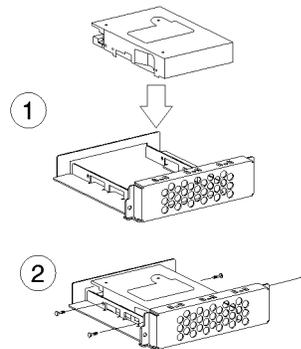
**J. Install Single-Ended SCSI Disks (Model D2xx Only)** Single-ended SCSI disks are standard on Model D2xx servers. Up to two single-ended SCSI disks can be installed in slots just below the removable media drives.

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**NOTE** A two-disk Fast/Wide (Hot-Swap) capability is available as an option for D2xx servers. If you are adding the hot-swap option to your D2xx server, skip this step and refer to the procedure described in step K of this manual.

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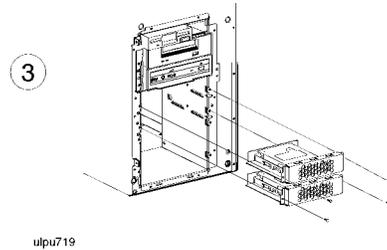
1. Insert each single-ended SCSI disk drive mechanism into a bracket.



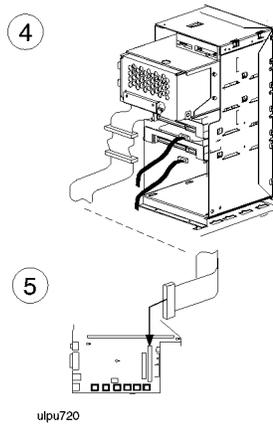
2. Secure each drive to its bracket with four (4) screws (two on each side).

D Class Internal Peripherals Installation  
Installation Procedures

Insert the SCSI drives and brackets into the top two slots underneath the removable media drives in the Model D2xx server cabinet, and secure each bracket to the cabinet with two (2) screws.



3. Connect the SCSI ribbon cable and the power cables to the rear connectors of the disk assemblies.
4. Connect the other end of the SCSI ribbon cable to the internal single-ended SCSI connector on the system board.



**K. Install Hot-Swap Option (Model D2xx)**

A Fast/Wide SCSI (Hot-Swap) disk capability (two disks maximum) can be added to the Model D2xx server. To add the hot-swap disk capability to your D2xx server, perform the following procedure. Otherwise, skip this procedure and go to step L.

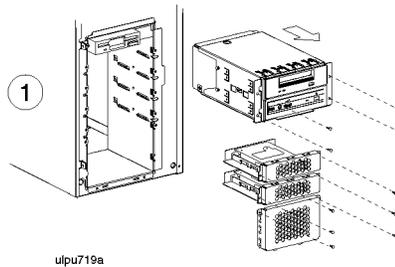
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**CAUTION**

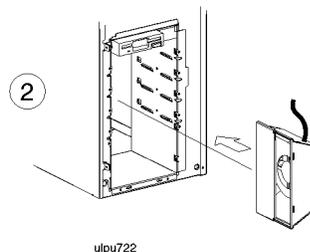
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You must perform a full system backup before installing the hot-swap option described in the following procedure. After the hot-swap option and all other peripherals have been installed and the cabinet is closed again, you will need to perform a system reload from the full system backup.

1. Remove the removable media devices and bracket, and all single-ended SCSI disks by disconnecting data and power cables, removing the mounting screws, then sliding the devices and their brackets out of the server cabinet. Also remove the front EMI shield from beneath the drives by removing two screws at the top corners of the shield and pulling the bottom tabs of the shield out of the cabinet.

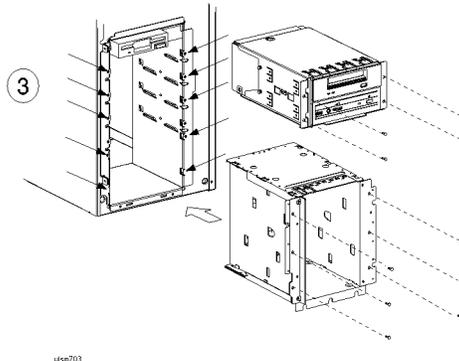


2. Insert the hot-swap blower fan into the server cabinet, and secure it with one (1) screw to the inside of the cabinet.

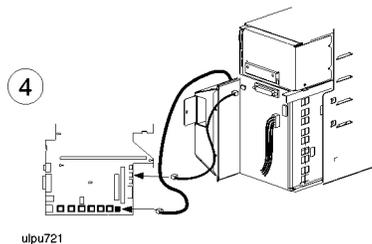


D Class Internal Peripherals Installation  
Installation Procedures

3. Insert the removable media devices and bracket, then insert the hot-swap disk bay directly under the removable media devices. Secure the bracket with four (4) screws (2 per side), and the hot-swap bay with six (6) screws (3 per side).



4. Connect the “hot-swap detect” cable and hot-swap blower fan power cable to the system board, then connect the disk bay power cable from the power supply to the power connector on the backplane of the disk bay.



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**NOTE**

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The Fast/Wide SCSI ribbon cable for the hot-swap disk bay is connected as part of the procedure for installing the EMI cover (refer to step L).

Refer to step A at the beginning of this guide for procedures on installing the Fast/Wide SCSI disks.

**L. Replace the EMI Cover**

If you removed the EMI cover in a previous step, or are adding the hot-swap disk option, install the EMI cover now. To install the EMI cover:

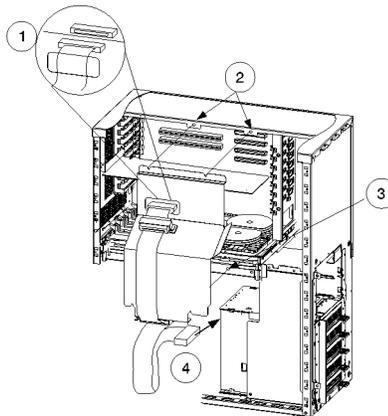
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**NOTE**

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If you are adding the hot-swap disk option, you must route the Fast/Wide SCSI ribbon cable for the hot-swap disk bay through two ferrites attached to the EMI cover, as shown in the figure below.

1. Place the EMI cover and SCSI ribbon cable close enough to the upper cabinet to connect the upper end of the ribbon cable to the connector on the Fast/Wide SCSI card.
2. Insert the two upper notches of the EMI cover onto the tabs at the top of the server cabinet.
3. Flex the EMI cover slightly to insert the two notches at the bottom of the EMI cover onto the tabs of the processor/memory card.
4. Connect the lower end of the SCSI ribbon cable on the EMI cover to the backplane connector on the Hot-Swap Module.

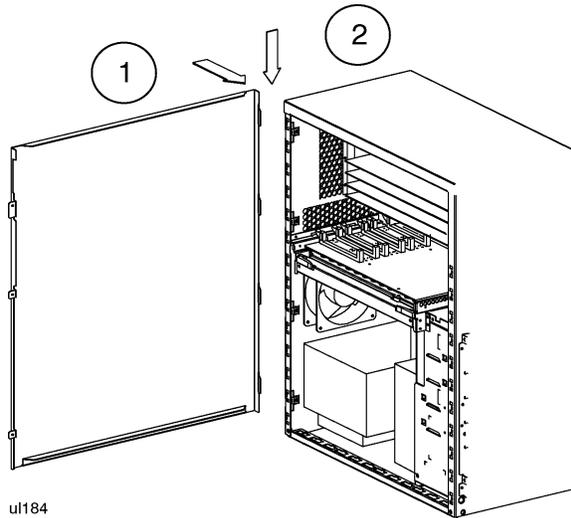


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D Class Internal Peripherals Installation  
Installation Procedures

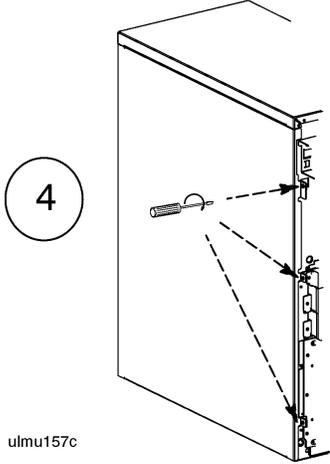
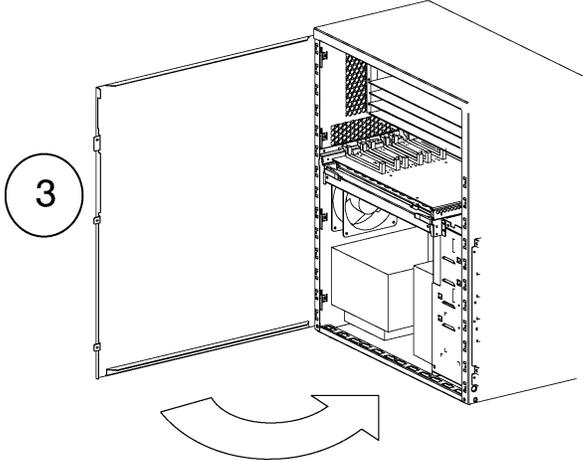
**M. Replace the Side Panel**

1. Position the hinge tabs of the side panel so that they go into the four slots at the rear of the system cabinet.



2. Lower the side panel until the hinge tabs are firmly resting in the slots.
3. Close the side panel.
4. Align and tighten the three (3) captive screws of the side panel into the holes at the front of the system cabinet.

D Class Internal Peripherals Installation  
**Installation Procedures**

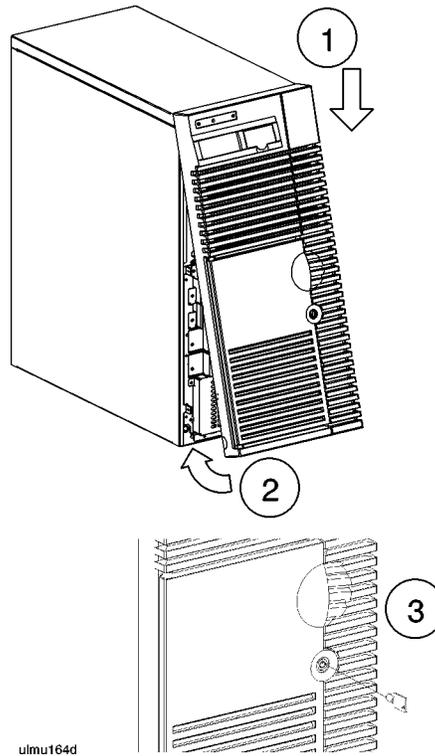


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D Class Internal Peripherals Installation  
Installation Procedures

N. Replace the Front  
Bezel

1. Place the top of the bezel down onto the top front of the system cabinet, and press the top of the bezel down until it clicks into place.
2. Push the bottom of the bezel into the bottom of the system cabinet front until it clicks into place.
3. Lock the peripheral door.



This completes the internal peripherals installation procedure. Proceed to the **Internal Peripherals installation Verification** procedure starting on the next page.

## Peripherals Installation Verification

### Overview

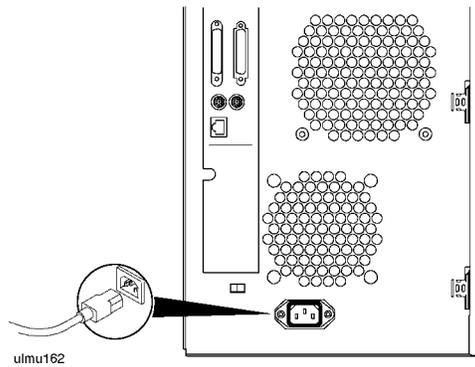
The following list is a summary of the verification process. Refer to the **Peripheral Installation Verification Procedure** below for detailed instructions.

- A. Connect power cords.
- B. Turn on power to the system.
- C. Observe console display for self-test error messages.
- D. Halt boot process to get the Boot Console prompt.
- E. Verify peripheral installation using the Support Tools Manager.

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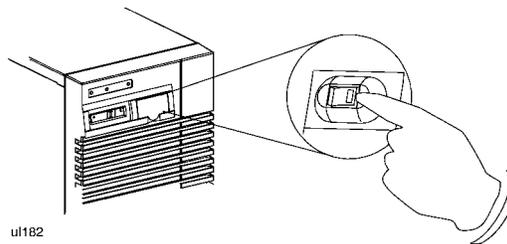
## Peripherals Installation Verification Procedure

### A. Connect the Power Cord



### B. Turn On Power to the System

Set the front panel Power switch to the ON position.



**C. Observe Console Display** During the power-on cycle, the system will perform selftests. These selftests may generate messages that will appear on the console screen if a problem is detected.

**D. Verify Peripheral Installation** At the operating system interface, you can run the online diagnostics to verify the peripherals installation. The diagnostics are available in the **Support Tools Manager**, in three different user interfaces:

- Graphical user interface (*xstm*)
- Menu interface (*mstm*)
- Command line interface (*cstm*)

**Graphical User Interface (XSTM)**

- To use the graphical user interface, you must have a graphics console running HP VUE.
- To access the graphical user interface, type *xstm* at the operating system prompt in a terminal window.
- Use the mouse to point and click on menus or components on the map.

**Menu Interface (MSTM)**

- To access the menu interface, type *mstm*.
- You can verify the installed peripherals by pressing the **Verify** function key.
- You can press the **Help** function key at any time to get more information.

**Command Line User Interface (CSTM)**

- To access the command line interface, type *cstm*.
- To get more information, type *help*.

After running the desired verification diagnostics, the peripherals installation is completed.

If the verification procedure indicates that a problem exists, contact an HP Service Representative.

D Class Internal Peripherals Installation  
**Peripherals Installation Verification Procedure**

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## 2

# R Class Internal Peripherals Installation

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## Internal Peripherals Installation Overview

To install internal peripherals, you must turn off system power, and open the server cabinet to gain access to the cabinet interior. An overview of the procedures is given below:

- A. Shut down the operating system.
- B. Turn off power to the system.
- C. Remove the front bezel.
- D. Remove the top panels.
- E. Remove the EMI cover.
- F. Remove the memory SIMM retainer.
- G. Remove the memory/processor card.
- H. Configure your peripheral, if necessary.
- I. Install removeable media drives (CD-ROM, DDS tape drives).
- J. Install Single-Ended SCSI disks.
- K. Replace the memory/processor card.
- L. Replace the memory SIMM retainer.
- M. Replace the EMI cover.
- N. Replace the top panels.
- O. Replace the front bezel.

After completing the installation procedures, proceed to the **Peripherals Installation Verification** section (located after the installation procedures) for instructions on how to verify that internal peripherals have been correctly installed.

## R Class Internal Peripherals Installation

### Internal Peripherals Installation Overview

- Required Tools**
- Small flat-bladed screwdriver
  - Torx driver, #15
  - Torx driver, #10
  - Phillips screwdriver

### Safety Considerations

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#### WARNING

---

**Turn off the system power and disconnect the power cable before opening the system cabinet. Otherwise, personal injury may occur.**

### Electrostatic Discharge Precautions

Electrostatic discharge can damage the integrated circuits on printed-circuit boards. To prevent such damage from occurring, be sure to observe the following precautions when handling and installing boards:

- Use a grounding mat and an anti-static wrist strap, such as those included in the ESD Field Service Kit (HP P/N A3024-80004).
- Wear the anti-static wrist strap to ensure that any accumulated electrostatic charge is discharged from you body to ground.
- Keep uninstalled printed-circuit boards in their protective anti-static bags until you are ready to install them.
- Handle printed-circuit boards by their edges after you have removed them from their protective anti-static bags.

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## Installation Procedures

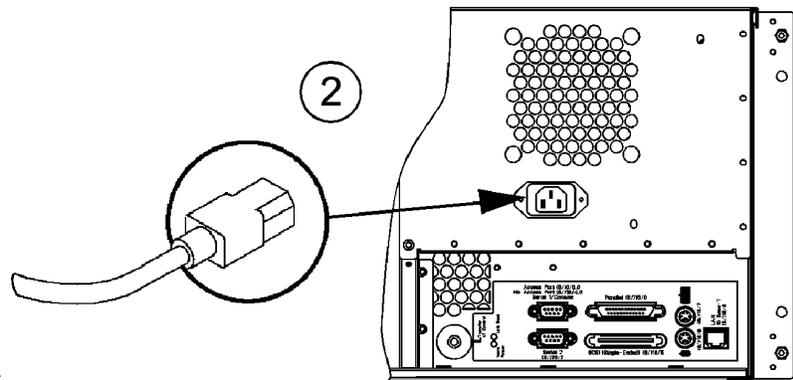
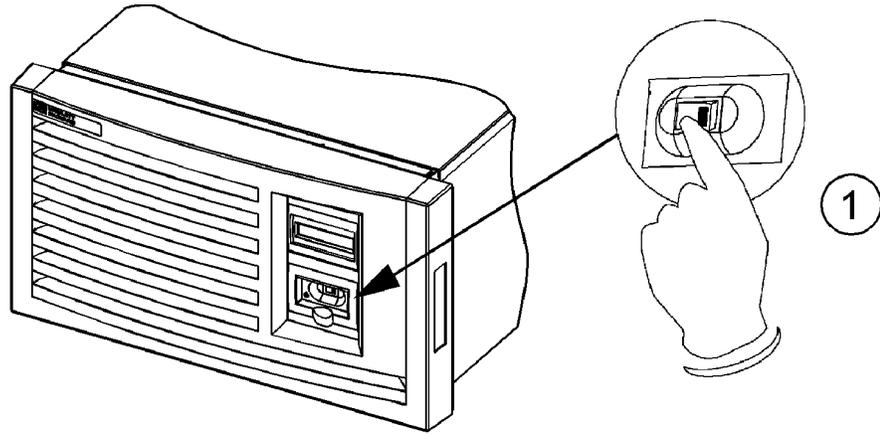
### A. Shut Down the Operating System

Before going to the next step of the upgrade procedure, shut down the operating system by entering:

```
shutdown -h
```

### B. Turn Off Power to the System

1. Set the Power switch on the server front panel to the OFF position.
2. Disconnect the AC power cord from the system cabinet.

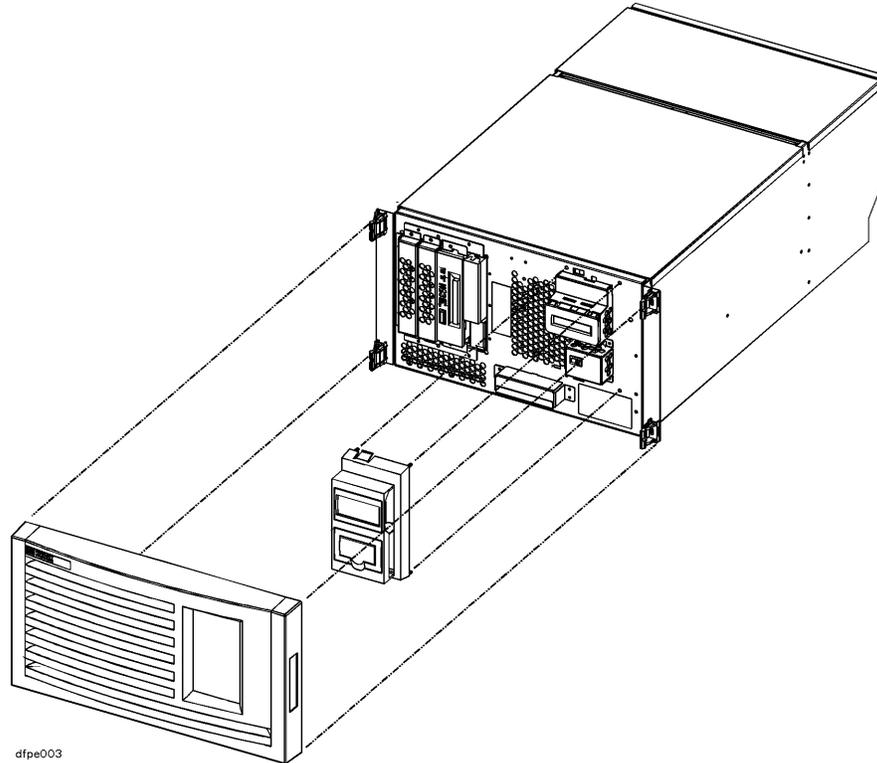


dfmu004

## R Class Internal Peripherals Installation Installation Procedures

### C. Remove the Front Bezel

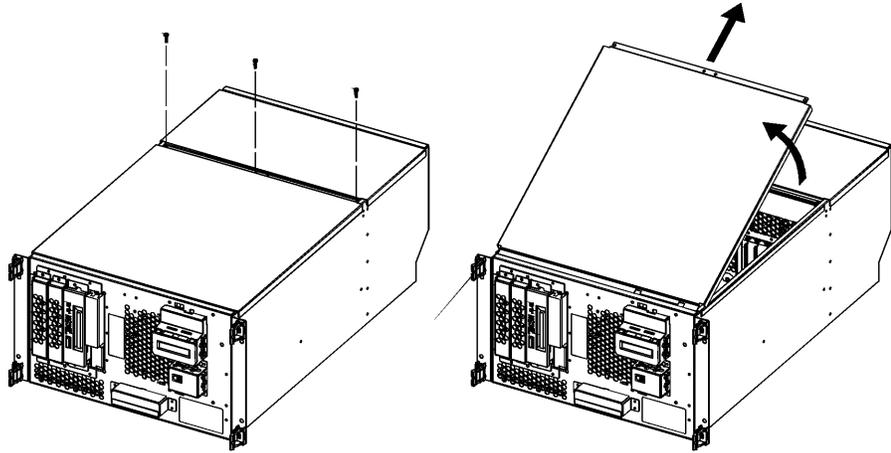
1. Grab the bottom sides of the front bezel, and pull the bottom of the bezel slightly out from the cabinet.
2. Carefully push the bezel up so that the top of the bezel comes loose from the top of the cabinet, then pull the bezel away from the cabinet.



R Class Internal Peripherals Installation  
**Installation Procedures**

**D. Remove the Top Cover**

1. Remove the three screws holding the top sheet metal cover in place.
2. Grasp the sides of the top front panel and lift it up and toward the rear.
3. Pull the top rear panel toward the front of the server, then lift it up and out.

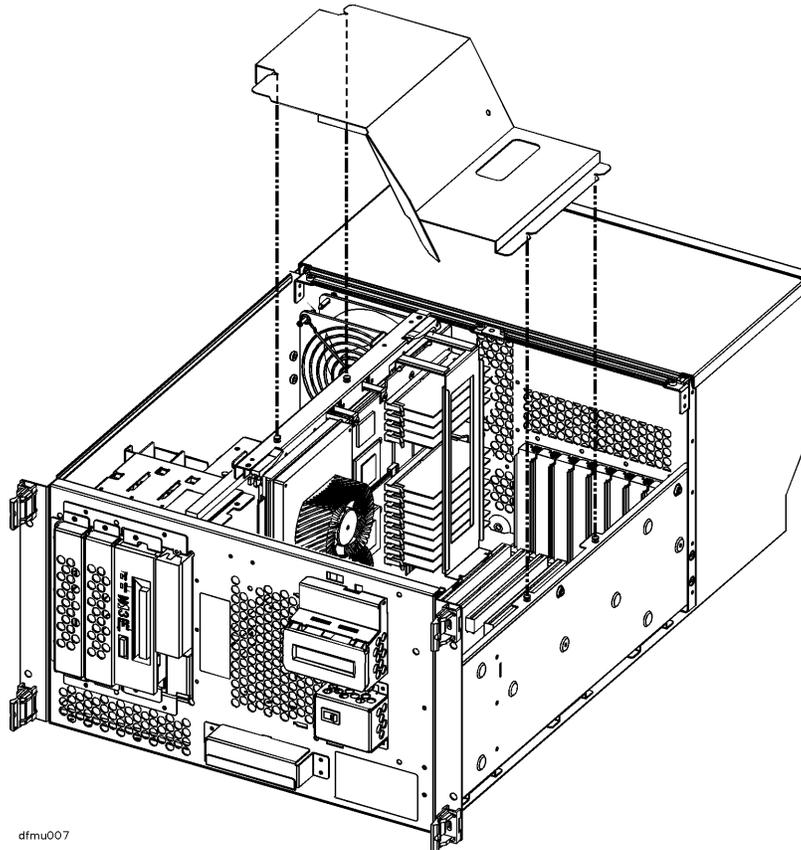


dfmu006

## R Class Internal Peripherals Installation Installation Procedures

### E. Remove the EMI Cover

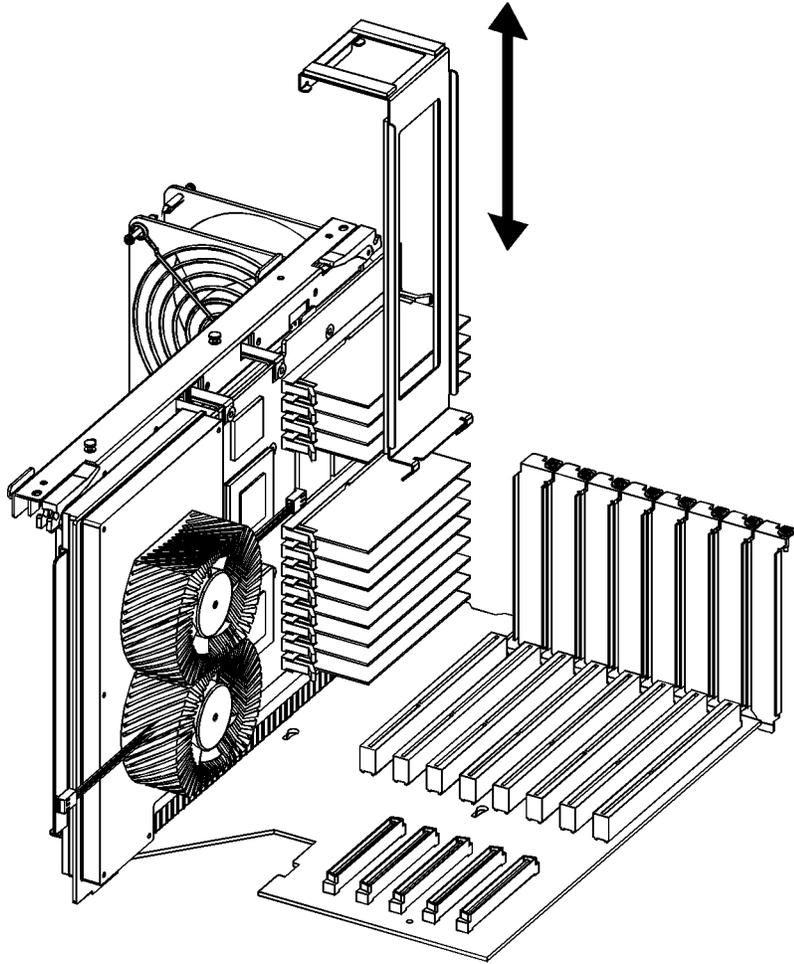
1. Loosen the two notches at the top of the EMI cover from the tabs on the Processor/Memory card by pulling back and slightly flexing the EMI cover until the notches come loose.
2. Pull the EMI cover up slightly until the two notches at the bottom of the cover come loose from the tabs at the side server chassis.



R Class Internal Peripherals Installation  
**Installation Procedures**

**F. Remove the  
Memory Simm  
Retainer**

Lift the memory SIMM retainer directly up and out of the system.

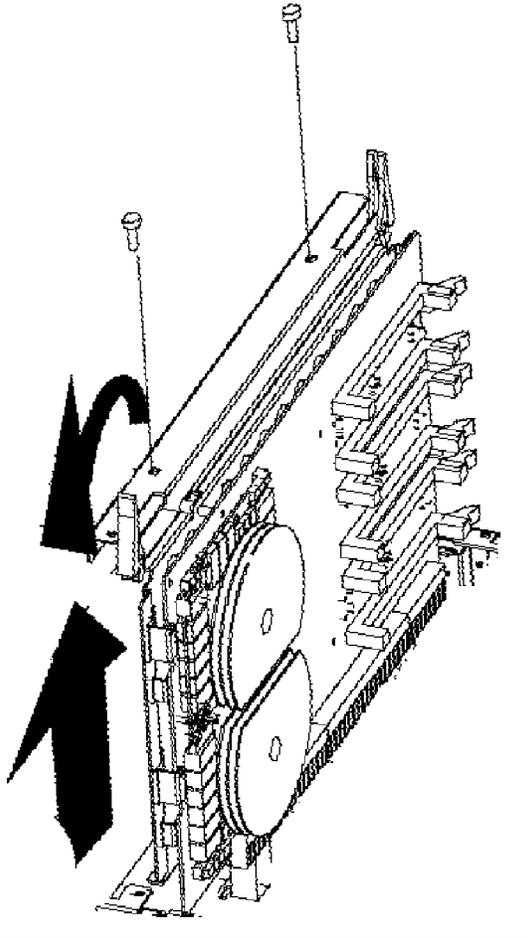


dfmu005

## R Class Internal Peripherals Installation Installation Procedures

### G. Remove the Processor/ Memory Card

1. Attach an anti-static strap to your wrist, and ground it to the main chassis.
2. Disconnect the cables label P13 and P14 from the back of the Processor/  
Memory card.
3. Loosen and remove the two (2) screws that secure the Processor/Memory card to the chassis.
4. Pull out the two plastic levers on the Processor/Memory card.
5. Pull the Processor/Memory card out of the system cabinet, and set it down on an anti-static mat.



R Class Internal Peripherals Installation  
**Installation Procedures**

**H. Configure Your  
Peripheral**

Before installing a peripheral, verify that it is configured correctly. Refer to the configuration information in the manual shipped with your peripheral device. After configuring the peripheral device, proceed to the following step.

## R Class Internal Peripherals Installation Installation Procedures

### I. Install Removeable Media Drives

The removable media slot can contain a CD-ROM drive or a DDS tape drive. Refer to the illustration on page 2-11 while performing this procedure.

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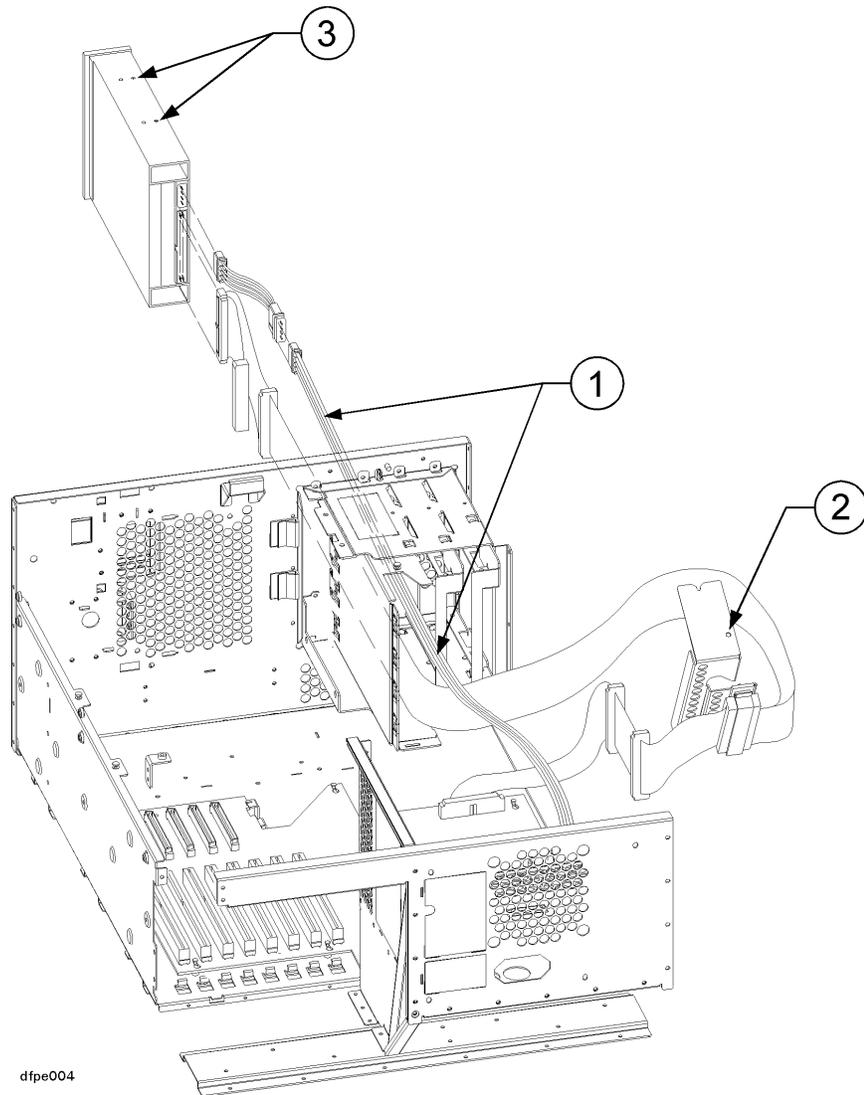
#### NOTE

If devices are already installed in the removeable media bracket, you must disconnect all data and power cables from the devices before performing the following procedure.

1. Disconnect the P6 power cable (callout 1) from the rear of the removeable media bay.
2. Remove the screw from bracket at the rear of the removeable media bay (see callout 2). Pull the bracket back and out.
3. Remove the two screws attaching the removeable media bay to the front of the chassis. Pull the removeable media bay forward.
4. Attach the P6 power cord segment to the new device.
5. Pull the ribbon cable through the empty bay and attach it to the new removeable media device.
6. Insert the removable media drive mechanisms into the removable media bracket, and secure the drives to the bracket with eight (8) screws (four each, top and bottom). (See callout 3 in the illustration.)
7. Slide the bay back into the chassis, and secure it with the two screws removed in step 3.
8. Reconnect the P6 power cable (callout 1).

## R Class Internal Peripherals Installation Installation Procedures

9. Replace the rear bracket. Secure the bracket in place with the screw removed in step 2 (see callout 2).



dfpe004

R Class Internal Peripherals Installation  
**Installation Procedures**

**\*\*\* GRAPHIC NOT PROVIDED \*\*\***

**J. Install Single-Ended SCSI Disks**

Up to two single-ended SCSI disks can be installed in slots next to the removable media drives.

1. Remove the two screws securing the SCSI disk drive bay cover to the chassis, and remove the cover.
2. Insert each single-ended SCSI disk drive mechanism into a bracket.
3. Secure each drive to its bracket with four (4) screws (two on each side).
4. Insert the SCSI drives and brackets into one of the two slots next to the removable media drive in the server cabinet. Replace the cover piece and secure it to the cabinet with two (2) screws.
5. Connect the SCSI ribbon cable and the power cables to the rear connectors of the disk assemblies.
6. Connect the other end of the SCSI ribbon cable to the internal single-ended SCSI connector on the system board.

**K. Replace the Processor/  
Memory Card**

1. Verify that an anti-static strap is still strapped to your wrist, and grounded to the cabinet main chassis.
2. Place the Processor/Memory card into the system cabinet so that the card rests in the metal rails with the large connector facing into the cabinet (see the figure on page 2-8).
3. Pull the extractor levers on the Processor/Memory card out away from the card.
4. Slide the Processor/Memory card into the system cabinet until the large connector is properly seated in the corresponding system board connector.
5. Push in the two extractor levers on the Processor/Memory card.
6. Insert and tighten two screws to secure the Processor/Memory card in the cabinet.
7. Reattach power cables P13 and P14.

## R Class Internal Peripherals Installation Installation Procedures

### L. Replace the Memory SIMM Retainer

Refer to the figure on this page while performing these steps.

1. Position the memory SIMM retainer between the memory SIMMs and the HSC card slot, centered over the memory SIMMs.
2. Lower the retainer until its bottom flange rests on the plastic HSC card connector just above the system board in the bottom of the chassis.

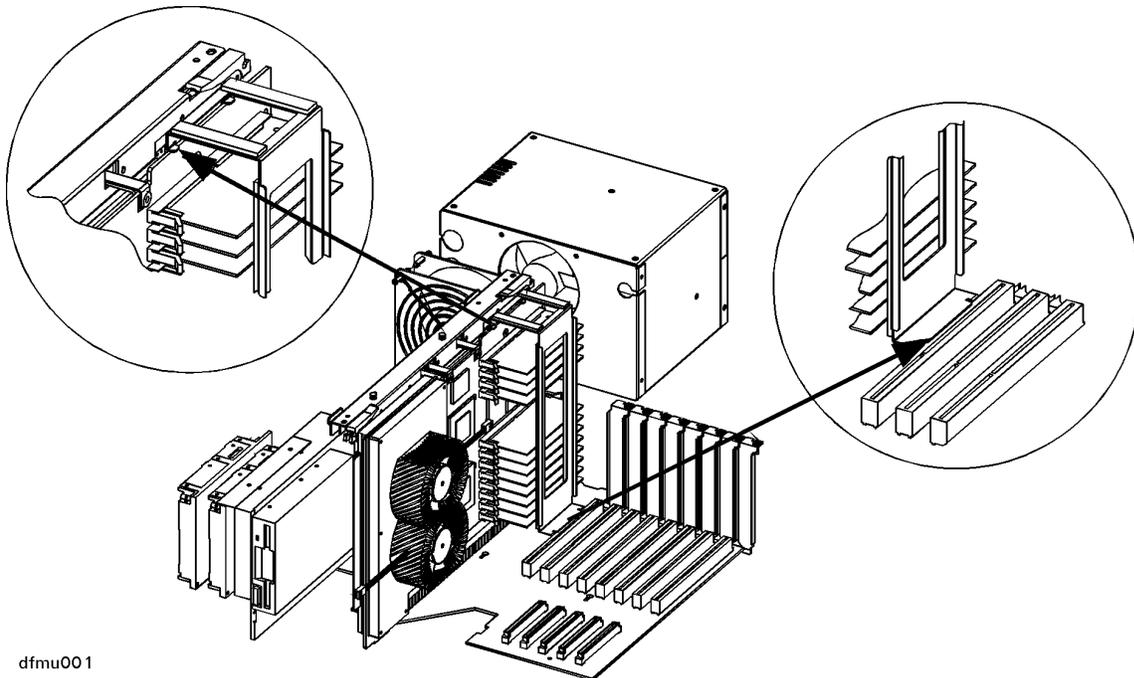
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#### CAUTION

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Avoid contact between the metal tabs at the foot of the retainer and the circuitry on the system board beneath. Otherwise, damage to the system board may occur.

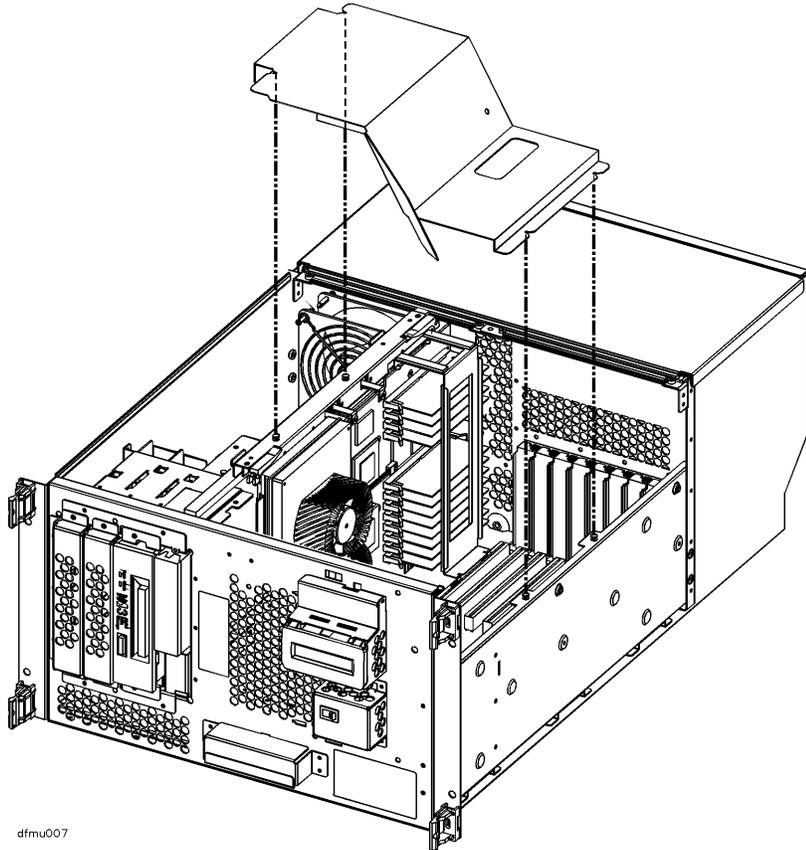
3. Pull the top of the retainer toward the memory SIMMs until the top rear flange hooks behind the processor/memory board, and the small tabs next to the flange rest on the top edge of the processor/memory board.



dfmu001

**M. Replace the EMI Cover** Place the EMI cover as shown in the illustration below.

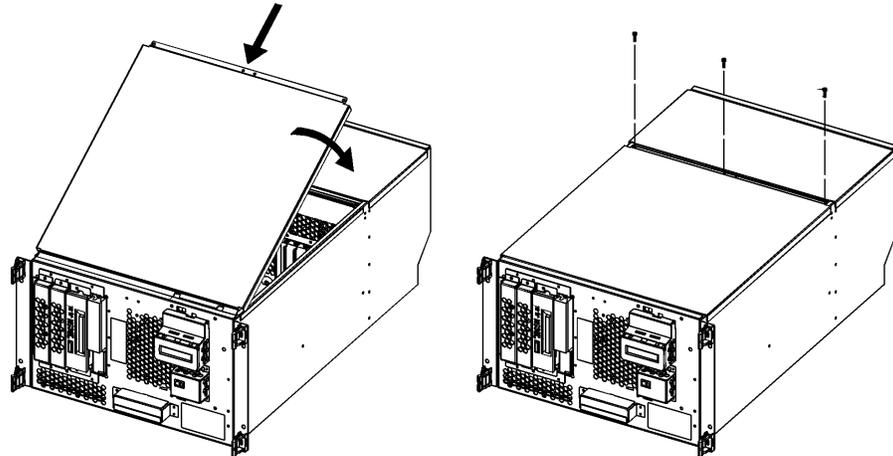
1. Insert the two lower notches of the EMI cover onto the tabs at the side of the server cabinet.
2. Flex the EMI cover slightly to insert the two notches at the top of the EMI cover onto the tabs on the processor/memory card.



## R Class Internal Peripherals Installation Installation Procedures

### **N. Replace the Top Sheet Metal Panels**

1. Position the hinge tab of the top rear panel so that it goes into the slot at the rear of the system cabinet. Lower the top rear panel into place.
2. Position the hinge tab of the top front panel so that it goes into the slot at the front of the system cabinet. Lower the top front panel into place.
3. Align and tighten the three screws of the top front panel into the holes as shown in the illustration.



dfmu008

**O. Replace the Front Bezel**

1. Align the control panel bezel over the power switch and LCD display and push gently to secure the bezel in place..

---

**CAUTION**

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Until the LCD and power switch bezel is attached, the area surrounding the LCD is ESD sensitive. See “Electrostatic Discharge Precautions” on page 2-2.

2. Align the front bezel over the front of the chassis and push gently to secure the bezel in place.

This completes the internal peripherals installation procedure. Proceed to the **Internal Peripherals installation Verification** procedure starting on the next page.

## **Peripherals Installation Verification**

### **Overview**

The following list is a summary of the verification process. Refer to the **Peripheral Installation Verification Procedure** below for detailed instructions.

- A. Connect power cords.
- B. Turn on power to the system.
- C. Observe console display for self-test error messages.
- D. Halt boot process to get the Boot Console prompt.
- E. Verify peripheral installation using the Support Tools Manager.

## **Peripherals Installation Verification Procedure**

**A. Connect the  
Power Cord**

**B. Turn On Power  
to the System**    Set the front panel Power switch to the ON position.

## R Class Internal Peripherals Installation

### Peripherals Installation Verification Procedure

#### C. Observe Console Display

During the power-on cycle, the system will perform selftests. These selftests may generate messages that will appear on the console screen if a problem is detected.

#### D. Halt the boot process.

#### E. Verify Peripheral Installation

At the operating system interface, you can run the online diagnostics to verify the peripherals installation. The diagnostics are available in the **Support Tools Manager**, in three different user interfaces:

- Graphical user interface (xstm)
- Menu interface (mstm)
- Command line interface (cstm)

#### Graphical User Interface (XSTM)

- To use the graphical user interface, you must have a graphics console running HP VUE.
- To access the graphical user interface, type *xstm* at the operating system prompt in a terminal window.
- Use the mouse to point and click on menus or components on the map.

#### Menu Interface (MSTM)

- To access the menu interface, type *mstm*.
- You can verify the installed peripherals by pressing the **Verify** function key.
- You can press the **Help** function key at any time to get more information.

#### Command Line User Interface (CSTM)

- To access the command line interface, type *cstm*.
- To get more information, type *help*.

After running the desired verification diagnostics, the peripherals installation is completed.

If the verification procedure indicates that a problem exists, contact an HP Service Representative.