Getting Started
HP Notebook

Product notice

This guide describes features that are common to most models. Some features may not be available on your computer.

Safety warning notice

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

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1 Welcome

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After you set up and register the computer, it is important to take the following steps:

- **Set up HP QuickWeb**—Immediately access your music, digital photos, and the Web without launching your main operating system. For more information, refer to HP QuickWeb on page 14.

- **Connect to the Internet**—Set up your wired or wireless network so that you can connect to the Internet. For more information, refer to Networking on page 23.

- **Update your antivirus software**—Protect your computer from damage caused by viruses. The software is preinstalled on the computer and includes a limited subscription for free updates. For more information, refer to the *HP Notebook Reference Guide*. For instructions on accessing this guide, refer to Finding information on page 3.

- **Get to know your computer**—Learn about your computer features. Refer to Getting to know your computer on page 5 and Keyboard and pointing devices on page 27 for additional information.

- **Create recovery discs**—Recover the operating system and software to factory settings in case of system instability or failure. For instructions, refer to Backup and recovery on page 47.

- **Find installed software**—Access a list of the software preinstalled on the computer. Select **Start > All Programs**. For details about using the software included with the computer, refer to the software manufacturer's instructions, which may be provided with the software or on the manufacturer's Web site.

What's new?

Using Stardock Fences Pro

Stardock Fences Pro is a program that allows you to personalize and organize your desktop icons into shaded areas. When the Fences program runs the first time, it creates shaded areas (known as Fences) and moves desktop icons into logical groupings. The Fences can be named and changed as needed as well as any of the contents. To customize Fences or to refer to the software help for Fences, select **Start > All Programs > Stardock.** Click **Fences**, and then click **Fences.lnk.**

Stardock Fences Pro includes the following features:

- **Create a Sorting Rule**—By default, new desktop icons are placed outside Fences. You can create rules to automatically place new icons into Fences based on criteria such as name, file type, time, and date.

- **Quick Hide**—Hides all the icons and Fences on your desktop for a clean look by double-clicking an empty area on the desktop. Double-clicking an empty area again will bring back all the icons and Fences that were hidden on your desktop.

- **Create Snapshots**—The Fences program creates one snapshot of your Fences layout when installed and then automatically creates daily snapshots. You can create additional snapshots at any time and restore your layout to any stored snapshot.

Finding information

The computer comes with several resources to help you perform various tasks.

Resources	For information about
Quick Setup poster	● How to set up the computer ● Help to identify computer components
HP Notebook Reference Guide To access this guide, select **Start > Help and Support > User Guides**.	● Power management features ● How to maximize battery life ● How to use the multimedia features of the computer ● How to protect the computer ● How to care for the computer ● How to update the software
Help and Support To access Help and Support, select **Start > Help and Support**. **NOTE:** For country- or region-specific support, go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.	● Operating system information ● Software, driver, and BIOS updates ● Troubleshooting tools ● How to access technical support
Regulatory, Safety and Environmental Notices To access the notices, select **Start > Help and Support > User Guides**.	● Regulatory and safety information ● Battery disposal information
Safety & Comfort Guide To access this guide: Select **Start > Help and Support > User Guides**. – or – Go to http://www.hp.com/ergo.	● Proper workstation setup, posture, health, and work habits ● Electrical and mechanical safety information
Worldwide Telephone Numbers booklet This booklet is provided with your computer.	HP support telephone numbers
HP Web site To access this Web site, go to http://www.hp.com/support.	● Support information ● Ordering parts and finding additional help ● Software, driver, and BIOS (Setup Utility) updates ● Accessories available for the device

Resources	For information about
*Limited Warranty**	Warranty information

To access the warranty:

Select **Start > Help and Support > HP Warranty**.

– or –

Go to http://www.hp.com/go/orderdocuments.

*You can find the expressly provided HP Limited Warranty applicable to your product in the start menu on your PC and/or in the CD/DVD provided in the box. For some countries/regions a printed HP Limited Warranty is provided in the box. In countries/ regions where the warranty is not provided in printed format, you may request a printed copy from http://www.hp.com/go/ orderdocuments or write to:

- North America: Hewlett Packard, MS POD, 11311 Chinden Blvd, Boise, ID 83714, USA

- Europe, Middle East, Africa: Hewlett Packard, POD, Via G. Di Vittorio, 9, 20063, Cernusco s/Naviglio (MI), Italy

- Asia Pacific: Hewlett Packard, POD, P.O. Box 200, Alexandra Post Office, Singapore 911507

Please include your product name, warranty period (found on your serial number label), name and postal address.

2   Getting to know your computer

Top

TouchPad

| Component		Description
(1)	TouchPad off indicator	Turns the TouchPad on and off. Quickly double-tap the TouchPad off indicator to turn the TouchPad on and off.
(2)	TouchPad zone	Moves the pointer and selects or activates items on the screen.

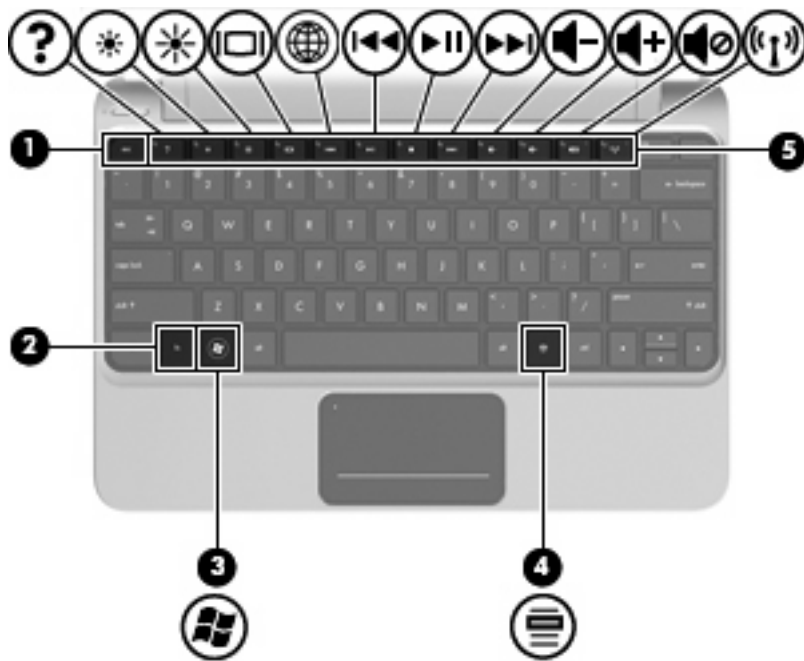| Component		Description
(3)	Left TouchPad button	Functions like the left button on an external mouse.
(4)	Right TouchPad button	Functions like the right button on an external mouse.

Lights

Component		Description
(1)	TouchPad off indicator	● Amber: The TouchPad is off.
		● Off: The TouchPad is on.
(2)	Caps lock light	● White: Caps lock is on.
		● Off: Caps lock is off.
(3)	Mute light	● Amber: Computer sound is off.
		● Off: Computer sound is on.
(4)	Wireless light	● White: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on.
		● Amber: All wireless devices are off.

Buttons

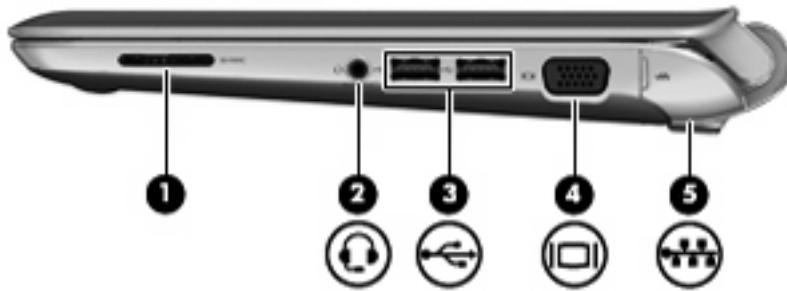| Component		Description
(1)	Power button	• When the computer is off, press the button to turn on the computer.
		• When the computer is on, press the button briefly to initiate Sleep.
		• When the computer is in the Sleep state, press the button briefly to exit Sleep.
		• When the computer is in Hibernation, press the button briefly to exit Hibernation.
		If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer.
		To learn more about your power settings, select **Start > Control Panel > System and Security > Power Options**, or refer to the *HP Notebook Reference Guide*.

Keys

Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.
(2)	fn key	Executes frequently used system functions when pressed in combination with a function key, the num lk key, or the esc key.
(3)	Windows logo key	Displays the Windows Start menu.
(4)	Windows applications key	Displays a shortcut menu for items beneath the pointer.
(5)	Function keys	Execute frequently used system functions.

Front

Component	Description
Speakers	Produce sound.

Right side

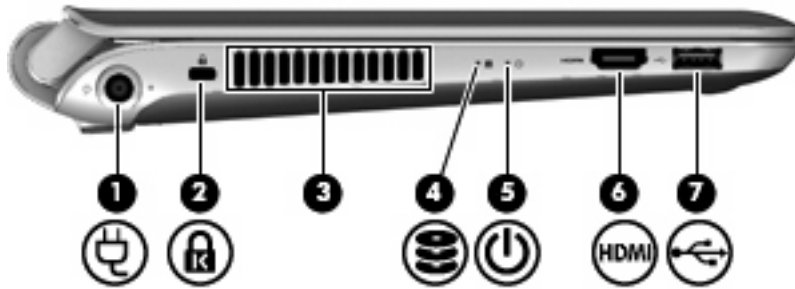| Component		Description
(1)	Digital Media Slot	Supports the following digital card formats: ● MultiMediaCard ● Secure Digital (SD) Card
(2)	Audio-out (headphone) jack/Audio-in (microphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or television audio. Also connects an optional headset microphone. **WARNING!** To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the *Regulatory, Safety and Environmental Notices*. **NOTE:** When a device is connected to the jack, the computer speakers are disabled. **NOTE:** A 4–conductor audio jack plug headphone with microphone is needed in order to use the microphone function.
(3)	USB ports (2)	Connect optional USB devices.
(4)	External monitor port	Connects external VGA monitor or projector.
(5)	RJ-45 (network) jack (under the cover)	Connects a network cable.

Left side

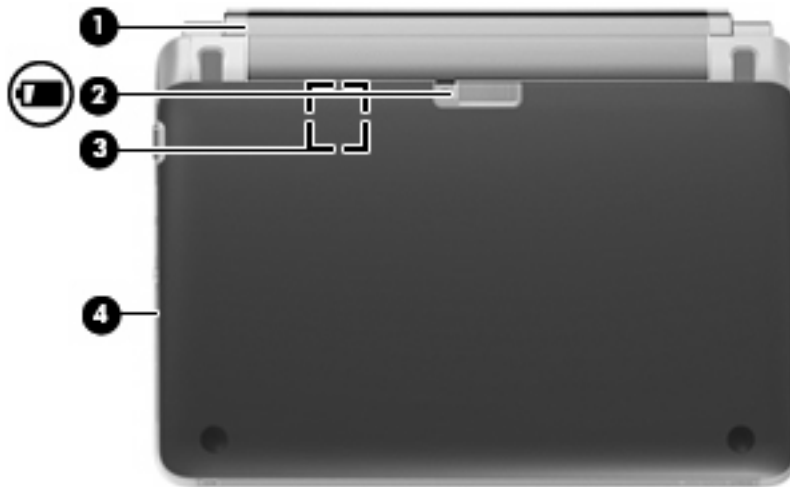| Component		Description
(1)	Power connector	Connects an AC adapter.
(2)	Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(3)	Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(4)	Drive light	- Blinking white: The hard drive is being accessed. - Amber: HP ProtectSmart Hard Drive Protection has temporarily parked the hard drive. **NOTE:** For information on HP ProtectSmart Hard Drive Protection, refer to the *HP Notebook Reference Guide*.
(5)	Power light	- White: The computer is on. - Blinking white: The computer is in the Sleep state. - Off: The computer is off or in Hibernation.
(6)	HDMI port	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio component.
(7)	USB port	Connects an optional USB device.

Display

Component		Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLAN).
(2)	WWAN antennas (2)* (select models only)	Send and receive wireless signals to communicate with wireless wide-area networks (WWAN).
(3)	Webcam light	On: The webcam is in use.
(4)	Webcam	Records video and captures still photographs. To use the webcam, select **Start > All Programs > HP > HP MediaSmart > HP MediaSmart Webcam**.
(5)	Internal microphone	Records sound.

*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions. To see wireless regulatory notices, refer to the section of the *Regulatory, Safety and Environmental Notices* that applies to your country or region. These notices are located in Help and Support.

Bottom

	Component	Description
(1)	Battery	Removable battery.
(2)	Battery release latch	Releases the battery so you can remove it.
(3)	SIM slot	Contains a wireless subscriber identity module (SIM). The SIM slot is located inside the battery bay.
(4)	Service cover	Remove to access the hard drive and memory components.

3   HP QuickWeb

After completing the Windows setup the first time you turn on the computer, the QuickWeb setup screen appears. HP QuickWeb is an optional, instant-on environment that is separate from the main operating system. QuickWeb allows you to access the following applications without the need to first start Windows:

- Web browser

- Chat

- Skype (select models only)

- Web e-mail

- Web calendar

- Music Player

- Photo Viewer

- Games

NOTE: For additional information about using QuickWeb, refer to the QuickWeb software Help.

Enabling HP QuickWeb

Follow the on-screen instructions to enable QuickWeb. After you have enabled QuickWeb, the QuickWeb Home screen appears whenever you turn on the computer.

NOTE: To enable or disable HP QuickWeb, refer to the section Enabling and disabling HP QuickWeb on page 22.

Starting HP QuickWeb

1. Turn on the computer.

    The HP QuickWeb Home screen appears.

2. Click an icon on the QuickWeb Home screen to launch an application.

Identifying the QuickWeb LaunchBar

The QuickWeb LaunchBar contains the QuickWeb control icons **(1)**, LaunchBar icons **(2)**, and the notification icons **(3)**.

Identifying the QuickWeb control icons

Icon	Function
	Launches the Windows operating system.
	Shuts the computer down.
	Returns to the QuickWeb Home screen.

Identifying the QuickWeb LaunchBar icons

Icon	Function
	Launches the Web browser. You can browse and search the Web, open bookmarks, and create links to your favorite Web sites.
	Launches the Chat application. Chat is the instant messaging (IM) program that allows you to chat with friends on multiple instant messaging programs simultaneously.
	Launches Skype (select models only). Skype is the preinstalled Internet calling software that allows you to have a conference call or video chat. You can also chat with one or more people at a time.
	Launches Web e-mail so you can view your recent e-mail, check for new e-mail, and configure your e-mail account.
	Launches the Web calendar so you can schedule and manage your activities using your favorite online calendar program.

Icon	Function
	Launches Music Player. Select and play music stored on your hard drive, external drives, or external media. Supports .mp3, .aac (MPEG-4), and audio CD formats.
	Launches Photo Viewer. Browse photos stored on your hard drive or external drive. Supports .jpg, .png, .gif, .tiff, and .raw formats (select .raw formats only).
	Launches Games. Play online games with QuickWeb's new social gaming feature.

Identifying the QuickWeb notification icons

Icon	Function
	When a USB drive is inserted, the File Manager window containing a USB icon appears. Click the USB icon to open the File Manager window. Right-click the USB icon to open a menu to safely remove the device.
	Indicates that the network is connected. Click the network icon to open the Network dialog box.
	Indicates that the network is disconnected.
	Launches the Volume Control dialog box.
	Indicates the volume is on mute. Click the Volume Control icon to open the Volume Control dialog box and control the volume for speakers and the microphone.
	Launches the Settings panel. Use the Settings panel to modify the following QuickWeb settings: ● Set date and time ● Configure network connections ● Manage power settings ● Manage QuickWeb applications ● Restore QuickWeb
	Indicates that the computer is connected to AC power. Click this icon to display a menu to control power settings and to see information about battery capacity.

Icon	Function
	Indicates that the computer is not connected to AC power. Click this icon to display a menu to control power settings and to see information about battery capacity.
	Launches the QuickWeb software Help.

Configuring the network

You can set up a wireless connection in QuickWeb using the HP QuickWeb Configuration Tool.

To access this tool:

1. Click the **Settings** icon in the system tray.

2. Select **Network**, and then select the **Enable Wi-Fi** check box.

For more information on setting up a wireless connection using QuickWeb, refer to the software Help.

Starting Microsoft Windows

NOTE: When the HP QuickWeb Home screen first appears, it displays an automatic timer above the **Start Windows** icon. If you do not move your mouse, or press a key for 15 seconds, the computer starts Microsoft® Windows. For more information on the QuickWeb timer and changing the timer settings, refer to the HP QuickWeb software Help.

1. Turn on the computer.

2. Do not move your mouse, or press a key for 15 seconds, and the computer starts Microsoft Windows.

   -or-

   Click the **Start Windows** icon on the far left of the QuickWeb Home screen. A dialog box appears, asking if you are sure you want to start Windows. Click **Yes**.

NOTE: Clicking **Make Windows your default Power On experience** in this dialog box disables QuickWeb. To enable QuickWeb, refer to Enabling and disabling HP QuickWeb on page 22.

Enabling and disabling HP QuickWeb

1. Select **Start > All Programs > HP QuickWeb > HP QuickWeb Configuration Tool**.

    The QuickWeb dialog box is displayed.

2. Select the **Status** tab.

3. Select the **Enable HP QuickWeb** check box to enable QuickWeb. Clear the **Enable HP QuickWeb** check box to disable QuickWeb.

4. Click **OK**.

4   Networking

- [Using an Internet service provider (ISP)](#)

- [Connecting to a wireless network](#)

NOTE: Internet hardware and software features vary depending on computer model and your location.

Your computer may support one or both of the following types of Internet access:

- Wireless—For mobile Internet access, you can use a wireless connection. Refer to [Connecting to an existing WLAN on page 25](#) or [Setting up a new WLAN network on page 25](#).

- Wired—You can access the Internet by connecting to a wired network. For information on connecting to a wired network, refer to the *HP Notebook Reference Guide*.

Using an Internet service provider (ISP)

Before you can connect to the Internet, you must establish an ISP account. Contact a local ISP to purchase Internet service and a modem. The ISP will help set up the modem, install a network cable to connect your wireless computer to the modem, and test the Internet service.

NOTE: Your ISP will give you a user ID and password to access the Internet. Record this information and store it in a safe place.

The following features will help you set up a new Internet account or configure the computer to use an existing account:

- **Internet Services & Offers (available in some locations)**—This utility assists with signing up for a new Internet account and configuring the computer to use an existing account. To access this utility, select **Start > All Programs > Online Services > Get Online**.

- **ISP-provided icons (available in some locations)**—These icons may be displayed either individually on the Windows desktop or grouped in a desktop folder named Online Services. To set up a new Internet account or configure the computer to use an existing account, double-click an icon, and then follow the on-screen instructions.

- **Windows Connect to the Internet Wizard**—You can use the Windows Connect to the Internet Wizard to connect to the Internet in any of these situations:

    ◦ You already have an account with an ISP.

    ◦ You do not have an Internet account and want to select an ISP from the list provided within the wizard. (The list of ISP providers is not available in all regions.)

    ◦ You have selected an unlisted ISP, and the ISP has provided you with information such as a specific IP address and POP3 and SMTP settings.

    To access the Windows Connect to the Internet Wizard and instructions for using it, select **Start > Help and Support**, and then type `Connect to the Internet wizard` in the Search box.

NOTE: If you are prompted within the wizard to choose between enabling or disabling Windows Firewall, choose to enable the firewall.

Connecting to a wireless network

Wireless technology transfers data across radio waves instead of wires. Your computer may be equipped with one or more of the following wireless devices:

- Wireless local area network (WLAN) device

- HP Mobile Broadband Module, a wireless wide area network (WWAN) device

- Bluetooth device

For more information on wireless technology and connecting to a wireless network, refer to the *HP Notebook Reference Guide* and information and Web site links provided in Help and Support.

Connecting to an existing WLAN

1. Turn on the computer.

2. Be sure that the WLAN device is on.

3. Click the network icon in the notification area, at the far right of the taskbar.

4. Select a network to connect to.

5. Click **Connect**.

6. If required, enter the security key.

Setting up a new WLAN network

Required equipment:

●   A broadband modem (either DSL or cable) **(1)** and high-speed Internet service purchased from an Internet service provider (ISP)

●   A wireless router (purchased separately) **(2)**

●   Your new wireless computer **(3)**

NOTE: Some modems have a built-in wireless router. Check with your ISP to determine what type of modem you have.

The illustration shows an example of a completed WLAN network installation that is connected to the Internet. As your network grows, additional wireless and wired computers can be connected to the network to access the Internet.

Configuring a wireless router

For help in setting up a WLAN, refer to the information provided by your router manufacturer or your ISP.

The Windows operating system also provides tools to help you set up a new wireless network. To use the Windows tools to set up your network, select **Start > Control Panel > Network and Internet > Network and Sharing Center > Set up a new connection or network > Set up a new network**. Then follow the on-screen instructions.

NOTE: It is recommended that you initially connect your new wireless computer to the router by using the network cable provided with the router. When the computer successfully connects to the Internet, you can disconnect the cable, and then access the Internet through your wireless network.

Protecting your WLAN

When you set up a WLAN or access an existing WLAN, always turn on security features to protect your network from unauthorized access.

For information on protecting your WLAN, refer to the *HP Notebook Reference Guide*.

5   Keyboard and pointing devices

- [Using the keyboard](#)
- [Using pointing devices](#)

Using the keyboard

Identifying the hotkeys

A hotkey is a combination of the fn key **(1)** and one of the function keys **(2)**.


To use a hotkey:

▲   Briefly press the fn key, and then briefly press the second key of the hotkey combination.

Hotkey		Description
fn+esc		Press fn+esc **(1)** and **(2)** to display information about system hardware components and the system BIOS (basic input-output system) version number.
?	fn+f1	Opens Help and Support.
		Help and Support provides tutorials, answers to questions, and product updates.
☀	fn+f2	Decreases the screen brightness level.

Hotkey	Description
fn+f3	Increases the screen brightness level.
fn+f4	Switches the screen image among display devices connected to the system. For example, if a monitor is connected to the computer, fn+f4 alternates the screen image from computer display to monitor display to simultaneous display on both the computer and the monitor. Most external monitors receive video information from the computer using the external VGA video standard. The fn+f4 hotkey can also alternate images among other devices that are receiving video information from the computer.
fn+f5	Opens a Web browser. NOTE: Until you set up your Internet or network services, this hotkey opens the Internet Connection Wizard.
fn+f6	Plays the previous track of an audio CD or the previous section of a DVD or a BD.
fn+f7	Plays, pauses, or resumes an audio CD, a DVD, or a BD.
fn+f8	Plays the next track of an audio CD or the next section of a DVD or a BD.
fn+f9	Decreases speaker volume.
fn+f10	Increases speaker volume.
fn+f11	Mutes or restores speaker sound.
fn+f12	Turns the wireless feature on or off. NOTE: This hotkey does not establish a wireless connection. To establish a wireless connection, a wireless network must be set up.

Using pointing devices

NOTE: In addition to the pointing devices included with your computer, you can use an external USB mouse (purchased separately) by connecting it to one of the USB ports on the computer.

Setting pointing device preferences

Use Mouse Properties in Windows® to customize settings for pointing devices, such as button configuration, click speed, and pointer options.

To access Mouse Properties, select **Start > Devices and Printers**. Then, right-click the device representing your computer, and select **Mouse settings**.
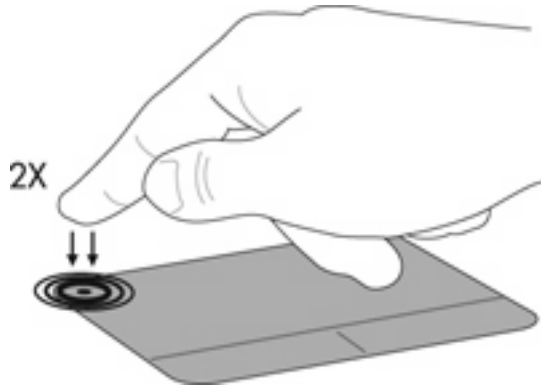
Using the TouchPad

To move the pointer, slide one finger across the TouchPad in the direction you want the pointer to go. Use the left and right TouchPad buttons like the buttons on an external mouse. To scroll up and down using the TouchPad vertical scroll zone, slide your finger up or down over the lines.

NOTE: If you are using the TouchPad to move the pointer, you must lift your finger off the TouchPad before moving it to the scroll zone. Simply sliding your finger from the TouchPad to the scroll zone does not activate the scrolling function.
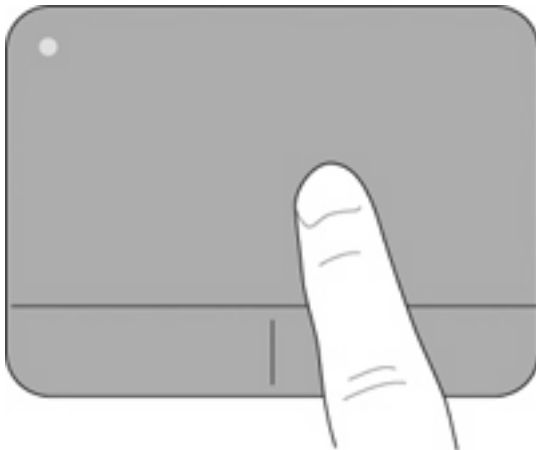
Turning the TouchPad on and off

To turn the TouchPad on and off, quickly double-tap the TouchPad off indicator. When the TouchPad off indicator is amber, the TouchPad is off.
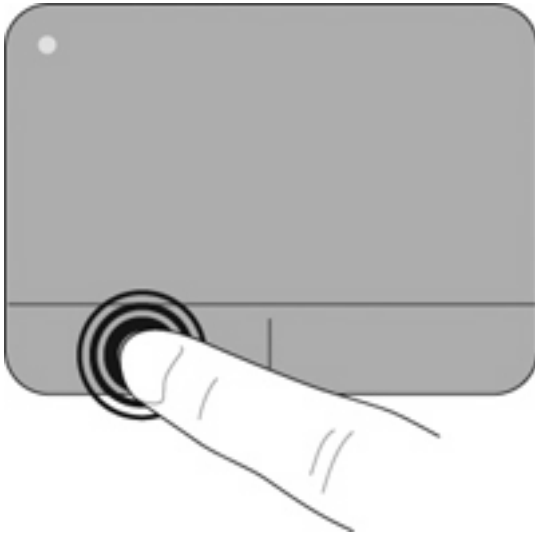
Navigating

To move the pointer, slide one finger across the TouchPad in the direction you want the pointer to go.

Selecting

Use the left and right TouchPad buttons like the corresponding buttons on an external mouse.

Using TouchPad gestures

The TouchPad supports a variety of gestures. To use TouchPad gestures, place two fingers on the TouchPad at the same time.

NOTE: TouchPad gestures are not supported in all programs.

To view the demonstration of a gesture:

1. Double-click the **Synaptics** icon in the notification area, at the far right of the taskbar, and then click the **TouchPad Properties**.

2. Click a gesture to activate the demonstration.

To turn the gestures on or off:

1. Double-click the **Synaptics** icon in the notification area, at the far right of the taskbar, and then click the **TouchPad Properties**.

2. Select the gesture that you want to turn on or off.

3. Click **Apply**, and then click **OK**.

Scrolling

Scrolling is useful for moving up, down, or sideways on a page or image. To scroll, place two fingers slightly apart on the TouchPad, and then drag them across the TouchPad in an up, down, left, or right motion.

NOTE: Scrolling speed is controlled by finger speed.

NOTE: Two-finger scrolling is enabled at the factory.
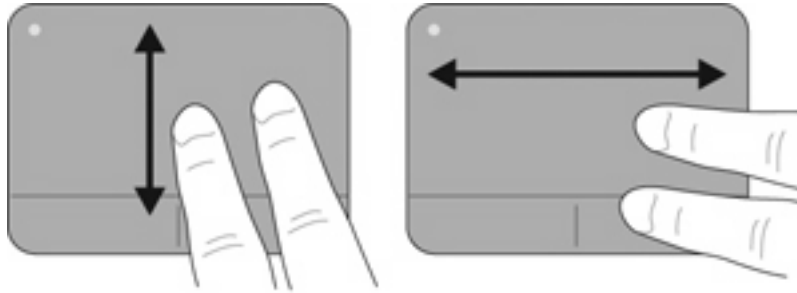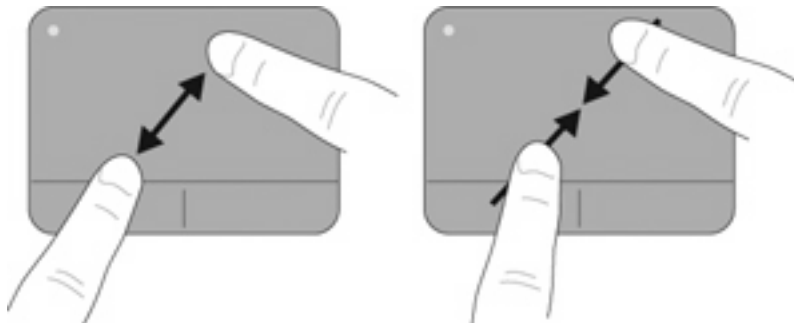
Pinching/Zooming

Pinching allows you to zoom in or out on images or text.

- Zoom in by placing two fingers together on the TouchPad, and then moving them apart.

- Zoom out by placing two fingers apart on the TouchPad, and then moving them together.

NOTE: Pinching/zooming is enabled at the factory.

Rotating

Rotating allows you to rotate items such as photos. To rotate, anchor your left forefinger in the TouchPad zone. Move the right forefinger around the anchored finger in a sweeping motion, moving from 12 o'clock to 3 o'clock. To reverse the rotation, move your right forefinger from 3 o'clock to 12 o'clock.

NOTE: Rotating must be done within the TouchPad zone.

NOTE: Rotating is disabled at the factory.
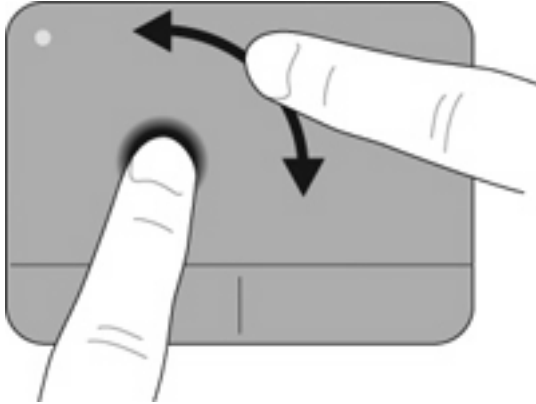
6 Maintenance

Inserting or removing the battery

NOTE: For additional information on using the battery, refer to the *HP Notebook Reference Guide*.

To insert the battery:

1. Turn the computer upside down on a flat surface, with the battery bay toward you.

2. Insert the battery into the battery bay until it is seated. The battery release latch automatically locks the battery into place.
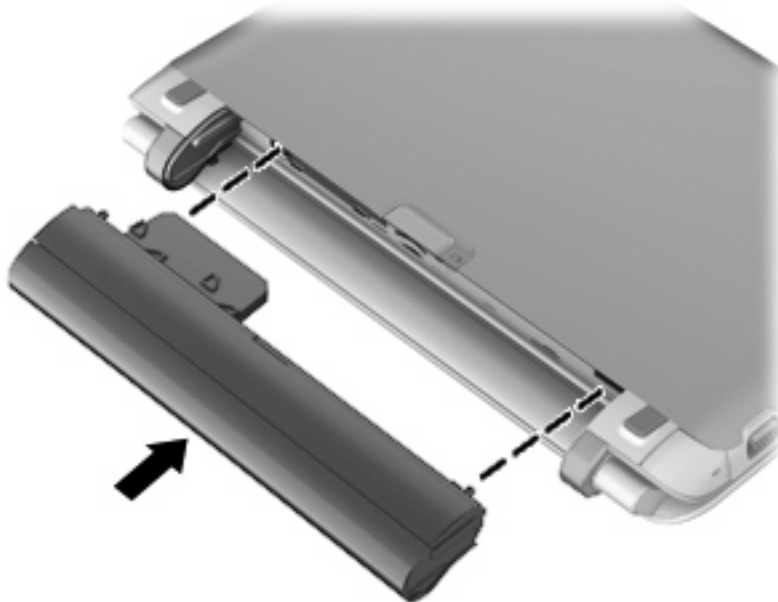
To remove the battery:

CAUTION: Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work and initiate Hibernation or shut down the computer through Windows before removing the battery.

1. Turn the computer upside down on a flat surface.

2. Slide the battery release latch **(1)** to release the battery.

3. Remove the battery from the computer **(2)**.
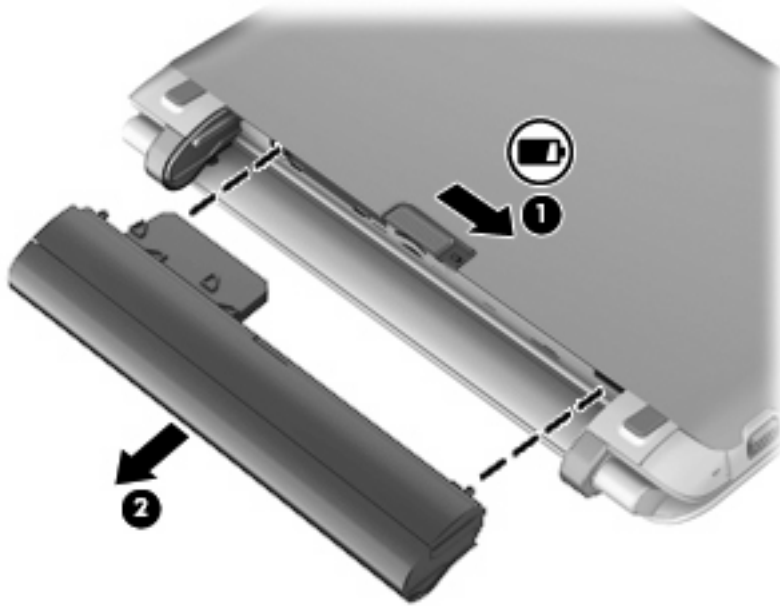
Replacing or upgrading the hard drive

△ **CAUTION:** To prevent information loss or an unresponsive system:

Shut down the computer before removing the hard drive from the hard drive bay. Do not remove the hard drive while the computer is on, in the Sleep state, or in Hibernation.

If you are not sure whether the computer is off or in Hibernation, turn the computer on by pressing the power button. Then shut down the computer through the operating system.

Removing the hard drive

1. Save your work and shut down the computer.

2. Disconnect all external devices connected to the computer.

3. Unplug the power cord from the AC outlet.

4. Turn the computer upside down on a flat surface and remove the battery.

5. Lift up at the two indentations **(1)** to remove the service cover **(2)**.

6. Disconnect the hard-drive connector **(1)**, and remove the four hard-drive screws **(2)**.
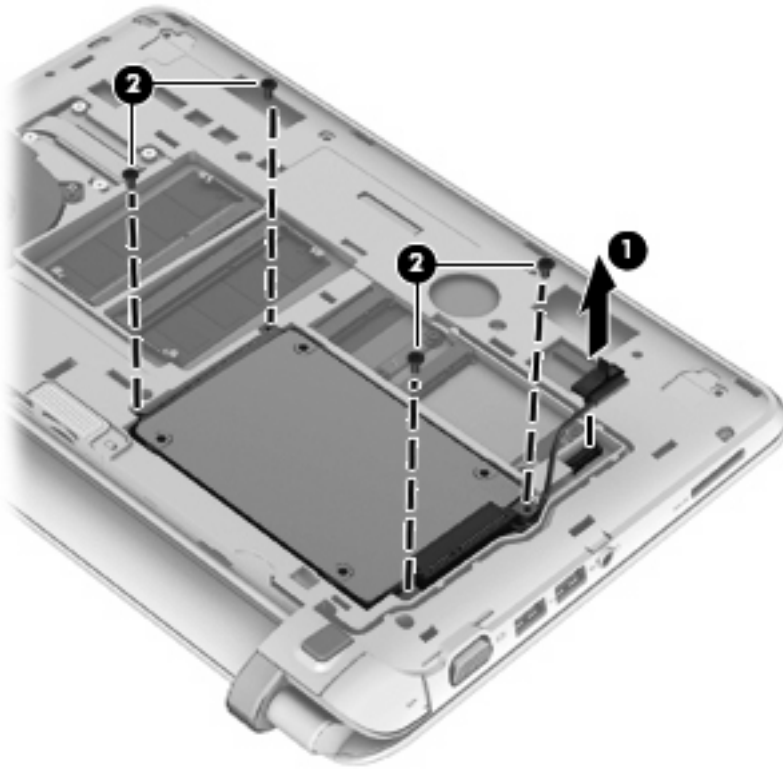
7. Lift the hard drive out of the hard drive bay.
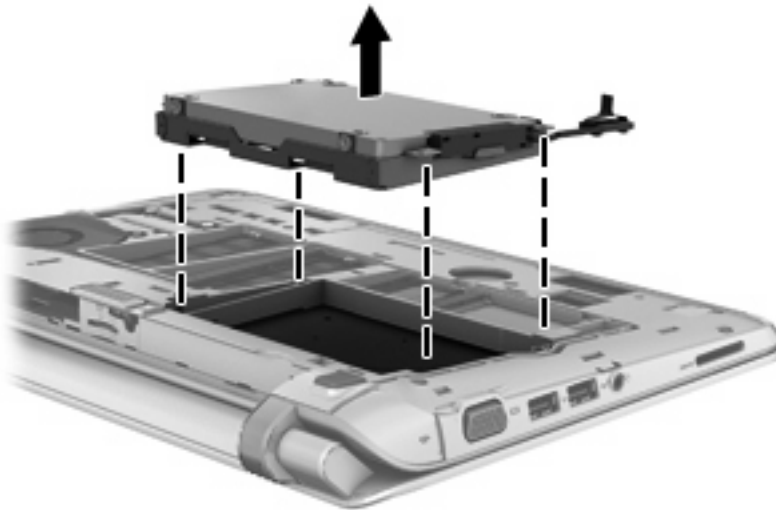
Installing a hard drive

1. Insert the hard drive into the hard drive bay.
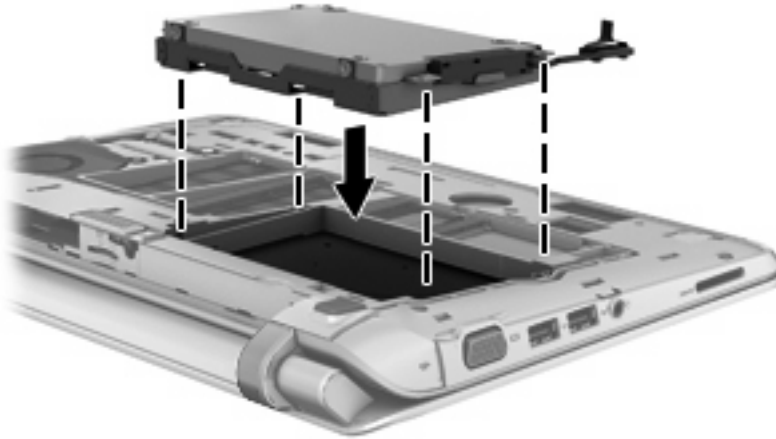
2. Insert and tighten the four hard-drive screws **(1)**, and connect the hard-drive connector **(2)**.
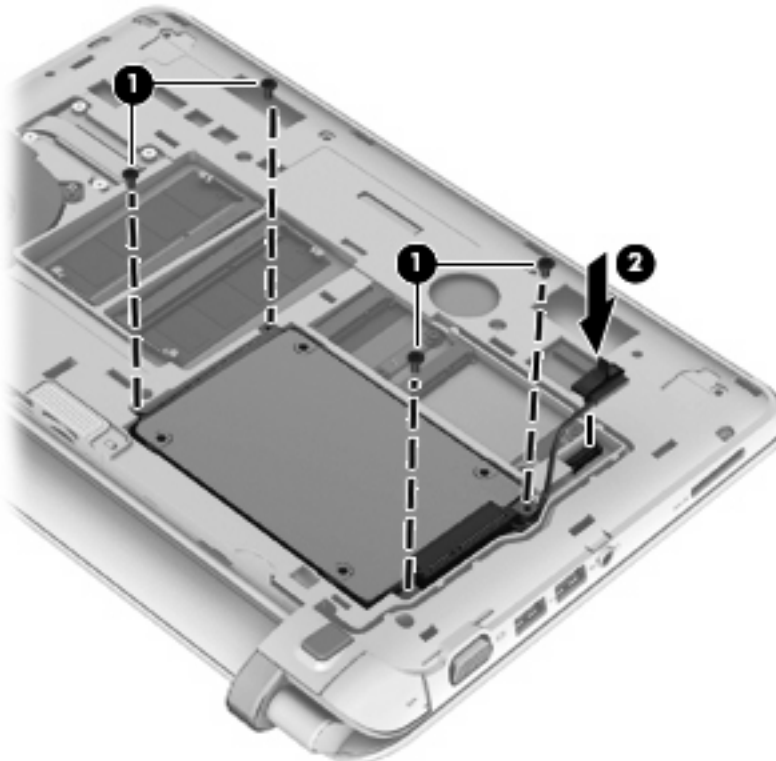
3. Reinstall the service cover by inserting the cover at an angle **(1)**.

4. Align the snap locations on the service cover.

5. Close the service cover **(2)**.
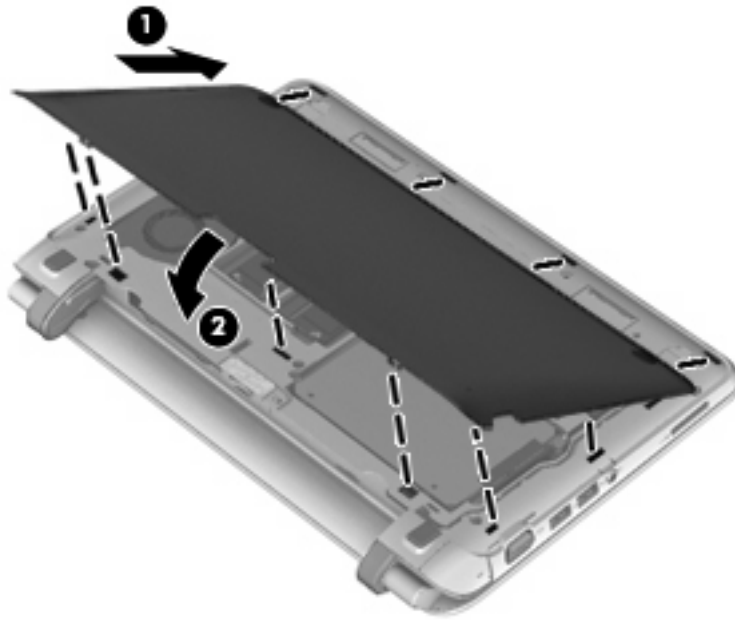
6. Push down on the right/center/left of the service cover until all hooks snap into place**.**

7. Replace the battery.

8. Turn the computer right-side up, and then reconnect external power and external devices.

9. Turn on the computer.

Adding or replacing memory modules

The computer has two memory module compartments. The capacity of the computer can be upgraded by adding a memory module to the vacant expansion memory module slot or by upgrading the existing memory module in the primary memory module slot.

⚠ **WARNING!** To reduce the risk of electric shock and damage to the equipment, unplug the power cord and remove all batteries before installing a memory module.

⚠ **CAUTION:** Electrostatic discharge (ESD) can damage electronic components. Before beginning any procedure, ensure that you are discharged of static electricity by touching a grounded metal object.

📝 **NOTE:** If the computer is only using a single memory module configuration, be sure to install the new memory module in the slot labeled SODIMM1.

NOTE: To use a dual-channel configuration when adding a second memory module, be sure that both memory modules are identical.

To add or replace a memory module:

⚠ **CAUTION:** To prevent information loss or an unresponsive system:

Shut down the computer before adding or replacing memory modules. Do not remove a memory module while the computer is on, in the Sleep state, or in Hibernation.

If you are not sure whether the computer is off or in Hibernation, turn the computer on by pressing the power button. Then shut down the computer through the operating system.

1. Save your work and shut down the computer.

2. Disconnect all external devices connected to the computer.

3. Unplug the power cord from the AC outlet.

4. Turn the computer upside down on a flat surface and remove the battery.

5. Lift up at the two indentations **(1)** to remove the service cover **(2)**.

6. Lift up the regulatory label to access the memory modules.
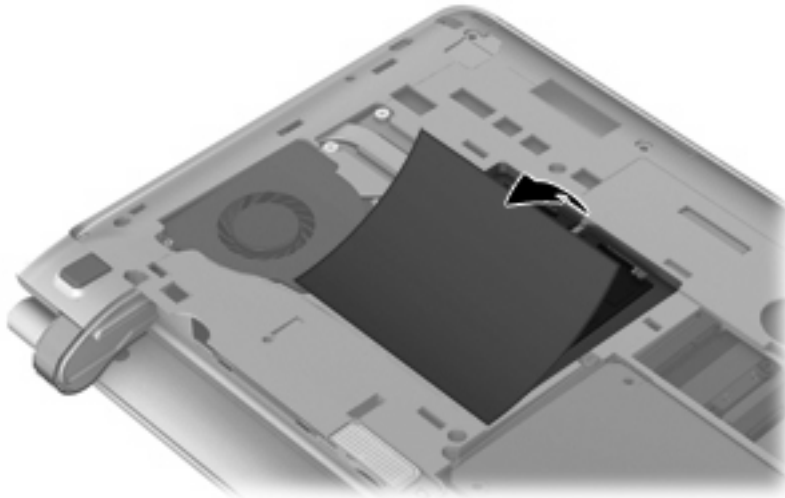
7. If you are replacing a memory module, remove the existing memory module:

    a. Pull away the retention clips **(1)** on each side of the memory module.

    The memory module tilts up.

    b. Grasp the edge of the memory module **(2)**, and then gently pull the memory module out of the memory module slot.

    △ **CAUTION:**   To prevent damage to the memory module, hold the memory module by the edges only. Do not touch the components on the memory module.
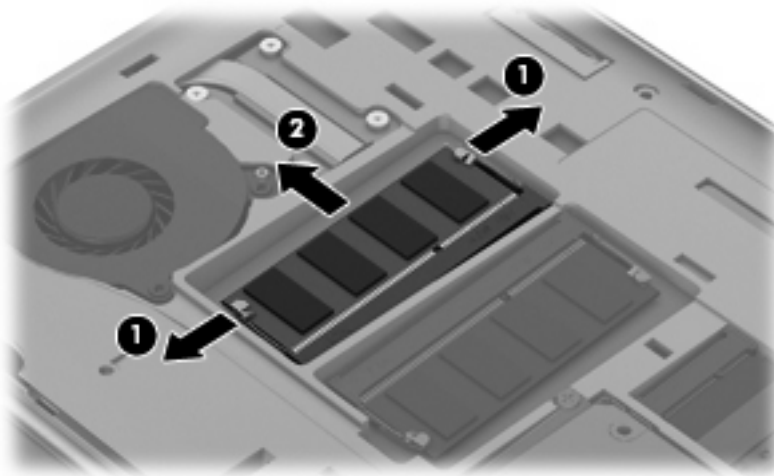
    To protect a memory module after removal, place it in an electrostatic-safe container.

8. Insert a new memory module:

△ **CAUTION:** To prevent damage to the memory module, hold the memory module by the edges only. Do not touch the components on the memory module.

a. Align the notched edge **(1)** of the memory module with the tab in the memory module slot.

b. With the memory module at a 45-degree angle from the surface of the memory module compartment, press the module **(2)** into the memory module slot until it is seated.

c. Gently press the memory module **(3)** down, applying pressure to both the left and right edges of the memory module, until the retention clips snap into place.

△ **CAUTION:** To prevent damage to the memory module, be sure that you do not bend the memory module.
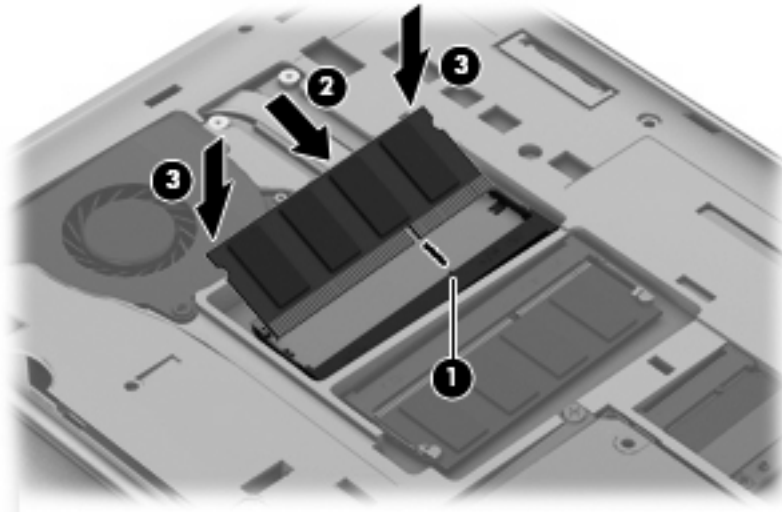
9. Reinstall the service cover by inserting the cover at an angle **(1)**.

10. Align the snap locations on the service cover.

11. Close the service cover **(2)**.
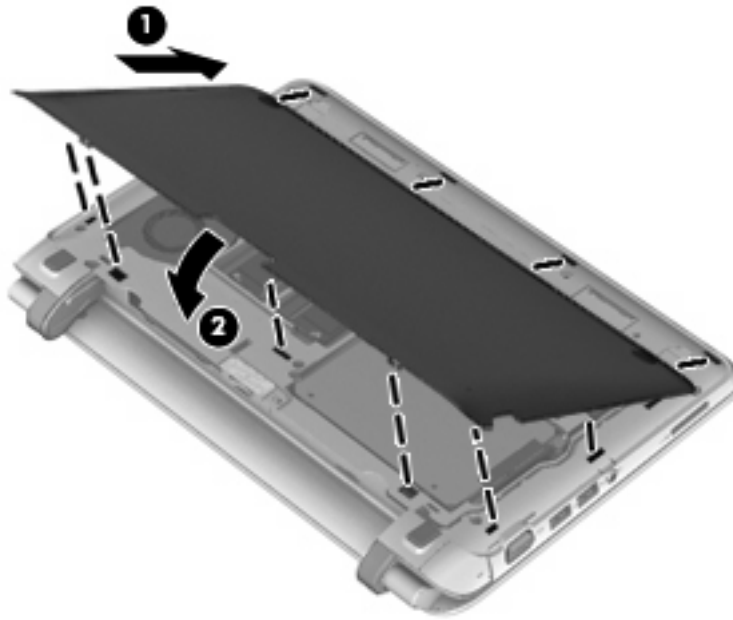
12. Push down on the right/center/left of the service cover until all hooks snap into place.

13. Replace the battery.

14. Turn the computer right-side up, and then reconnect external power and external devices.

15. Turn on the computer.

Removing or installing the RJ45 cover

To remove the RJ45 cover:

1. Slide the RJ45 cover to the right (grasping the cover at the indentation on the left side) **(1)** in order to release the cover.

2. Gently press the hinged bottom of the rubber tail and pull the RJ45 cover off of the computer **(2)**.

To install the RJ45 cover:

1. Gently press the end of the rubber tail and insert the RJ45 cover into the computer **(1)**.

2. Push on the edge of the RJ45 cover until it snaps into place **(2)**.

Updating programs and drivers

HP recommends that you update your programs and drivers on a regular basis with the latest versions. Go to http://www.hp.com/support to download the latest versions. You can also register to receive automatic update notifications when they become available.

Routine care

Cleaning the display

△ **CAUTION:** To prevent permanent damage to the computer, never spray water, cleaning fluids, or chemicals on the display.

To remove smudges and lint, frequently clean the display with a soft damp, lint-free cloth. If the screen requires additional cleaning, use premoistened antistatic wipes or an antistatic screen cleaner.

Cleaning the TouchPad and keyboard

Dirt and grease on the TouchPad can cause the pointer to jump around on the screen. To avoid this, clean the TouchPad with a damp cloth, and wash your hands frequently when using the computer.

⚠ **WARNING!** To reduce the risk of electric shock or damage to internal components, do not use a vacuum cleaner attachment to clean the keyboard. A vacuum cleaner can deposit household debris on the keyboard surface.

Clean the keyboard regularly to prevent keys from sticking, and to remove dust, lint, and particles that can become trapped beneath the keys. A can of compressed air with a straw extension can be used to blow air around and under the keys to loosen and remove debris.

7 Backup and recovery

Your computer includes tools provided by the operating system and HP to help you safeguard your information and restore it if ever needed.

This chapter provides information on the following topics:

- Creating a set of recovery discs or recovery flash drive (Recovery Manager software feature)

- Performing a full system restore (from the partition, recovery discs, or recovery flash drive)

- Backing up your information

- Recovering a program or driver

Restore

In the event of hard drive failure, to restore your system to its factory image you will need a set of recovery discs or recovery flash drive that you can create using HP Recovery Manager. HP recommends that you use this software to create either a set of recovery discs or recovery flash drive immediately after software setup.

If for some other reason you need to restore your system, this can be achieved using the HP Recovery partition (select models only), without the need for recovery discs or recovery flash drive. To check for the presence of a recovery partition, click **Start**, right-click **Computer**, click **Manage**, and then click **Disk Management**. If the recovery partition is present, a Recovery drive is listed in the window.

NOTE: Recovery discs have been included if your computer does not have a recovery partition.

CAUTION: HP Recovery Manager (partition, or discs/flash drive) restores only software that was preinstalled at the factory. Software not provided with this computer must be or reinstalled manually.

Creating restore media

HP recommends that you create either a set of recovery discs or recovery flash drive to be sure that you can restore your computer to its original factory state if the hard drive fails, or if for any reason you cannot restore using the recovery partition tools. Create these discs or the flash drive after setting up the computer for the first time.

NOTE: HP Recovery Manager allows the creation of only one set of recovery discs or one recovery flash drive. Handle these discs or flash drive carefully and keep them in a safe place.

NOTE: If your computer does not include an integrated optical drive, you can use an optional external optical drive (purchased separately) to create recovery discs, or you can purchase recovery discs for your computer from the HP Web site. If you use an external optical drive, it must be connected directly to a USB port on the computer, not to a USB port on an external device, such as a USB hub.

Guidelines:

● Purchase high-quality DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs.

   NOTE: Read-write discs, such as CD-RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs, are not compatible with the Recovery Manager software.

● The computer must be connected to AC power during this process.

● Only one set of recovery discs or recovery flash drive can be created per computer.

● Number each disc or flash drive before inserting it into the optical drive or the USB port.

● If necessary, you can exit the program before you have finished creating the recovery discs or recovery flash drive. The next time you open Recovery Manager, you will be prompted to continue the backup creation process.

To create a set of recovery discs or recovery flash drive:

1. Select **Start > All Programs > Recovery Manager > Recovery Media Creation**.

2. Follow the on-screen instructions.

Performing a system restore

Recovery Manager software allows you to repair or restore the computer to its original factory state. Recovery Manager works from recovery discs, recovery flash drive, or from a dedicated recovery partition (select models only) on the hard drive.

NOTE: A system restore needs to be performed if the computer hard drive failed or if all attempts to correct any functional computer issues fail. A system restore should be used as a final attempt to correct computer issues.

Note the following when performing a system restore:

- You can restore only the system that you have previously backed up. HP recommends that you use HP Recovery Manager to create a set of either recovery discs or recovery flash drive (entire drive backup) as soon as you set up the computer.

- Windows has its own built-in repair features, such as System Restore. If you have not already tried these features, try them before using Recovery Manager.

- Recovery Manager restores only software that was preinstalled at the factory. Software not provided with this computer must be downloaded from the manufacturer's Web site or reinstalled from the disc provided by the manufacturer.

Restoring using the dedicated recovery partition (select models only)

To restore the computer from the recovery partition, follow these steps:

1. Access Recovery Manager in either of the following ways:

   - Select **Start > All Programs > Recovery Manager > Recovery Manager**.

     – or –

   - Turn on or restart the computer, and then press esc while the "Press the ESC key for Startup Menu" message is displayed at the bottom of the screen. Then, press f11 while the "F11 (System Recovery)" message is displayed on the screen.

2. Click **System Recovery** in the **Recovery Manager** window.

3. Follow the on-screen instructions.

NOTE: When using the dedicated recovery partition, there is an option to backup pictures, music and other audio, videos and movies, recorded TV shows, documents, spreadsheets and presentations, e-mails, internet favorites and settings during this process.

Restoring using the restore media

1. If possible, back up all personal files.

2. Insert the first recovery disc into the optical drive on your computer or an optional external optical drive, and then restart the computer.

   – or –

   Insert the recovery flash drive into a USB port on your computer, and then restart the computer.

   NOTE: If the computer does not automatically restart in the Recovery Manager, the computer boot order needs to be changed.

3. Follow the on-screen instructions.

Changing the computer boot order

To change the boot order for recovery discs:

1. Restart the computer.

2. Press esc while the computer is restarting, and then press f9 for boot options.

3. Select **Internal CD/DVD ROM Drive** from the boot options window.

To change the boot order for recovery flash drive:

1. Insert the flash drive into a USB port.

2. Restart the computer.

3. Press esc while the computer is restarting, and then press f9 for boot options.

4. Select the flash drive from the boot options window.

Backup

It is very important to back up your files and keep any new software in a safe place. As you add new software and data files, continue to create backups on a regular basis.

NOTE: How completely you are able to recover your system depends on how recent your back up is.

Backing up and recovering your information

Backing up your information allows you to back up individual files or back up the entire computer image. You should back up your computer files on a regular schedule to maintain a current backup.

NOTE: A backup recovery needs to be performed if the computer has a virus attack or if any major system components fail. In order to correct computer issues, a backup recovery should first be attempted before a system restore is attempted.

You can back up your information to an optional external hard drive, a network drive, or discs. Back up your system at the following times:

- At regularly scheduled times

  TIP: Set reminders to back up your information periodically.

- Before the computer is repaired or restored

- Before you add or modify hardware or software

Guidelines:

- Create system restore points using the Windows® System Restore feature, and periodically copy them to an optional disc or an external hard drive. For more information on using system restore points, refer to .

- Store personal files in the Documents library and back up this folder periodically.

- Save customized settings in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to re-enter your preferences.

Using Windows Backup and Restore

Guidelines:

- Be sure that the computer is connected to AC power before you start the backup process.

- Allow enough time to complete the backup process. Depending on file sizes, it may take over an hour.

To create a backup:

1. Select **Start > Control Panel > System and Security > Backup and Restore**.

2. Follow the on-screen instructions to schedule and create a backup.

NOTE: Windows® includes the User Account Control feature to improve the security of the computer. You may be prompted for your permission or password for tasks such as installing software, running utilities, or changing Windows settings. Refer to Help and Support for more information.

Using Windows system restore points

A system restore point allows you to save and name a snapshot of your hard drive at a specific point in time. You can then recover back to that point if you want to reverse subsequent changes.

NOTE: Recovering to an earlier restore point does not affect data files saved or e-mails created since the last restore point.

You also can create additional restore points to provide increased protection for your files and settings.

When to create restore points

- Before you add or modify software or hardware

- Periodically, whenever the computer is functioning optimally

NOTE: If you revert to a restore point and then change your mind, you can reverse the restoration.

Create a system restore point

1. Select **Start > Control Panel > System and Security > System**.

2. In the left pane, click **System Protection**.

3. Click the **System Protection** tab.

4. Follow the on-screen instructions.

Restore to a previous date and time

To revert to a restore point (created at a previous date and time), when the computer was functioning optimally, follow these steps:

1. Select **Start > Control Panel > System and Security > System**.

2. In the left pane, click **System protection**.

3. Click the **System Protection** tab.

4. Click **System Restore**.

5. Follow the on-screen instructions.

8 Customer support

- [Contacting customer support](#)
- [Labels](#)

Contacting customer support

If the information provided in this user guide, in the *HP Notebook Reference Guide*, or in Help and Support does not address your questions, you can contact HP Customer Support at:

http://www.hp.com/go/contactHP

NOTE: For worldwide support, click **Contact HP worldwide** on the left side of the page, or go to http://welcome.hp.com/country/us/en/wwcontact_us.html.

Here you can:

- Chat online with an HP technician.

  NOTE: When technical support chat is not available in a particular language, it is available in English.

- E-mail HP Customer Support.

- Find HP Customer Support worldwide telephone numbers.

- Locate an HP service center.

Labels

The labels affixed to the computer provide information you may need when you troubleshoot system problems or travel internationally with the computer:

- Serial number label—Provides important information, including the following:
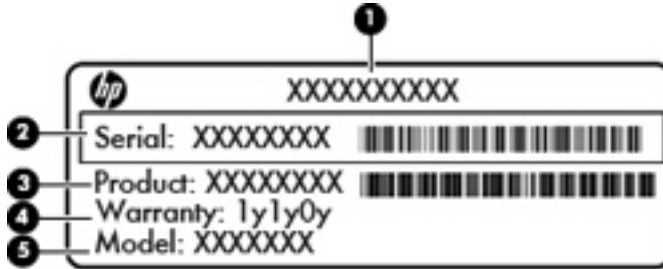
	Component
(1)	Product name
(2)	Serial number (s/n)
(3)	Part number/Product number (p/n)
(4)	Warranty period
(5)	Model description

Have this information available when you contact technical support. The serial number label is affixed to the bottom of the computer.

- Microsoft® Certificate of Authenticity—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system. The Microsoft Certificate of Authenticity is located on the bottom of the computer.

- Regulatory label—Provides regulatory information about the computer. The regulatory label is located under the service cover.

- Wireless certification label or labels (select models only)—Provide information about optional wireless devices and the approval markings of some of the countries or regions in which the devices have been approved for use. If your computer model includes one or more wireless devices, one or more certification labels are included with your computer. You may need this information when traveling internationally. Wireless certification labels are affixed to the bottom of the computer.

- SIM (subscriber identity module) label (select models only)—Provides the ICCID (Integrated Circuit Card Identifier) of the SIM. This label is located inside the battery bay.

- HP Mobile Broadband Module serial number label (select models only)—Provides the serial number of the HP Mobile Broadband Module. This label is located inside the battery bay.

9 Specifications

Input power

The power information in this section may be helpful if you plan to travel internationally with the computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. The AC power source must be rated at 100–240 V, 50–60 Hz. Although the computer can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source supplied and approved by HP for use with this computer.

The computer can operate on DC power within the following specifications.

Input power	Rating
Operating voltage and current	18.5 V dc @ 3.5 A - 65W

NOTE: This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 V rms.

NOTE: The computer operating voltage and current can be found on the system regulatory label located under the service cover.

Operating environment

Factor	Metric	U.S.
Temperature		
Operating (writing to optical disc)	**5°C to 35°C**	41°F to 95°F
Nonoperating	**-20°C to 60°C**	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	**10% to 90%**	10% to 90%
Nonoperating	**5% to 95%**	5% to 95%
Maximum altitude (unpressurized)		
Operating	**-15 m to 3,048 m**	-50 ft to 10,000 ft
Nonoperating	**-15 m to 12,192 m**	-50 ft to 40,000 ft

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