

# **Upgrading and Servicing Guide**

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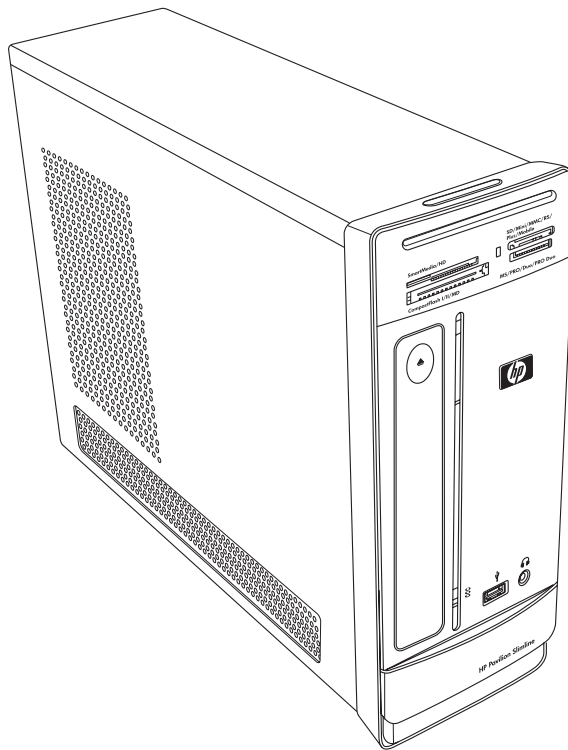
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# Upgrading and Servicing Guide

## Introduction



The *Upgrading and Servicing Guide* provides instructions on how to remove and replace the following hardware components in your HP Pavilion Slimline Desktop PC:

- Optical disc drive
- Hard disk drive
- Memory module
- PCI card
- PCI-E card
- Battery

# Safety Information

Please read the following important safety information before performing any procedure.

This product has not been evaluated for connection to an "IT" power system (an AC distribution system with no direct connection to earth, according to IEC 60950).



**WARNING:** Please read "Additional Safety Information" in your *Limited Warranty and Support Guide* before installing and connecting your system to the electrical power system.

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**WARNING:** Keep your hands away from the moving fan. Keep fingers and tools clear of the fan when power is applied. Never open the cover with the power cord attached or power applied. You may damage your computer or be injured from the spinning fan blades.

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**WARNING:** Avoid touching sharp edges inside the computer.

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## Opening the Computer

Before you upgrade any component in your computer, prepare the computer so that you can safely handle the unit and the components.

Read the following items before attempting to upgrade or service the computer:

- Print out this document before attempting any removal/replacement procedures.
- These procedures assume familiarity with the general terminology associated with computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Write down and save the system model number and serial number, all installed options, and other information about the system. If you need this information later, you will not need to open and examine the computer.



**CAUTION:** Static electricity can damage the electronic components of the computer or optional equipment. Ensure that you are discharged of static electricity by briefly touching a grounded metal object.

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- Hewlett-Packard recommends that you use an antistatic wrist strap and a conductive foam pad when working on system electronic components.
- You need a Phillips screwdriver.

## Preparing the Computer

To avoid injury and equipment damage, always follow this procedure before opening the computer:

- 1 Remove any of the following:
  - Memory card from the memory card reader
  - Optical disc (CD or DVD) from the optical drive
  - Pocket Media Drive from the Pocket Media Drive bay
- 2 Turn off the computer. Click the **Windows Start Button**<sup>®</sup>, click the **Arrow** button next to the **Lock** button, and then click **Shut Down**.
- 3 Disconnect the modem/telephone cable, if present.



**WARNING: Always disconnect the modem cord from the telephone system before opening the cover.**

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- 4 Disconnect the power cord from the electrical outlet and then from the computer.



**WARNING: To reduce the risk of personal injury from electrical shock or hot surfaces, disconnect the power cord from the electrical outlet. Then disconnect the computer from the power source before removing the computer cover. Failure to do so before you open the computer or do any procedures can result in personal injury or equipment damage.**

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- 5 Disconnect all other attached cables (such as the keyboard, mouse, Ethernet, and monitor).
- 6 Disconnect all external devices.

## Removing the Computer Cover



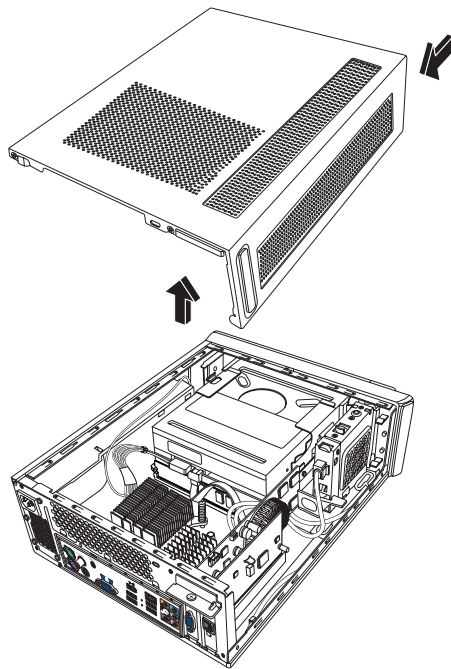
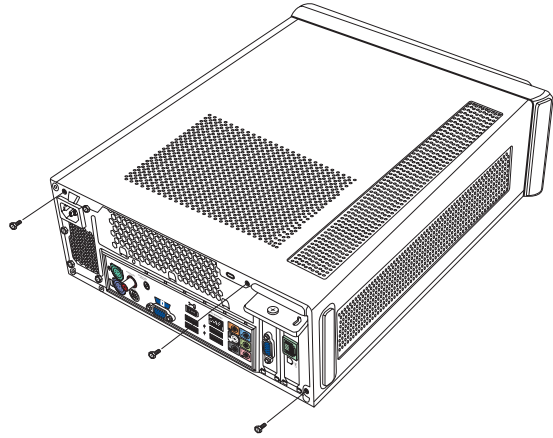
**WARNING:** Remove power before opening the computer cover. Allow the internal system components to cool before touching.

- 1 Complete the procedure "Preparing the Computer" on page 3.
- 2 Lay the computer flat.
- 3 Loosen the three screws on the back cover. Use a Phillips screwdriver.

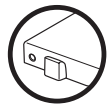


**WARNING:** Avoid touching sharp edges inside the computer.

- 4 Slide the computer cover back about 1.25 centimeters (1/2 inch), and then lift it off the computer. Set it aside.



**NOTE:** Use the screwdriver slot on the back of the cover to loosen the cover, as required.





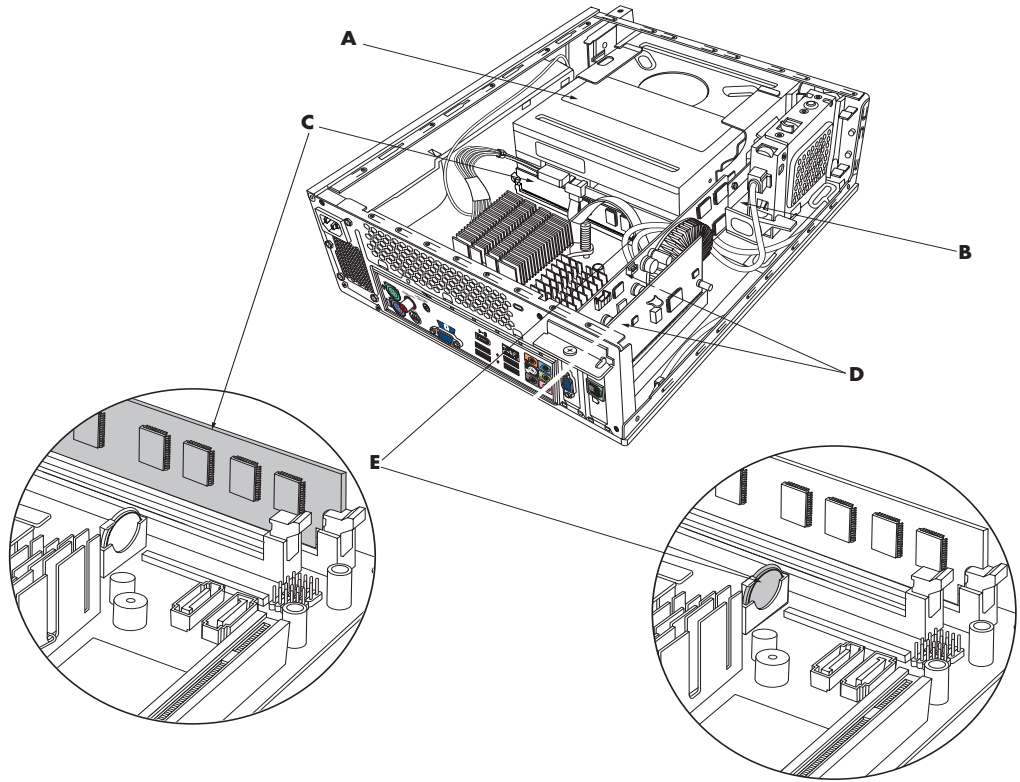
## Locating Components Inside the Computer

Computer component configurations vary by model. You can remove and replace the following components:

<b>Component</b>	<b>See:</b>
<b>A</b> Optical disc drive. May be a CD-ROM, CD-RW, DVD-ROM, DVD+RW, or combination drive	"Removing and Replacing an Optical Disc Drive" on page 8.
<b>B</b> Hard disk drive (located under the optical drive bay)	"Removing and Replacing a Hard Disk Drive" on page 12.
<b>C</b> Memory module (2)	"Removing and Replacing Memory" on page 16.
<b>D</b> Modem card (PCI card) and graphics card (PCI-E card)	"Removing and Replacing a PCI Card" on page 19.
<b>E</b> Battery	"Removing and Replacing the Battery" on page 24.

Read the "Before You Begin" section at the start of each component procedure. This section contains requirements and important information about the replaceable component.

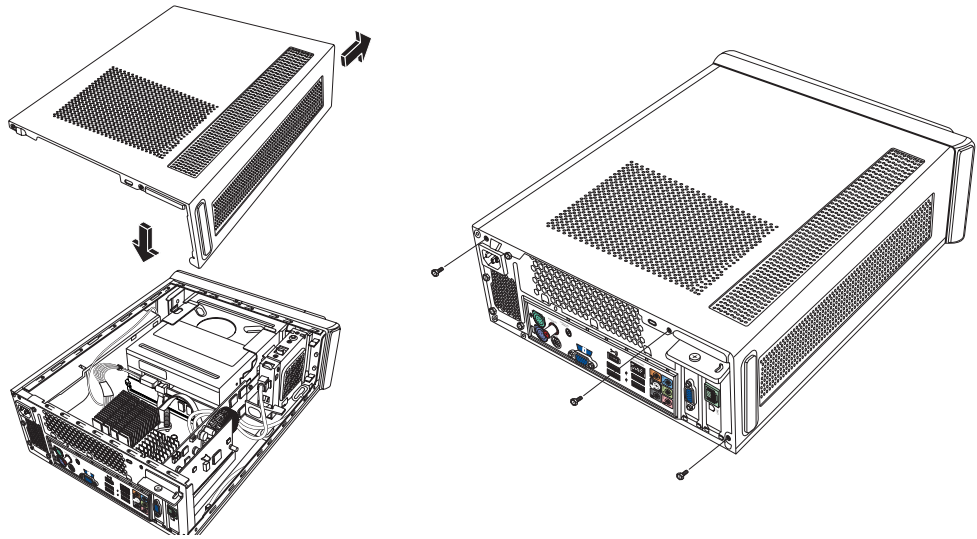
The following illustration shows component locations:



# Closing the Computer

## Replacing the Computer Cover

- 1 Place all cables inside of the computer case.
- 2 Place the cover onto the computer about 2.5 centimeters (1 inch) back. Make sure the slots in the computer case align with the cover tabs.
- 3 Slide the cover forward on the frame until it locks into place. Make sure the bottom of the cover lines up with the computer case.



- 4 Align the screws on the computer cover with the holes on the back of the computer frame. Insert and then tighten the screws on the cover.
- 5 Complete the procedure "After Closing the Computer" on page 7.

## After Closing the Computer

To avoid injury and equipment damage, always follow this procedure in this order after closing the computer:



**WARNING:** To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telecommunications or telephone connectors into the Ethernet network interface connector.

- 1 Reconnect the modem/telephone cable and all other attached cables, such as the keyboard, mouse, Ethernet, and monitor cables.
- 2 Reconnect external devices, such as a printer.
- 3 Reconnect the power cord.
- 4 Turn on the computer and all peripherals, such as the monitor.

# Removing and Replacing an Optical Disc Drive

Your computer includes an optical disc drive that you can replace or upgrade. See “Locating Components Inside the Computer” on page 5.

## Before You Begin

Observe the following requirements before removing and replacing the component:

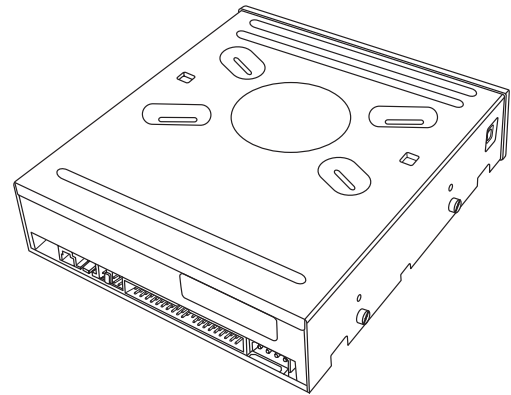
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**IMPORTANT:** Due to the small computer size, you can only install an optical disc drive of less than the approximate length of 170 millimeters (6.7 inches).

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Your computer comes with a SATA (serial advanced technology attachment) drive that uses a narrow data cable with an optional latch.

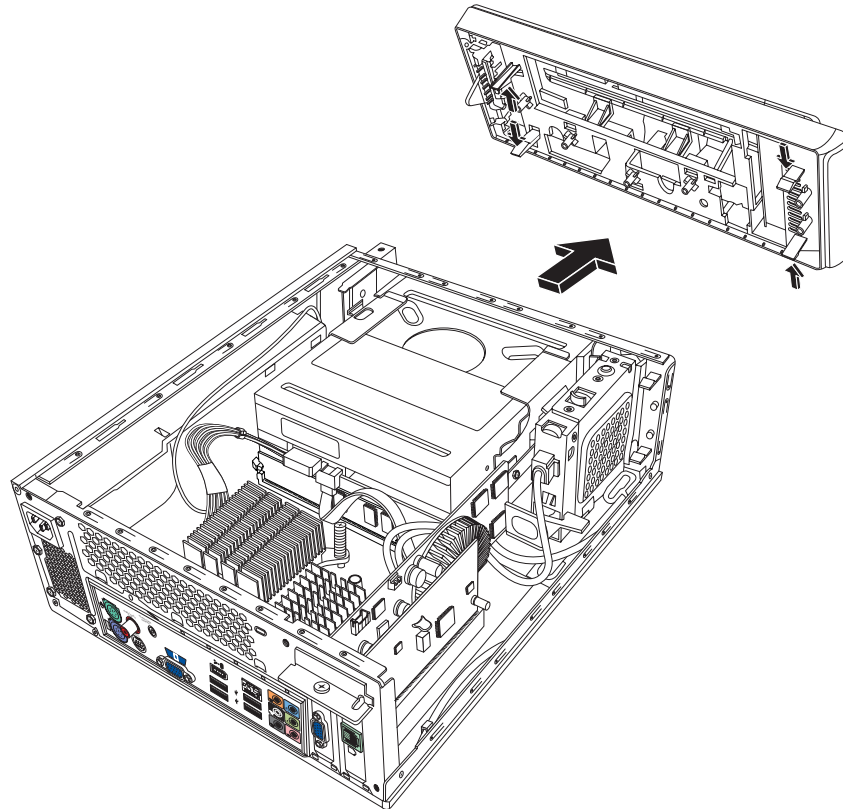
This procedure requires a Phillips screwdriver.



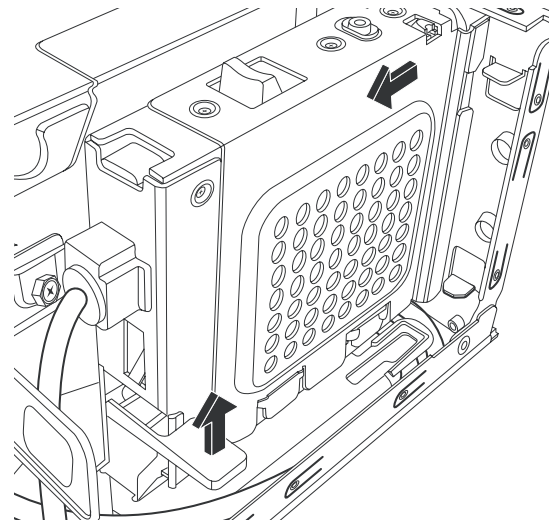
**Optical disc drive**

## Removing an Optical Disc Drive

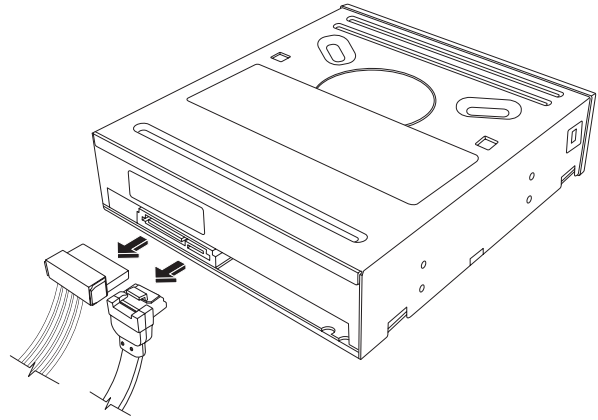
- 1 Prepare the computer and remove the computer cover. Complete the “Opening the Computer” procedures on page 2.
- 2 Remove the front cover from the computer. Press the two tabs at the bottom of the cover, and press the two tabs together at the top of the cover; then push the cover out.



- 3 If your computer includes a Pocket Media Drive, lift the tab on the Pocket Media Drive cage. Then pull the cage back and out of the chassis.



- 4 Make a note of each cable and plug orientation attached to the back of the optical disc drive before removing the cables.
- 5 Disconnect the power cable and then the data cable from the back of the optical disc drive. Pull the tab on the data cable. Use a gentle rocking motion on the power cable.



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**NOTE:** The SATA data cable may include a latch. Press the latch, and pull the plug to remove the data cable from the drive.

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**CAUTION:** Pull the connector by the handle only.

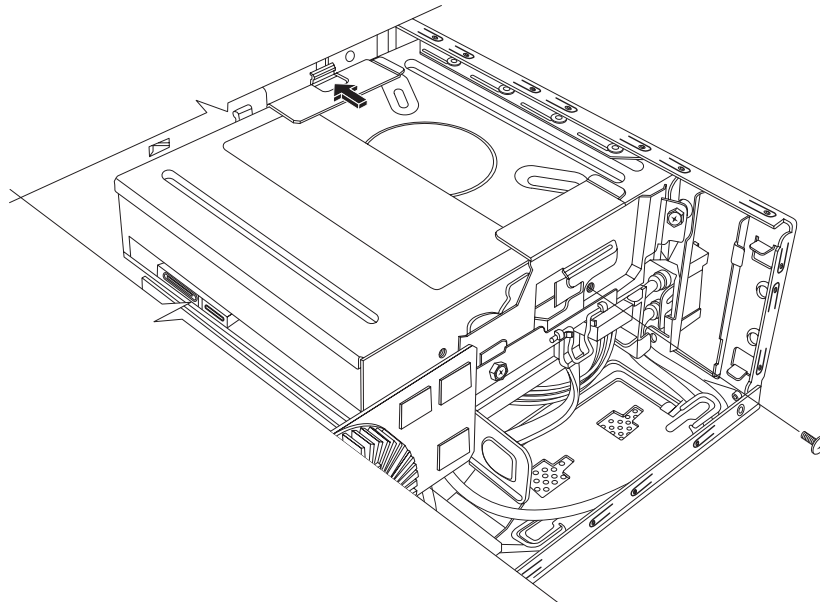
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- 6 Disconnect the sound cable, if present.
- 7 Remove the screw from the optical disc drive side.
- 8 Pull the latch away from the drive, and push the drive through the front of the computer.

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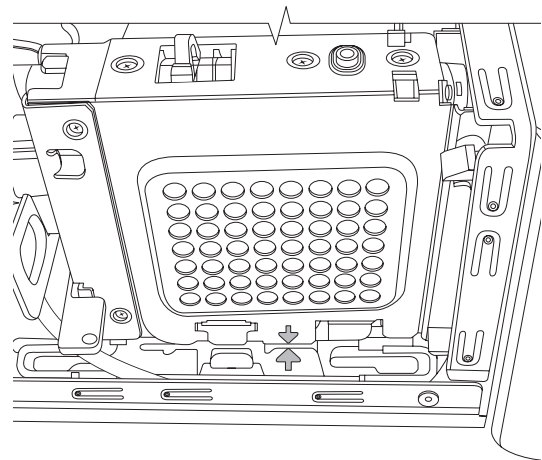
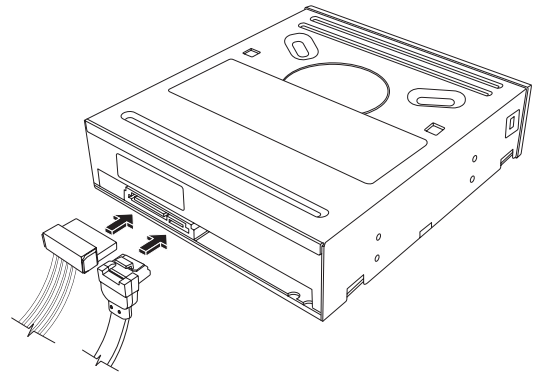
**IMPORTANT:** Do not tilt the drive during removal.

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## Replacing an Optical Disc Drive

- 1** Complete the procedure “Removing and Replacing an Optical Disc Drive” on page 8.
- 2** Gently push the new optical disc drive into the slot on the front of the chassis.
- 3** Insert the screw on the side of the optical disc drive.
- 4** Connect the power cable and data cable firmly to the back of the optical disc drive. Ensure that the cables are completely inserted.
- 5** Some drive models may have a sound cable. If so, connect the sound cable.
- 6** If your computer includes a Pocket Media Drive, insert the Pocket Media Drive cage:
  - a** Align the arrow on the PMD cage with the arrow on the bottom of the chassis.
  - b** Push the PMD cage toward the front of the chassis until it locks in place.
- 7** Replace the front cover.
- 8** Replace the computer cover and close the computer. Complete the “Closing the Computer” procedures on page 7.

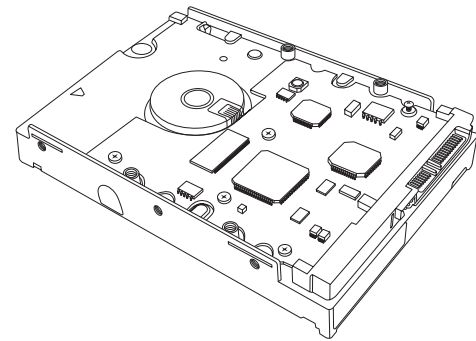


# Removing and Replacing a Hard Disk Drive

Your computer includes a hard drive that you can replace or upgrade. See “Locating Components Inside the Computer” on page 5.

The original hard disk drive is preloaded with the computer system recovery partition. If you remove this hard disk drive, store it in a properly sealed antistatic bag.

The hard disk drive is a SATA (serial advanced technology attachment) drive that uses a narrow data cable with an optional latch.



Hard disk drive

## Before You Begin

Observe the following requirements before removing and replacing the component:



**CAUTION:** Before you remove the hard disk drive, back up your personal files on the hard disk drive to an external storage device, such as a DVD, CD, or USB drive. Failure to do so will result in data loss.

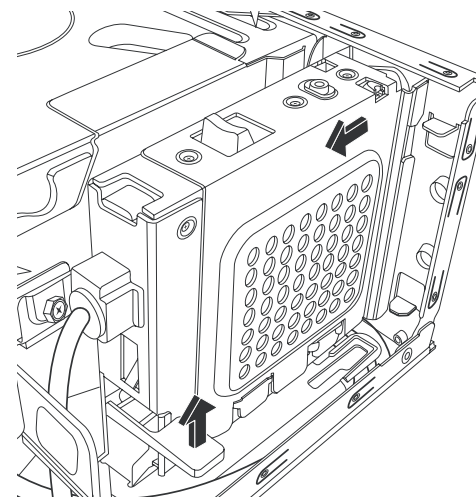
After you replace the hard disk drive, perform the System Recovery procedure. Use the recovery discs to load the factory-installed files. Refer to the *Troubleshooting and Maintenance Guide* for detailed System Recovery steps.

**IMPORTANT:** Before upgrading a hard disk drive, make sure a recovery disc is available.

This procedure requires a Phillips screwdriver.

## Removing a Hard Disk Drive

- 1 Prepare the computer and remove the computer cover. Complete the “Opening the Computer” procedures on page 2.
- 2 If your computer includes a Pocket Media Drive, lift the tab on the Pocket Media Drive cage. Then pull the cage back and out of the chassis.





- 3 Make a note of each cable attached to the hard disk drive before removing the cables.
- 4 Lift the wire latch, and disconnect the power and data cables from the back of the hard disk drive.
- 5 Remove the retaining screw from the drive tray.

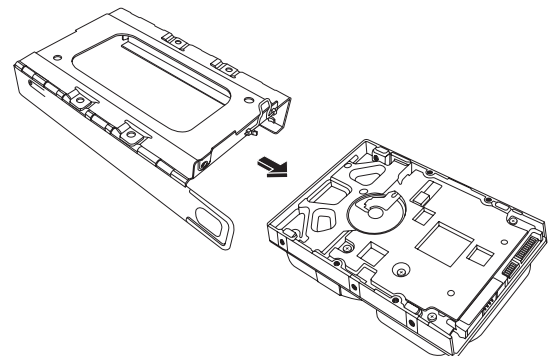
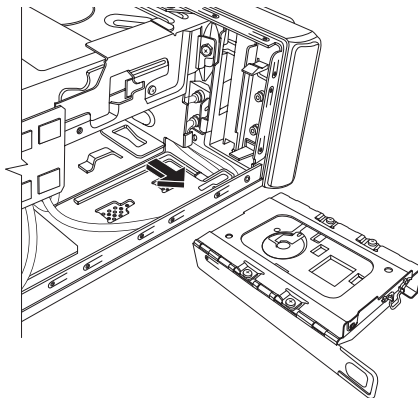
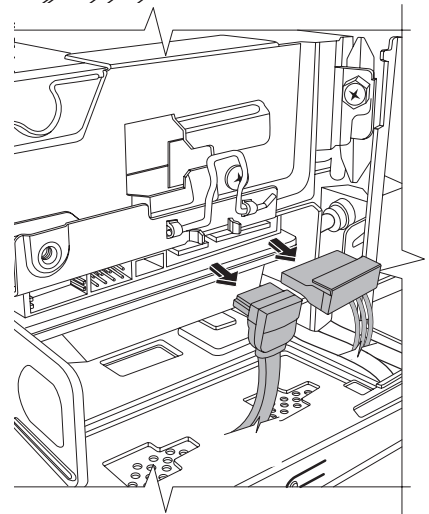
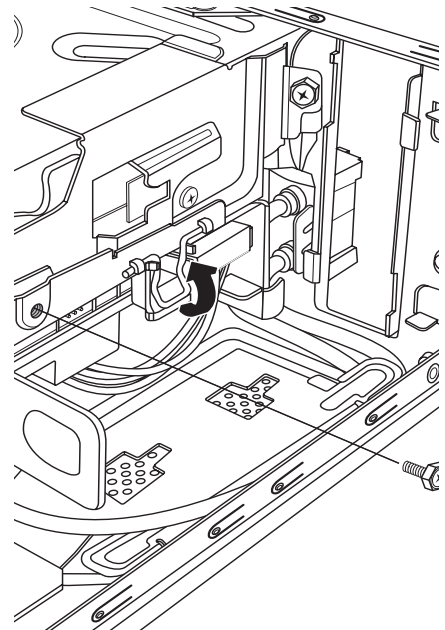


**CAUTION:** Handle hard disk drives with care. Dropping or banging the hard disk drive can result in data loss.

- 6 Slide the hard disk drive tray out of the drive bay by pulling the tab on the drive tray.

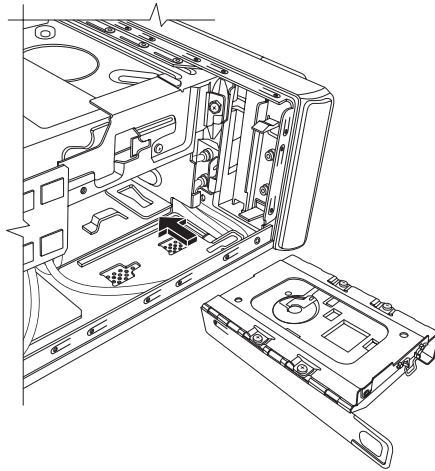
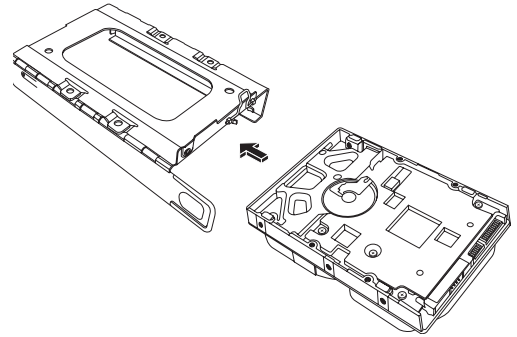
**NOTE:** Ensure that the computer cables are clear of the drive tray when removing. Push them away, as required, before removing the tray.

- 7 Remove the four screws that secure the hard disk drive to the drive tray, and slide the hard disk drive out of the tray.

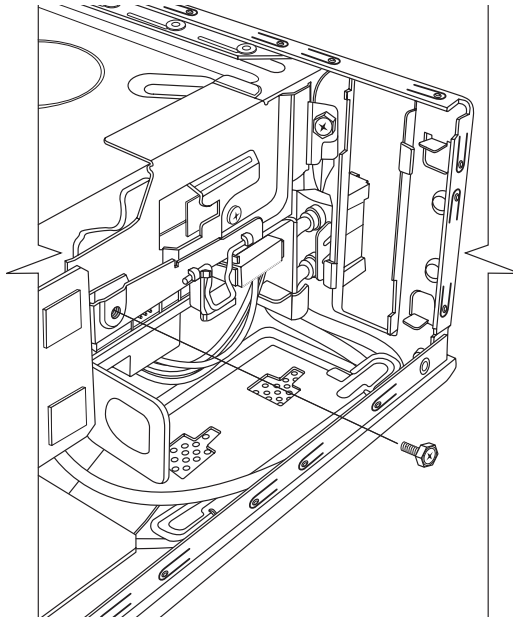


## Replacing a Hard Disk Drive

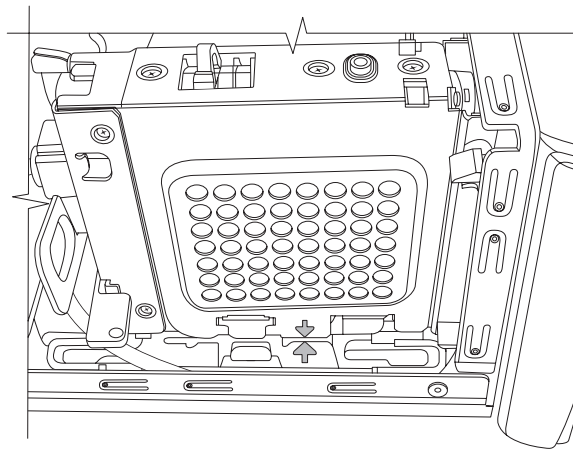
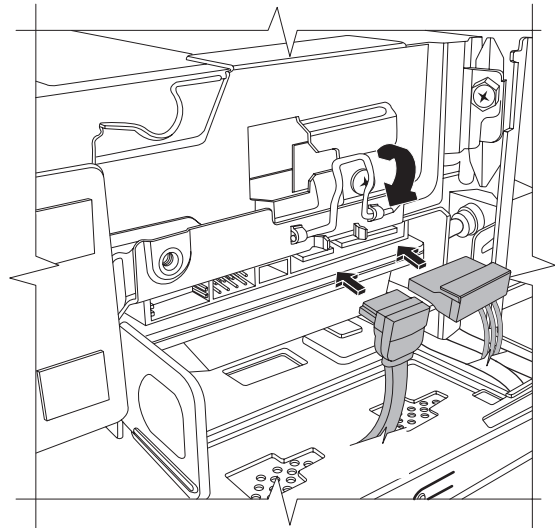
- 1 Complete the procedure “Removing a Hard Disk Drive” on page 12.
- 2 Slide the hard disk drive into the tray.
- 3 Insert and tighten the four screws that secure the hard disk drive to the drive tray.
- 4 Slide the hard disk drive tray into the computer drive bay.



- 5 Insert and tighten the hard disk drive retaining screw into the drive tray.



- 6 Attach the data and power supply cables to the back of the hard disk drive and close the wire latch.
- 7 If your computer includes a Pocket Media Drive (PMD), insert the Pocket Media Drive cage:
  - a Align the arrow on the PMD cage with the arrow on the bottom of the chassis.
  - b Push the PMD cage toward the front of the chassis until it locks in place.
- 8 Complete the procedures to replace the computer cover and close the computer. See "Closing the Computer" on page 7.
- 9 Perform a System Recovery, as required. Use the recovery discs to replace the factory-installed files. Refer to the *Troubleshooting and Maintenance Guide* for detailed System Recovery procedures.



# Removing and Replacing Memory

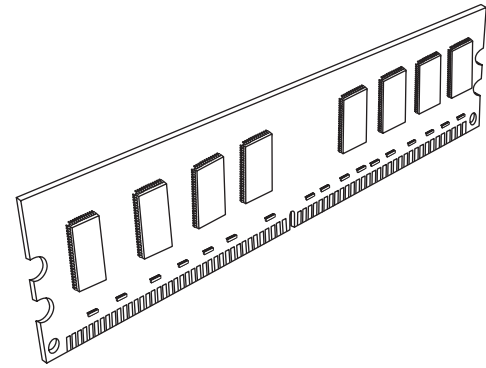
The motherboard contains one or two memory module sockets for DDR DIMMs (double data rate dual in-line memory modules).

## Before You Begin

Observe the following requirements before removing and replacing the component:

To determine which type and speed of memory module your computer uses, and for specific memory module information and specifications:

- 1 Go to **<http://www.hp.com/support>** in your Web browser.
- 2 Select your country/region and language.
- 3 From the Support and Drivers page, click **See support and troubleshooting information**, enter the model number of your computer, and then click **Search**.



**Memory module**



**WARNING: Using the wrong type of memory module could damage the system.**

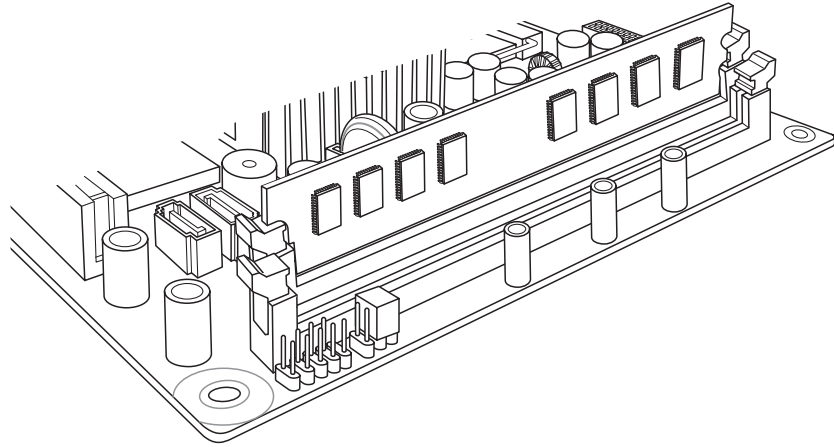


**WARNING: Handle the memory module with care. Be careful to not touch any memory module contacts. Touching the gold contacts may damage the module. Avoid touching the memory chips.**

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## Removing a Memory Module

- 1 Remove the optical disc drive. See “Removing an Optical Disc Drive” on page 9.
- 2 Locate the memory socket on the motherboard.

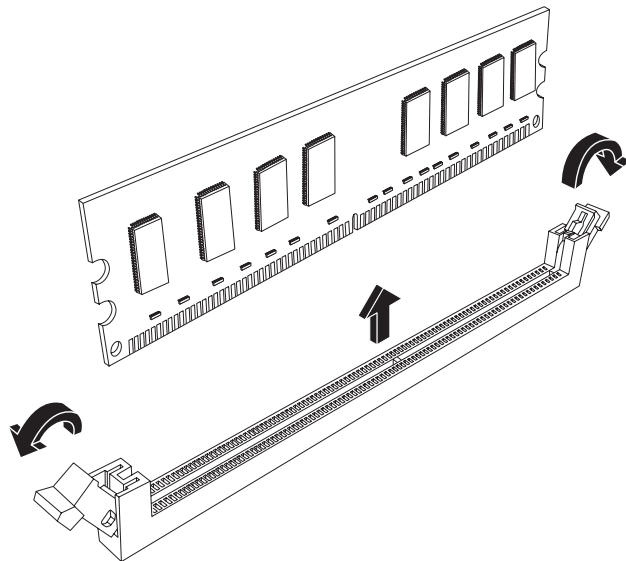


- 3 Move any cabling out of the way, if necessary.



**WARNING: Do not pull the memory module out of the socket. Use the retaining clips to eject the module.**

- 4 Push down the two retaining clips on the ends of the socket until the memory module pops out of the socket. Hold the memory module by its edges only, as you lift it away from the socket.



- 5 Store the memory module in antistatic packaging.

## Replacing a Memory Module

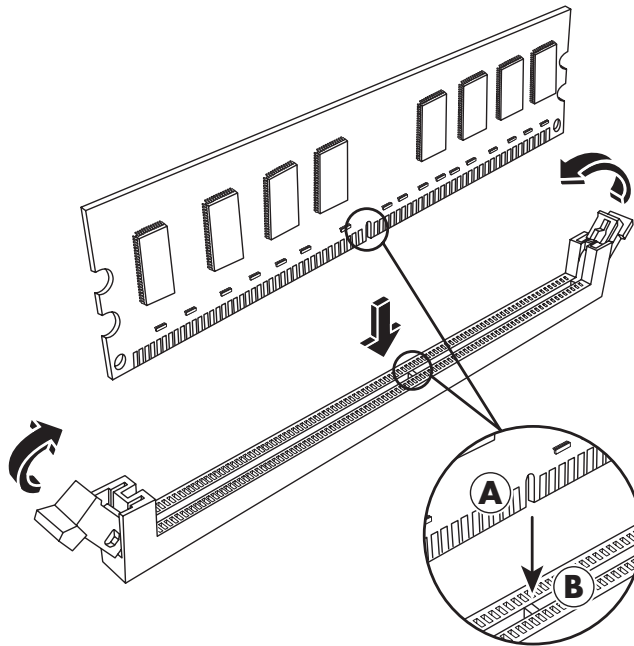
Upgrade the memory in your computer with memory of the same type and speed as the memory originally installed in your computer.

- 1 Complete the procedure “Removing a Memory Module” on page 17.
- 2 Open both latches of the memory module socket.



**WARNING: Handle the memory module with care. Be careful to not touch any memory module contacts. Touching the gold contacts may damage the module. Avoid touching the memory chips.**

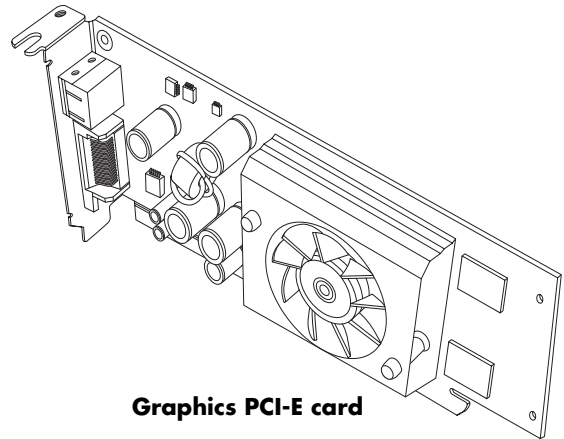
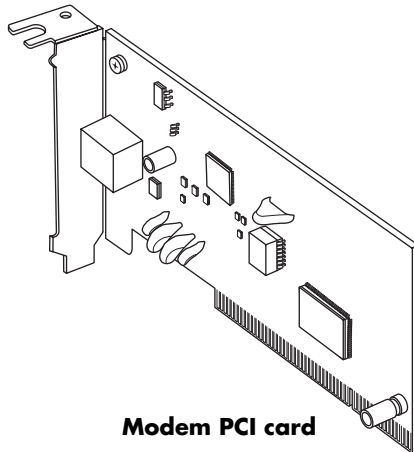
- 3 Remove the new memory module from the antistatic packaging. Hold it by its edges only.
- 4 You can install the memory module in only one position. Match the notch **(A)** on the memory module with the tab **(B)** on the memory socket. Push the module carefully and firmly into the slot, ensuring that the latches on both ends snap into place.



- 5 Repeat steps 1 to 4 for the second memory slot, as required.
- 6 Replace any cabling that was moved.
- 7 Complete the procedures to replace the optical disc drive. See “Replacing an Optical Disc Drive” on page 11.

# Removing and Replacing a PCI Card

Your computer comes with a modem card in the PCI card slot. The computer may also come with a graphics card in a PCI Express (PCI-E) card slot. You can replace these cards with a new modem card or graphics card. You may also replace with a different PCI card or PCI-E card. The modem card is a telephone modem circuit board that fits into a PCI card slot.



## Before You Begin

Observe the following requirements before removing and replacing the component:

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**IMPORTANT:** Due to the small computer size, you can only install a small, low-profile PCI card of the same approximate size of the modem card. HP recommends that you install a card with power consumption of 5 watts or less.

Not all low-profile cards will fit into the PCI slot. Some external connectors, especially connectors located at the top of the card, may not fit properly into the back panel.

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**IMPORTANT:** Due to the small computer size, you can only install a small, low-profile PCI-E card of the same approximate size of the graphics card. HP recommends that you install a card with power consumption of 25 watts or less.

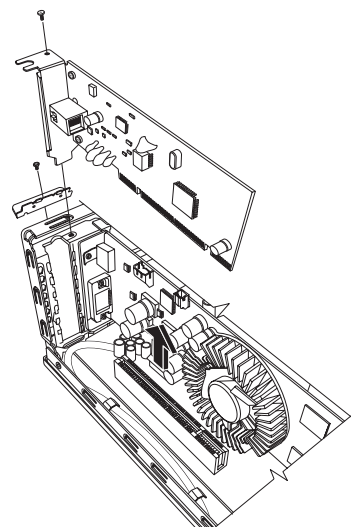
Not all low-profile cards will fit into the PCI-E slot. Some external connectors, especially connectors located at the top of the card, may not fit properly into the back panel.

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This procedure requires a Phillips screwdriver.

## Removing a PCI Card

- 1 Prepare the computer and remove the computer cover. Complete the procedures "Opening the Computer" on page 2.
- 2 Inside the computer, locate the PCI card slot on the motherboard.
- 3 Make a note of any internal cables attached to the card, and then disconnect them.
- 4 Remove the screw on the modem card bracket holder on the outside of the frame. Remove the bracket holder.
- 5 Hold the card at the top, and carefully pull the card straight out of the slot.





## Replacing a PCI Card

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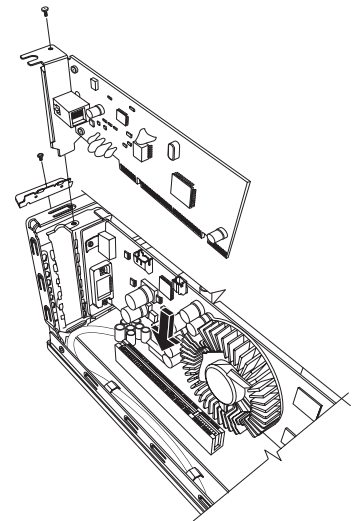
**IMPORTANT:** Due to the small computer size, you can only install a small, low-profile PCI card of the same approximate size of the modem card. HP recommends that you install a card with power consumption of 5 watts or less.

Not all low-profile cards will fit into the PCI slot. Some external connectors, especially connectors located at the top of the card, may not fit properly into the back panel.

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You can replace the modem card with a new modem card or another PCI card in the PCI card slot:

- 1 Complete the procedures to remove the modem card. See "Removing a PCI Card" on page 20.
- 2 Align the edge of the add-in card with the slot on the computer, and gently but firmly press the card straight down into the card slot. The whole connector should be seated properly in the card slot.
- 3 Attach the bracket holder with the screw to secure the card.
- 4 Connect any internal cables attached to the card.
- 5 Complete the procedures to close the computer. See "Closing the Computer" on page 7.
- 6 Install any software drivers — supplied by the card manufacturer if you are installing another PCI card — or as required.



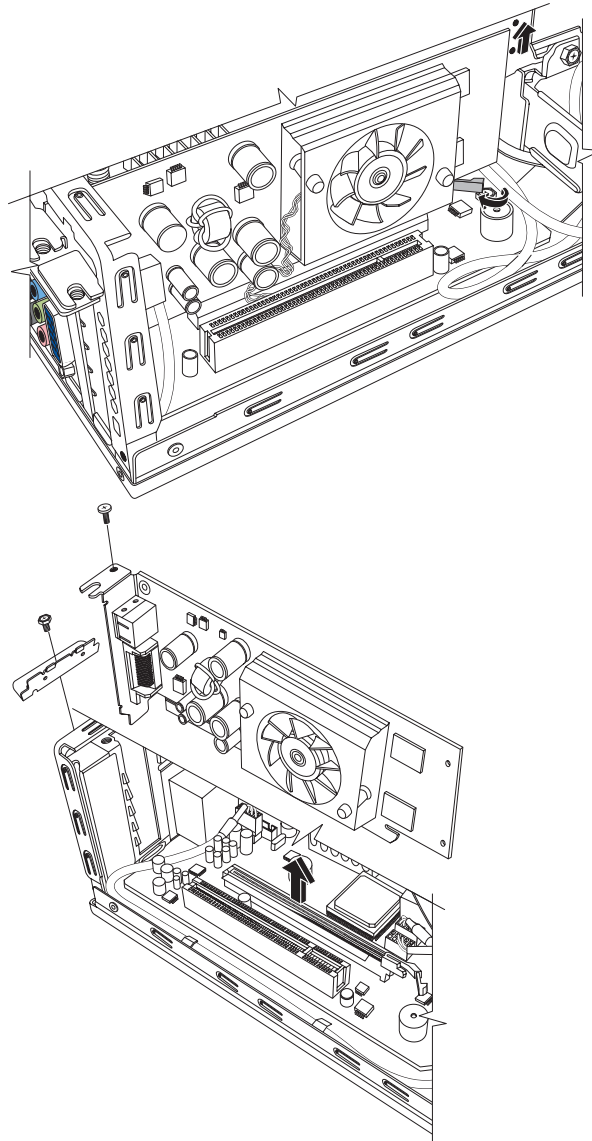
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**NOTE:** If the new card or device isn't working, read the card manufacturer's installation instructions, and recheck all connections, including those to the card, power supply, keyboard, and monitor.

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## Removing a PCI-E Card

- 1 Prepare the computer and remove the computer cover. Complete the procedures “Opening the Computer” on page 2.
- 2 Inside the computer, locate the PCI-E card slot on the motherboard.
- 3 Make a note of any internal cables attached to the card, and then disconnect them.
- 4 Remove the screw on the modem card bracket holder on the outside of the frame. Remove the bracket holder.
- 5 While lifting the latch holding the card to the motherboard, hold the card at the top, and carefully pull the card straight out of the slot.



## Replacing a PCI-E Card

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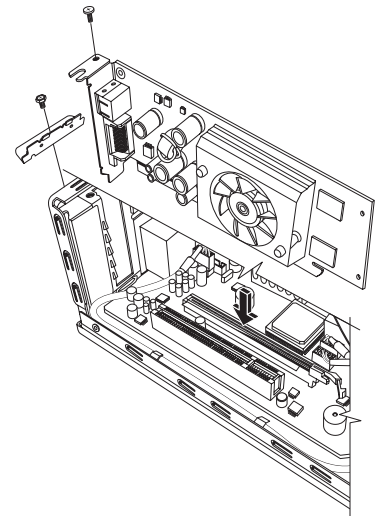
**IMPORTANT:** Due to the small computer size, you can only install a small, low-profile PCI-E card of the same approximate size of the graphics card. HP recommends that you install a card with power consumption of 25 watts or less.

Not all low-profile cards will fit into the PCI-E slot. Some external connectors, especially connectors located at the top of the card, may not fit properly into the back panel.

---

You can replace the graphics card with a new graphics card or another PCI-E card in the PCI-E card slot:

- 1 Complete the procedures to remove the graphics card. See “Removing a PCI-E Card” on page 22.
- 2 Align the edge of the add-in card with the slot on the computer, and gently but firmly press the card straight down into the card slot. The whole connector should be seated properly in the card slot.
- 3 Attach the bracket holder with the screw to secure the card.
- 4 Connect any internal cables attached to the card.
- 5 Complete the procedures to close the computer. See “Closing the Computer” on page 7.
- 6 Install any software drivers — supplied by the card manufacturer if you are installing another PCI-E card — or as required.



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**NOTE:** If the new card or device isn't working, read the card manufacturer's installation instructions, and recheck all connections, including those to the card, power supply, keyboard, and monitor.

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# Removing and Replacing the Battery

A lithium battery on the motherboard provides backup power for the computer's timekeeping capability.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, replace it with a CR2032 lithium battery (3-volt, 220 mAh rating) or an equivalent battery.

## Before You Begin

Observe the following requirements before removing and replacing the component:



**WARNING:** There is danger of explosion if the battery is incorrectly replaced. Replace only with the same, or equivalent, type of battery. Discard used batteries according to the manufacturer's instructions.

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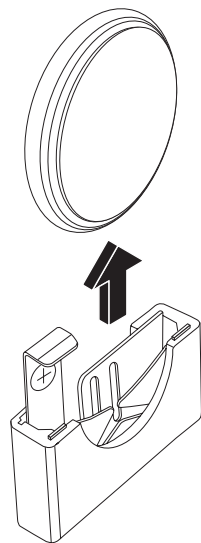


**WARNING:** Never use metal objects, such as pliers, to remove or replace the battery. Metal contact may cause a battery short and damage the battery.

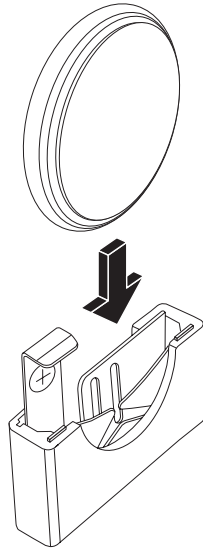
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## Procedure

- 1 Prepare the computer, and remove the computer cover. Complete the procedures "Opening the Computer" on page 2.
- 2 Gently lay the computer on its side.
- 3 Complete the procedure "Removing an Optical Disc Drive" on page 9.
- 4 Remove any cabling, if necessary, to reach the battery.
- 5 Move the retaining clip away from the battery. Lift the battery from the socket to release the battery.



- 6 Install the new CR2032 battery in the socket, with the positive (+) side facing the open side of the socket.



- 7 Replace all cables that you removed.
- 8 Complete the procedure "Replacing an Optical Disc Drive" on page 11.
- 9 Complete the procedures to replace the computer cover and close the computer. See "Closing the Computer" on page 7.

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**NOTE:** You may have to manually set the time and date on the computer after startup.

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Part number: 5991-8366