Maintenance and Service Guide

HP Pro All-in-One ms218/219

Maintenance and Service Guide

About This Book

WARNING!   Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

NOTE: Text set off in this manner provides important supplemental information.

Table of contents

1 Components

Rear components

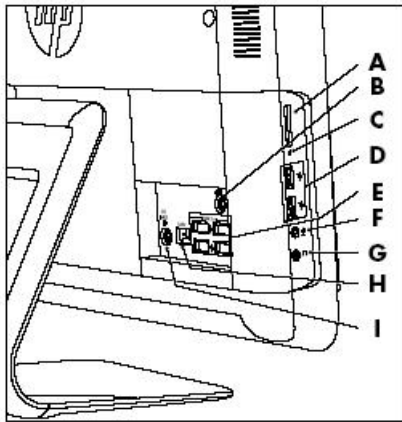| Item	Item	Component
A	Memory card reader	Built-in memory card reader to read a memory card. Supported formats include: Extreme Digital (xD), Secure Digital (SD), Secure Digital High-Capacity (SDHC), MultiMediaCard (MMC), Memory Stick (MS), and Memory Stick Pro (MS Pro) memory cards. Additional media cards can be supported by using an adapter sleeve (purchased separately): Mini SD, RS-MMC, Micro SD, MS-Duo, and MS Pro Duo.
B	Audio line out	Connect external 2.0 and 2.1 powered speakers.
C	Memory card reader LED	Indicates card reader activity.
D	USB 2.0 ports (2)	Connect USB devices (USB 2.0) such as printers, external hard disk drives, digital cameras, and MP3 players.
E	USB 2.0 ports (4)	Connect USB devices (USB 2.0) such as printers, external hard disk drives, digital cameras, and MP3 players.
F	Microphone jack	Connect an external microphone to the port.
G	Headphone jack	Produces sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio. **NOTE:** When a device is connected to the headphone jack, the computer speakers are disabled.

H	Ethernet (Local Area Network [LAN]) port	Connect to the Internet through a wired network.
I	Power connector	Plug the power adapter into your computer.

Front and right side
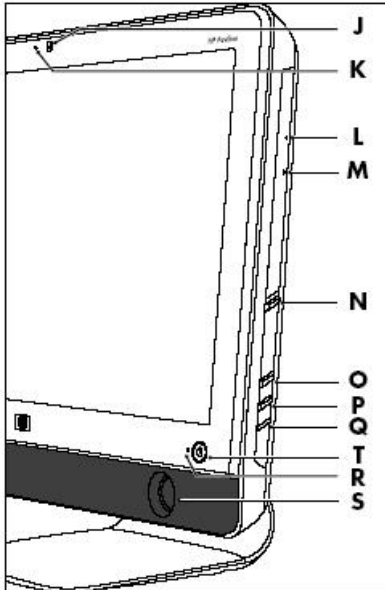
Item	Item	Component
J	Webcam	Create videos and snapshots that you can view, send by e-mail, and upload to video sharing sites. Use the built-in webcam and microphone for video chats (Internet access required).
K	Built-in microphone	Record sound for webcam videos and for video chats online.
L	Optical disc emergency eject	Insert a small pin to eject a disc when the optical disc Eject button does not work.
M	Optical disc drive and LED	Watch your favorite DVDs, or listen to your CD collection. Burn CDs and DVDs. The LED indicates whether there is a disc in the drive.
N	Optical disc eject button	Press this button to open the optical disc drive to insert or remove a disc.
O	Brightness up	Press this button for a brighter screen display.
P	Brightness down	Press this button to dim the screen display.
Q	Hard disk drive LED	Indicates hard disk drive activity.
R	Power status LED	Indicator light is blue when computer is on; the light is off when computer is in sleep or hibernate mode.
S	Built-in speakers	Use the built-in stereo speakers for a powerful media experience when listening to music, or when watching your home videos and DVDs.
T	Power/Standby button	Press the button to turn on your computer or put it in Sleep mode.

2 Spare Parts

See the following available spare parts for the HP Pro All-in-One.

Processor and system board

Description	Spare Part Number
System board	
VT538AA or other 5.X BIOS only	597920-001
all 6.X BIOS units, 2010 and up	641326-001
Processor	
AMD Athlon M2 3250e processor (1.5-GHz, 1-MB L2 cache)	597923-001

Drives and memory

Description	Spare Part Number
DVD drive, Slim Tray, 8x Supermulti with Lightscribe	597927-001
500 GB hard drive, 7200 rpm	595170-001
320 GB hard drive, 7200 rpm	505914-001
250 GB hard drive, 7200 rpm	595171-001
160 GB hard drive, 7200 rpm	457547-001
Memory module, 2 GB (PC6400, DDR2-800)	505915-001
Memory module, 1 GB (PC6400, DDR2-800)	599326-001

Keyboards and Mice

Description	Spare Part Number
Keyboard (Blue, USB)	
Latin American Spanish	597932-161
Brazilian	597932-201
U.S./Pape	597932-371
French Canadian	597932-121
Keyboard (Blue, wireless, 2.4 GHz)	
U.S./Pape	618799-371
S-Chinese	618799-AA1
Taiwan/T-Chinese	618799-AB1
Korean	618799-AD1
Mouse (Blue, wireless)	
Optical, USB	596410-001
Wireless, 2.4 GHz	596412-001

Cables

Description	Spare Part Number
Hard drive cable	638937-001
Optical drive cable	638938-001
Inverter power cable	638939-001
Webcam cable	638940-001
Power button cable	638941-001
Optical drive eject/brightness cable	638942-001
LCD cable	597921-001

Misc Parts

Description	Spare Part Number
802.11b/g WLAN PCIe adapter	597929-001
Thermal module, UMA	597924-001
Thermal module, MXM	597925-001
Fan	597926-001
Webcam module	597928-001
Speaker, right	597930-001
Speaker, left	597931-001
Power adapter, 120W	597922-001
Power button/LED side board	627711-001
Inverter board	627712-001

3 Removal and Replacement Procedures

The following sections provide information about disassembling various components of the HP Pro All-in-One.

Preparing to disassemble the computer

To avoid injury and equipment damage, always complete the following steps in order, when opening the HP Pro All-in-One.

1. Remove all media (CD, DVD, etc.) from the computer.

2. Shut down the computer.

3. After the system has completely shut down, disconnect the power adapter from the back of the HP Pro All-in-One.

4. Disconnect all other attached cables from the back of the computer.

5. Place the computer face down on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the touch screen surface from scratches or other damage.

⚠ **WARNING!**   Beware of sharp edges inside the chassis.

Replacing the Keyboard or Mouse

1. Leave the computer on.

2. If you are replacing the wireless mouse, remove the old receiver and plug the new receiver into the back of the computer. **Skip this step if you are replacing the keyboard only.**

3. Remove the tab from the battery compartment on the bottom of the mouse and/or the keyboard. This activates the pre-installed battery.
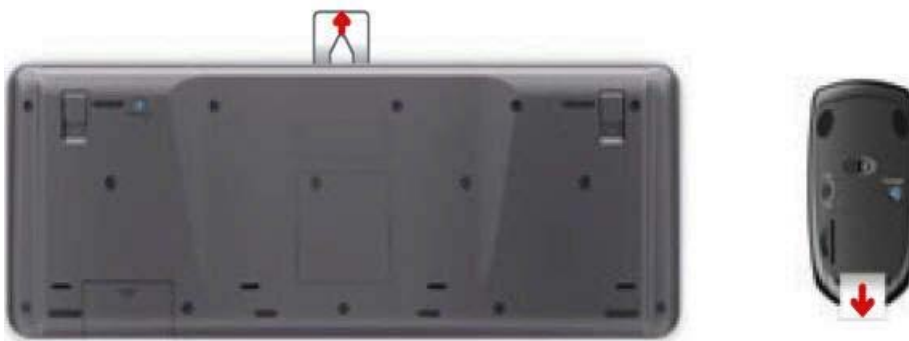
4. If you are replacing the mouse and it has a power switch on the bottom, turn on the mouse power switch **(A)**. The keyboard does not have a power switch, so you can skip this step if you are installing the keyboard only.

5. Press the blue connect button on the bottom of the keyboard **(B)** and/or mouse **(C)** for 5 to 10 seconds. The blue activity LED on the wireless receiver illuminates when the synchronization command has been received and goes off when synchronization is complete.

NOTE: If the synchronization does not work, remove and then re-insert the wireless receiver from the back of the computer and synchronize the keyboard and/or mouse again.

Memory

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Locate the memory compartment in the upper right corner of the computer.

3. Lift up the rubber cover over the screw.

4. Remove the Phillips screw that secures the cover to the computer.

5. Slide the memory compartment cover off.

6. Open both latches of the memory module socket **(1)**, and remove the memory module from the socket **(2)**.
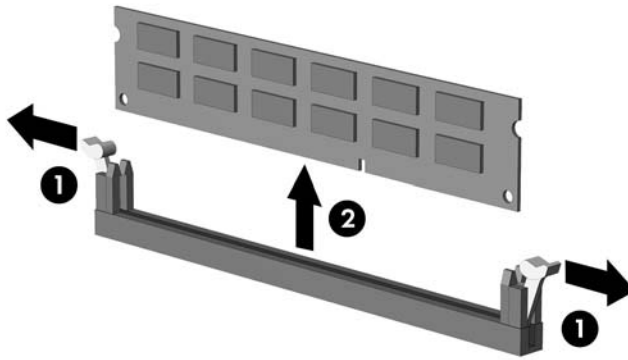
> 📝 **NOTE:**   If you are removing both cards, you must remove the upper one before removing the lower one.

To install a memory module, reverse the removal procedures.

Stand

1. Prepare the computer for disassembly (see).

2. Use a flathead screwdriver to open the cover on the back of the computer behind the stand.
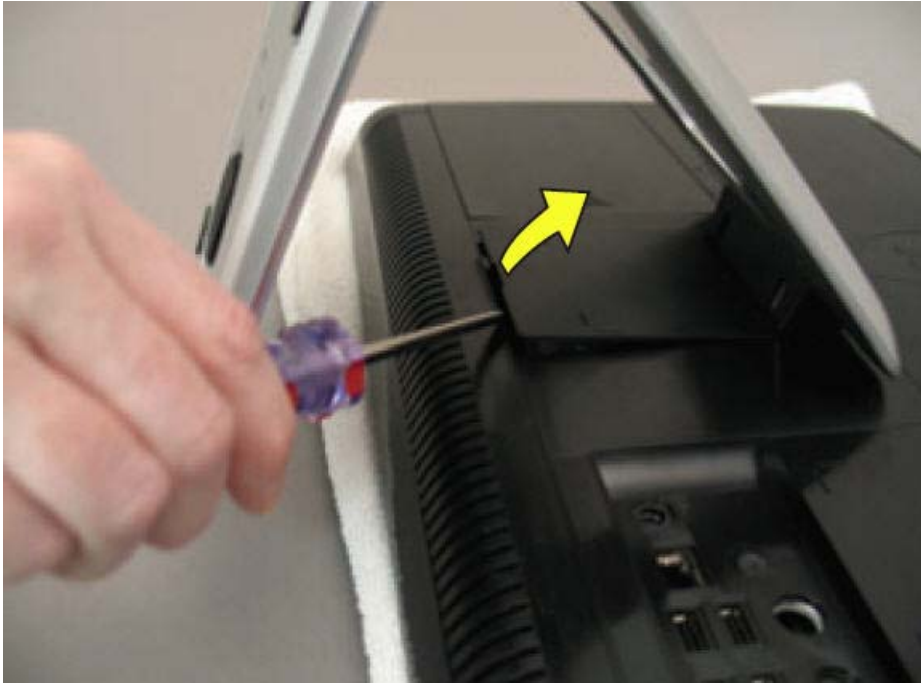
3. Use a Phillips screwdriver to remove the three screws that secure the stand to the computer.
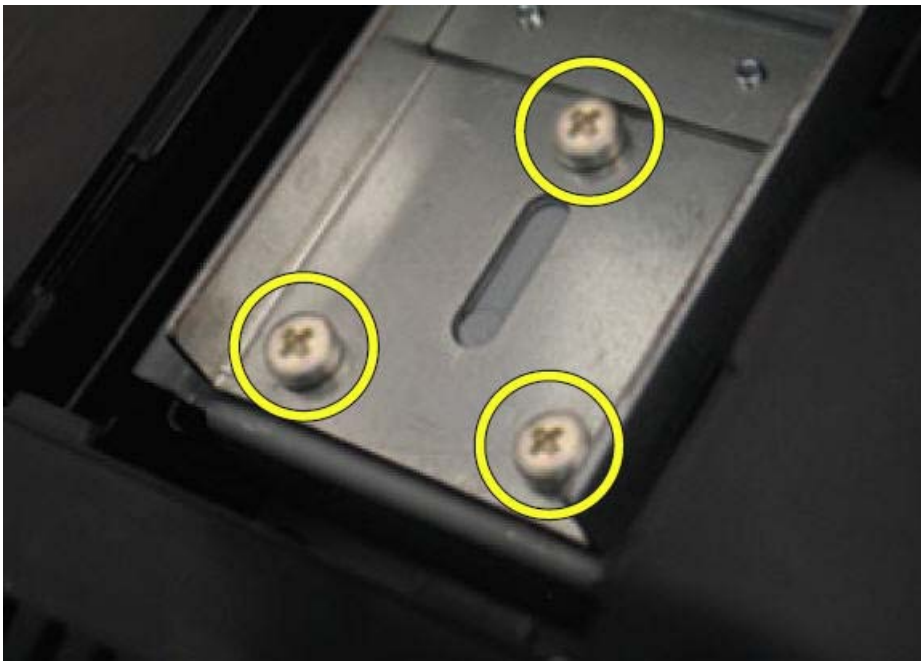
4. Slide the stand assembly down and out to remove it.

To install the stand, reverse the removal procedures.

Hard drive

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Lift up the rubber screw cover.

3. Use a Phillips screwdriver to remove the hard disk drive cover screw.
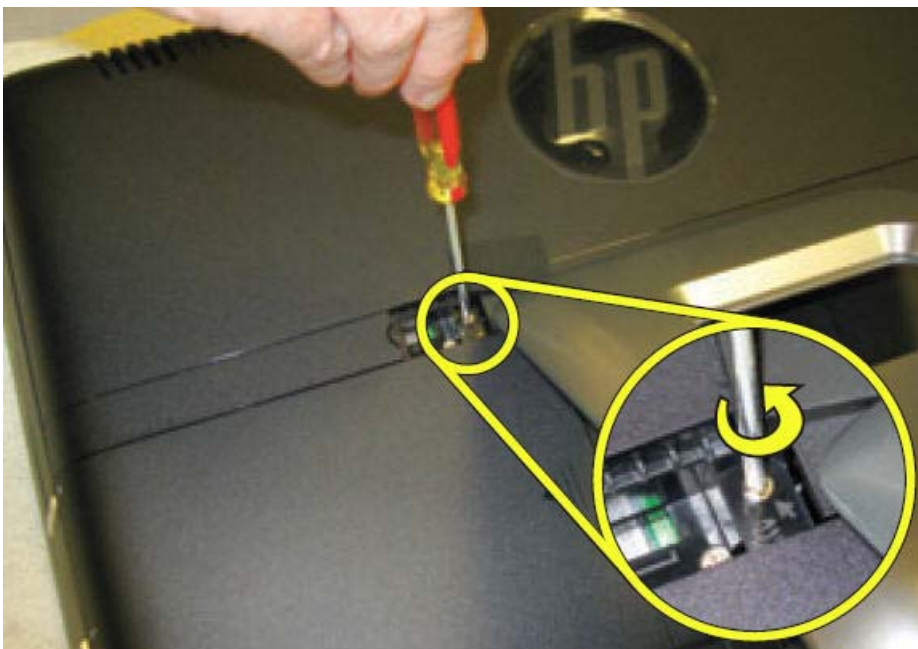
4. Slide the hard disk drive cover off.

5. Loosen the screw at the front of the hard disk drive cage.

6. Lift up the metal handle on the hard disk drive cage and pull it firmly toward you to remove the hard disk drive cage from its bay.

To remove the hard drive from the hard drive cage:

1. Remove the four screws that secure the hard drive into the hard drive cage.
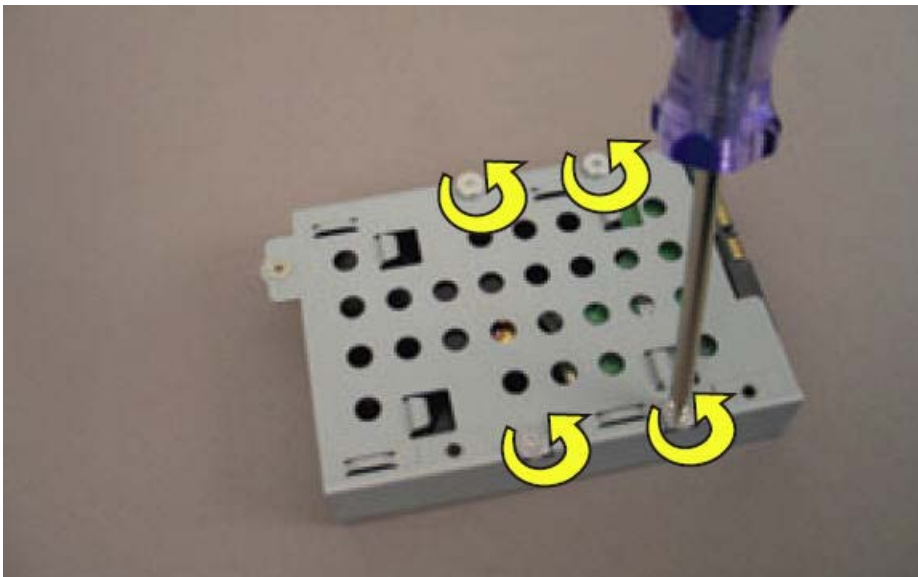
2. Remove the drive from the cage.

Optical drive

1. Prepare the computer for disassembly (see).

2. Lift up the screw cover and move it out of the way.

3. Use a Phillips screwdriver to remove the optical drive screw.
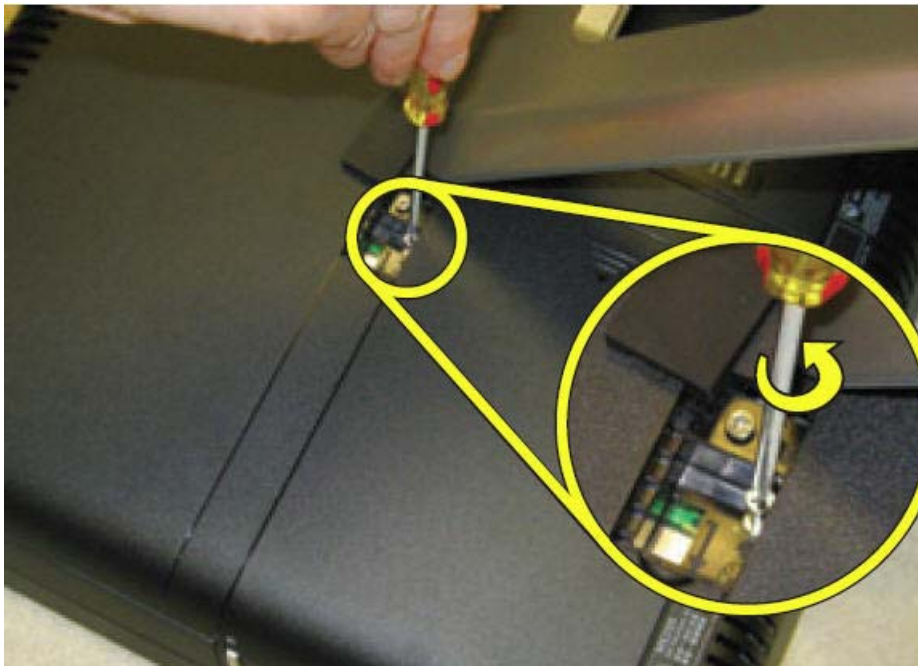
4. Insert a small flathead screwdriver gently into the notch and use a levering motion to disengage the optical drive assembly.
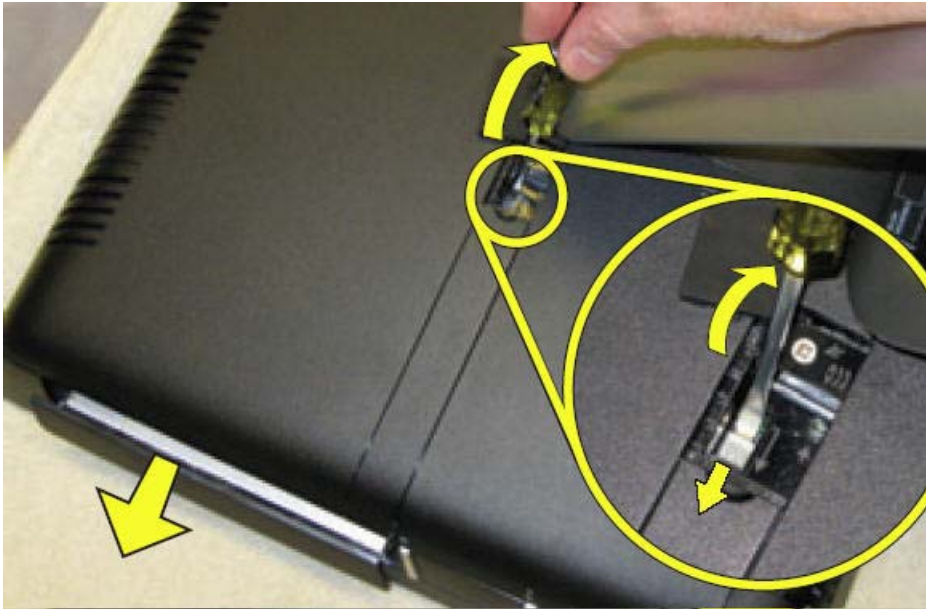
**5.** Pull the optical drive assembly out of the computer.
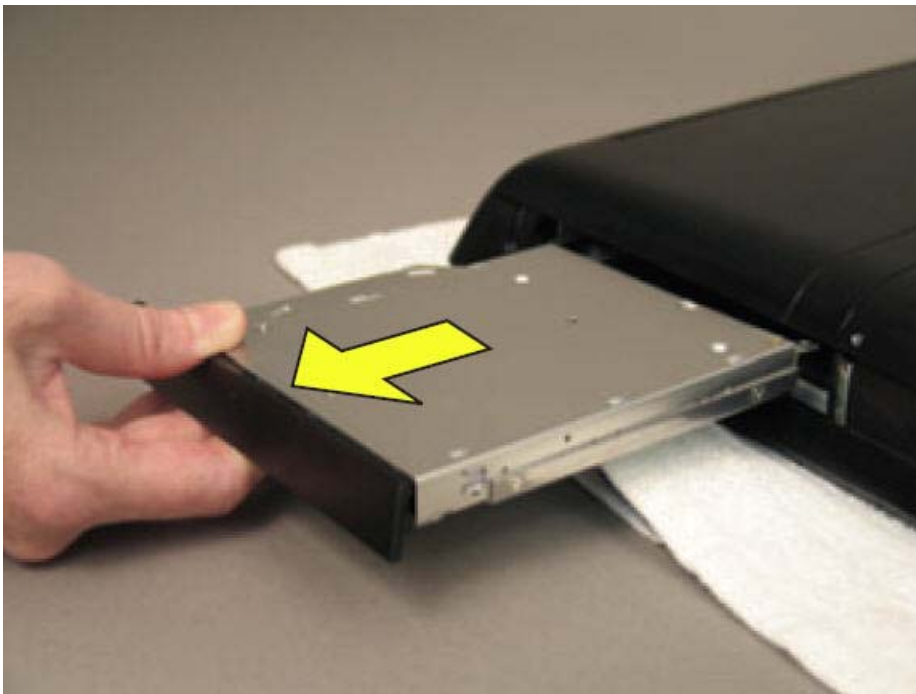
To install an optical drive, reverse the removal procedures.

Back cover

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover by prying the back cover away from the front bezel, as follows:

   a. Using your fingers at the outside seam between the back cover and front bezel, pry the back cover away from the computer at the area near the stand mounting bracket.

   b. Move around the bottom to the left side of the computer while prying the cover off the computer.

   c. After you pry the cover off near the optical drive, the cover should release from the computer.

   > **NOTE:** To avoid breaking parts of the back cover or computer, make sure the tabs on the back cover and slots on the computer are clearly separated before lifting the cover off the computer.
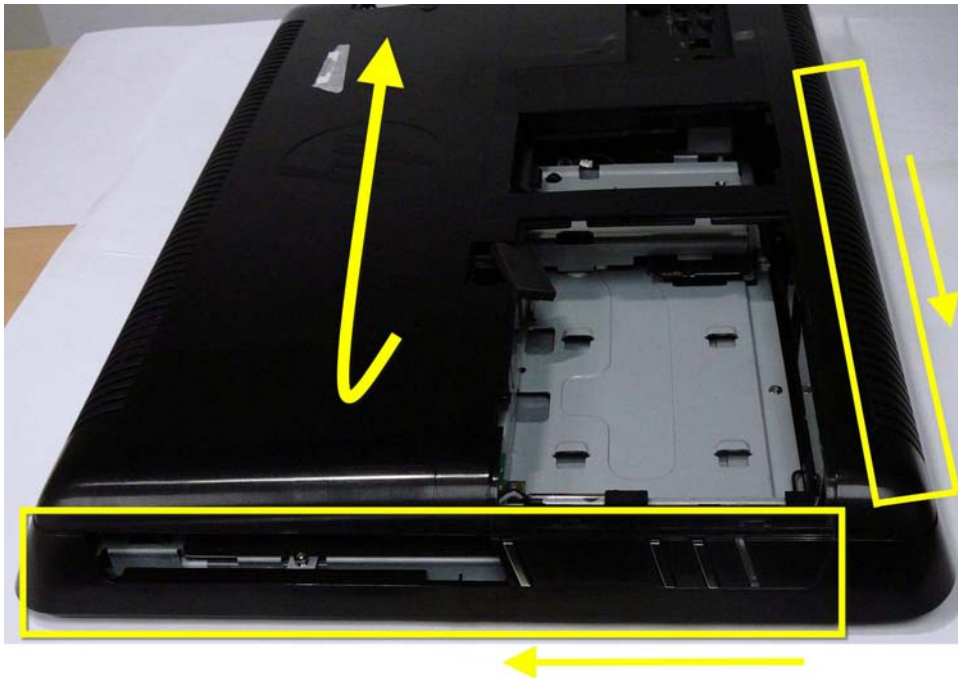

To replace the back cover, reverse the removal procedures.

System board shield

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield by removing the four screws and lifting it off the computer.

   NOTE: The bottom right screw also secures a speaker grounding cable.
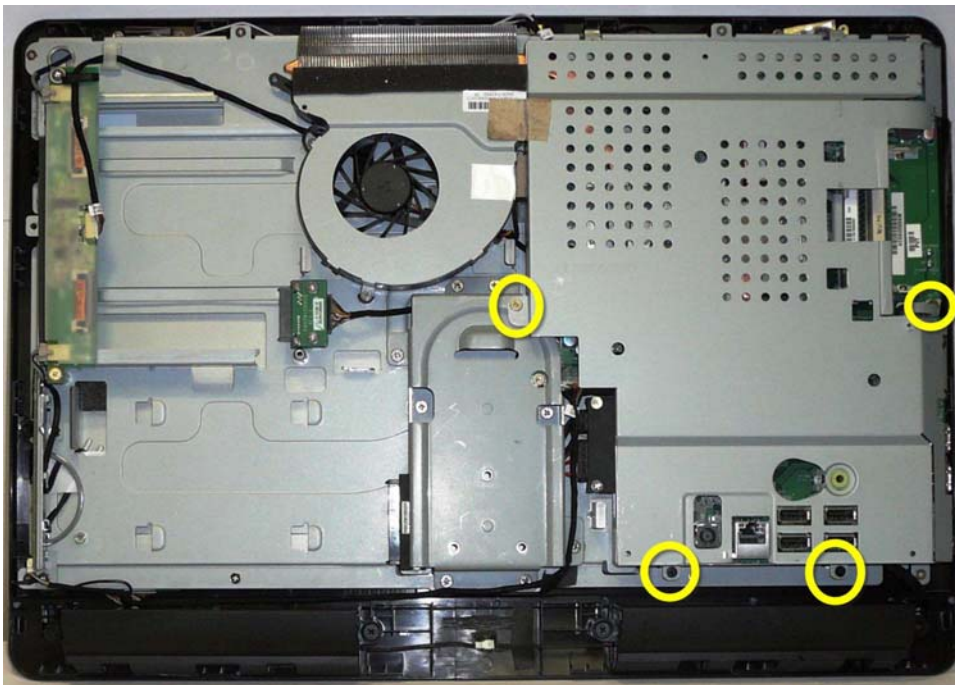
To install the system board shield, reverse the removal procedures.

Speakers

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Disconnect the speaker cable from the system board **(1)**.

8. Disconnect the cables that connect the two speakers together **(2)**, and remove the speaker cable from the tape **(3)** the secures it to the computer.

9. Each speaker has two screws that secure the speaker to the computer. To remove either speaker, remove the two screws **(4)**, and then lift the speaker from the computer.

To install the speakers, reverse the removal procedures.

Webcam

1. Prepare the computer for disassembly (see).

2. Remove the stand (see).

3. Remove the hard drive (see).

4. Remove the optical drive (see).

5. Remove the back cover (see).

6. Remove the system board shield (see).

7. Disconnect the cable from the system board **(1)**, and remove the cable from the clips on the computer **(2)**.
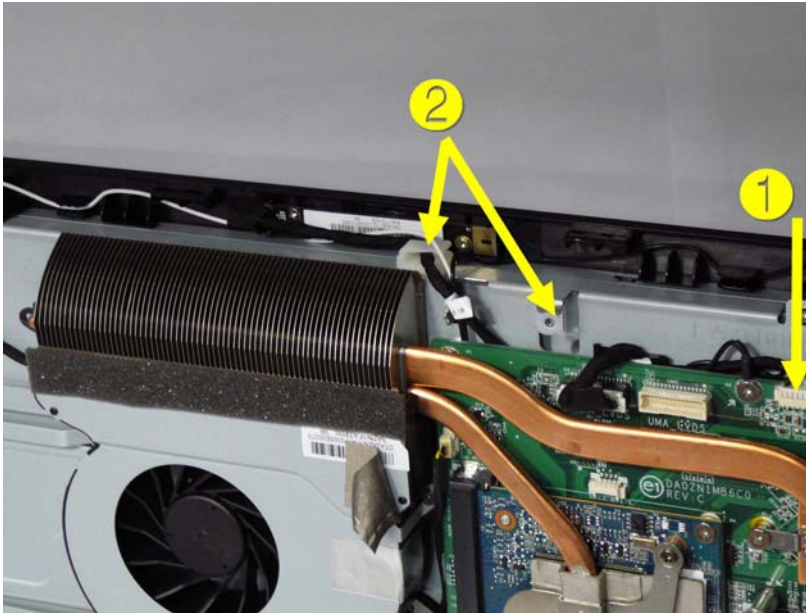
8. Remove the two screws that secure the webcam to the computer, and lift it off the computer.

To install the webcam, reverse the removal procedures.

WLAN module

1. Prepare the computer for disassembly (see).

2. Remove the stand (see).

3. Remove the hard drive (see).

4. Remove the optical drive (see).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Remove the antenna cables **(1)** from the module.

8. Remove the screw **(2)** that secures the module to the system board.

> **NOTE:** Some modules may be secured by two screws.

9. Lift the module out of the slot at an angle.

> **NOTE:** The WLAN module has a notch to prevent incorrect installation.

To install the WLAN module, reverse the removal procedures.

Fan

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Remove the four screws **(1)** that secure the fan to the system board, and then lift the fan partially out of the computer.

8. Disconnect the fan cable from the system board **(2)**, and then remove the fan from the computer.
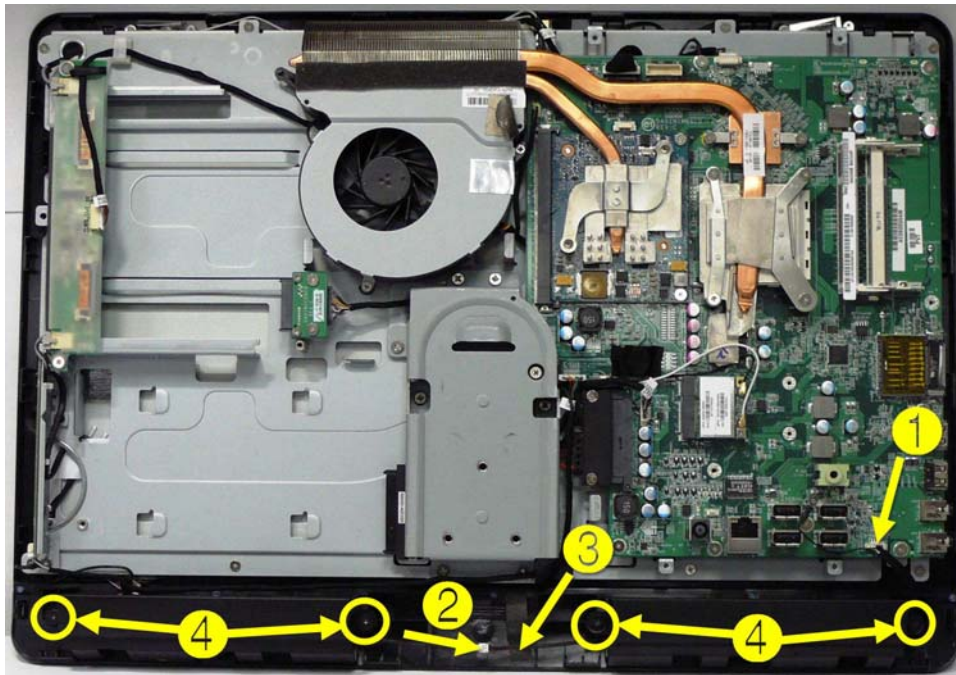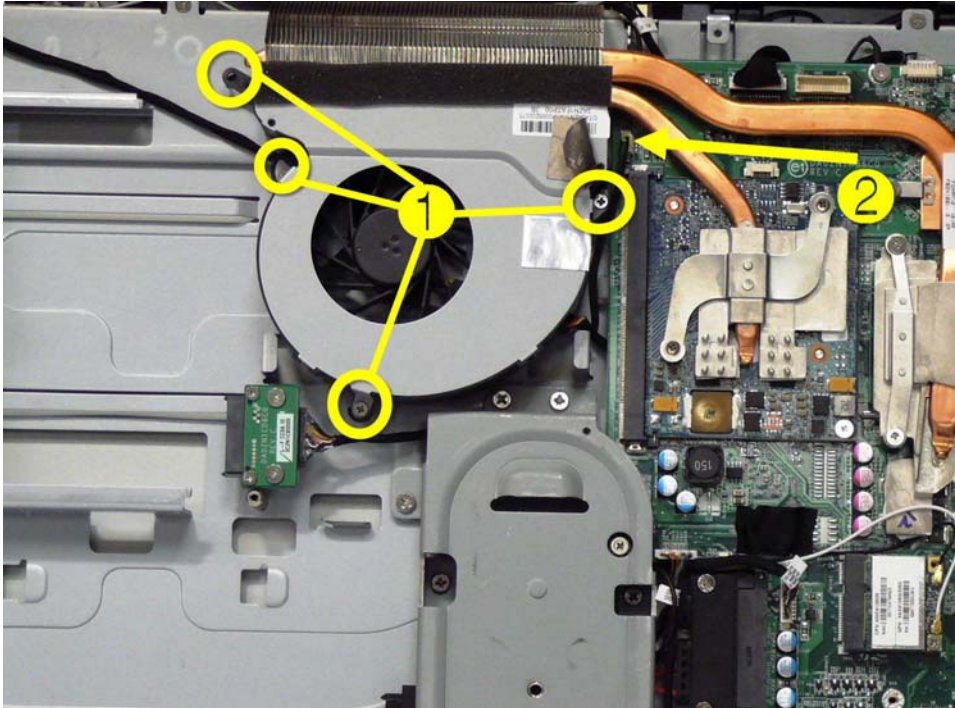

To install the fan, reverse the removal procedures.

Thermal module

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Remove the fan (see Fan on page 23).

8. Loosen the captive screws from the thermal module, as follows:

   a. **(1)** Two screws for the chipset heat sink

   b. **(2)** Four screws for the processor heat sink

   c. **(3)** Two screws for the graphics card heat sink
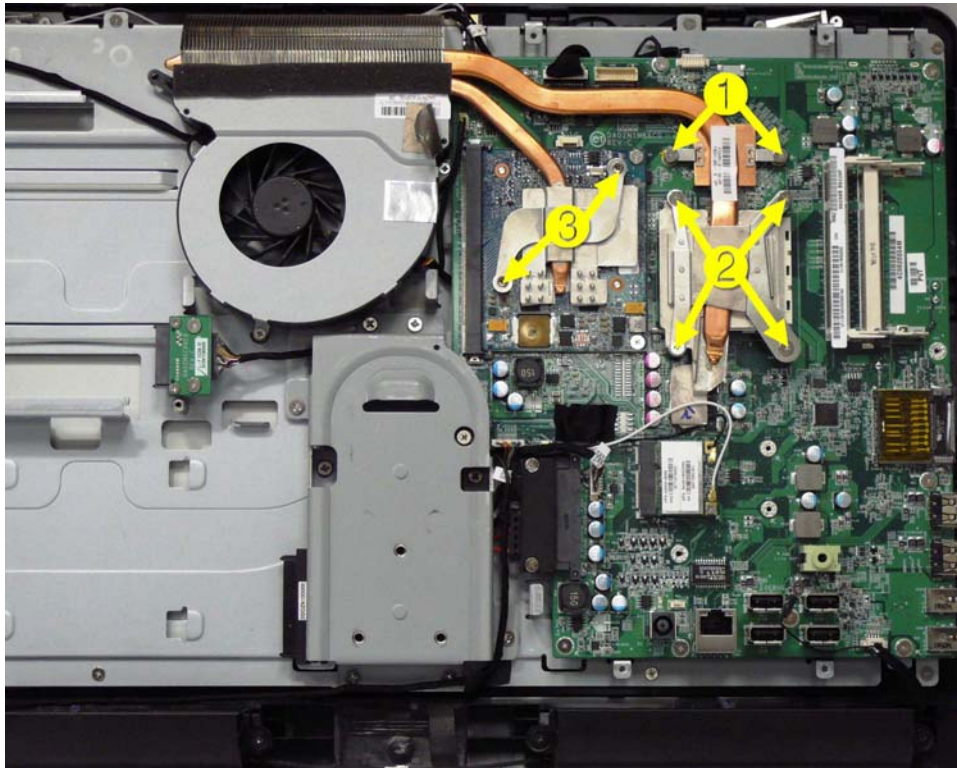
9. Lift the thermal module off the system board.

To install the system board, reverse the removal procedures.

Note the following thermal module features:

- **(1)** Radiator that fits into the fan assembly

- **(2)** Heat sink for the chipset

- **(3)** Heat sink for the processor

- **(4)** Heat sink for the graphics card
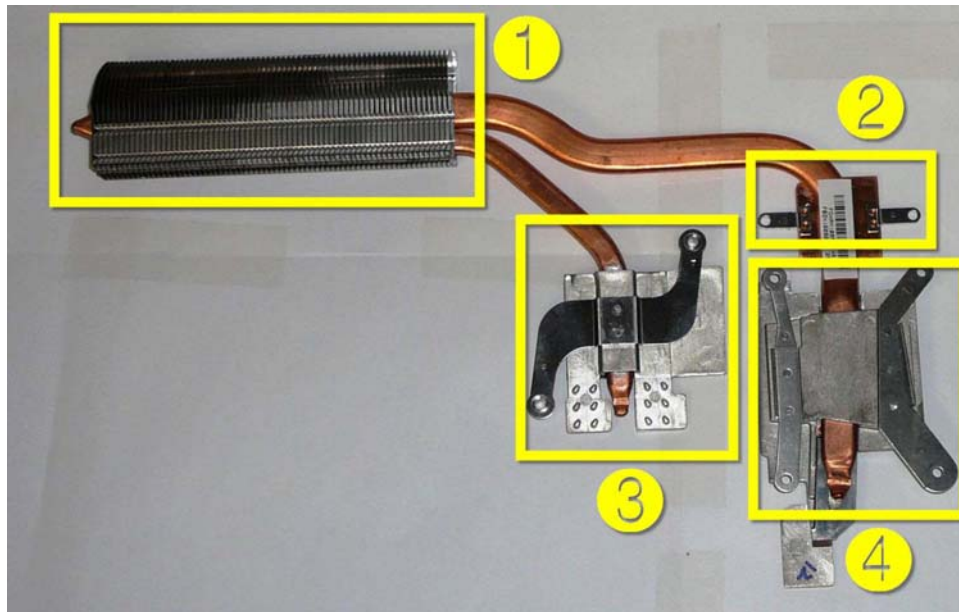
Make sure the heat sinks have new thermal material when installing a thermal module.
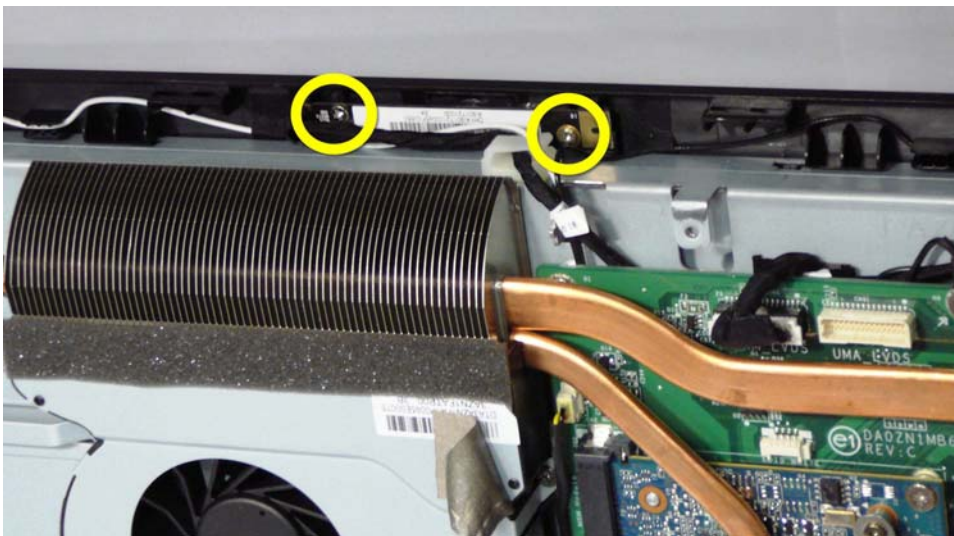
Processor

1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Remove the fan (see Fan on page 23).

8. Remove the thermal module (see Thermal module on page 24).

9. Rotate the locking lever to its full open position **(1)**.

10. Carefully lift the processor from the socket **(2)**.

⚠️ **CAUTION:** Do NOT handle the pins in the processor socket. These pins are very fragile and handling them could cause irreparable damage. Once pins are damaged it may be necessary to replace the system board.

CAUTION: The heat sink must be installed within 24 hours of installing the processor to prevent damage to the processor's solder connections.
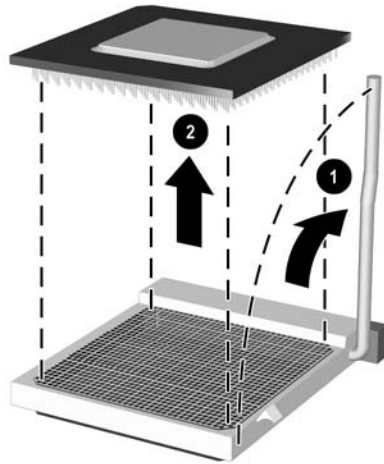
To install a new processor:

1. Place the processor in its socket and close the retainer.

2. Secure the locking lever.

   If reusing the existing heat sink, go to step 3.

   If using a new heat sink, go to step 5.

3. If reusing the existing heat sink, clean the bottom of the heat sink with the alcohol pad provided in the spares kit.

4. Apply the thermal material provided in the spares kit to the top of the processor and install the heat sink atop the processor.

5. If using a new heat sink, remove the protective covering from the bottom of the heat sink and place it in position atop the processor.

System board
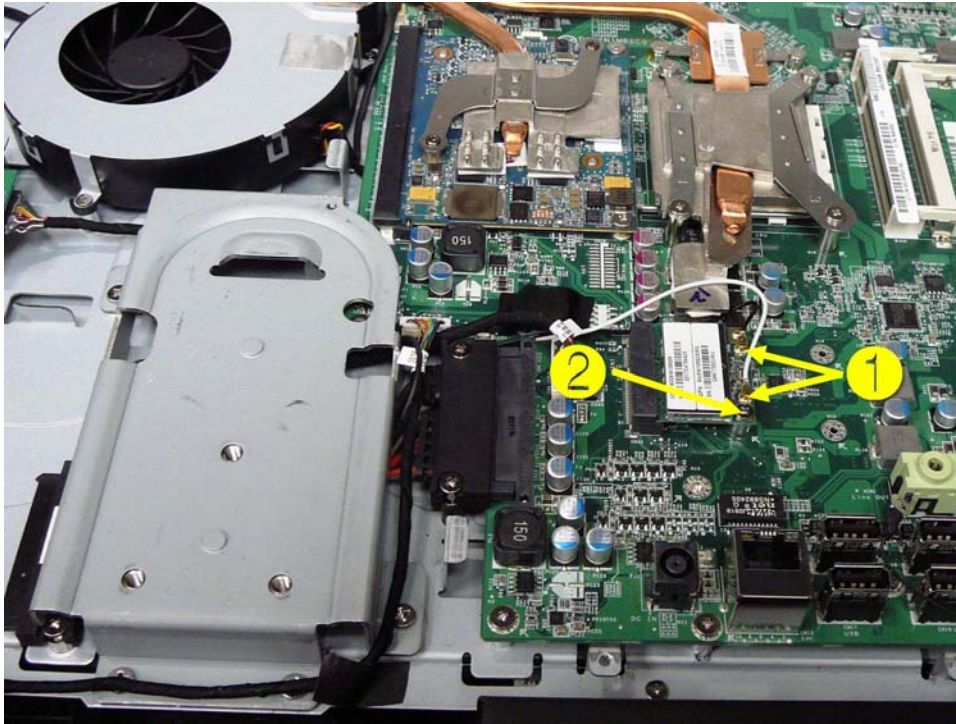
1. Prepare the computer for disassembly (see Preparing to disassemble the computer on page 6).

2. Remove the stand (see Stand on page 12).

3. Remove the hard drive (see Hard drive on page 14).

4. Remove the optical drive (see Optical drive on page 17).

5. Remove the back cover (see Back cover on page 19).

6. Remove the system board shield (see System board shield on page 20).

7. Remove the WLAN module (see WLAN module on page 22).

8. Remove the fan (see Fan on page 23).

9. Remove the thermal module (see Thermal module on page 24).

10. Disconnect all remaining connectors.

11. Remove the eight screws that secure the system board to the computer.
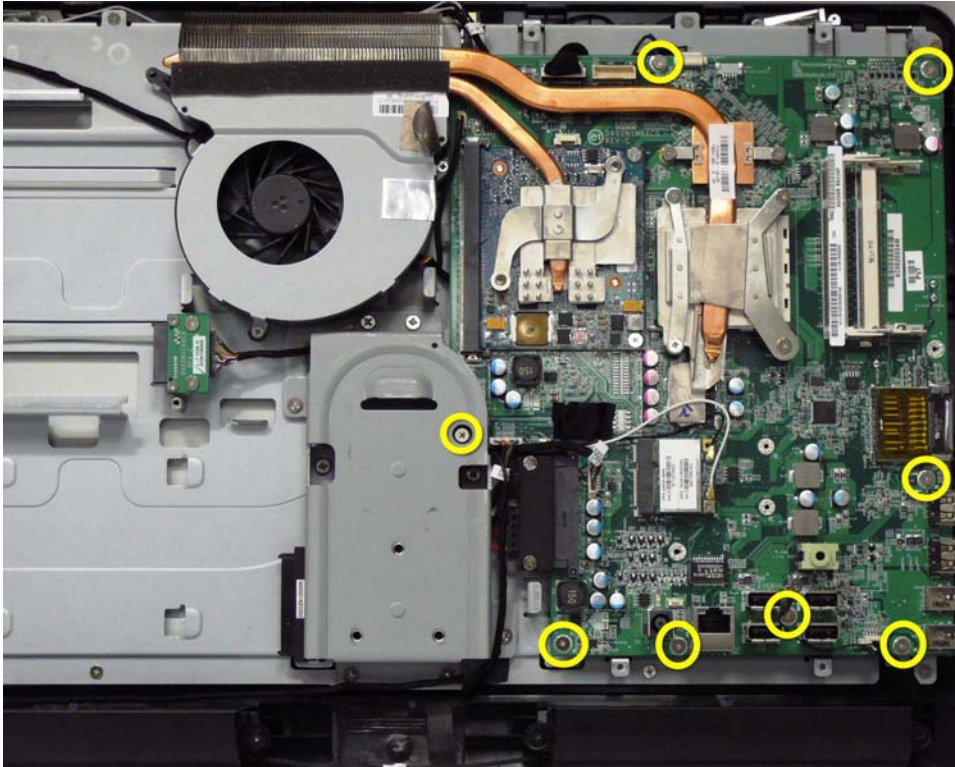
12. Lift the system board out of the computer.

To install the system board, reverse the removal procedures.

4   Computer Setup (F10) Utility

Computer Setup (F10) Utilities

Access the BIOS Setup Utility by pressing the F10 button during startup. Use Computer Setup (F10) Utility to do the following:

- Change factory default settings.

- Set the system date and time.

- Set, view, change, or verify the system configuration, including settings for processor, graphics, memory, audio, storage, communications, and input devices.

- View processor and memory settings

- Modify the boot order of bootable devices such as hard drives, diskette drives, optical drives, or USB media.

- Run hard drive self-tests.

- Establish a supervisor password that controls access to Computer Setup (F10) Utility and the settings described in this section.

Using Computer Setup (F10) Utilities

Computer Setup can be accessed only by turning the computer on or restarting the system. To access the Computer Setup Utilities menu, complete the following steps:

1. Turn on or restart the computer.

2. As soon as the computer is turned on, press F10 before the system boots to the operating system to enter Computer Setup. Press Enter to bypass the title screen, if necessary.

   NOTE: If you do not press F10 at the appropriate time, you must restart the computer and again press F10 before the unit boots to the operating system to access the utility.

3. The Computer Setup Utility screen is divided into menu headings and actions.

   Five menu headings appear on the Computer Setup Utility screen:

   - Main

   - Advanced

   - Boot

- Power

- Exit

Use the arrow keys to select the appropriate heading, then press Enter. Use the arrow (up and down) keys to select the option you want, then press Enter. To return to the previous screen, press Esc.

4. To apply and save changes, press the F10 key.

If you have made changes that you do not want applied, press the F5 key to return to the default values.

⚠ **CAUTION:** Do NOT turn the computer power OFF while the ROM is saving the Computer Setup (F10) changes because the CMOS could become corrupted. It is safe to turn off the computer only after exiting the F10 Setup screen.

Table 4-1 Computer Setup (F10) Utility Main Menu

Heading	Table
Main	Computer Setup—Main on page 30
Advanced	Computer Setup—Advanced on page 31
Boot	Computer Setup—Boot on page 32
Power	Computer Setup—Power on page 32
Exit	Computer Setup—Exit on page 33

Computer Setup—Main

📝 **NOTE:** Support for specific Computer Setup options may vary depending on the hardware configuration.

Table 4-2 Computer Setup—Main

Option	Description
System Time	Allows you to set system time.
System Date	Allows you to set system date.
Language	Allows you to select language.

Table 4-2 Computer Setup—Main (continued)

1st Drive	For each, allows you to:
2nd Drive	● Capacity
	● Transfer Mode
	● Smart Support:
	◦ SMART Status Check
	◦ SMART Short Self-Test
	◦ SMART Extended Self-Test
System Information	(view only)
	● Installed Memory
	● Memory Bank 1
	● Memory Bank 2
	● BIOS Revision
	● Core Version
	● Model Number
	● Product Number
	● Build ID

Computer Setup—Advanced

NOTE: Support for specific Computer Setup options may vary depending on the hardware configuration.

⚠ WARNING! Setting items on this menu to incorrect values may cause your system to malfunction.

Table 4-3 Computer Setup—Advanced

Option	Description
CPU Type	(view only)
CPU Speed	(view only)
Cache RAM (L2)	(view only)
SATA1 Controller	Allows you to disable/enable the SATA Controller.
SATA1 Controller Mode	If SATA1 Controller is enabled, allows you to set the mode to: ● IDE ● AHCI
Onboard LAN	Allows you to disable/enable onboard LAN controller.
Onboard LAN Boot ROM	Allows you to disable/enable the boot ROM of the onboard LAN chip.

Table 4-3 Computer Setup—Advanced (continued)

Change Supervisor Password	Allows you to change the supervisor password.
Change User Password	Allows you to change the user password.
Onboard Audio	Allows you to set the on-board audio to: ● Enabled ● Disabled

Computer Setup—Power

NOTE: Support for specific Computer Setup options may vary depending on the hardware configuration.

Table 4-4 Computer Setup—Power

Option	Description
After AC Power Failure	Allows you to select system restart behavior after power loss: ● Stay Off ● Power On ● Auto
XD (Execute Disable)	Disables/enables the processor's XD feature.
Virtualization Technology	Allows you to disable/enable Virtualization Technology.

Computer Setup—Boot

NOTE: Support for specific Computer Setup options may vary depending on the hardware configuration.

Table 4-5 Computer Setup—Boot

Option	Description
Boot-time Diagnostic Screen	Disables/enables POST diagnostic messages display.
(Boot Device Priority) **1st Boot Device** **2nd Boot Device** **3rd Boot Device** **4th Boot Device**	Allows you to specify which device groups will boot first, second, third, and fourth or to disable any of the four: ● CD-ROM Group ● HDD Group ● Floppy Group ● Network Boot Group **NOTE:** MS-DOS drive lettering assignments may not apply after a non-MS-DOS operating system has started.

Table 4-5 Computer Setup—Boot (continued)

Floppy Group Boot Priority	Specifies boot device priority within removable devices.
CD-ROM Group Boot Priority	Specifies boot device priority within CD/DVD drives.
HDD Group Boot Priority	Specifies boot device priority within hard drives.
Network Group Boot Priority	Specifies boot device priority within bootable network devices.

Computer Setup—Exit

NOTE: Support for specific Computer Setup options may vary depending on the hardware configuration.

Table 4-6 Computer Setup—Exit

Option	Description
Exit Saving Changes	Press Enter to exit saving changes.
Exit Discarding Changes	Press Enter to exit discarding changes.
Load Setup Defaults	Press Enter to load setup defaults.
Discard Changes	Press Enter to discard changes.
Save Changes	Press Enter to save changes.

BIOS updates

HP periodically releases system BIOS updates, which are available from the HP website. These updates often contain fixes for known issues in the BIOS.

To find out whether a PC needs a BIOS update, compare the current BIOS version number against the latest version available for download. To determine the current BIOS version, you should perform the following steps:

1. Click **Start**, and then select **Shut Down**.

2. Select **Restart**, and then click **OK**.

3. When the first screen displays, press F10 to enter Setup. The BIOS revision number is listed on the Main menu.

4. Write down the current BIOS version that is listed.

5. To exit Setup, press Esc, select **Yes**, and then press Enter.

5   Software Troubleshooting

Your computer uses the operating system and installed software programs during normal operation. If your computer works improperly or stops because of the software, you may be able to repair it.

Some software repairs are as simple as restarting your computer, and others require performing a system recovery from files on your hard disk drive.

Updating Drivers

A *driver* is a software program that enables your computer to communicate with an attached device, such as a printer, hard disk drive, mouse, or keyboard.

Complete the following procedure to update a driver, or to revert to an earlier version of the driver if the new one does not solve your problem:

1. Click the **Start** button.

2. Type *Device Manager* into the Start Search box, and then click **Device Manager** to open the Device Manager window.

3. Click the plus sign (**+**) to expand the type of device for which you want to update or rollback, (for example, DVD/CD-ROM drives).

4. Double-click the specific item (for example, HP DVD Writer 640b).

5. Click the **Driver** tab.

6. To update a driver, click **Update Driver**, and follow the on-screen instructions.

    – or –

    To revert to an earlier version of a driver, click **Rollback Driver**, and follow the on-screen instructions.

Microsoft System Restore

Microsoft Windows 7 includes a feature that enables you to restore your computer configuration to a configuration that was in use before the current software problem existed. The feature does this by creating a restore point where it records the computer settings at that time and date.

When a new program is installed, the operating system automatically creates a restore point before it adds the new software. You can also set restore points manually.

If you experience a problem that you think may be due to software on your computer, use System Restore to return the computer to a previous restore point.

NOTE: Always use this System Restore procedure before you use the system recovery program.

To start a System Restore:

1. Close all open programs.

2. Click the **Start** button, right-click **Computer**, and then click **Properties**.

3. Choose **System protection**, **System Restore**, and then click **Next**.

4. Follow the on-screen instructions.

To manually add restore points:

1. Close all open programs.

2. Click the **Start** button, right-click **Computer**, and then click **Properties**.

3. Click **System protection**.

4. Under Protection Settings, select the disk for which you want to create a restore point.

5. Click **Create**.

6. Follow the on-screen instructions.

For more information about software restore points:

1. Click the **Start** button, and then click **Help and Support**.

2. Type *system restore* into the **Search** box, and then press Enter.

Software Program and Hardware Driver Reinstallation

If an individual factory-installed software program or hardware driver is damaged, you can reinstall it by using the Recovery Manager program (select models only).

NOTE: Do not use the Recovery Manager program to reinstall software programs that came on CDs or DVDs included in the computer box. Reinstall these programs directly from the CDs or DVDs.

Before you uninstall a program, be sure you have a way to reinstall it. Check that it is still available from where you initially installed it (for example, discs or the Internet). Or check that the program is in the list of programs you can reinstall from the Recovery Manager.

To check the list of installable programs in the Recovery Manager:

1. Click the **Start** button, **All Programs**, **Recovery Manager**, and then click **Recovery Manager**. If prompted, click **Yes** to allow the program to continue.

2. Under I need help immediately, click **Software Program Reinstallation**.

3. Click **Next** at the Welcome screen.

A list of programs opens. Check whether your program is there.

To uninstall a program:

1. Close all software programs and folders.

2. Uninstall the damaged program:

    a. Click the Start button, and then click **Control Panel**.

    b. Under **Programs**, click **Uninstall a program**.

    c. Select the program you want to remove, and then click **Uninstall**.

    d. Click **Yes** if you want to continue with the uninstall process.

To reinstall a program using the Recovery Manager:

1. Click the **Start** button, click **All Programs**, click **Recovery Manager**, and then click **Recovery Manager**.

2. Click **Software Program Reinstallation**.

3. Click **Next** at the Welcome screen.

4. Choose the program you want to install, click **Next**, and follow the on-screen instructions.

5. When you have finished reinstalling, restart the computer.

NOTE: Do not skip this last step. You must restart the computer when you are finished recovering software programs or hardware drivers.

Creating data backup discs

Use CD or DVD recording (or burning) software that is installed on your computer to create backup discs of important information, including personal files, e-mail messages, and Web site bookmarks. You can also move data to an external hard disk drive.

When writing data to a backup disc, use software that includes write verification functionality. This feature compares the data on your hard disk drive with the data copied to the disc to ensure it is an exact copy. Depending on your disc recording software, you may need to manually enable this feature (refer to the software documentation).

If you encounter recording issues, try alternate media (different types or brands). Also, use the Windows Explorer tool to view your files and verify content was copied over. To open Windows Explorer, right-click the **Start** button, and then click **Explore**.

Clearing CMOS and password settings

When the BIOS has been incorrectly configured, it is sometimes necessary to clear all CMOS settings.

To clear the CMOS, perform the following steps:

> **⚠ CAUTION:** Before attempting to remove or touch any parts from the motherboard, check that the power cord is disconnected from the electrical outlet. Failing to do so can cause hardware damage and even physical injury.

1. Shut down the operating system and turn off the computer and any external devices.

2. Disconnect the power cords of the computer and any external devices from the power outlet.

3. Disconnect any external devices that are connected to the computer.

4. Remove all components required to gain access to the system board.

5. Locate the solder points on the system board.

6. To clear CMOS, make a short on the two solder pads labeled CLEAR CMOS.

-or-

To clear CMOS, make a short on the two solder pads labeled PASSWORD.

7. Reassemble the computer.

8. Reconnect the external equipment.

9. Plug in the computer and turn on the power. Allow the operating system to start.

Troubleshooting

Computer does not start

Table 5-1 Computer does not start

Symptom	Possible solution
Computer will not turn on or start.	Ensure that the cables connecting the computer to the external power source are plugged in properly.
	When the cables connecting the computer to the external power source are plugged in properly, and the wall outlet is functioning, the green power supply light on the back of the computer should be on.
	Test the wall outlet by connecting a different electrical device to it.
	Incompatible memory (RAM) may have been installed. Reinstall the old memory to return your computer to its original state. For instructions, refer to the Upgrading and Servicing Guide.
Computer seems to be locked up and is not responding.	Use the Windows Task Manager to close any programs not responding, or restart the computer:
	1. Press the Ctrl**+**Alt**+**Delete.
	2. Click **Start Task Manager**.
	3. Select the program that is not responding, and then click **End Task**.
	If closing programs does not work, restart the computer:
	1. Press the Ctrl**+**Alt**+**Delete.
	2. Click the arrow next to the red **Shut Down** button, and then click **Restart**.
	Or
	1. Press and hold the On button for 5 or more seconds to turn off the computer.
	2. Press the On button to start the computer.

Power

Table 5-2 Power

Symptom	Possible solution
Error message: Invalid system disk or Non-System disk or Disk error.	When optical disc drive activity stops, remove the disc and press the spacebar on the keyboard. The computer should start up.
Computer does not turn off when the On button is pressed.	Press and hold the On button until the computer turns off.
	Check power settings.
Computer shuts down automatically.	The computer may be in an exceedingly hot environment. Let it cool down.
	Ensure computer air vents are not blocked and internal fan is running. Note that your computer may not have an internal fan.

Display

Table 5-3 Display

Symptom	Possible solution
Screen is blank, and power light is not lit.	Reconnect the power plug to the back of the computer and to the wall outlet.
	Press the On button on the front of the computer.
Screen is blank.	Press the space bar on the keyboard or move the mouse to make the screen display visible again.
	Press the Esc key on the keyboard to resume from Sleep or Hibernate mode.
	Press the On button to turn on the computer.
Images on the screen are too large or too small, or the images are fuzzy.	Adjust the monitor resolution setting in Windows 7: 1. Click the **Start** button, and then click **Control Panel**. 2. Under **Appearance and Personalization**, click **Adjust Screen Resolution**. 3. Adjust resolution as necessary, and then click **Apply**.

Keyboard and mouse (with cable)

Table 5-4 Keyboard and mouse (with cable)

Symptom	Possible solution
Keyboard commands and typing are not recognized by the computer.	Turn off the computer by using the mouse, unplug and reconnect the keyboard to the back of your computer, and then turn on your computer.
Mouse (with cable) does not work or is not detected.	Unplug and reconnect the mouse cable to your computer.
	If the mouse is still not detected, turn off the computer, unplug and reconnect the mouse cable, and then restart the computer.
Cursor does not respond to mouse movement.	Restart your computer by using the keyboard: 1. Press Alt**+**Tab to navigate to an open program. 2. Press Ctrl+S to save your changes in the selected program. 3. Repeat step 1 and step 2 to save changes in all open programs. 4. After saving changes in all open programs, press Ctrl**+**Esc to display the Windows Start Menu. 5. Use the arrow keys to select the **Arrow** button next to **Shut Down**, select **Shut Down**, and then press the Enter key on the keyboard. 6. After the shutdown is complete, unplug and reconnect the mouse connector to the back of your computer, and then turn on your computer.

Table 5-4 Keyboard and mouse (with cable) (continued)

Cursor responds slowly, moves only vertically or horizontally, or does not track smoothly.	**For an optical mouse:**
	● Clean the optical mouse: Gently wipe the light sensor lens on the bottom of the mouse with a lint-free cloth (not paper).
	● Use a mouse pad, white sheet of paper, or other less reflective surface under the mouse.
	For detailed cleaning instructions, go to: http://www.hp.com/support
	Select your country/region and language, search on your computer model number, and then search on the keyword cleaning.
I cannot move the cursor using the arrow keys on the number key pad.	Press the Num Lock key to turn off the Num Lock light. The Num Lock light should not be on if you want to use the arrow keys on the number key pad.

Wireless keyboard and mouse

Table 5-5 Wireless keyboard and mouse

Symptom	Possible solution

Wireless keyboard or mouse does not work or is not detected.	**A Check for these problems:**
	
	● Ensure you are using the wireless keyboard or wireless mouse within range of the receiver, approximately 10 meters (32 feet) for normal use, and within 30 cm (12 inches) during initial setup or for resynchronization.
	
	● Check the LED on the mouse to indicate battery power level. When the mouse powers up:
	
	   ◦ If the LED is green, the mouse has full power.
	
	   ◦ If the battery level is low, the LED will be amber and will fade in and out 10 times continuously.
	
	   ◦ If the battery level is below 2.0 V, the LED will not turn on, and the battery will need to be replaced.
	
	● Replace the batteries in the keyboard and mouse; do not use rechargeable batteries: Turn the devices over, turn the mouse off, take off the battery cover, remove the old batteries, and insert new alkaline batteries. Then turn on the mouse and press the Connect button.
	
	● Ensure the mouse is not in Suspend mode, which occurs after 20 minutes of inactivity. Click the left mouse button to reactivate it.
	
	B Resynchronize the keyboard and mouse to the receiver:
	
	The receiver, wireless keyboard, and wireless mouse shown in the illustrations are examples; your models may vary.
	
	NOTE: During these steps, place the wireless keyboard and wireless mouse on the same level as the receiver, within 30 cm (12 inches) of the receiver, and away from interference from other devices.
	
	1. Unplug and reconnect the receiver into a USB connector on the computer.
	
	   The receiver may have an LED light
	
	2. Check that the mouse is on, and push and hold the Connect button on the underside of the mouse for 5 to 10 seconds.
	
	   NOTE: The receiver connection session times out after 60 seconds. To ensure the connection was established, and that the receiver did not time out instead, move the mouse and check for response on the screen.
	
	3. After the mouse connection is established, continue with the steps that follow to repeat the procedure for the keyboard.
	
	4. Push and hold the Connect button on the underside of the keyboard for 5 to 10 seconds.

Audio and speakers

Symptom	Possible solution
No sound is produced.	Press the Mute button on the keyboard to see whether the Mute feature is enabled.
	Or
	1. Right-click the **Volume** icon on the taskbar, and then click **Open Volume Mixer**.
	The Volume Mixer settings window opens.
	2. If programs are muted, click the Mute button to unmute.
	To increase the volume, click the **Volume** icon on the task bar, or use the keyboard controls. Check the volume setting in your software program.
	If you are using external speakers, make sure that you connected powered (active) speakers and that they are turned on.
	Turn off your computer, and then unplug and reconnect the external speakers. Ensure the external speakers are connected to a Line Out connector.
	To resume from Sleep mode, press the **Sleep** button (select models only), or press the Esc key.
	Unplug headphones if they are connected to your computer.

Internet access

Symptom	Possible solution
I cannot connect to the Internet.	Contact your ISP for assistance.
	Verify that you are using the proper cables for your Internet connection type.
	Run the wireless setup wizard:
	1. Click the **Start** button, and then click **Control Panel**.
	2. Click **Network and Internet**, and then click **Network and Sharing Center**.
	3. In the Network and Sharing Center window, click **Set up a connection or network** to open the wizard.
	4. Follow the on-screen instructions.
	Use Device Manager to verify that the integrated WLAN device is installed on the computer correctly:
	1. Click the **Start** button.
	2. Type `Device Manager` into the **Start Search** box, and then click **Device Manager**.
	3. Click **Network adapters**. The WLAN device should be listed here. The WLAN device may include the term *wireless*, *wireless LAN*, or *802.11*.
	4. Click the **Start** button.
	5. Type `Network and Sharing Center` into the **Start Search** box, and then click **Network and Sharing Center** to open the Network and Sharing Center window.
	6. Click **Connect to a network**, and then follow the on-screen instructions.

CD and DVD players

Table 5-8 CD and DVD players

Symptom	Possible solution
The CD or DVD drive cannot read a disc, or it takes too long to start.	Ensure the disc is inserted with the label facing out and centered in the tray.
	Wait at least 30 seconds for the drive to determine the type of media.
	Clean the disc with a disc cleaning kit, available from most computer stores.
	The driver may be corrupted or outdated. For detailed information about restoring and updating drivers, see "Updating drivers".

Table 5-8 CD and DVD players (continued)

I cannot remove a CD or DVD.	Turn on your computer, and press the Eject button nearest the drive to open the tray.
	If you suspect a problem with the Eject button itself:
	1. Click the **Start** button, and then click **Computer**.
	2. Right-click the CD or DVD drive you want to open.
	3. Select **Eject** from the menu.
	4. If the disc is stuck, stick a pin in the hard eject button, a small pin hole on side of the computer, to release it.
I cannot play a DVD movie on a DVD player.	Your DVD player cannot play video files that were recorded onto the DVD as data files. To play a movie properly, use a video recording program. Some video files may be viewed on a computer, but not on a home DVD video player.
	Ensure the disc is inserted with the label facing out and centered in the tray.
	Verify that you are using the correct disc type (media) for the drive. Try a different brand of disc.
	Ensure the disc is clean and undamaged. If recording stopped during a recording session, the disc may be damaged; use a different disc.
	Use the correct type of disc for the type of files you are recording.
	When using a CD-R disc, ensure it is blank if recording music, and that it is blank or appendable (with space to add more data files) if recording data.
	Verify that you are using the correct disc type when you make a copy of a disc. Some recording programs can record only to the same disc type as the source. For example, you can record a DVD only to a DVD+R/-R or a DVD+RW/-RW disc, and you can record a CD only to a CD-R or a CD-RW disc.
	Select a slower write speed for the recording drive, if a slower speed is available.
	The recording software may not let you add a track if it exceeds the available space on your disc. You can make space available by removing one or more tracks from the list before recording the files to the disc.
	Close all software programs and windows before recording.
	Ensure you have enough available space on your hard disk drive to store a temporary copy of the content.
	Click the **Start** button, and then click **Computer**. Right-click the hard disk drive, and then click **Properties** to view the available space.
	If you are on a network, copy the files from a network drive to your hard disk drive first, and then record them to disc.
	Close all programs and windows, and then restart your computer.

Video

Table 5-9 Video

Symptom	Possible solution
Some video files do not play.	Your file may be corrupt or in an unsupported format. Open the video file in a video editor, and then resave the file in a supported format.
Codec error messages appear when I try to play certain video files.	Open the file in Windows Media Player. Ensure Windows Media Player is configured to automatically download codecs. ● If the correct codec is available, the file will play. Note that you must be connected to the Internet to download the codec file. ● If the correct codec is not available, check to see whether there is an update available for Windows Media Player. For more information, open Windows Media Player Help and search for *codec*.
Error message: *Files Needed To Display Video Are Missing or Corrupt.*	1. Click the **Start** button. 2. Type `Device Manager` into the **Start Search** box, and then click **Device Manager** to open the Device Manager window. 3. Click the plus sign (+) next to **Sound, video and game controllers**. 4. Right-click TV tuner (select models only), and then click **Update Driver Software**. 5. Select **Search automatically for updated driver software**. 6. Follow the instructions to update the driver. 7. If you are prompted, restart the computer.

Hardware installation

Table 5-10 Hardware installation

Symptom	Possible solution
A new device is not recognized as part of the system.	Install the device driver provided with the device, or download and install the driver from the device manufacturer Web site.
	You may need an updated driver for Windows. Contact the device vendor directly for an update.
	For HP peripheral devices, visit the HP Web site: http://www.hp.com/support
	Ensure that all cables are properly and securely connected and that the pins in the cable or connector are not bent.
	Turn off the computer, turn on the external device, and then turn on the computer to integrate the device with the computer.
	Disable the automatic settings in the operating system for the new device, and choose a basic configuration that does not cause a resource conflict.
	You can also reconfigure or disable devices to resolve the resource conflict.

Table 5-10 Hardware installation (continued)

A new device does not work.	To install or uninstall a device driver, you must be logged in with administrative privileges. If you need to switch users, click the **Start** button, click the **Arrow** button next to **Shut Down**, and then click **Switch User**. Choose a user with administrative privileges.
A device does not work after installing a new device.	To resolve a device conflict, you may need to disable one of the devices or uninstall an old device driver: 1. Click the **Start** button. 2. Type `Device Manager` into the **Start Search** box, and then click **Device Manager** to open the Device Manager window. 3. Click the plus sign (+) next to the problem device and check for an exclamation point in a yellow circle near the device icon. The exclamation point means there is a device conflict or problem with the device. Exclamation points do not always appear when a device is not working properly. 4. If you have removed a hardware device, but the device driver is still listed in the Device Manager, this may be causing the device conflict. To uninstall the old driver so that the new device driver works properly, right-click the device, click **Uninstall**, and then click **OK**. 5. Right-click the name of the device, and then select **Properties**. 6. Click the **General** tab to see whether your device is enabled and working properly. If it is available, click the **Troubleshoot** button, and follow the on-screen instructions in the device troubleshooter wizard. 7. Restart the computer. Click the **Start** button, click the **Arrow** button next to **Shut Down**, and then click **Restart**.

Performance

Table 5-11 Performance

Symptom	Possible solution
Computer displays a processor speed that is lower than expected.	This happens when the processor is automatically running in a lower power state, because the applications running do not require the maximum processing power. Verify that your system contains the processor you purchased. To verify, click the **Start** button, right-click **Computer**, click **Properties**, and under the **General** tab check the processor installed on your system.
Software programs and files take longer than expected to open or respond.	If you created multiple user accounts on your computer, ensure other users are not logged in. If there are multiple users logged in simultaneously, system resources must be shared among them.

Memory card reader

Table 5-12 Memory card reader

Symptom	Possible solution
Memory card reader cannot read the memory card.	Do not insert or remove memory cards when the memory card reader LED is flashing. Doing so may cause data loss or permanent damage to the card reader.
	Some memory cards have a Read/Write or a Security switch. Ensure the switch is set to Write Enabled before you attempt to write data to the card.
	Ensure the amount of stored data does not exceed the storage limit of the memory card.
	Ensure the memory card is one of the supported types: Memory Stick (MS), Memory Stick Pro (MS Pro), MultiMediaCard (MMC), Secure Digital (SD), Secure Digital High-Capacity (SDHC), or Extreme Digital (xD).
	Additional media card types can be supported by use of an adapter sleeve: Mini Secure Digital (Mini SD), Micro Secure Digital (Micro SD), Reduced-sized MultiMediaCard (RS-MMC), Memory Stick Duo (MS Duo), or Memory Stick Pro Duo (MS Pro Duo).
	Ensure the memory card is fully inserted into the slot and the LED is on.
	Inspect the ends of the memory cards for dirt or material that closes a hole or spoils a metal contact. Clean the contacts with a lint-free cloth and a small amount of isopropyl alcohol. Replace the memory card if necessary.

6   System Recovery

System recovery completely erases and reformats the hard disk drive, deleting all data files you have created. System recovery reinstalls the operating system, programs, and drivers. However, you must reinstall any software that was not installed on the computer at the factory. This includes software that came on CDs included in the computer accessory box, and software programs installed after purchase.

Choose from the following methods for performing a System Recovery:

Recovery Image—Run the system recovery from a recovery image stored on your hard disk drive. The recovery image is a file that contains a copy of the original factory-shipped software. To perform a system recovery from the recovery image on your hard disk drive.

NOTE: The recovery image uses a portion of the hard disk drive that cannot be used for data storage.

Recovery Discs—Run the system recovery from a set of recovery discs that you create from files stored on your hard disk drive.

Creating Recovery Discs

Complete the procedure described in this section to create a set of recovery discs from the recovery image stored on your hard disk drive. This image contains the operating system and software program files that were originally installed on your computer at the factory.

You can create only one set of recovery discs for your computer. Furthermore, the recovery discs you create can be used only with your computer.

Choosing Recovery Discs

To create recovery discs, your computer must have a DVD writer.

- Use DVD+R or DVD-R blank media to create your system recovery discs.

- You cannot use DVD+RW, DVD-RW, DVD+RW DL, DVD-RW DL, DVD+R DL, or DVD-R DL discs to create recovery discs.

Use high-quality discs to create your set of recovery discs. The verification standard for the recovery disc creation process is very high. You may see error messages such as *Recording failure when writing disc or Error detected during disc verification*.

Your discs may be rejected if they are not defect-free. You will be prompted to insert a new blank disc to try again. It is normal that some of your discs may be rejected.

The number of discs in the recovery disc set depends on your computer model (typically 1–3 DVD discs). The Recovery Disc Creator program tells you the specific number of blank discs needed to make the set.

The process takes some time to verify that the information written on the disc is correct. You can quit the process at any time. The next time you run the program, it resumes where it left off.

To create recovery discs:

1. Close all open programs.

2. Tap the **Start** button, **All Programs**, **Recovery Manager**, and then tap **Recovery Disc Creation**. If prompted, tap **Yes** to allow the program to continue.

3. Follow the on-screen instructions. Label each disc as you make it (for example, Recovery 1, Recovery 2).

4. Store the Recovery discs in a safe place.

System Recovery Options

You should attempt system recovery in the following order:

1. Through the hard disk drive, from the Windows 7 Start menu.

2. Through the hard disk drive, by pressing the F11 key on the keyboard during system startup.

3. Through recovery discs that you create.

4. Through recovery discs purchased from HP Support. To purchase recovery discs, go to http://www.hp.com/support and visit the Software & Driver downloads page for your computer model.

System recovery from the Windows 7 Start menu

If the computer is working, and Windows 7 is responding, use these steps to perform a system recovery.

NOTE: System Recovery deletes any data or programs that you created or installed after purchase. Therefore, ensure you have backed up to a removable disc any data that you want to keep.

1. Turn off the computer.

2. Disconnect all peripheral devices from the computer, except the monitor, keyboard, and mouse.

3. Turn on the computer.

4. Tap the **Start** button, **All Programs**, **Recovery Manager**, and then tap **Recovery Manager**. If prompted, tap **Yes** to allow the program to continue.

5. Under I need help immediately, tap **System Recovery**.

6. Tap **Yes**, and then tap **Next**.

    Your computer restarts.

    NOTE: If your system does not detect a recovery partition, it will prompt you to insert a recovery disc.

7. Under I need help immediately, tap **System Recovery**.

8. If you are prompted to back up your files, and you have not done so, select **Back up your files first (recommended)** button, and then tap **Next**. Otherwise, select **Recover without backing up your files** button, and then tap **Next**.

   System recovery begins. After system recovery is complete, tap **Finish** to restart the computer.

9. Complete the registration process, and wait until you see the desktop.

10. Turn off the computer, reconnect all peripheral devices, and turn the computer back on.

System recovery at system startup

If Windows 7 is not responding, but the computer is working, use these steps to perform a system recovery:

NOTE: System Recovery deletes any data or programs that you created or installed after purchase. Therefore, ensure you have backed up to a removable disc any data that you want to keep.

1. Turn off the computer. If necessary, press and hold the On button until the computer turns off.

2. Disconnect all peripheral devices from the computer, except the monitor, keyboard, and mouse.

3. Press the On button to turn on the computer.

4. As soon as you see the initial company logo screen appear, repeatedly press the F11 key on your keyboard until the *Windows is Loading Files* message appears on the screen.

5. Under I need help immediately, tap **System Recovery**.

6. If you are prompted to back up your files, and you have not done so, select **Back up your files first (recommended)** button, and then tap **Next**. Otherwise, select **Recover without backing up your files** button, and then tap **Next**. Otherwise, select **Recover without backing up your files** button, and then tap **Next**.

   System recovery begins. After system recovery is complete, tap **Finish** to restart the computer.

7. Complete the registration process, and wait until you see the desktop.

8. Turn off the computer, reconnect all peripheral devices, and turn the computer back on.

Starting system recovery from user-created recovery discs

This section contains the procedure for performing a system recovery from the recovery discs you created.

NOTE: System Recovery deletes any data or programs that you created or installed after purchase. Therefore, ensure you have backed up to a removable disc any data that you want to keep.

To perform a system recovery program using recovery discs:

1. If the computer is working, create a backup DVD containing all the data files you want to save. When you are done, remove the backup disc from the disc tray.

   CAUTION: All data on the hard disk drive will be deleted. You will lose data if it is not backed up.

2. Insert recovery disc #1 into the DVD drive tray, and close the tray.

3. If the computer works, click the **Start** button, click the **Arrow** button next to **Shut Down**, and then click **Shut Down**.

   – or –

   If the computer is not responding, press and hold the On button for approximately 5 seconds, or until the computer turns off.

4. Disconnect all peripheral devices from the computer, except the monitor, keyboard, and mouse.

5. Press the On button to turn on the computer.

   If you are prompted to choose between running System Recovery from disc or from hard drive, select **Run program from disc**, and then click **Next**.

6. Under I need help immediately, tap **Factory Reset**.

7. If you are prompted to back up your files, and you have not done so, select **Back up your files first (recommended)** button, and then tap **Next**. Otherwise, select **Recover without backing up your files** button, and then click **Next**.

8. If you are prompted to insert the next recovery disc, do so.

9. When the Recovery Manager is finished, remove all recovery discs from the system.

10. Click **Finish** to restart the computer.

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