



ENVY¹⁷3D

GETTING STARTED

HP ENVY¹⁷ 3D Getting Started

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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 contact 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

The following sections are included in this chapter:

- [What's new](#)
- [Finding information](#)

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

- **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 33](#).
- **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*.
- **Get to know your computer**—Learn about your computer features. Refer to [Getting to know your computer on page 23](#) and [Keyboard and pointing devices on page 38](#) 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 58](#).
- **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

HP 3D Cinema Technology

HP 3D Cinema Technology provides exceptional, cinema-quality stereoscopic 3D entertainment. The computer's integrated 3D features, along with the HP 3D Active Shutter Glasses, provide an outstanding 3D visual experience. For more information, refer to [Using HP 3D Cinema Technology on page 7](#).




NOTE: Before using 3D Cinema Technology and the 3D glasses, read the 3D safety information. Consult a physician if you suspect a physical problem seeing stereoscopic 3D.



Beats Audio

Beats Audio is an enhanced audio profile that provides a deep, controlled bass while maintaining a clear sound. Beats Audio is enabled by default.

- ▲ To increase or decrease the Beats Audio bass settings, press **fn+b**.

 **NOTE:** You can also view and control the bass settings through the Windows operating system. Select **Start > Control Panel > Hardware and Sound > HP Beats Audio Control Panel > Equalization** to view and control the bass properties.

The following table describes the Beats Audio icons that appear when you press **fn+b**.

Icon	Description
	Indicates that Beats Audio is enabled.
	Indicates that Beats Audio is disabled.

Stardock

Stardock includes the following features:

- **Stardock MyColors**—Offers a customizable desktop theme that transforms the look and feel of your basic Windows desktop. The new desktop includes custom icons, visual styles (Start button and taskbar), and a corresponding wallpaper.

To change back to the standard Windows theme, open the Stardock MyColors program and select the standard Windows theme.

- **Stardock Fences**—Organizes the icons on your desktop. When the custom theme has been applied, all of the icons on the desktop are moved to a vertical column or “fence” in the lower left corner of the screen, with the Recycle Bin at the top. To customize Fences or to refer to the software Help for Fences, select **Start > All Programs > Stardock**. Click **Fences**, and then click **Fences.Ink**.


ATI Eyefinity Multi-Display technology

Your computer supports the new ATI Eyefinity technology that provides the following features:

- You can now have up to 3 external displays as long as one of the displays is connected to the Mini DisplayPort on the computer
- Provides a new display configuration by spanning the image across a group of external displays into a massive single large surface (SLS)

Example display configuration for single large surface (SLS)

When you use 3 external displays and span the image across them as an SLS, the computer display is turned off. The 3 external displays are connected to the computer using the external monitor port (VGA), the Mini DisplayPort, and the HDMI port.

 **NOTE:** Identical resolution is required among all displays to form the SLS mode. Displays with different native resolutions can still form an SLS mode by using non-native resolutions.




 **NOTE:** Windows 7 only supports 2 external displays. To configure 3 external displays in Windows 7, refer to [Using the ATI Catalyst Control Center on page 4](#).

Switching the screen image

Press the [switch screen image](#) action key to open a dialog box that shows the 4 configuration choices, independent of the number of connected display devices.

- Computer only mode—Turns off the external display and displays the image only on the computer display.
- Duplicate mode—Clones the computer display onto an external display that is connected to the external monitor port (VGA) on the computer.
- Extend mode—Extends the desktop to all connected external displays along with the computer display.
- Projector only mode—Turns off the computer display and sets all connected external displays to extended desktop.


 **NOTE:** You can manage the video output and default output devices using the ATI Catalyst™ Control Center.

Using the ATI Catalyst Control Center

To configure desktops and displays and to manage ATI Eyefinity, you must use the ATI Catalyst Control Center.

To access the ATI Catalyst Control Center:

1. Select **Start > All Programs > Catalyst Control Center**.
2. Click the **Graphics** arrow, and then select **Desktops and Displays**.

 **NOTE:** For additional information on using the ATI Catalyst Control Center, refer to the software Help.

Finding information

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

Resources	For information about
<p><i>Quick Setup</i> poster</p>	<ul style="list-style-type: none"> • How to set up the computer • Help to identify computer components
<p><i>HP Notebook Reference Guide</i></p> <p>To access this guide, select Start > Help and Support > User Guides.</p>	<ul style="list-style-type: none"> • 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
<p>Help and Support</p> <p>To access Help and Support, select Start > Help and Support.</p> <p>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.</p>	<ul style="list-style-type: none"> • Operating system information • Software, driver, and BIOS updates • Troubleshooting tools • How to access technical support
<p><i>Regulatory, Safety, and Environmental Notices</i></p> <p>To access the notices, select Start > Help and Support > User Guides.</p>	<ul style="list-style-type: none"> • Regulatory and safety information • Battery disposal information
<p><i>Safety & Comfort Guide</i></p> <p>To access this guide:</p> <p>Select Start > Help and Support > User Guides.</p> <p>– or –</p> <p>Go to http://www.hp.com/ergo.</p>	<ul style="list-style-type: none"> • Proper workstation setup, posture, health, and work habits • Electrical and mechanical safety information
<p><i>Worldwide Telephone Numbers</i> booklet</p> <p>This booklet is provided with your computer.</p>	<p>HP support telephone numbers</p>
<p>HP Web site</p> <p>To access this Web site, go to http://www.hp.com/support.</p>	<ul style="list-style-type: none"> • 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
<p>To access this warranty:</p> <p>Select Start > Help and Support > Warranty.</p> <p>– or –</p> <p>Go to http://www.hp.com/go/orderdocuments.</p>	
<p>*You may find the expressly provided HP Limited Warranty applicable to your product located with the electronic guides on your computer and/or on the CD/DVD provided in the box. Some countries/regions may provide a printed HP Limited Warranty in the box. In countries/regions where the warranty is not provided in printed format, you may request a printed copy at http://www.hp.com/go/orderdocuments or write to:</p> <ul style="list-style-type: none"> • 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 <p>Please include your product number, warranty period (found on your serial number label), name and postal address.</p>	

2 Using HP 3D Cinema Technology

The following sections are included in this chapter:

- [3D safety information](#)
- [What is stereoscopic vision and 3D](#)
- [What is HP 3D Cinema Technology](#)
- [Using the HP 3D Active Shutter Glasses](#)
- [Using 3D Cinema Technology](#)
- [Understanding 3D formats](#)
- [Using HP MediaSmart](#)
- [Caring for the 3D glasses](#)
- [Troubleshooting and frequently asked questions](#)

3D safety information

Carefully read all of the following safety precautions before using the 3D glasses and 3D Cinema Technology.

⚠ **WARNING!** If you cannot see 3D content after you set up 3D Cinema Technology, HP recommends that you discontinue use. Consult a physician if you suspect a physical problem seeing stereoscopic 3D.

Photosensitive Epileptic Seizures—Some individuals may experience a seizure or other complications when exposed to certain visual images, including flashing lights or patterns that may appear in 3D content. If you or any of your relatives have a history of seizures or epilepsy, consult a physician before using the 3D glasses and 3D Cinema Technology. Even those without a personal family history of epilepsy or stroke may have an undiagnosed condition that can cause photosensitive epileptic seizures.

If you experience any of the following symptoms, immediately stop watching 3D content and consult a physician: **altered vision, light-headedness, dizziness, involuntary movements such as eye or muscle twitching, convulsions, nausea, loss of awareness, confusion, cramps, and/or disorientation.** Parents should monitor and ask their children if they have any of the above symptoms. Children and teenagers may be more likely than adults to experience these symptoms.

Do not watch 3D content when you feel sleepy, tired, or sick. Watching 3D with the 3D glasses for an extended period of time may cause a headache or fatigue. If you feel headache, fatigue, or dizziness, stop using the 3D glasses and rest.

Your vision can change to accommodate viewing through the 3D glasses. After removing the 3D glasses, wait several minutes before resuming regular activities.

Some 3D content may startle viewers. People who are pregnant, elderly, or epileptic, and those suffering from severe physical conditions are advised to avoid using the computer's 3D functionality.

The vision of young children (especially children under the age of 6) is still under development. Consult your doctor (such as a pediatrician or eye doctor) before allowing young children to watch 3D video images or play 3D videos games. Parents or guardians should supervise young children to ensure they follow these recommendations.

Choking Hazard—The 3D glasses contain small parts and are not intended for babies and small children.

The lenses in the 3D glasses contain glass. To prevent damage to the lenses, use caution when using the glasses and properly store them when not in use. Do not use the glasses if there is any sign of damage or cracking in the lenses.

The 3D glasses are not prescription eyewear, sunglasses, or protective goggles. To prevent personal injury, do not use the glasses for any general eyewear purposes.

What is stereoscopic vision and 3D

When you see the world through both eyes, you are actually looking at two pictures merged into one. Your right eye and your left eye each deliver a separate image to your brain, which meshes these two images into one three-dimensional picture.

Most movies in the past were only able to provide one image on the screen, and 3D effects had to be simulated by other means. However, the HP 3D Active Shutter Glasses provide a different view for each eye, which more closely simulates 3D vision.


Each scene of the 3D content has two images, one drawn from the right eye view and the other from the left eye view. The computer display shows these alternating views so fast that your eyes cannot see the change.

The 3D glasses are equipped with shutters in each lens. When the right eye image is displayed on the screen, the left lens of the 3D glasses is closed, allowing only the right eye to see the image. When the left eye image is displayed, the process is reversed and only the left eye can see the image. These images alternate so quickly that the eyes only see one smooth picture, making it look like you are actually inside a 3D environment.


What is HP 3D Cinema Technology

3D Cinema Technology delivers a vivid, immersive movie experience. When you watch Blu-ray 3D movies on the computer with your 3D glasses, the action appears to leap from the screen. 3D creates an entirely new viewing experience. With 3D Cinema Technology, you have all the necessary components to watch exceptional Blu-ray 3D. No additional software is required to experience the 3D cinema-quality visuals.

- 3D full high-definition 1080p display
- 3D technology specifically designed and optimized for 3D Blu-ray content
- 3D Active Shutter Glasses that wirelessly synchronize with the 3D computer display

 **NOTE:** Select computer models may include 3D content so you can immediately begin enjoying 3D.

The computer supports both 2D and 3D formats. The computer operates in standard 2D mode until stereoscopic 3D is detected and the 3D glasses are activated.

 **NOTE:** 3D Cinema Technology is only supported on the computer display.

Using the HP 3D Active Shutter Glasses

Your 3D experience begins with active 3D content and the 3D glasses. The 3D glasses are battery powered and linked wirelessly to the infrared (IR) emitters in your 3D computer.

⚠ WARNING! Before using the 3D glasses, read the 3D safety information.

📝 NOTE: For optimal 3D viewing, you should be no more than approximately **1.5 meters** (5 feet) from the computer display. Depending on the viewing angle, the operational distance from the display can vary. Keep the areas immediately around the IR emitters free from obstructions. For information on the location of the IR emitters, refer to [Getting to know your computer on page 23](#).

Identifying the 3D glasses components



Components

(1) Battery compartment

NOTE: The battery ships preinstalled in the glasses battery compartment. You may need to remove the protective tab from the battery compartment to activate the glasses battery.

(2) Nose pieces (3)

NOTE: There are 3 nose pieces in different sizes. One nose piece ships installed on the glasses and two additional nose pieces ship with the glasses.

Turning the 3D glasses on and off


Your 3D glasses are easy to use:

- The 3D glasses turn on and off automatically. There is no on or off switch.
- When 3D content begins to play, the glasses detect an IR signal from the computer and turn on automatically.

- Once the 3D content begins to play, the lenses may appear to darken and you may see some flickering as the glasses begin to turn on.
- The battery installed in the glasses provides approximately 180 hours of 3D viewing time. To help conserve battery power, the glasses enter Standby if no IR signal is detected for 5 seconds.


Using 3D Cinema Technology

After you set up your 3D computer, you are ready to verify that you can properly view the 3D content.

 **NOTE:** Be sure that your computer is connected to AC power when viewing 3D content.


NOTE: For optimal 3D viewing, the screen brightness controls are disabled when watching 3D content.


1. Depending on your computer model, you can access 3D content by one of the following ways:
 - Double-click the 3D demo icon (select models only) on the computer desktop and select a 3D clip from the menu.
 - Insert a Blu-ray 3D movie (purchased separately) into the slot-load optical drive on the computer and follow the on-screen instructions.

 **NOTE:** Insert the disc into the optical drive until it clicks into place. To eject the disc, press the optical drive eject key located at the top right of the keyboard.

2. Put on your 3D glasses. If needed, adjust the glasses using the nose pieces provided.
3. The 3D glasses turn on automatically when the 3D content begins to play and the infrared (IR) signal is detected. Your lenses may darken, or you may see flickering while the glasses start operation.

If you can see clearly in 3D, the setup is complete and you can begin viewing 3D cinema content!


 **NOTE:** If you continue to see flickering after the glasses have turned on, you may need to adjust the refresh rate to optimize stereoscopic viewing. Refer to [Adjusting the refresh rate on page 16](#).


 **WARNING!** If you still cannot see 3D content, remove the 3D glasses and stop using 3D Cinema Technology. Refer to the 3D safety information and consult a physician if you suspect a physical problem seeing stereoscopic 3D.

Understanding 3D formats

Your computer supports the following 3D formats:


- Blu-ray 3D movies
- 3D MPEG 4 MVC files

 **NOTE:** To play back 3D MPEG 4 MVC files, you need to place them in the following location:
C:\user\public\Public Videos\HP 3D demo videos

 **NOTE:** 3D playback is only supported in full-screen mode.

Using HP MediaSmart

When you open MediaSmart, the control panel displays the following items.

 **NOTE:** Some controls may not be shown when the window is minimized.



Components		Description
(1)	Settings control	Click to select DVD and BD preferences and adjust the settings.
(2)	Playback controls	To display the controls, move the computer mouse pointer. NOTE: The appearance and operation of the controls depends on the type of DVD or BD being viewed. If the window is minimized, all of the controls may not be visible. <ul style="list-style-type: none">• Eject: Click to eject the disc.• Top-level menu: Click to display the DVD top menu.• Marker: Click the button, and then enter a name to name the bookmark.• Previous/rewind: Click to return to the previous track or chapter. If the previous chapter is not available, the menu page is displayed. Click and hold the button to rewind 4x.• Play/pause: Click to play or pause the selected media.• Next/fast forward: Click to advance the next track or chapter. If the next chapter is not available, the next title is displayed. Click and hold the button to advance 4x.• 2D/3D: Click to switch between 2D and 3D modes. NOTE: This button only appears when a 3D movie is playing.• 3D Demo: Click to preview a 3D clip.

Understanding the 3D settings

During 3D playback, you can manually adjust the following 3D configuration settings for improved stereoscopic 3D viewing.



NOTE: Available DVD settings depend on the type of DVD or BD being viewed.

- Screen refresh rate—Adjust the screen refresh rate to either 96 Hz or 120 Hz.
- 3D Image Adjustment—Switch the left eye frame and the right eye frame if the 3D output appears incorrect.
- 2D/3D movie playback—Select to either continue or restart movie playback when switching between 2D and 3D modes.

Adjusting the refresh rate

For the best experience when watching 3D content, you may need to manually adjust the refresh rate.

1. Click the **Settings** icon on the bottom of the MediaSmart control panel.
The Settings window opens.
2. Click the **Advanced** tab.
3. In the **Screen Refresh Rate** drop-down menu, select a different screen refresh rate.
4. Click **Apply**.

Switching left and right eye views

If the 3D output or 3D depth appears incorrect, you may need to switch the left and right eye views to see the 3D content correctly.

To switch the left and right eye views:


1. Click the **Settings** icon on the bottom of the MediaSmart control panel.
The Settings window opens.
2. Click the **Advanced** tab.
3. Select the **Swap left and right eye views** check box.
4. Click **Apply**.

Switching between 2D and 3D modes

Your computer supports both 2D and 3D content. If you are watching a 3D movie, you can switch to 2D mode at any time.

To switch from 3D to 2D:

1. Click the **2D/3D** button in the MediaSmart control panel. The image on the display appears as 2D content.
2. Remove your 3D glasses.

 **NOTE:** Click the **2D/3D** button again to switch back to 3D mode, and put your 3D glasses back on.

Settings for 2D and 3D modes

3D discs have either 3D-only content or both 2D and 3D content. Depending on the type of 3D disc you are watching, you may need to adjust the MediaSmart DVD settings to see all of the menus available on your disc.

The following settings are available:

- **Continue movie playback when switching between 2D and 3D modes** (factory default)—This setting provides uninterrupted movie playback when switching between 2D and 3D modes. This setting only supports 3D BD-J interactive content. If you have a disc with both 2D and 3D content, you will not be able to view the 2D main menu content in this setting.
- **Restart movie playback when switching between 2D and 3D modes**—This setting stops the movie playback and returns you to the main menu. You will be able to view both the 2D and 3D main menu content on the disc.


To change the 2D/3D switching settings:

1. Click the **Settings** icon on the bottom of the MediaSmart control panel.
The Settings window opens.
2. Click the **Advanced** tab.
3. Select either **Continue movie playback when switching between 2D and 3D modes** or **Restart movie playback when switching between 2D and 3D modes**.
4. Click **Apply**.

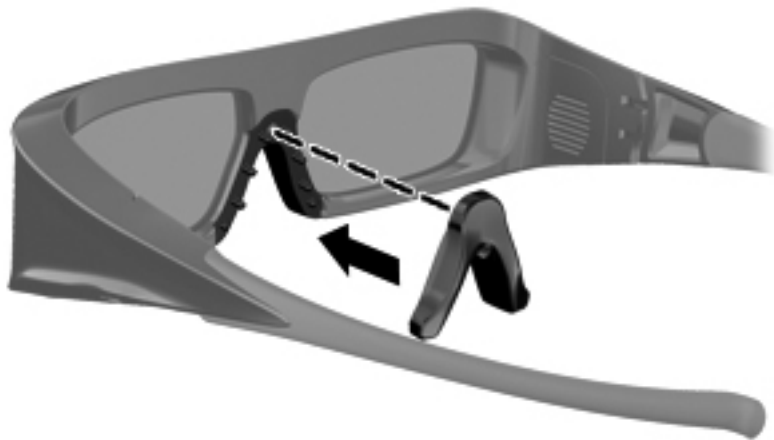
Caring for the 3D glasses

Using the nose pieces

The 3D glasses come with 3 nose pieces in different sizes. One nose piece is installed at the factory and two additional nose pieces ship with the glasses. Try on the glasses, and change the nose piece if needed to find a comfortable fit. You can also wear the glasses without a nose piece if needed.

 **NOTE:** The 3D glasses are designed to fit over most standard prescription glasses.

- ▲ To add a nose piece, insert the nose piece onto the glasses. To remove a nose piece, pull the nose piece away from the glasses.

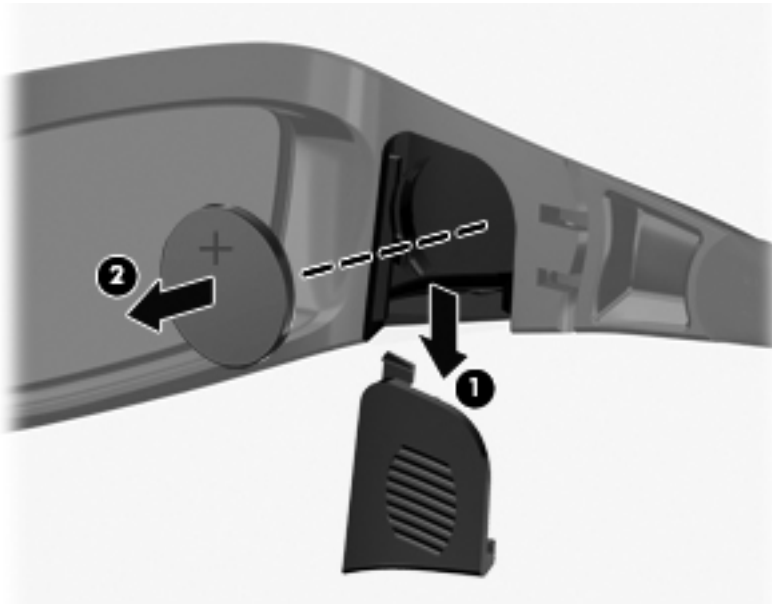


Replacing the battery

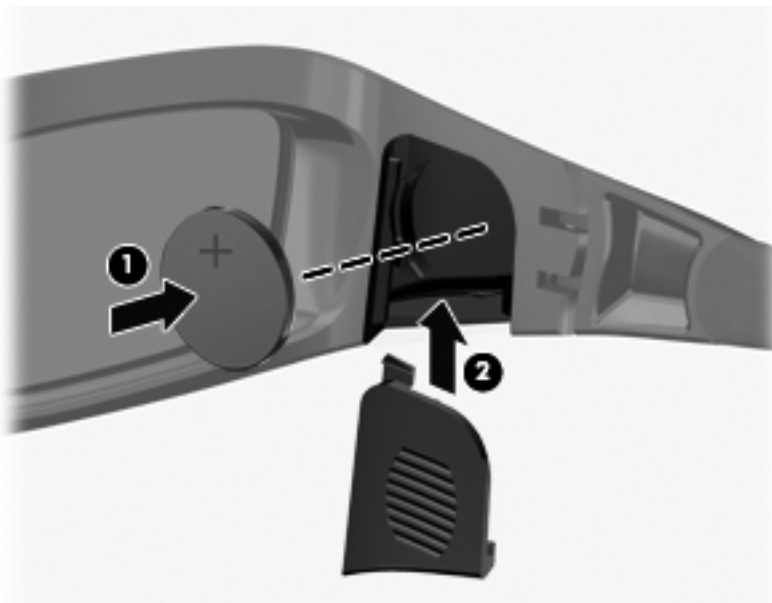
The battery in the 3D glasses ships preinstalled in the battery compartment and provides approximately 180 hours of 3D viewing time. HP recommends that the battery be replaced once a year. The glasses can stay in Standby mode for up to one year. The 3D glasses use a basic CR2032 type battery. These batteries can easily be replaced and can be purchased anywhere batteries are sold.

To replace the battery:

1. Slide the battery compartment cover (1) down, and then remove the used battery (2).



2. Insert the new battery (1) with the positive (+) side facing the battery compartment cover, and then replace the battery compartment cover (2).



Cleaning the 3D glasses

To remove smudges and lint, frequently clean the 3D glasses with a soft, damp, lint-free cloth. The cloth can be dampened with mild cleaning agents with less than 10% alcohol.

△ **CAUTION:** To prevent permanent damage to the 3D glasses:

Do not use paper-based towels, because they can scratch the lenses.

Do not spray cleaning fluids or chemicals directly on the lenses.

Do not use ammonia-based cleaning products.

Handling the glasses

The 3D glasses are durable but sensitive to physical pressure, and need to be handled with care. The 3D glasses should be held by the frame in order to avoid getting fingerprints on the lenses. When you are not using the 3D glasses, store them in the protective bag.


△ **CAUTION:** To prevent the lenses from cracking, never twist or rotate the 3D glasses.

Troubleshooting and frequently asked questions

I cannot see 3D content

If you are watching in 3D mode and cannot see 3D content, HP recommends that you not use the 3D glasses. Refer to the information below and [3D safety information on page 7](#). Consult a physician if you suspect a physical problem seeing stereoscopic 3D.

- You may be trying to watch 3D content in 2D mode.
- The battery in the 3D glasses may need to be replaced. Refer to [Replacing the battery on page 19](#) for additional information.
- The IR emitters on the computer display may be obstructed. For optimal transmission, keep the areas immediately around the IR emitters free from obstructions. For information on the location of the IR emitters, refer to [Getting to know your computer on page 23](#).
- You may be sitting too far from the computer display. You should be no more than approximately **1.5 meters** (5 feet) from the display when viewing 3D content.

 **NOTE:** Depending on your viewing angle, the operational distance from the display can vary.

What 3D formats are supported on my computer

The following 3D formats are supported on your computer:

- Blu-ray 3D movies
- 3D MPEG 4 MVC files

Refer to [Using HP MediaSmart on page 14](#) for additional information.

Can I play stereoscopic 3D games on my computer

You may need to purchase additional software to view stereoscopic 3D games. Contact the gaming software manufacturer for more information.

Can I wear the 3D glasses to a 3D movie in a movie theater

The 3D glasses are optimized to work with the HP ENVY¹⁷ 3D computer and integrated IR emitters. The 3D glasses are not guaranteed to work optimally in any other 3D environment.

Can I wear my 3D glasses over my prescription glasses

Yes. The 3D glasses are designed to fit over most prescription glasses. If you normally wear glasses when viewing the computer screen, keep them on and put the 3D glasses on over your eyewear. You can use the additional replaceable nose pieces to find a comfortable fit. Refer to [Using the HP 3D Active Shutter Glasses on page 10](#) for more information.

How do I clean my 3D glasses

Use a soft, damp, lint-free cloth to clean your 3D glasses. Refer to [Caring for the 3D glasses on page 18](#) for more information.

How close do I need to be to the computer to view 3D content

The effective range of the integrated IR emitters is approximately **1.5 meters** (5 feet).

I see flickering when watching 3D content

Flickering in your 3D glasses can be caused by one of the following:

- Differences in the frequencies at which 3D Cinema Technology and the lighting in your room operate. This type of flickering can be avoided by turning off the lights or changing the stereoscopic 3D refresh rate.
- Low battery in the glasses. You should try replacing the battery.

Can I use the 3D glasses in bright sunlight next to a window

The stereoscopic 3D effect works best in a darkened room.

What type of batteries do I need for the 3D glasses

The 3D glasses use a basic CR2032 type battery. These batteries can easily be replaced and can be purchased anywhere batteries are sold. Refer to [Replacing the battery on page 19](#) for more information.

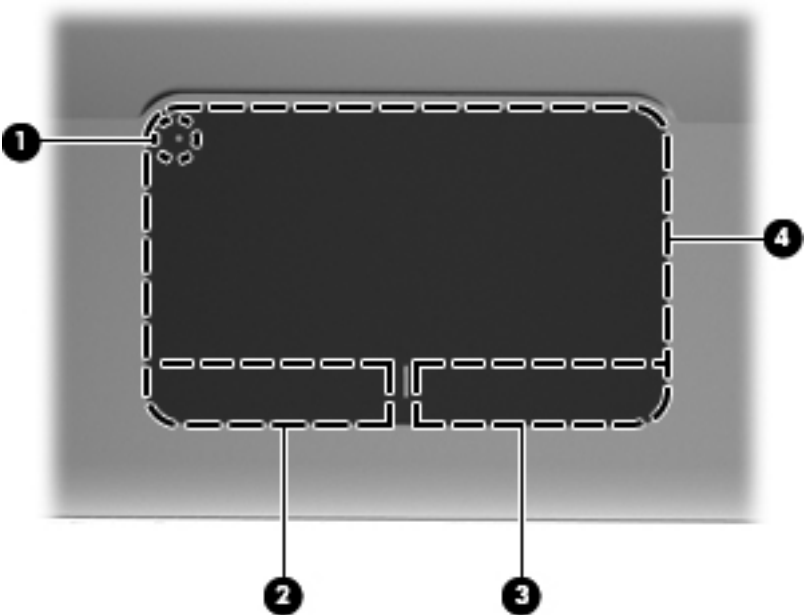
3 Getting to know your computer


The following sections are included in this chapter:

- [Top](#)
- [Front](#)
- [Right-side](#)
- [Left-side](#)
- [Display](#)
- [Bottom](#)

Top

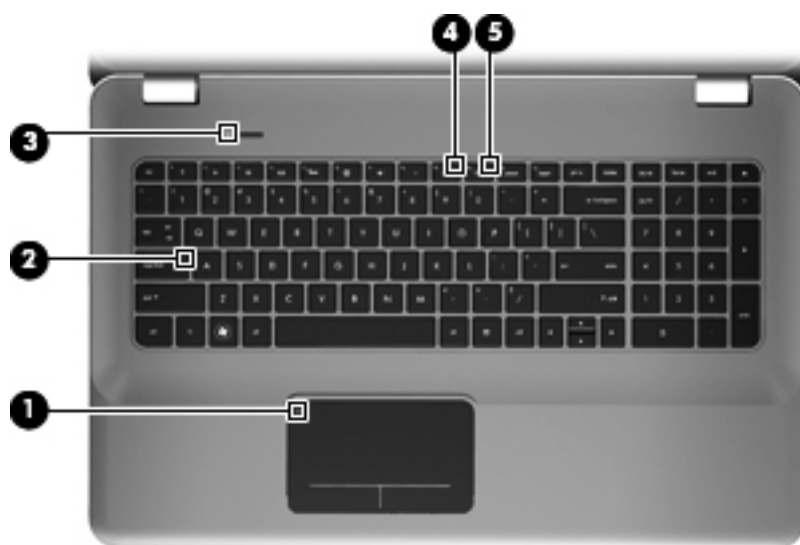
TouchPad







Component	Description
(1)  TouchPad light	Turns the TouchPad on and off. Quickly double-tap the TouchPad light to turn the TouchPad on and off.

Component		Description
(2)	Left TouchPad button	Functions like the left button on an external mouse.
(3)	Right TouchPad button	Functions like the right button on an external mouse.
(4)	TouchPad zone	Moves the pointer and selects or activates items on the screen.


Lights



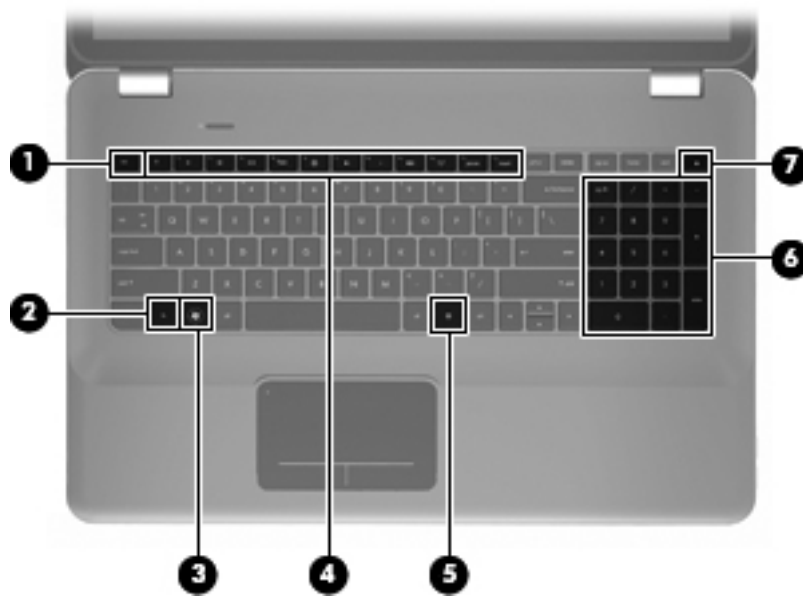
Component		Description
(1)	 TouchPad light	<ul style="list-style-type: none"> Amber: The TouchPad is off. Off: The TouchPad is on.
(2)	Caps lock light	<ul style="list-style-type: none"> White: Caps lock is on. Off: Caps lock is off.
(3)	 Power light	<ul style="list-style-type: none"> White: The computer is on. Blinking white: The computer is in the Sleep state. Off: The computer is off or in Hibernation.
(4)	 Mute light	<ul style="list-style-type: none"> Amber: Computer sound is off. Off: Computer sound is on.
(5)	 Wireless light	<ul style="list-style-type: none"> White: An integrated wireless device, such as a wireless local area network (WLAN) device, is on. <p>NOTE: Wireless devices are enabled at the factory.</p> <ul style="list-style-type: none"> Amber: All wireless devices are off.




Button



Component		Description
	Power button	<ul style="list-style-type: none">• 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. <p>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.</p> <p>To learn more about your power settings, select Start > Control Panel > System and Security > Power Options, or refer to the <i>HP Notebook Reference Guide</i>.</p>



Keys



Component		Description
(1)	<code>esc</code> key	Displays system information when pressed in combination with the <code>fn</code> key.
(2)	<code>fn</code> key	Executes frequently used system functions when pressed in combination with the <code>b</code> key or the <code>esc</code> key.
(3)	 Windows logo key	Displays the Windows Start menu.
(4)	Action keys	Execute frequently used system functions.
(5)	 Windows applications key	Displays a shortcut menu for items beneath the pointer.
(6)	Integrated numeric keypad	Can be used like an external numeric keypad.
(7)	 Optical drive eject key	Ejects the optical disc from the optical drive.




Front



Component		Description
(1)	 Power light	<ul style="list-style-type: none">• White: The computer is on.• Blinking white: The computer is in the Sleep state.• Off: The computer is off or in Hibernation.
(2)	 Drive light	<ul style="list-style-type: none">• Blinking white: The hard drive is being accessed.• Amber: HP ProtectSmart Hard Drive Protection has temporarily parked the hard drive. <p>NOTE: For information on HP ProtectSmart Hard Drive Protection, refer to the <i>HP Notebook Reference Guide</i>.</p>
(3)	Speakers (2)	Produce sound.







Right-side





Component		Description
(1)	 USB ports (2)	Connect optional USB devices.
(2)	Digital Media Slot	Supports the following digital card formats: <ul style="list-style-type: none"> • Memory Stick • Memory Stick Pro • MultiMediaCard • Secure Digital (SD) Memory Card • Secure Digital High Capacity Memory Card • xD-Picture Card
(3)	Optical drive	Reads and writes to an optical disc. CAUTION: Do not insert 8-cm optical discs into the optical drive. This can cause damage to the computer.
(4)	Battery light	<ul style="list-style-type: none"> • Off: The computer is running on battery power. • Blinking amber: The battery has reached a low battery level, a critical battery level, or there is a battery error. • Amber: A battery is charging. • White: The computer is connected to external power and the battery is fully charged.
(5)	 Power connector	Connects an AC adapter.
(6)	 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.

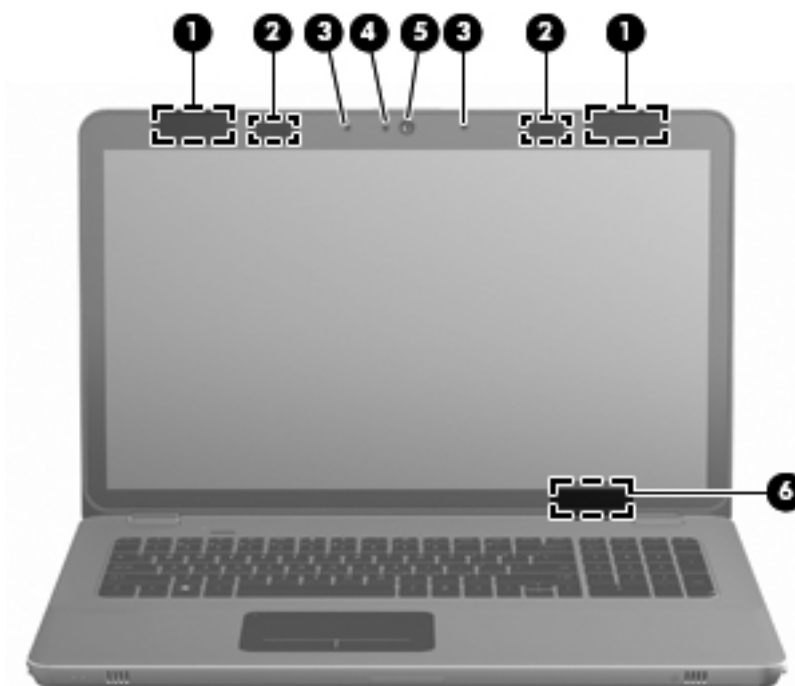
Left-side



Component		Description
(1)	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.
(2)	 External monitor port	Connects an external VGA monitor or projector.
(3)	 RJ-45 (network) jack	Connects a network cable.
(4)	 Mini DisplayPort	Connects an optional digital display device, such as a high-performance monitor or projector.
(5)	 HDMI port	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio component.
(6)	 eSATA/USB port	Connects a high-performance eSATA component, such as an eSATA external hard drive, or connects an optional USB 2.0 device.
(7)	 SuperSpeed USB port	Connects an optional USB 3.0 device and provides enhanced USB power performance. NOTE: The SuperSpeed USB port is also compatible with USB 1.0 and 2.0 devices.

Component	Description
<p>(8)  Audio-out (headphone) jack/Audio-in (microphone) jack</p>	<p>Produces sound when connected to optional powered stereo speakers, headphones, earbuds, a headset, or television audio. Also connects an optional headset microphone.</p> <p>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 <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>
<p>(9)  Audio-out (headphone) jack</p>	<p>Produces sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.</p> <p>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 <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p>NOTE: When a device is connected to the jack, the computer speakers are disabled.</p>

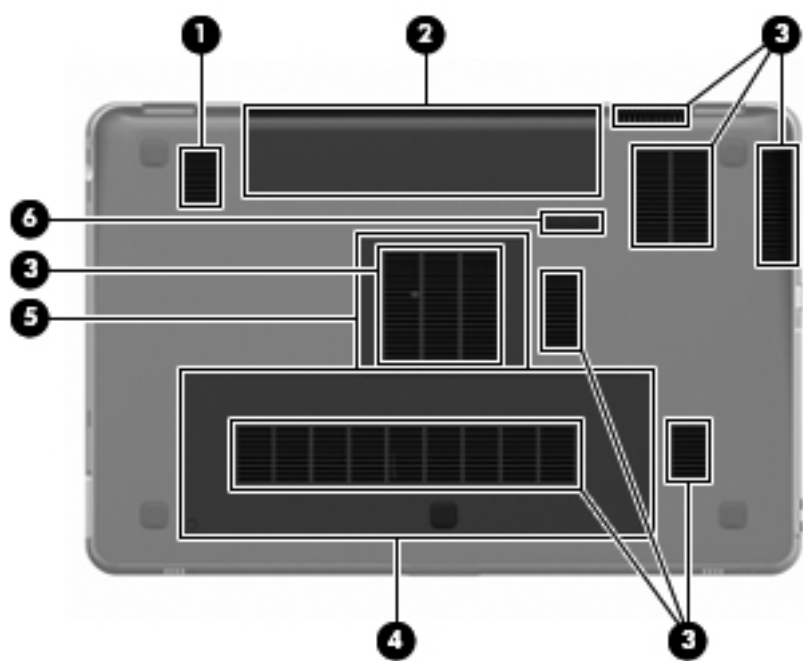
Display






Component		Description
(1)	WLAN antennas (2)*	Send and receive wireless signals to communicate with wireless local area networks (WLAN).
(2)	IR emitters*	Wirelessly synchronize the 3D glasses with the computer display.
(3)	Internal microphones (2)	Record sound.
(4)	Webcam light	On: The webcam is in use.
(5)	Webcam	Records video and captures still photographs. To access the webcam, select Start > All Programs > HP > HP MediaSmart > HP MediaSmart Webcam .
(6)	Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on. NOTE: The internal display switch is not visible from the outside of the computer.

*The antennas and IR emitters are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas and IR emitters 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)	Subwoofer	Contains the subwoofer speaker.
(2)	Battery bay	Holds the battery. NOTE: The battery is preinstalled in the battery bay at the factory.
(3)	Vents (7)	Enable 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)	 Hard drive bay	Holds the hard drive.
(5)	 Memory module compartment	Holds the memory modules.
(6)	 Battery release latch	Releases the battery from the battery bay.

4 Networking

The following sections are included in this chapter:

- [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 supports two types of Internet access:

- **Wireless**—For mobile Internet access, you can use a wireless connection. Refer to [Connecting to an existing WLAN on page 34](#) or [Setting up a new WLAN network on page 36](#).
- **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.

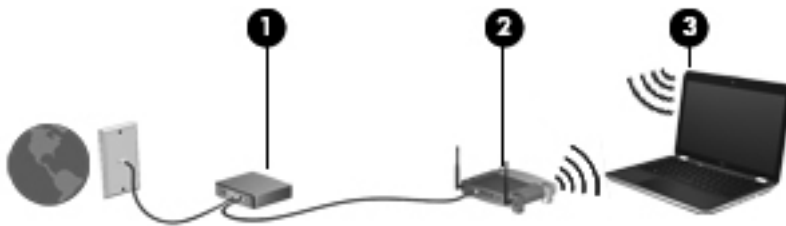
Setting up a new WLAN network

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

The following sections are included in this chapter:


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

Using the keyboard

Using the action keys




Action keys are customized actions that are assigned to specific keys at the top of the keyboard.








To use an action key, press and hold this key to activate the assigned action.

 **NOTE:** Depending on the program you are using, pressing **fn** and one of the action keys will open a specific shortcut menu within that application.

NOTE: You can disable the action key feature in Setup Utility (BIOS) and revert back to pressing the **fn** key and one of the action keys to activate the assigned action.



Icon	Action	Description
	Help and Support	Opens Help and Support. Help and Support provides tutorials, answers to questions, and product updates.
	Screen brightness down	Decreases the screen brightness level.
	Screen brightness up	Increases the screen brightness level.

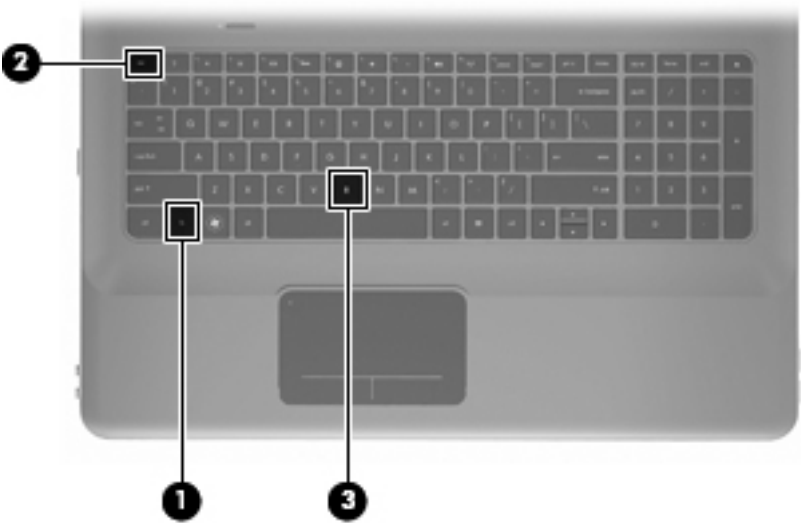
Icon	Action	Description
	Switch screen image	<p>Switches the screen image among display devices connected to the system. For example, if a monitor is connected to the computer, this key alternates the screen image from computer display to monitor display to simultaneous display on both the computer and the monitor.</p> <p>Most external monitors receive video information from the computer using the external VGA video standard. The switch screen image key can also alternate images among other devices that are receiving video information from the computer.</p> <p>The computer also supports multiple display outputs. When you press the switch screen image key, you can select from four different video outputs:</p> <ul style="list-style-type: none"> • Computer only mode • Duplicate mode • Extend mode • Projector only mode
	Keyboard backlight	<p>Turns the keyboard backlight on and off.</p> <p>NOTE: The keyboard backlight is turned on at the factory. To extend battery power, turn off the keyboard backlight.</p>
	Web	<p>Opens a Web browser.</p> <p>NOTE: Until you set up your Internet or network services, this key opens the Internet Connection Wizard.</p>
	Volume down	Decreases speaker volume.
	Volume up	Increases speaker volume.
	Mute	Mutes or restores speaker sound.
	Wireless	<p>Turns the wireless feature on or off.</p> <p>NOTE: This key does not establish a wireless connection. To establish a wireless connection, a wireless network must be set up.</p>
prt sc	Print screen	Takes a snapshot or picture of your computer screen and copies it to the clipboard.

Using the hotkeys

A hotkey is a combination of the **fn** key (1) and either the **esc** key (2) or the **b** key (3).

To use a hotkey:

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



Function	Hotkey	Description
Display system information.	fn+esc	Displays information about system hardware components and the system BIOS version number.
Control the bass settings.	fn+b	<p>Increases or decreases the Beats Audio bass settings.</p> <p>Beats Audio is an enhanced audio profile that provides a deep, controlled bass while maintaining a clear sound. Beats Audio is enabled by default.</p> <p>You can also view and control the bass settings through the Windows operating system. Select Start > Control Panel > Hardware and Sound > HP Beats Audio Control Panel > Equalization to view and control the bass properties.</p>


Using the keypad

Using the integrated numeric keypad



Component	Description
Integrated numeric keypad	Can be used like an external numeric keypad. NOTE: The computer does not have a num lock key.

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**.

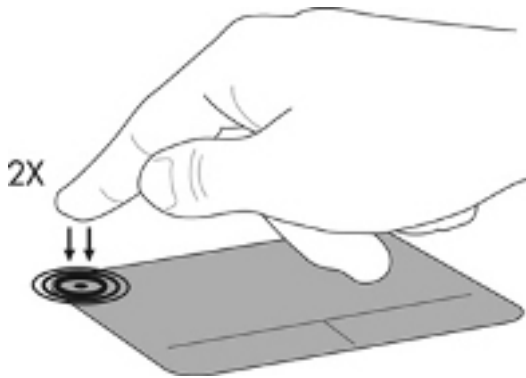
Using the TouchPad

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 corresponding buttons on an external mouse.

Turning the TouchPad off and on

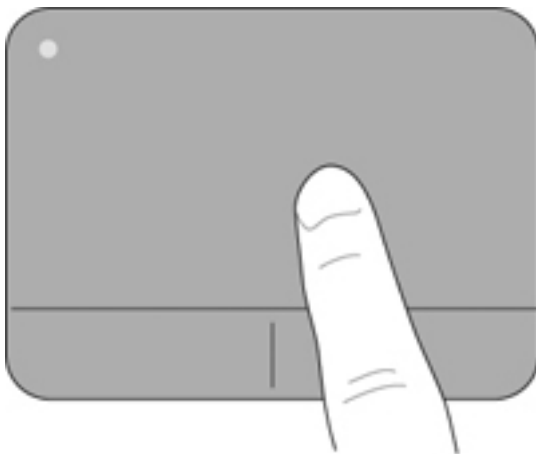
To turn the TouchPad off and on, quickly double-tap the TouchPad light.

 **NOTE:** If the TouchPad light is amber, the TouchPad is off.



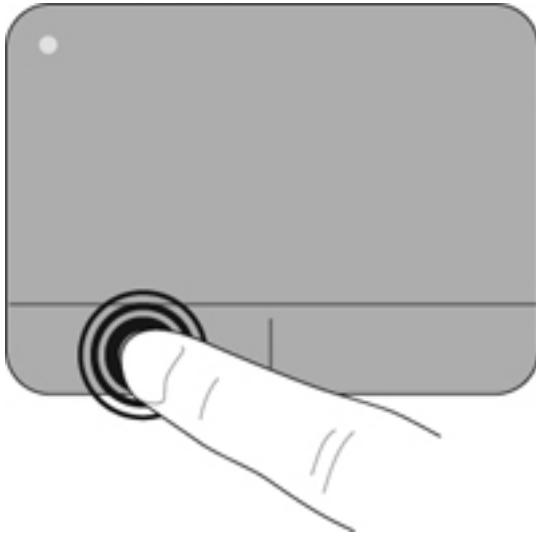
Navigating

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.


To turn the gestures on and off:

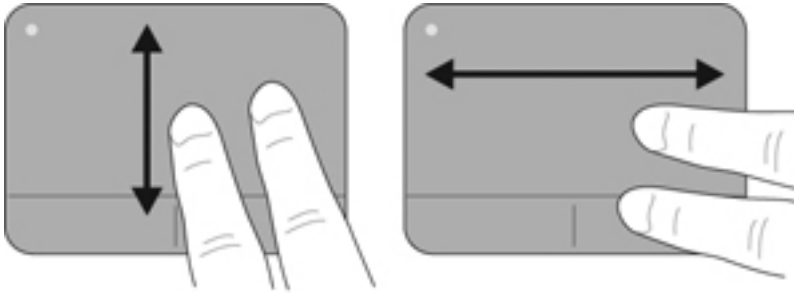
1. Double-click the **Synaptics** icon  in the notification area, at the far right of the taskbar, and then click the **Device Settings** tab.
2. Select the device, and then click **Settings**.
3. Select the gesture that you want to turn on or off.
4. Click **Apply**, and then click **OK**.

 **NOTE:** The computer also supports additional TouchPad features. To view and turn on these features, double-click the **Synaptics** icon in the notification area, at the far right of the taskbar, and then click the **Device Settings** tab. Select the device, and then click **Settings**.

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 drag them across the TouchPad in an up, down, left, or right motion.

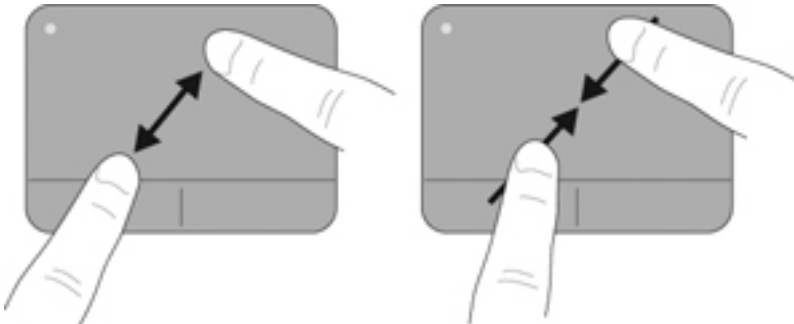
 **NOTE:** Scrolling speed is controlled by finger speed.



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.



6 Maintenance

The following sections are included in this chapter:

- [Removing or inserting the battery](#)
- [Replacing or upgrading the hard drive](#)
- [Adding or replacing memory modules](#)
- [Routine care](#)
- [Updating programs and drivers](#)

Removing or inserting the battery

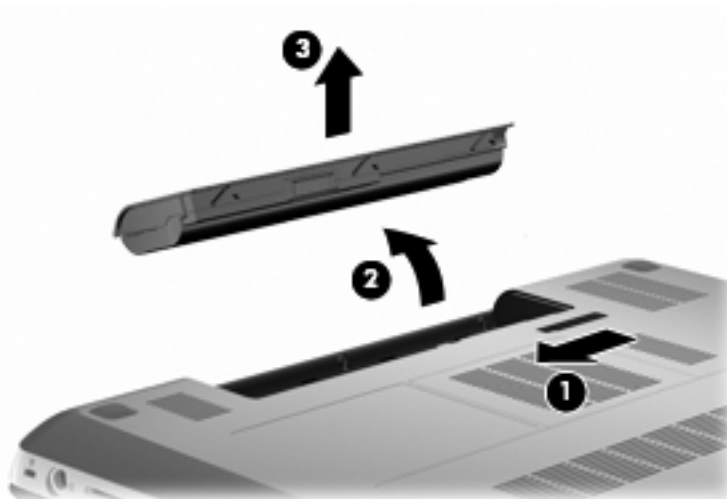
 **NOTE:** The battery is preinstalled in the battery bay at the factory.

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

Removing 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.

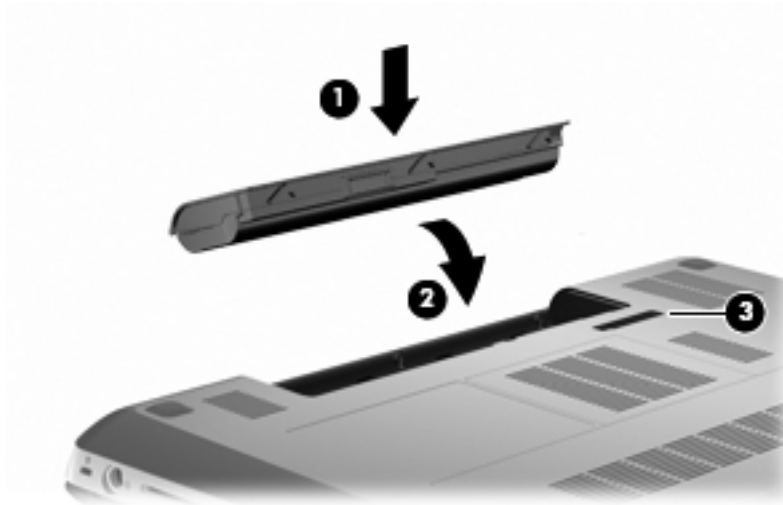
1. Slide the battery release latch **(1)** to release the battery.
2. Pivot the battery **(2)** upward and remove it from the computer **(3)**.



Inserting the battery

- ▲ Align the tabs on the battery with the notches on the outer edge of the battery bay **(1)**, and rotate the battery into the battery bay until it is seated **(2)**.

The battery release latch **(3)** automatically locks the battery into place.



Replacing or upgrading the hard drive

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

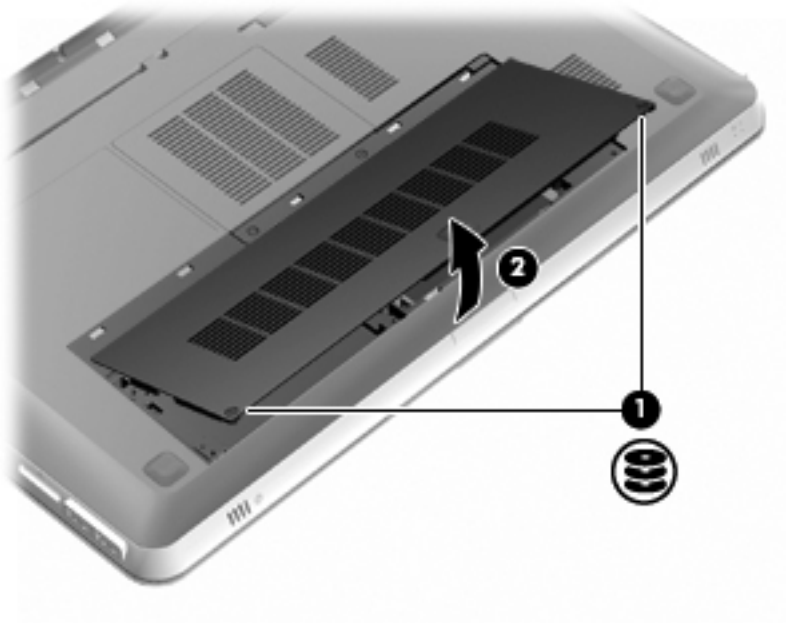
Shut down the computer before removing the hard drive from the hard drive bay. Do not remove the hard drive while the computer is on, in the Sleep state, or in Hibernation.

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.

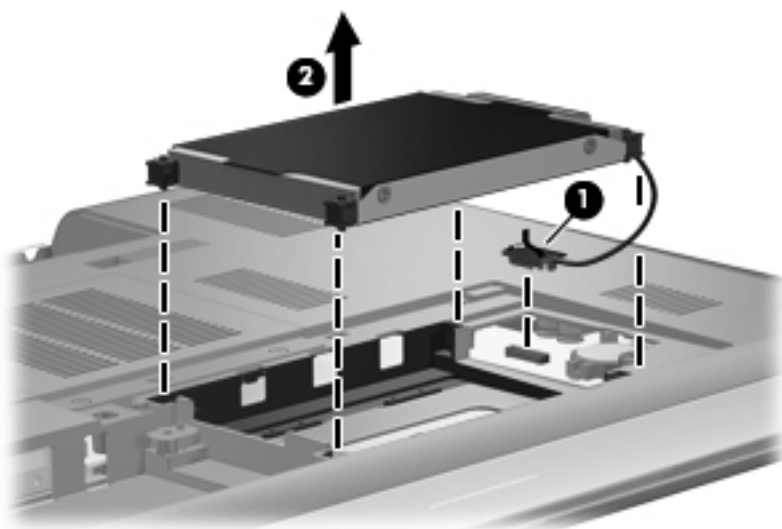
📝 **NOTE:** Select computer models can support up to two drives. To view the drives installed on the computer, select **Start > Computer**.

Removing the hard drive

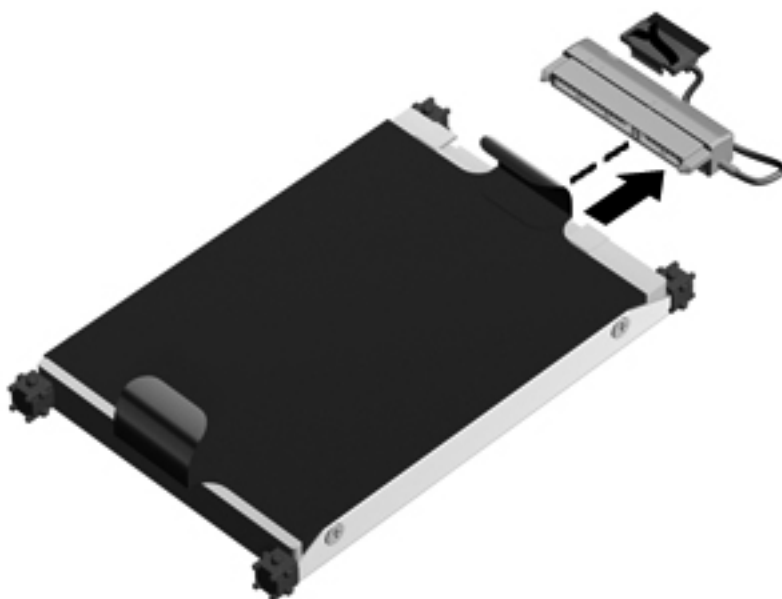
1. Save your work and shut down the computer.
2. Disconnect all external devices connected to the computer.
3. Unplug the power cord from the AC outlet and remove the battery.
4. Loosen the 2 hard drive cover screws (1).
5. Remove the hard drive cover (2).



6. Disconnect the hard drive cable (1) from the computer, and then lift the hard drive (2) out of the hard drive bay.

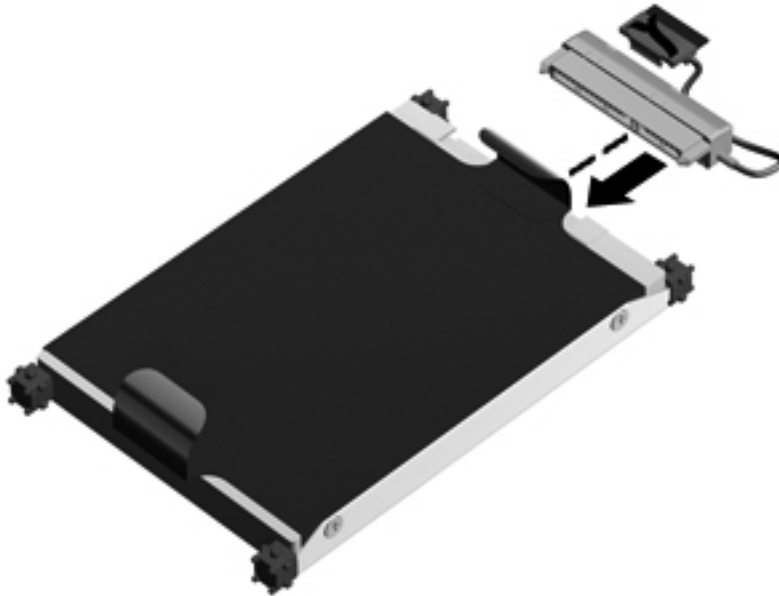


7. Disconnect the hard drive cable from the hard drive.

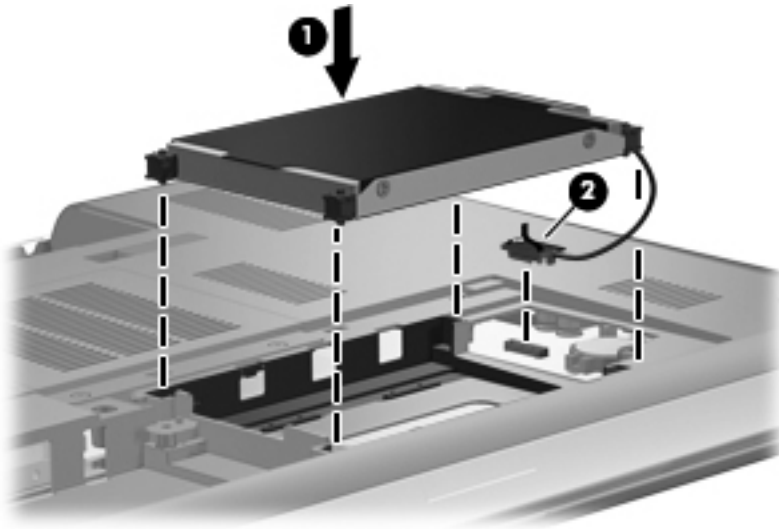


Installing a hard drive

1. Connect the hard drive cable to the hard drive.

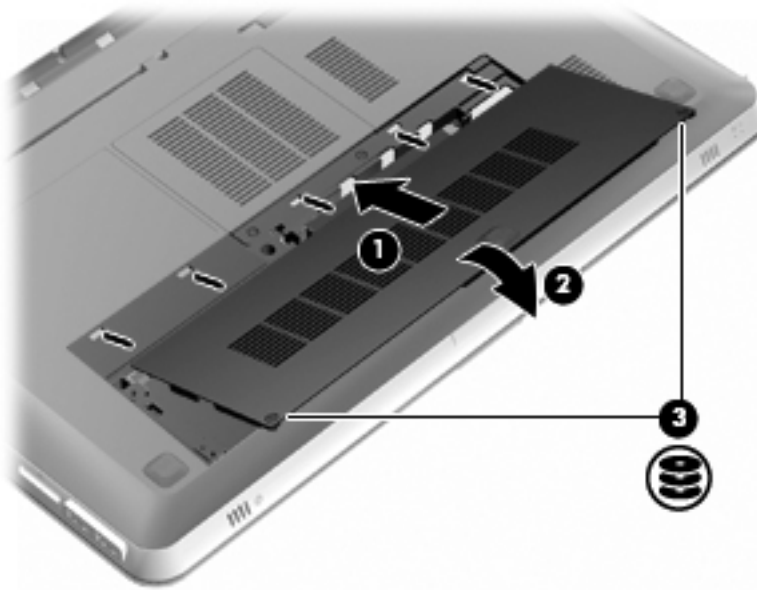


2. Insert the hard drive (1) into the hard drive bay, and then connect the hard drive cable (2) to the computer.



3. Align the tabs (1) on the hard drive cover with the notches on the computer.
4. Close the cover (2).

5. Tighten the hard drive cover screws (3).



6. Replace the battery.
7. Reconnect external power and external devices.
8. Turn on the computer.

Adding or replacing memory modules

The computer has two memory module slots. The memory module slots are located on the bottom of the computer under the hard drive cover. The memory capacity of the computer can be upgraded by adding a memory module or replacing the existing memory module in one of the memory module slots.

-
- ⚠ **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:** To use a dual-channel configuration when adding a second memory module, be sure that both memory modules are the same capacity.
-

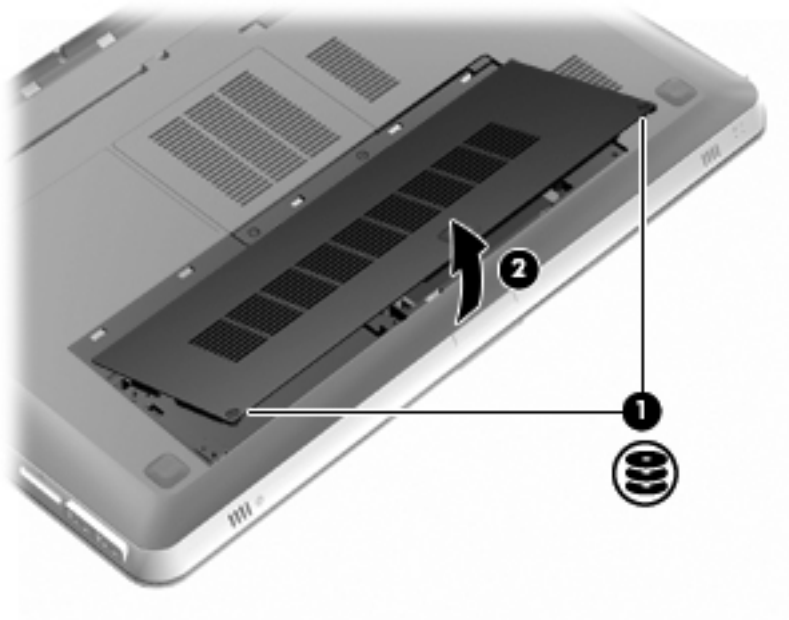
To add or replace a memory module:

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

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

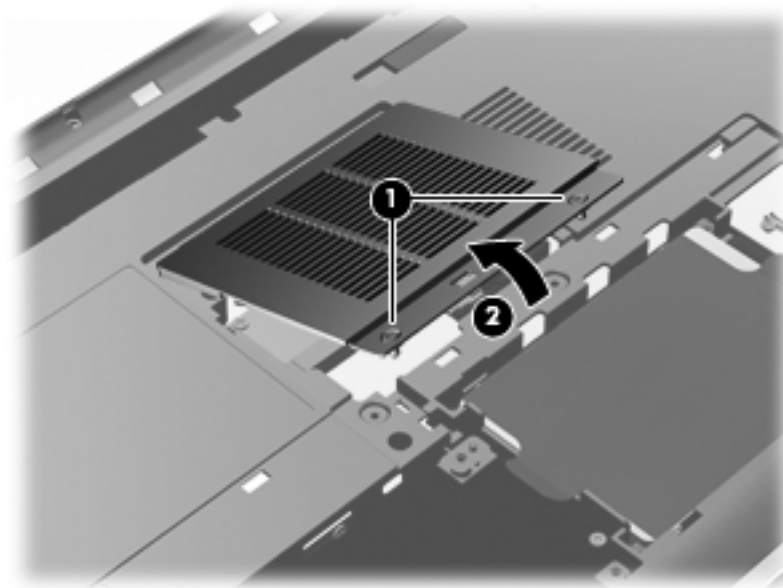
If you are not sure whether the computer is off or in Hibernation, turn the computer on by pressing the power button. Then shut down the computer through the operating system.

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 and remove the battery.
4. Remove the hard drive cover.
 - a. Loosen the 2 hard drive cover screws (1).
 - b. Remove the hard drive cover (2).



5. Remove the memory module compartment cover.
 - a. Loosen the 2 memory module compartment cover screws (1).

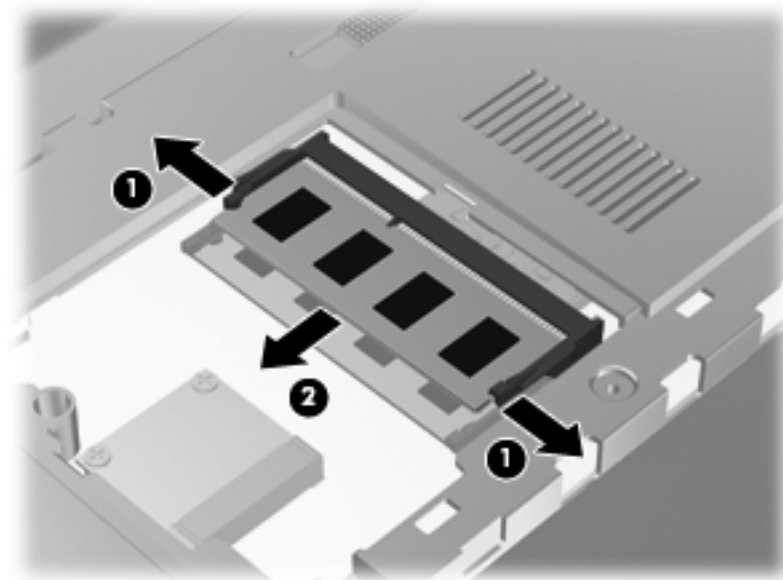
- b. Remove the memory module compartment cover (2).



- 6. 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 module out of the memory module slot.

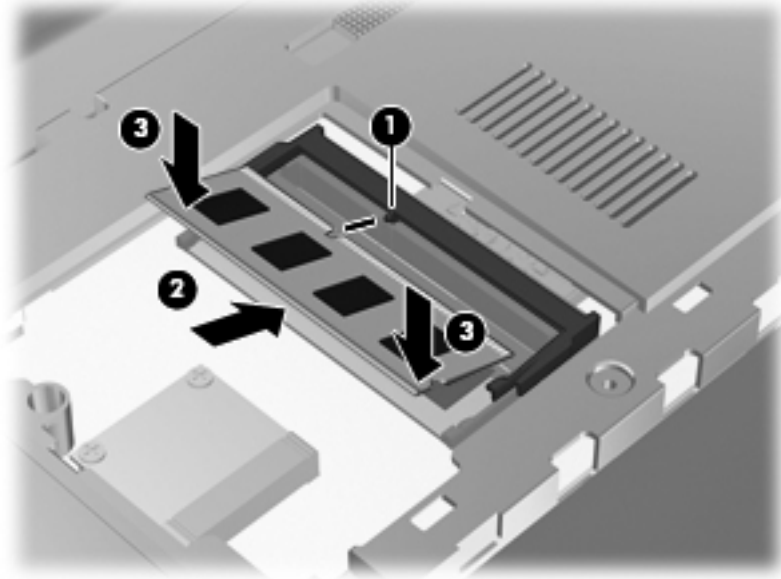
△ **CAUTION:** To prevent damage to the memory module, hold the memory module by the edges only. Do not touch the components on the memory module. To protect a memory module after removal, place it in an electrostatic-safe container.



- 7. Insert a new memory module:

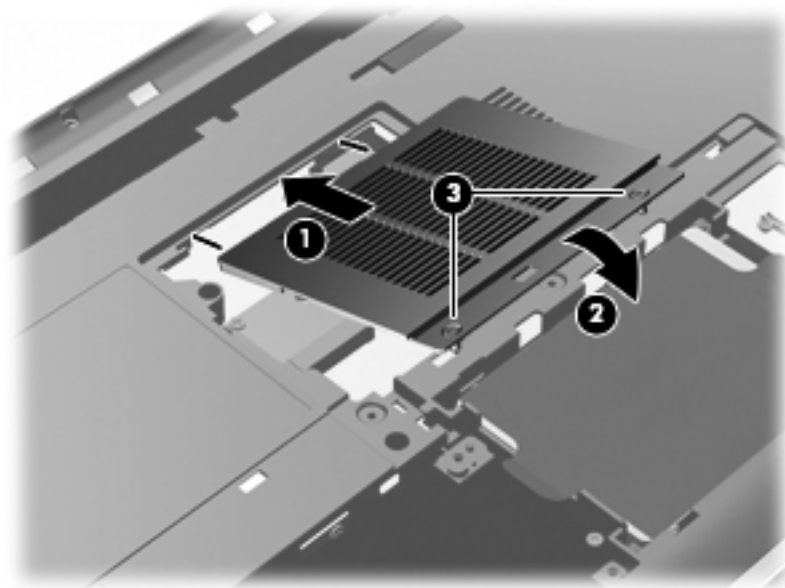
△ **CAUTION:** To prevent damage to the memory module, hold the memory module by the edges only. Do not touch the components on the memory module, and do not bend the memory module.

- 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.



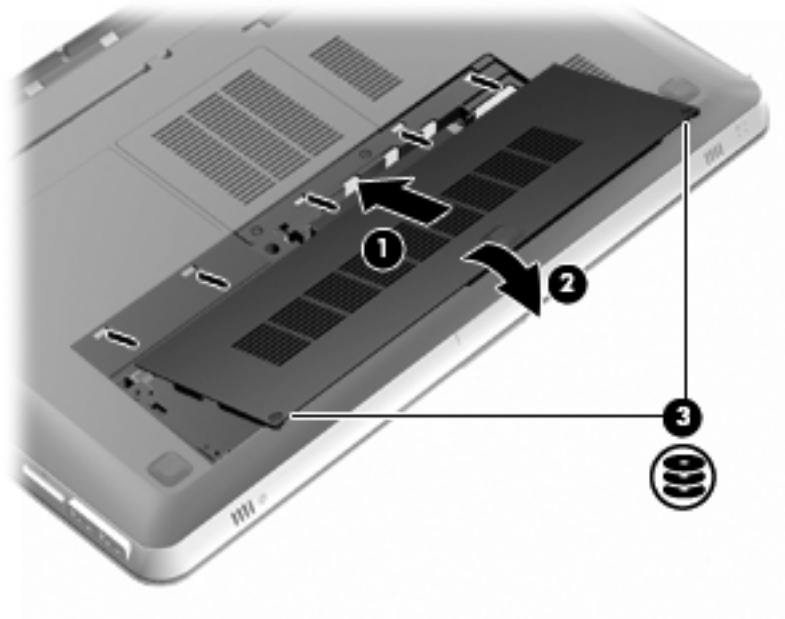
8. Replace the memory module compartment cover.
 - a. Align the tabs **(1)** on the memory module compartment cover with the notches on the computer.
 - b. Close the cover **(2)**.

- c. Tighten the 2 memory module compartment cover screws (3).



9. Replace the hard drive cover.

- a. Align the tabs (1) on the hard drive cover with the notches on the computer.
- b. Close the cover (2).
- c. Tighten the 2 hard drive cover screws (3).



10. Replace the battery.

11. Reconnect external power and external devices.

12. Turn on the computer.

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.

Updating programs and drivers

HP recommends that you update your programs and drivers on a regular basis. 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.

7 Backup and recovery

The following sections are included in this chapter:

- [Recovery discs](#)
- [Performing a system recovery](#)
- [Backing up your information](#)

Recovery after a system failure is as good as your most recent backup. HP recommends that you create recovery discs immediately after software setup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup.

Tools provided by the operating system and HP Recovery Manager software are designed to help you with the following tasks for safeguarding your information and restoring it in case of a computer failure:

- Creating a set of recovery discs (Recovery Manager software feature)
- Backing up your information
- Creating system restore points
- Recovering a program or driver
- Performing a full system recovery (from the partition or recovery discs)



NOTE: Recovery discs have been included if your computer does not have a partition. Use these discs to recover your operating system and software. To check for the presence of a recovery partition, click **Start**, right-click **Computer**, click **Manage**, and then click **Disk Management**. If the partition is present, an HP Recovery drive is listed in the window.

Recovery discs

HP recommends that you create recovery discs 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 recover using the recovery partition tools. Create these discs after setting up the computer for the first time.


Handle these discs carefully and keep them in a safe place. The software allows the creation of only one set of recovery discs.



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, BD-R (writable Blu-ray), or CD-R discs. DVDs and BDs have a much higher storage capacity than CDs. If you use CDs, up to 20 discs may be required, whereas only a few DVDs or BDs are required.

 **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 can be created per computer.
- Number each disc before inserting it into the optical drive.
- If necessary, you can exit the program before you have finished creating the recovery discs. The next time you open Recovery Manager, you will be prompted to continue the disc creation process.

To create a set of recovery discs:

1. Select **Start > All Programs > Recovery Manager > Recovery Disc Creation**.
2. Follow the on-screen instructions.

Performing a system recovery

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

Note the following when performing a system recovery:

- You can recover only files that you have previously backed up. HP recommends that you use HP Recovery Manager to create a set of recovery discs (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 recovers 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.

Recovering using the dedicated recovery partition (select models only)

On some models, you can perform a recovery from the partition on the hard drive, accessed by clicking **Start** or pressing the **f11** key. This type of recovery restores the computer to its factory condition without using recovery discs.

To restore the computer from the 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 (HP Recovery)” message is displayed on the screen.
2. Click **System Recovery** in the **Recovery Manager** window.
3. Follow the on-screen instructions.

Recovering using the recovery discs

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.
3. Follow the on-screen instructions.

Backing up your information

You should back up your computer files on a regular schedule to maintain a current backup. 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



NOTE: 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 optical disc or an external hard drive. For more information on using system restore points, refer to [Using system restore points on page 61](#).
- 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 reset your preferences.

Using Windows Backup and Restore


Windows Backup and Restore allows you to back up individual files or back up the entire computer image.

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 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 extensively 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

The following sections are included in this chapter:

- [Contacting Customer Support](#)
- [Labels](#)

Contacting Customer Support

If the information provided in this *Getting Started* 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.



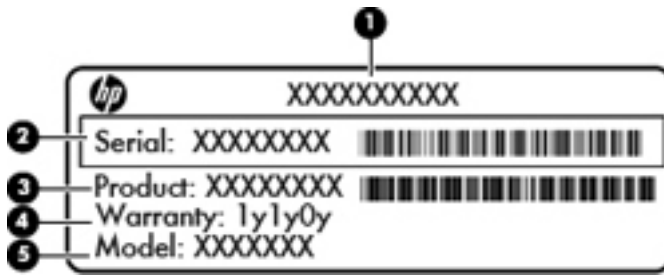
NOTE: When technical support chat is not available in a particular language, it is available in English.

- 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 affixed inside the battery bay.
- 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.

9 Specifications

The following sections are included in this chapter:

- [Input power](#)
- [Operating environment](#)


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	19.5 V dc @ 6.5 A - 120 W
Operating current	6.5 A

 **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 inside the battery bay.

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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