



GETTING STARTED



Getting Started

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Product notice

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

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For any further information or for requesting a full refund of the computer, please contact your local point of sale (the seller).

User guides

HP is committed to reducing the environmental impact of our products. As part of this effort, we provide user guides and learning centers on your computer hard drive in Help and Support. Additional support and updates to the user guides are available on the web.

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).

Table of contents

1 Welcome	1
What's new	2
Touch to Share (select models only)	2
Determining your Android phone OS version	2
Setting up Touch to Share	2
Using Touch to Share	3
Turning the NFC radio antenna on your computer on or off	3
Accessing settings	3
Audio	4
Volume dial	4
Beats Audio	5
Accessing Beats Audio Control Panel	5
Enabling and Disabling Beats Audio	6
HP Wireless Audio (select models only)	7
HP Wireless Audio Manager	7
Refreshing your software content with Intel Smart Connect Technology (select models only)	8
Radiance backlight keyboard and proximity sensor	8
Power	9
Factory-sealed battery	9
AC adapter	9
HP CoolSense	9
Intel Wireless Display	9
TPM Embedded Security device	10
Finding information	11
2 Getting to know your computer	13
Top	14
Imagepad	14
Lights	15
Button	16
Keys	17

Front	18
Right side	19
Left side	20
Display	22
Bottom	23
3 Networking	24
Using an Internet service provider (ISP)	25
Connecting to a wireless network	25
Connecting to an existing WLAN	26
Setting up a new WLAN network	26
Configuring a wireless router	27
Protecting your WLAN	27
4 Keyboard and pointing devices	28
Using the keyboard	28
Using the action keys	28
Using pointing devices	30
Setting pointing device preferences	30
Using the Imagepad	30
Turning the Imagepad off or on	30
Navigating	31
Selecting	31
Using Imagepad gestures	32
Scrolling	33
Pinching/Zooming	33
Rotating	34
Flicking	34
5 Backing up, restoring, and recovering	35
Creating backups	35
Creating recovery media to recover the original system	35
What you need to know	36
Creating the recovery media	36
Creating system restore points	36
What you need to know	37
Creating a system restore point	37
Backing up system and personal information	37
Tips for a successful backup	37
What you need to know	38

Creating a backup using Windows Backup and Restore	38
Restore and recovery	39
Restoring to a previous system restore point	39
Restoring specific files	39
Restoring specific files using Windows Backup and Restore	39
Recovering the original system using HP Recovery Manager	39
What you need to know	40
Recovering using HP Recovery partition	40
Recovering using the recovery media	41
Changing the computer boot order	41
6 Customer support	42
Contacting customer support	42
Labels	43
Identifying the labels	43
Locating the labels	44
7 Specifications	45
Input power	45
Operating environment	46
Index	47

1 Welcome

The following sections are included in this chapter:

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

Before you set up and register your computer, plug the AC adapter into the computer and connect to external power. With external power connected, press the power button to begin charging the battery, and then follow the on-screen instructions.

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

1. Set up your wired or wireless network. For more information, see [Networking on page 24](#).
2. Create recovery discs or a recovery flash drive. For instructions, see [Backing up, restoring, and recovering on page 35](#).
3. Get to know your computer. See [Getting to know your computer on page 13](#) and [Keyboard and pointing devices on page 28](#).
4. Discover the software that is already loaded on the computer, by selecting **Start > All Programs**.

What's new

Touch to Share (select models only)

With HP Touch to Share, you can wirelessly share websites to and from your Near Field Communication (NFC)–compatible Android smart phone and your computer.



NOTE: Before starting Touch to Share, be sure that the computer is connected to the Internet.

Determining your Android phone OS version

The Touch to Share setup procedures vary based on the version of your Android phone.

To determine which OS version is installed on your phone, follow these steps:

1. Go to the **Settings** screen on your phone, and then tap **About Phone**.
2. Tap **Android version** to determine which OS is installed on your phone.

Setting up Touch to Share

If you have an Android 2.3 phone, follow these steps:

1. On your phone, go to **Settings > Wireless and Networks**, and then tap the **NFC** checkbox to enable.
2. On your computer, select **Start > All Programs > HP > HP Touch to Share**, and then follow the on-screen instructions to download and install the HP Touch to Share for Android app on your phone.
3. Open the website that you want to share on either your phone or computer.
4. Tap the home button on your phone, and then tap the **HP Touch to Share for Android** app.

If you have an Android 4.0 phone, follow these steps:

1. On your phone, go to **Settings > Wireless and Networks**, and then tap the **NFC** checkbox to enable.
2. On your computer, select **Start > All Programs > HP > HP Touch to Share** to open Touch to Share.

Using Touch to Share

1. Open the website that you want to share on either your phone or your computer.
2. Tap any part of your phone on the left palm rest of your computer. In a few seconds, the website you are viewing appears on either your computer display or your phone.

 **NOTE:** If a website is open on both devices, a dialog box will appear on each device after you tap your phone to the computer. Tap **Send** on the dialog box of the device from which you want to send the website.



Turning the NFC radio antenna on your computer on or off

To turn the NFC antenna on or off, follow these steps:

1. Select **Start > All Programs > HP > HP Touch to Share**.
 2. Click the **Gear** icon on the HP Touch to Share screen, and then click **On** or **Off**.
- or –
- ▲ Click the **Touch to Share** icon  in the notification area, at the far right of the taskbar, and then click **Turn NFC Radio On** or **Turn NFC Radio Off**.

Accessing settings

- ▲ Select **Start > All Programs > HP > HP Touch to Share**, and then click the **Gear** icon on the Touch to Share screen.
- or –
- ▲ Click the Touch to Share icon  in the notification area, at the far right of the taskbar. Click **Open HP Touch to Share**, and then click the **Gear** icon on the Touch to Share screen.

Audio

Volume dial

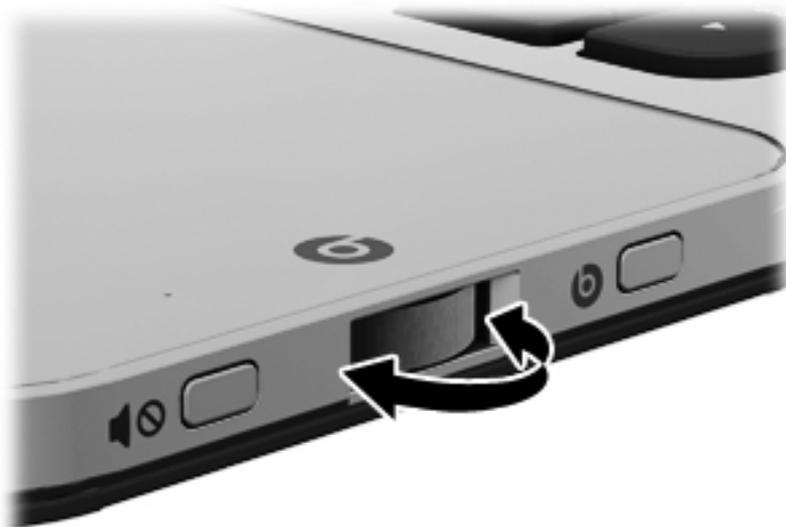
Like the dial on a stereo, the integrated volume dial controls speaker volume on the computer.

▲ To increase speaker volume, rotate the dial clockwise.

– or –

▲ To decrease speaker volume, rotate the dial counter-clockwise.

 **NOTE:** You can manually adjust the volume settings in Beats Audio Control Panel. For more information, see [Accessing Beats Audio Control Panel on page 5](#).



Beats Audio

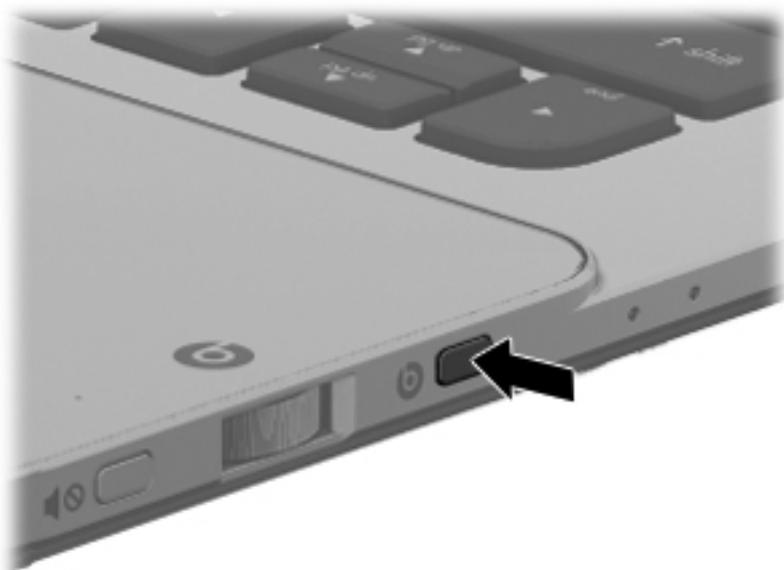
Beats Audio is an enhanced audio feature that provides a deep, controlled bass while maintaining a clear sound.

Accessing Beats Audio Control Panel

Beats Audio Control Panel allows you to view and manually control audio and bass settings.

To open Beats Audio Control Panel, do one of the following:

- ▲ Press the Beats Audio button  on the right side of the computer.

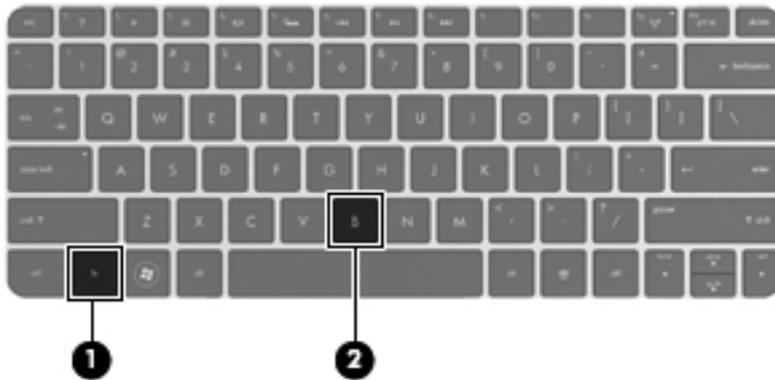


– or –

- ▲ Select **Start > Control Panel > Hardware and Sound > Beats Audio Control Panel**.

Enabling and Disabling Beats Audio

- ▲ To enable or disable Beats Audio, press the **fn** key (1) and the **b** key (2).

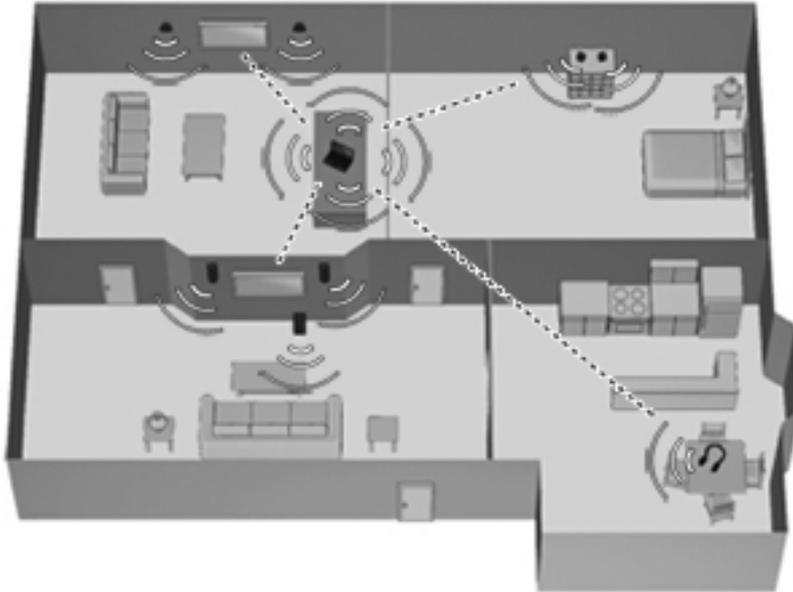


The following table explains the meaning of the Beats Audio icons that appear on the screen when you press the Beats Audio hot key (**fn+b**).

Icon	Meaning
	Beats Audio is enabled.
	Beats Audio is disabled.

HP Wireless Audio (select models only)

HP Wireless Audio helps you set up a wireless sound system in your home that streams audio from your computer to a compatible set of wireless-enabled speakers or other audio devices.



 **NOTE:** HP Wireless Audio uses KlearNet technology, and is not compatible with other wireless technologies. Your wireless audio devices must also be compatible with HP Wireless Audio and KlearNet technology. To purchase compatible wireless audio devices, go to <http://www.hp.com> or a retailer near you.

HP Wireless Audio Manager

With HP Wireless Audio Manager, you can add, remove, name, and group wireless-enabled devices in your home audio system.

 **NOTE:** Before you start HP Wireless Audio Manager, be sure that the wireless device is turned on (the wireless light on the **f12** key is white).

To access HP Wireless Audio Manager, do one of the following:

- ▲ Right-click the **HP Wireless Audio** icon in the notification area, at the far right of the taskbar, and then click **Launch Manager**.

 **NOTE:** If you want to conserve battery life, disable HP Wireless Audio when you are not using it: Right-click the icon in the notification area and select **Disable HP Wireless Audio**. To reenble the software, right-click the icon in the notification area and select **Enable HP Wireless Audio**.

– or –

- ▲ Select **Start > Control Panel > Hardware and Sound > HP Wireless Audio**.

 **NOTE:** For more information about HP Wireless Audio, see the software Help.

Refreshing your software content with Intel Smart Connect Technology (select models only)

When the computer is in the Sleep state, Intel® Smart Connect Technology periodically causes the computer to exit Sleep. Smart Connect then updates the content for certain open applications and reinitiates Sleep. As a result, your work is immediately available to you as soon as you exit Sleep. You do not have to wait while updates are downloaded.

- ▲ To enable this feature or manually adjust the settings, select **Start > All Programs > Intel > Intel Smart Connect Technology**.

For additional information and a list of supported applications, see the software Help.

Radiance backlight keyboard and proximity sensor

The radiance backlight keyboard feature, turned on at the factory, uses proximity sensor technology to automatically light up the keyboard when the sensors detect your presence in front of the computer. The proximity sensors, also turned on at the factory, automatically turn the radiance backlight keyboard feature on or off based on your location.

- ▲ To turn the radiance backlight keyboard feature off or on, press the [keyboard backlight](#) action key (f5).



- ▲ To switch between low, medium, and high brightness levels, press and hold the [keyboard backlight](#) action key (f5) in combination with either the up or down arrow key.
- ▲ To change the proximity sensor settings, select **Start > All Programs > HP > HP Proximity Sensor**.

Power

Factory-sealed battery

 **IMPORTANT:** Do not attempt to replace your computer battery, which is installed and sealed at the factory. A broken battery seal voids your warranty.

Your computer has an internal rechargeable battery that can be replaced only by an authorized service provider. For information about keeping your battery in good condition, see “Using Battery Power” in the *HP Notebook Reference Guide*. To access this guide, select **Start > Help and Support > User guides**.

To monitor the status of your battery, or if the battery is no longer holding a charge, run Battery Check in Help and Support. Select **Start > Help and Support > Troubleshoot > Power, Thermal and Mechanical > Battery Check**. If Battery Check indicates that your battery should be replaced, contact HP Customer Support.

 **NOTE:** If your computer is unresponsive and you are unable to use the recommended shut down procedures, press and hold the power button and the mute button to shut down your computer.

AC adapter

Connect the computer to AC power to charge the battery. The AC adapter also includes a USB charging port that charges USB devices, such as cell phones and MP3 players. The USB port provides only charging functionality, it does not power USB devices.

HP CoolSense

HP CoolSense  automatically detects when the computer is not in a stationary position and adjusts performance and fan settings to keep the surface temperature of your computer at the optimum level of comfort.

When HP CoolSense is off, the position of the computer is not detected and the performance and fan options remain at the factory setting. As a result, the surface temperature of the computer may be higher than it would be with HP CoolSense on.

To turn CoolSense off or on, follow these steps:

1. Select **Start > Control Panel > Hardware and Sound > HP CoolSense**.
2. Select the **On** or **Off** check box.

Intel Wireless Display

Intel Wireless Display allows you to transmit your computer content wirelessly to your receiver/display device, such as HDTV, monitor, projector, game console, Blu-ray player, or DVR, by using an optional wireless adapter (purchased separately). For details about using the wireless adapter, see the manufacturer's instructions.

▲ To open Intel Wireless Display, select **Start > All Programs > Intel WiDi**.

 **NOTE:** Before you can use the wireless display feature, the computer wireless feature must be turned on and the computer graphics must be set to power-saving mode.

TPM Embedded Security device

TPM (Trusted Platform Module) provides additional security for your computer. You can modify the TPM settings in Setup Utility. For information on changing Setup Utility settings, refer to the “Setup Utility (BIOS) and System Diagnostics” chapter in the *HP Notebook Reference Guide*.

The following table describes the TPM settings in Setup Utility.

Password	Function
TPM Embedded Security Device (select models only)	Available/Hidden <ul style="list-style-type: none">• If the administrator password is set, you can select Available.• If you select Hidden, the TPM device is not visible in the operating system.
TPM Status (select models only)	Enabled/Disabled <ul style="list-style-type: none">• If the administrator password is not set, or if TPM Security Device is set to Hidden, this entry is hidden.• This value reflects the current physical state for the TPM. The state is enabled or disabled by the Embedded Security State setting.
Embedded Security State (select models only)	No Operation/Disabled/Enabled <ul style="list-style-type: none">• If the administrator password is not set, or if TPM Security Device is set to Hidden, this entry is hidden.• You can enable or disable the TPM function.• The next time the computer is restarted after the TPM function is set, this value is set to No Operation.
TPM Set to Factory Defaults (select models only)	No/Yes <ul style="list-style-type: none">• If the administrator password is not set, or if the TPM Security Device is set to Hidden, this entry is hidden.• If the Embedded Security State is set to Enabled, select Yes to reset the TPM to factory settings, and then press f10 to save and exit. A confirmation message is displayed to Clear the TPM. Press f1 to reset the TPM, or press f2 to cancel the action.

Finding information

You have already used *Setup Instructions* to turn on the computer and locate this guide. For product details, how-to information, and more, use this table.

Resources	Contents
<i>Setup Instructions</i> poster	Overview of computer features.
<i>HP Notebook Reference Guide</i> To access this guide, select Start > Help and Support > User guides .	<ul style="list-style-type: none">• Power management features• Instructions for the following:<ul style="list-style-type: none">◦ Maximizing battery life◦ Using the multimedia features of the computer◦ Protecting the computer◦ Caring for the computer◦ Updating the software
Help and Support To access Help and Support, select Start > Help and Support . For more details, go to http://www.hp.com/support .	A broad range of how-to information and troubleshooting tips.
<i>Regulatory, Safety and Environmental Notices</i> To access this guide, select Start > Help and Support > User guides .	Important regulatory notices, including proper battery disposal information.
<i>Safety & Comfort Guide</i> To access this guide, select Start > Help and Support > User guides , or go to http://www.hp.com/ergo .	<ul style="list-style-type: none">• Proper workstation setup• Guidelines for posture and work habits that maximize your comfort and decrease your risk of injury• Electrical and mechanical safety information
<i>Worldwide Telephone Numbers</i> This booklet is provided with your computer.	HP Customer Support phone numbers.
HP website To access this website, go to http://www.hp.com/support .	<ul style="list-style-type: none">• Customer support information• Ordering parts and finding additional help• Software, driver, and BIOS updates• Information about accessories for the computer

Resources	Contents
<i>Limited Warranty*</i> To access the warranty, select Start > Help and Support > User guides , or go to http://www.hp.com/go/orderdocuments .	Specific warranty information about this computer.
<hr/> <p>*You can find the expressly provided HP Limited Warranty applicable to your product located with the user guides on your computer and/or on the CD/DVD provided in the box. In some countries/regions, HP may provide a printed HP Limited Warranty in the box. For some 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:</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>When you request a printed copy of your warranty, please include your product number, warranty period (found on your serial number label), name, and postal address.</p> <p>IMPORTANT: Do NOT return your HP product to the addresses above. For U.S. product support, go to http://www.hp.com/go/contactHP. For worldwide product support, go to http://welcome.hp.com/country/us/en/wwcontact_us.html.</p> <hr/>	

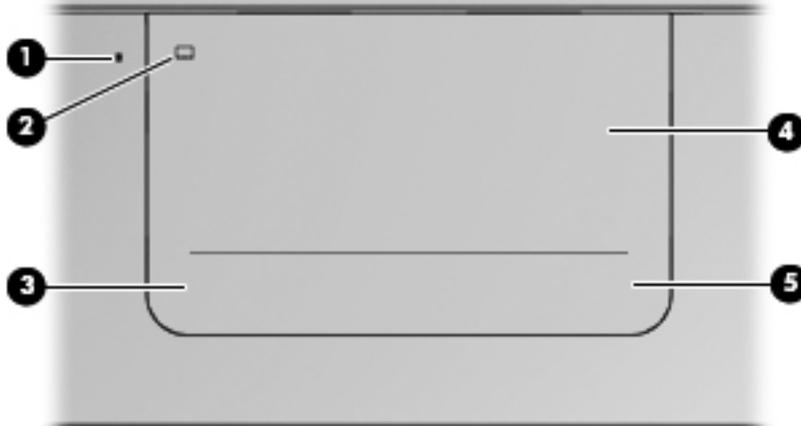
2 Getting to know your computer

The following sections are included in this chapter:

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

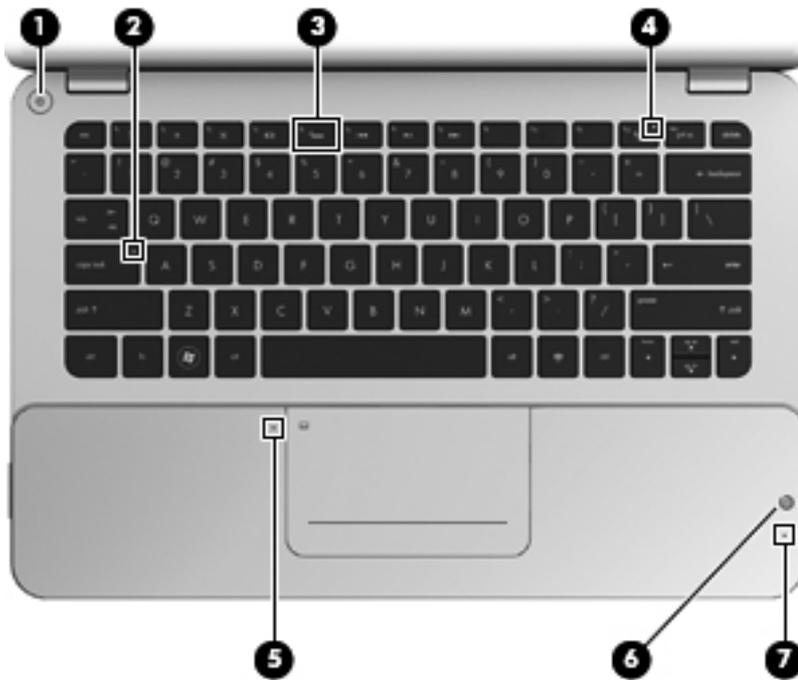
Top

Imagepad



Component	Description
(1) Imagepad light	<ul style="list-style-type: none">• Amber: The Imagepad is off.• Off: The Imagepad is on.
(2) Imagepad on/off button	Quickly double-tap this button to turn the Imagepad off or on.
(3) Left Imagepad button	The bottom left corner of the Imagepad functions like the left button on an external mouse.
(4) Imagepad zone	Moves the pointer and selects or activates items on the screen.
(5) Right Imagepad button	The bottom right corner of the Imagepad functions like the right button on an external mouse.

Lights



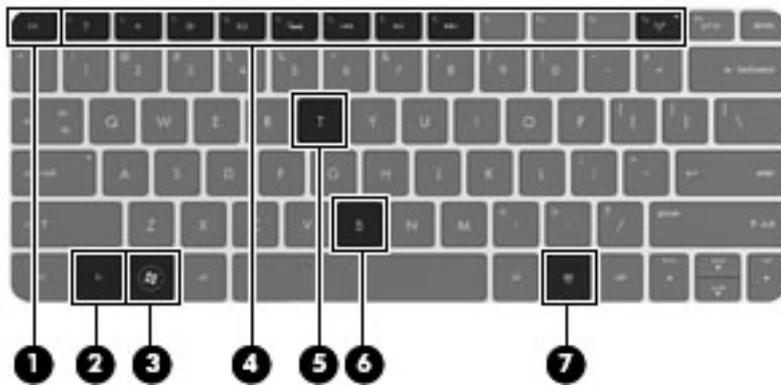
Component	Description
(1)  Power light	<ul style="list-style-type: none"> • White: The computer is on. • Blinking white: The computer is in the Sleep state. • Off: The computer is off or in Hibernation.
(2) Caps lock light	<ul style="list-style-type: none"> • White: Caps lock is on. • Off: Caps lock is off.
(3)  Keyboard backlight light	<p>White: Identifies the keyboard backlight action key.</p> <p>Press the key to turn the keyboard backlight on or off.</p>
(4)  Wireless light	<ul style="list-style-type: none"> • White: An integrated wireless device, such as a wireless local area network (WLAN) device, is enabled. <p>NOTE: Wireless devices are enabled at the factory.</p> <ul style="list-style-type: none"> • Amber: All wireless devices are disabled.
(5) Imagepad light	<ul style="list-style-type: none"> • Amber: The Imagepad is off. • Off: The Imagepad is on.
(6)  Beats Audio light	<ul style="list-style-type: none"> • Red: Beats Audio is enabled. • Off: Beats Audio is disabled.
(7)  Mute light	<ul style="list-style-type: none"> • Amber: Speaker sound is off. • Off: Speaker sound is on.

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>CAUTION: Pressing and holding down the power button will result in the loss of unsaved information.</p> <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 power settings, select Start > Control Panel > System and Security > Power Options, or see the <i>HP Notebook Reference Guide</i>.</p>

Keys



Component	Description
(1) esc key	Displays system information when pressed in combination with the fn key.
(2) fn key	Executes the following functions: <ul style="list-style-type: none"> • When the key is pressed in combination with the esc key, system information is displayed. • When the key is pressed in combination with the b key, Beats Audio is enabled or disabled.
(3)  Windows logo key	Displays the Windows Start menu.
(4) Action keys	Execute frequently used system functions.
(5) t key	Opens the Twitter website when pressed in combination with the fn key.
(6) b key	Enables or disables Beats Audio when pressed in combination with the fn key.
(7)  Windows applications key	Displays a shortcut menu for items beneath the pointer.

Front



Component	Description
Stereo speakers (2)	Produce enhanced, Beats Audio sound.

Right side



Component	Description
(1)  Mute button	Mutes or restores speaker sound.
(2) Volume dial	Adjusts the speaker volume. To increase the volume, rotate the dial clockwise. To decrease the volume, rotate the dial counter-clockwise.
(3)  Beats Audio button	Opens Beats Audio Control Panel, which allows you to view and control all audio settings. Beats Audio is an enhanced audio feature that provides a deep, controlled bass while maintaining a clear sound. NOTE: You can also open the Beats Audio Control Panel by selecting Start > Control Panel > Hardware and Sound > Beats Audio Control Panel .
(4) Hard 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. NOTE: For information about HP ProtectSmart Hard Drive Protection, see the <i>HP Notebook Reference Guide</i> .
(5) 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.
(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.
(7) AC adapter light	<ul style="list-style-type: none"> White: The computer is connected to external power, and the battery is fully charged. Amber: The computer is connected to external power, and the battery is charging. Blinking amber: The computer is connected to external power and there is a battery error or the battery has reached a low or critical battery level. Off: The computer is running on battery power.
(8)  Power connector	Connects an AC adapter.

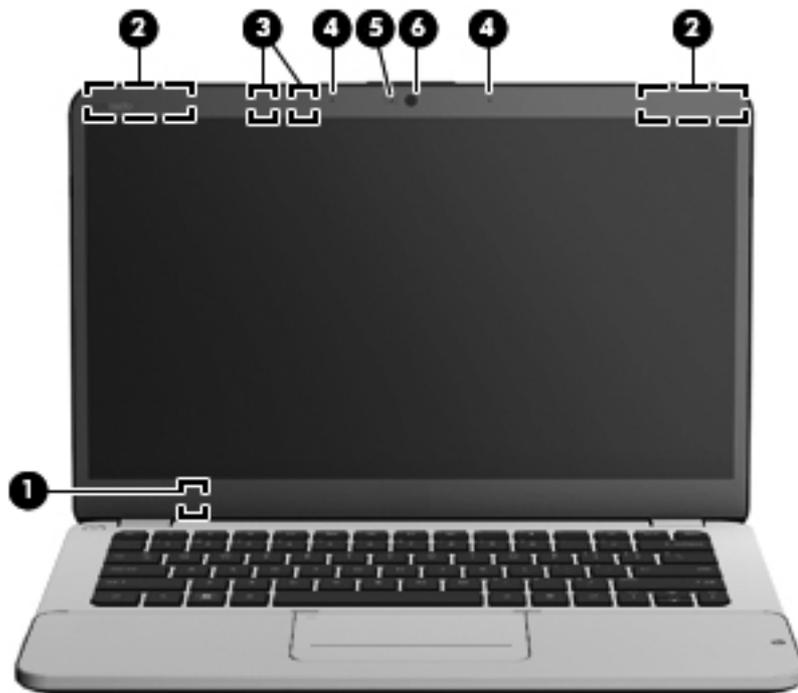
Left side



Component	Description
(1)  DisplayPort	Connects an optional digital display device, such as a high-performance monitor or projector.
(2)  HDMI port	Connects an optional video or audio device, such as a high-definition television, any compatible digital or audio component, or a high-speed HDMI 1.4 device.
(3)  RJ-45 (network) jack	Connects a network cable.
(4)  USB 3.0 charging port	Connects an optional USB 1.0, USB 2.0, or USB 3.0 device and provides enhanced USB power performance for USB 3.0 devices. The USB 3.0 charging port can also charge select models of cell phones and MP3 players, even when the computer is off. NOTE: USB charging is enabled at the factory. To disable this setting, follow the instructions in the “Setup Utility (BIOS) and System Diagnostics” chapter in the <i>HP Notebook Reference Guide</i> .
(5)  USB 2.0 charging port	Connects an optional USB 1.0 or USB 2.0 device. The USB 2.0 charging port can also charge select models of cell phones and MP3 players, even when the computer is off. NOTE: USB charging is enabled at the factory. To disable this setting, follow the instructions in the “Setup Utility (BIOS) and System Diagnostics” chapter in the <i>HP Notebook Reference Guide</i> .

Component	Description
(6)  Audio-out (headphone) jack/ Audio-in (microphone) jack	<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>NOTE: Be sure that the device cable has a 4-conductor connector that supports both audio-out (headphone) and audio-in (microphone).</p>
(7) Digital Media Slot	<p>Supports the following digital card formats:</p> <ul style="list-style-type: none"> • MultiMediaCard • Secure Digital (SD) Memory Card • Secure Digital High Capacity Memory Card

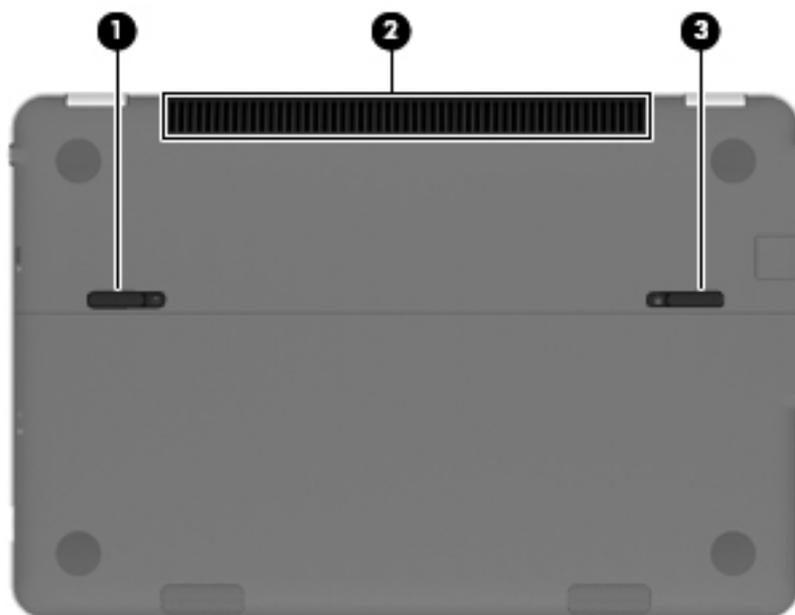
Display



Component	Description
(1) 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.
(2) WLAN antennas (2)*	Send and receive wireless signals.
(3) Proximity sensors (2)*	Detect your presence in front of the computer and turn on the radiance backlight keyboard feature.
(4) Internal microphones (2)	Record audio, automatically reducing ambient noise and providing echo cancellation
(5) Webcam light	On: The webcam is active.
(6) HP TrueVision HD Webcam	Records video and captures still photographs. To access the webcam, select Start > All Programs > CyberLink > CyberLink YouCam .

*The antennas and proximity sensors are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas and proximity sensors free from obstructions. For wireless regulatory notices, see 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 cover release latch	Releases the battery cover.
(2) 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.
(3) Battery cover lock	Locks the battery cover into place.

3 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. See [Connecting to an existing WLAN on page 26](#) or [Setting up a new WLAN network on page 26](#).
- **Wired**—You can access the Internet by connecting to a wired network. For information about connecting to a wired network, see 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 helps to 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 help you set up a new Internet account or configure the computer to use an existing account:

- **ISP-provided icons (available in some locations)**—These icons are individually displayed on the Windows desktop. 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 the following 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 > Control Panel > Network and Internet > Network and Sharing Center > Set up a new connection or network**.

 **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 about wireless technology and connecting to a wireless network, see the *HP Notebook Reference Guide* and information and website 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, see 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 your WLAN, always turn on security features to protect your network from unauthorized access.

For information about protecting your WLAN, see the *HP Notebook Reference Guide*.

4 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 used for performing customized actions that are assigned to specific keys at the top of the keyboard.

The icons on the **f1** through **f8** and **f12** keys represent the action key functions. To activate a function, press and hold the key.

You can disable the action key feature and revert back to standard settings. Using standard settings, you press the **fn** key and one of the function keys to activate the assigned function. For instructions on disabling the action key feature, see the “Setup Utility (BIOS) and System Diagnostics” chapter in the *HP Notebook Reference Guide*.

CAUTION: Use extreme care when making changes. Errors can prevent the computer from operating properly.



Icon	Key	Description
?	f1	Opens Help and Support, which provides information about the Windows operating system and your computer, tutorials and answers to questions, and updates to your computer. Help and Support also provides automated troubleshooting and links to support specialists.
☀️	f2	Decreases the screen brightness level.
☀️	f3	Increases the screen brightness level.

Icon	Key	Description
	f4	<p>Presents the following choices to switch the screen image among display devices connected to the computer:</p> <ul style="list-style-type: none"> • Computer only—Turns off any external displays and shows the image only on the computer display. • Duplicate—Clones the image on the computer display onto an external display that is connected to the computer. • Extend—Extends the screen image across the computer display and all connected external displays. • Projector only—Turns off the computer display and extends the screen image across all connected external displays.
	f5	<p>Turns the radiance backlight keyboard feature off or on.</p> <p>NOTE: To conserve battery power, turn off this feature. To switch between low, medium, or high brightness levels, press and hold the keyboard backlight action key (f5) in combination with either the up or down arrow key.</p>
	f6	Plays the previous track of an audio CD or the previous section of a DVD or a BD.
	f7	Plays, pauses, or resumes an audio CD, a DVD, or a BD.
	f8	Plays the next track of an audio CD or the next section of a DVD or a BD.
	f12	<p>Turns off or on all wireless features, including wireless networking, wireless display, and wireless audio.</p> <p>NOTE: This key does not establish a wireless connection. To establish a wireless connection, a wireless network must be set up.</p>

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**.

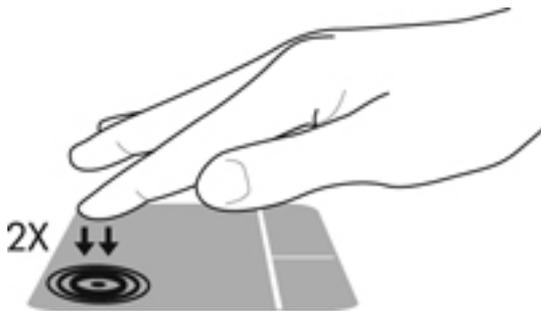
Using the Imagepad

The advanced Imagepad is a high-precision, gesture-friendly mouse alternative. To move the pointer, slide one finger across the Imagepad in the direction you want the pointer to go. Use the left and right Imagepad buttons like the corresponding buttons on an external mouse.

Turning the Imagepad off or on

To turn the Imagepad off or on, quickly double-tap the Imagepad on/off button.

 **NOTE:** The Imagepad light is off when the Imagepad is on.

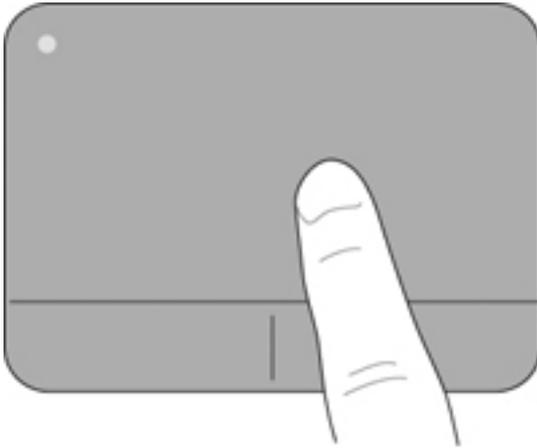


The Imagepad light and on-screen display icons indicate the Imagepad status.

Imagepad light	Icon	Description
Amber		Indicates that the Imagepad is off.
Off		Indicates that the Imagepad is on.

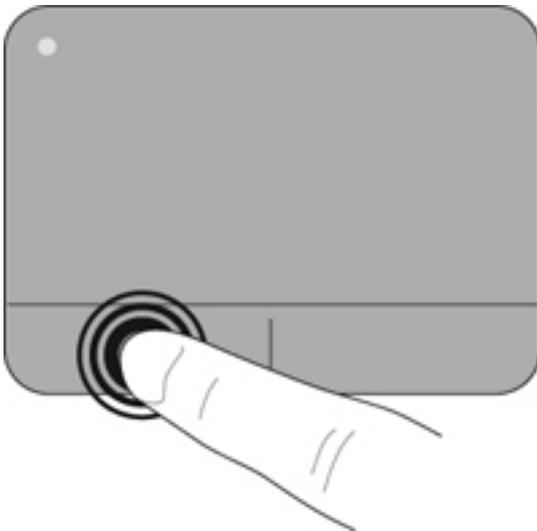
Navigating

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



Selecting

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



Using Imagepad gestures

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



NOTE: Imagepad gestures are not supported in all computer programs.

To view the demonstration of a gesture:

1. Select **Start > Control Panel > Hardware and Sound > Synaptics ClickPad**.
2. Click a gesture to activate the demonstration.

To turn the gestures off or on:

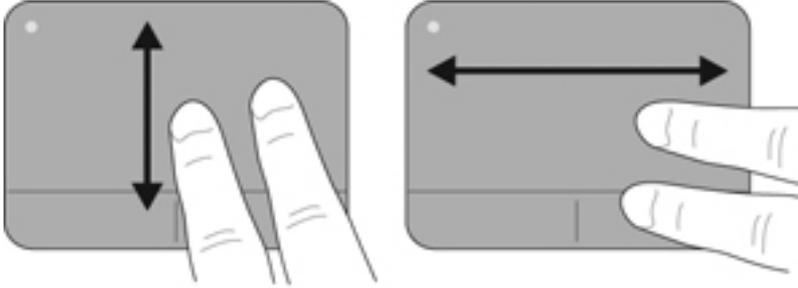
1. Select **Start > Control Panel > Hardware and Sound > Synaptics ClickPad**.
2. To turn a gesture on, select the check box next to the gesture. To turn a gesture off, clear the check box next to the gesture.
3. Click **Apply**, and then click **OK**.

Scrolling

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

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

 **NOTE:** 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 Imagepad, and then moving them apart.
- Zoom out by placing two fingers apart on the Imagepad, and then moving them together.

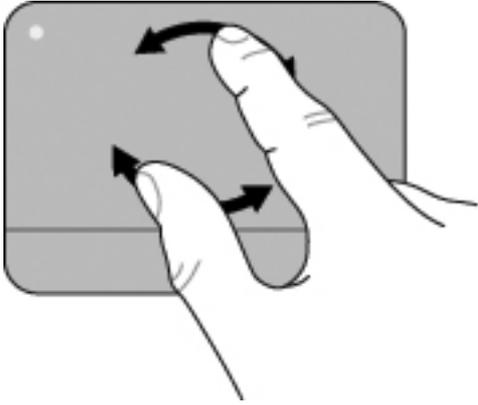
 **NOTE:** Pinching/zooming is enabled at the factory.



Rotating

Rotating allows you to rotate items such as photos. Place two separated fingers on the Imagepad, and then rotate your fingers in an arc while maintaining uniform finger separation. An arcing motion to the left rotates the object to the left; an arcing motion to the right rotates the object to the right.

 **NOTE:** Rotating is enabled at the factory.



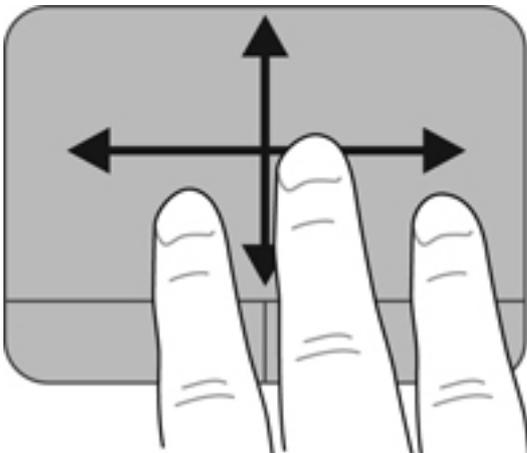
Flicking

Flicking allows you to quickly perform the following functions:

- Browse the Internet.
- Scroll through photos in a photo viewer.
- Navigate through screens.
- Scroll through documents.
- Enter or exit the slide show mode in your photo viewer.

To flick, use three fingers to touch the Imagepad in a light, quick flicking motion up, down, left, or right.

 **NOTE:** Three-finger flicking is enabled at the factory.



5 Backing up, restoring, and recovering

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

Creating backups

1. Use HP Recovery Manager to create recovery media immediately after you set up the working computer.
2. As you add hardware and software programs, create system restore points.
3. As you add photos, video, music, and other personal files, create a backup of your system and personal information.

Creating recovery media to recover the original system

After you successfully set up the computer, you should create recovery discs or a recovery flash drive using HP Recovery Manager. You will need these recovery discs or recovery flash drive to perform a system recovery should the hard drive become corrupted. A system recovery reinstalls the original operating system, and then configures the settings for the default programs.

What you need to know

- Only one set of recovery media can be created. Handle these recovery tools carefully, and keep them in a safe place.
- HP Recovery Manager examines the computer and determines the required storage capacity for the flash drive or the number of blank DVD discs that will be required.

Use DVD-R, DVD+R, DVD-R DL, DVD+R DL discs or a flash drive. Do not use rewriteable discs such as CD±RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software.

- 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 obtain recovery discs for your computer from the HP website. 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.
- Be sure that the computer is connected to AC power before you begin creating the recovery media.
- The creation process can take up to an hour or more. Do not interrupt the creation process.
- Store the recovery media in a safe location, separate from the computer.
- If necessary, you can exit the program before you have finished creating the recovery media. The next time you open HP Recovery Manager, you will be prompted to continue the process.

Creating the recovery media

1. Select **Start** and type `recovery` in the search field. Select **Recovery Manager** from the list. Allow the action to continue, if prompted.
2. Click **Recovery Media Creation**.
3. Follow the on-screen instructions to continue.

To recover, see [Recovering the original system using HP Recovery Manager on page 39](#).

Creating system restore points

A system restore point is a snapshot of certain hard drive contents saved by Windows System Restore at a specific time. A restore point contains information such as registry settings that Windows uses. Restoring to a previous restore point allows you to reverse changes that have been made to the system since the restore point was created.

Restoring to an earlier system restore point does not affect data files saved or emails created since the last restore point, but it does affect software you may have installed.

For example, if you download a photo from a digital camera and then restore the computer to the state it was on the previous day, the photo remains on the computer.

However, if you install photo viewing software and then restore your computer to the state it was on the previous day, the software will be uninstalled, and you won't be able to use it.

What you need to know

- If you restore to a restore point and then change your mind, you can undo the restoration.
- You should create system restore points:
 - Before you add or change software or hardware
 - Periodically, whenever the computer is running normally
- System Restore also saves shadow copies of files that have been changed since the last restore point was created. For more information about using shadow copies to restore, see Help and Support.

Creating 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. Click **Create**, and follow the on-screen instructions.

To restore, see [Restoring to a previous system restore point on page 39](#).

Backing up system and personal information

Your computer stores information that is important to you, such as files, emails, and photos, and you will want to keep that information even if you download a virus or the system stops working properly. How completely you are able to recover your files depends on how recent your backup is. As you add new software and data files, you should create backups on a regular basis.

Tips for a successful backup

- Number backup discs before inserting them into the optical drive.
- Store personal files in the Documents, Music, Pictures, and Videos libraries, and back up these folders 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.

To create a screen shot:

1. Display the screen you want to save.
2. Copy the screen image:
 - To copy only the active window, press **alt+prt sc**.
 - To copy the entire screen, press **prt sc**.
3. Open a word-processing document or graphics editing program, and then select **Edit > Paste**. The screen image is added to the document.
4. Save and print the document.

What you need to know

- You can back up your information to an optional external hard drive, a flash drive, a network drive, or discs.
- Connect the computer to AC power during backups.
- Allow enough time for the backup. Depending on files sizes, it may take more than an hour.
- Verify the amount of free space on your backup storage device before you back up.
- You should back up:
 - Before adding or changing software or hardware.
 - Before the computer is repaired or restored.
 - On a regular schedule to be sure you have recent copies of personal information.
 - After you add many files—for example, if you saved videos from a birthday party.
 - Before using antivirus software to remove a malicious program.
 - After adding information that is hard to replace, such as pictures, videos, music, project files, or data records.

Creating a backup using Windows Backup and Restore

Windows allows you to back up files using Windows Backup and Restore. You can select the level you want to back up, from individual folders to drives. The backups are compressed to save space. To back up:

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. See Help and Support for more information.

To restore, see [Restoring specific files using Windows Backup and Restore on page 39](#).

Restore and recovery

Restoring to a previous system restore point

Sometimes installing a software program causes your computer or Windows to behave unpredictably. Usually uninstalling the software fixes the problems. If uninstalling does not fix the problems, you can restore the computer to a previous system restore point (created at an earlier date and time).

To restore to a previous system restore point, when the computer was running correctly:

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**, and follow the on-screen instructions.

Restoring specific files

If files are accidentally deleted from the hard disk and they can no longer be restored from the Recycle Bin, or if files become corrupt, restoring specific files is useful. Restoring specific files is also useful if you ever choose to recover the original system using HP Recovery Manager. You can only restore specific files that you have backed up before.

Restoring specific files using Windows Backup and Restore

Windows allows you to restore files that were backed up using Windows Backup and Restore:

1. Select **Start > Control Panel > System and Security > Backup and Restore**.
2. Follow the on-screen instructions to restore your 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. See Help and Support for more information.

Recovering the original system using HP Recovery Manager

HP Recovery Manager software allows you to repair or recover the computer to its original factory state.

What you need to know

- HP Recovery Manager recovers only software that was installed at the factory. For software not provided with this computer, you must either download the software from the manufacturer's website or reinstall the software from the disc provided by the manufacturer.
- A system recovery should be used as a final attempt to correct computer issues. If you have not already tried restore points (see [Restoring to a previous system restore point on page 39](#)) and partial restores (see [Restoring specific files on page 39](#)), try them before using HP Recovery Manager to recover your system.
- A system recovery must be performed if the computer hard drive fails or if all attempts to correct any functional computer issues fail.
- If the recovery media do not work, you can obtain recovery discs for your system from the HP website.
- The Minimized Image Recovery option is recommended for advanced users only. All hardware-related drivers and software are re-installed, but other software applications are not. Do not interrupt the process until it is complete, otherwise the recovery will fail.

Recovering using HP Recovery partition

The HP Recovery partition, allows you to restore your system without the need for recovery discs or a recovery flash drive. This type of recovery can only be used if the hard drive is still working.

To check for the presence of a recovery partition, select **Start**, right-click **Computer** then select **Manage > 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 did not ship with a recovery partition.

1. Access HP Recovery Manager in either of the following ways:
 - Select **Start > All Programs > HP Help and Support > HP Recovery Manager > HP 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 **HP Recovery Manager** window.
3. Follow the on-screen instructions.

Recovering using the recovery 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 HP Recovery Manager, change the computer boot order. See [Changing the computer boot order on page 41](#).

3. Press **f9** at system bootup.
4. Select the optical drive or the flash drive.
5. 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 a 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.

6 Customer support

The following sections are included in this chapter:

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

Contacting customer support

If the information provided in this guide, in the *HP Notebook Reference Guide*, or in Help and Support does not address your questions, you can contact HP Customer Support. For U.S. product support, go to <http://www.hp.com/go/contactHP>. For worldwide product support, 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.

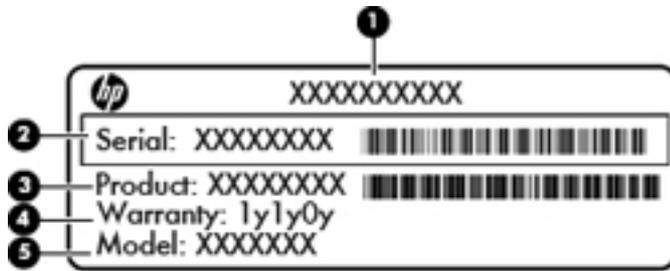
- E-mail HP Customer Support.
- Find HP Customer Support worldwide telephone numbers.
- Locate an HP service center.

Labels

Identifying the labels

The labels affixed to the computer provide information you may need when you troubleshoot system problems or travel internationally with the computer. The labels are located on the bottom of the computer, inside the battery bay, or in another easily accessible location. To locate the labels, see [Locating the labels on page 44](#).

- 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.
- Microsoft® Certificate of Authenticity—Contains the Windows Product Key. You may need the Product Key to update or troubleshoot the operating system.
 - Regulatory label—Provides regulatory information about the computer.
 - 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.

Locating the labels

To locate the labels inside the battery bay.

1. Slide the right battery cover lock (1) to unlock the battery cover, and then slide the left battery cover release latch (2) to release the battery cover.
2. Slide the battery cover (3) away from the computer, and then remove the battery cover.



To replace the battery cover:

1. Slide the battery cover (1) to the rear of the computer until it is seated.
2. Slide the right battery cover lock (2) to lock the battery cover into place.

 **NOTE:** The left battery cover release latch automatically locks into place.



7 Specifications

- [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 and current	19.5 V dc @ 3.33 A – 65W
DC plug of external HP power supply	

 **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 regulatory label.

Operating environment

Factor	Metric	U.S.
Temperature		
Operating	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

Index

A

- AC adapter light 19
- action keys
 - Help and Support 28
 - identifying 17
 - radiance backlight keyboard 29
 - screen brightness 28
 - switching screen image 29
 - using 28
 - wireless 29
- Audio-in (microphone) jack, identifying 21
- Audio-out (headphone) jack, identifying 21

B

- backups 35
- battery 9
- battery cover lock, identifying 23
- battery cover release latch, identifying 23
- Beats Audio 5, 19
- Beats Audio button 5
- Beats Audio Control Panel 5
- Beats Audio hot key 6
- Beats Audio hotkey 17
- Beats Audio light, identifying 15
- Bluetooth label 43
- boot order
 - changing 41
- buttons 16
 - Beats Audio 19
 - Imagepad on/off 14
 - left Imagepad 14
 - mute 19
 - right Imagepad 14

C

- caps lock light, identifying 15
- Certificate of Authenticity label 43
- components
 - bottom 23
 - display 22
 - front 18
 - left-side 20
 - right-side 19
 - top 14
- connector, power 19
- CoolSense 9

D

- DC plug of external HP power supply 45
- deleted files
 - restoring 39
- dial, volume 19
- Digital Media Slot, identifying 21
- display image, switching 29
- DisplayPort, identifying 20

E

- esc key, identifying 17

F

- flicking Imagepad gesture 34
- fn key, identifying 17

H

- hard drive light, identifying 19
- HDMI port, identifying 20
- headphone jack, identifying 21
- Help and Support key 28
- hotkeys
 - Beats Audio 17
 - Twitter 17
- HP Recovery Manager 39

- HP Wireless Audio Manager 7

I

- Imagepad
 - buttons 14
 - identifying 14
 - navigating 31
 - selecting 31
 - using 30
- Imagepad gestures
 - flicking 34
 - pinching 33
 - rotating 34
 - scrolling 33
 - zooming 33
- Imagepad light, identifying 14, 15
- Imagepad on/off button, identifying 14
- Imagepad zone, identifying 14
- input power 45
- integrated webcam light, identifying 22
- Intel Smart Connect Technology 8
- Intel Wireless Display 9
- internal display switch, identifying 22
- internal microphones, identifying 22
- Internet connection setup 26
- ISP, using 25

J

- jacks
 - Audio-out (headphone) jack/ Audio-in (microphone) jack 21
 - RJ-45 (network) 20

- K**
- keyboard backlight action key, identifying 29
- keyboard backlight, identifying 15
- keys
 - action 17
 - esc 17
 - fn 17
 - Windows applications 17
 - Windows logo 17
- L**
- labels
 - Bluetooth 43
 - Microsoft Certificate of Authenticity 43
 - regulatory 43
 - serial number 43
 - wireless certification 43
 - WLAN 43
- lights
 - AC adapter 19
 - Beats Audio 15
 - caps lock 15
 - hard drive 19
 - Imagepad 14, 15
 - keyboard backlight 15
 - mute 15
 - power 15, 19
 - webcam 22
 - wireless 15
- M**
- microphone jack, identifying 21
- Microsoft Certificate of Authenticity label 43
- mouse, external, setting preferences 30
- mute button, identifying 19
- mute light, identifying 15
- N**
- network jack, identifying 20
- O**
- operating environment 46
- operating system
 - Microsoft Certificate of Authenticity label 43
 - Product Key 43
- original system recovery 39
- P**
- pinching Imagepad gesture 33
- pointing devices, setting preferences 30
- ports
 - HDMI 20
 - USB 3.0 20
 - USB 3.0 charging 20
- power button, identifying 16
- power connector, identifying 19
- power lights, identifying 15, 19
- Product Key 43
- product name and number, computer 43
- proximity sensors 8, 22
- R**
- radiance backlight keyboard 8
- recovering from the recovery discs 41
- recovering the original system 39
- recovery 39
 - HP Recovery Manager 39
- recovery discs 35
- recovery media 35
- recovery, system 39
- regulatory information
 - regulatory label 43
 - wireless certification labels 43
- restore points 36
- restoring the original system
 - creating recovery media 35
- RJ-45 (network) jack, identifying 20
- rotating Imagepad gesture 34
- S**
- screen brightness keys, identifying 28
- screen image, switching 29
- scrolling Imagepad gesture 33
- security cable slot, identifying 19
- serial number label 43
- serial number, computer 43
- setup of WLAN 26
- slots
 - Digital Media Slot 21
 - security cable 19
- speakers, front, identifying 18
- supported discs 36
- system recovery 39
- system restore points 36
 - creating 36
- T**
- TPM Embedded Security 10
- traveling with the computer 43
- Twitter hotkey 17
- U**
- USB 3.0 charging port, identifying 20
- USB 3.0 port, identifying 20
- V**
- vents, identifying 23
- volume dial, identifying 4, 19
- W**
- webcam light, identifying 22
- webcam, identifying 22
- Windows applications key, identifying 17
- Windows Backup and Restore restoring files 39
- Windows logo key, identifying 17
- Wireless Audio 7
- wireless certification label 43
- wireless key, identifying 29
- wireless light, identifying 15
- wireless network (WLAN)
 - connecting 26
 - equipment needed 26
 - protecting 27
- wireless router, configuring 27
- wireless setup 26
- WLAN (wireless network)
 - connecting 26
 - equipment needed 26
 - protecting 27
- WLAN antennas, identifying 22
- WLAN label 43
- Z**
- zooming Imagepad gesture 33

