Product notice

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

Not all features are available in all editions of Windows. This computer may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. Go to http://www.microsoft.com for details.

To access the latest user guide, go to http://www.hp.com/support, and select your country. Select Drivers & Downloads, and then follow the on-screen instructions.

Software terms

By installing, copying, downloading, or otherwise using any software product preinstalled on this computer, you agree to be bound by the terms of the HP End User License Agreement (EULA). If you do not accept these license terms, your sole remedy is to return the entire unused product (hardware and software) within 14 days for a full refund subject to the refund policy of your seller.

For any further information or to request a full refund of the price of the computer, please contact your seller.
Safety warning notice

⚠️ WARNING! To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950-1).
# Table of contents

1 Starting right ................................................................................................................. 1
   Visit the HP Apps Store .................................................................................................. 1
   Best practices .................................................................................................................. 1
   More HP resources ......................................................................................................... 2

2 Getting to know your computer .................................................................................... 4
   Locating hardware .......................................................................................................... 4
   Locating software .......................................................................................................... 4
   Right side ....................................................................................................................... 5
   Left side .......................................................................................................................... 6
   Display ............................................................................................................................. 7
      Buttons and speakers .................................................................................................... 8
   Back edge ......................................................................................................................... 9
   Bottom ............................................................................................................................. 10
      Using the kickstand ...................................................................................................... 11
   Inserting and removing microSD cards ......................................................................... 12
      Inserting a microSD card ............................................................................................. 12
      Removing a microSD card ........................................................................................... 12
   Installing a micro SIM card (select products only) ......................................................... 13
   Labels ............................................................................................................................. 14

3 Using the keyboard base .............................................................................................. 16
   Keyboard base components ............................................................................................ 16
      Keys ............................................................................................................................... 16
         Using the action keys ............................................................................................... 16
      Lights .......................................................................................................................... 18
   TouchPad ......................................................................................................................... 19
   Connecting the tablet to the keyboard base .................................................................... 20
   Removing the keyboard base from the tablet ................................................................. 21

4 Connecting to a network ............................................................................................... 22
   Connecting to a wireless network .................................................................................. 22
      Using the wireless controls ......................................................................................... 22
         Airplane mode key .................................................................................................... 22
      Operating system controls ......................................................................................... 22
   Connecting to a WLAN ................................................................................................... 23
Using HP Mobile Broadband (select products only) ................................................................. 23
Using HP DataPass (select products only) ................................................................................. 24
Using GPS (select products only) ............................................................................................... 24
Using Bluetooth wireless devices (select products only) ............................................................ 24
Sharing data and drives and accessing software ........................................................................ 24

5 Enjoying entertainment features .............................................................................................. 25
Using a webcam ............................................................................................................................. 25
Using an integrated 3D camera ..................................................................................................... 25
Using 3D scanning ........................................................................................................................ 25
Using audio .................................................................................................................................. 25
Connecting speakers .................................................................................................................... 25
Connecting headphones ............................................................................................................... 26
Connecting headsets .................................................................................................................... 26
Using sound settings .................................................................................................................... 26
Using video .................................................................................................................................. 27
Discovering and connecting to Miracast-compatible wireless displays (select products only) .... 27
Discovering and connecting to Intel WiDi certified displays (select Intel products only) .......... 28

6 Navigating the screen ................................................................................................................ 29
Using the TouchPad and touch screen gestures .......................................................................... 29
Tap .............................................................................................................................................. 29
Two-finger pinch zoom ............................................................................................................... 29
Two-finger scroll (TouchPad only) ............................................................................................... 30
Two-finger tap (TouchPad only) ................................................................................................. 30
Three-finger swipe (TouchPad only) ............................................................................................ 31
One-finger slide (touch screen only) ............................................................................................ 32
Using the keyboard and optional mouse .................................................................................... 32
Using a tablet pen (select products only) ..................................................................................... 32

7 Managing power ....................................................................................................................... 33
Initiating and exiting Sleep ............................................................................................................ 33
Manually initiating and exiting Sleep ............................................................................................ 34
Setting password protection on wakeup (exiting Sleep) ............................................................. 34
Using the power meter and power settings ............................................................................... 34
Running on battery power ........................................................................................................... 35
Factory-sealed battery ................................................................................................................ 35
Finding battery information ........................................................................................................ 35
Conserving battery power ........................................................................................................... 35
Identifying low battery levels ...................................................................................................... 36
Securing your computer and information ................................................................. 36
	Resolving a low battery level .................................................................................. 36
	Resolving a low battery level when external power is available ................................. 36
	Resolving a low battery level when no power source is available ................................ 36
Running on AC power .............................................................................................. 36
Troubleshooting power problems ............................................................................. 37
Shutting down (turning off) the computer ................................................................. 37

8 Maintaining your computer .................................................................................... 39
Improving performance ............................................................................................. 39
Using Disk Defragmenter ......................................................................................... 39
Using Disk Cleanup ................................................................................................. 39
Using HP 3D DriveGuard (select products only) ....................................................... 39
Identifying HP 3D DriveGuard status ....................................................................... 40
Updating programs and drivers ................................................................................ 40
Cleaning your computer ......................................................................................... 40
Cleaning procedures ............................................................................................... 40
Cleaning the display .............................................................................................. 41
Cleaning the sides or cover .................................................................................... 41
Cleaning the TouchPad, keyboard, or mouse (select products only) ....................... 41
Traveling with or shipping your computer ............................................................... 41

9 Securing your computer and information ............................................................. 43
Using passwords ...................................................................................................... 43
Setting Windows passwords .................................................................................... 43
Setting Setup Utility (BIOS) passwords .................................................................... 44
Using Internet security software ............................................................................. 44
Using antivirus software ....................................................................................... 44
Using firewall software .......................................................................................... 45
Installing software updates .................................................................................... 45
Using HP Touchpoint Manager (select products only) ............................................ 45
Securing your wireless network ............................................................................ 45
Backing up your software applications and information ........................................... 46

10 Using Setup Utility (BIOS) .................................................................................. 47
Starting Setup Utility (BIOS) ................................................................................... 47
Updating Setup Utility (BIOS) ................................................................................ 47
Determining the BIOS version ............................................................................... 47
Downloading a BIOS update ................................................................................... 48
Synchronizing a tablet and keyboard (select products only) .................................... 49

vii
11 Using HP PC Hardware Diagnostics (UEFI) ................................................................. 50
   Downloading HP PC Hardware Diagnostics (UEFI) to a USB device .......................... 50

12 Backing up, restoring, and recovering ................................................................. 52
   Creating recovery media and backups .................................................................... 52
      Creating HP Recovery media (select products only) ........................................... 52
   Using Windows tools .................................................................................................. 53
   Restore and recovery ..................................................................................................... 54
      Recovering using HP Recovery Manager ............................................................... 54
         What you need to know before you get started ................................................. 54
         Using the HP Recovery partition (select products only) ................................. 55
         Using HP Recovery media to recover .............................................................. 55
         Changing the computer boot order .................................................................... 56
         Removing the HP Recovery partition (select products only) ........................... 57

13 Specifications ............................................................................................................. 58
   Input power .................................................................................................................. 58
   Operating environment ............................................................................................... 58

14 Electrostatic Discharge ............................................................................................ 59

15 Accessibility ............................................................................................................... 60
   Supported assistive technologies ............................................................................... 60
   Contacting support ...................................................................................................... 60

Index .............................................................................................................................. 61
1 Starting right

This computer is a powerful tool designed to enhance your work and entertainment. Read this chapter to learn about best practices after you set up your computer, fun things to do with your computer, and where to find additional HP resources.

Visit the HP Apps Store

The HP Apps Store offers a wide choice of popular games, entertainment and music apps, productivity apps, and apps exclusive to HP that you can download to the desktop. The selection is updated regularly and includes regional content and country-specific offers. Be sure to check the HP Apps Store frequently for new and updated features.

**IMPORTANT:** You must be connected to the Internet to access the HP Apps Store.

To view and download an app:

1. Select the **Start** button, and then select the **Store** app.
   - or –
   Select the **Store** icon next to the taskbar search box.
2. Select **HP picks** to view all the available apps.

**NOTE:** **HP picks** is available in select countries only.

3. Select the app you want to download, and then follow the on-screen instructions. When the download is complete, the app appears on the All apps screen.

Best practices

After you set up and register the computer, we recommend the following steps to get the most out of your smart investment:

- Back up your hard drive by creating recovery media. See **Backing up, restoring, and recovering** on page 52.
- If you haven’t already done so, connect to a wired or wireless network. See details in **Connecting to a network** on page 22.
- Become familiar with the computer hardware and software. For more information, see **Getting to know your computer on page 4** and **Enjoying entertainment features on page 25**.
- Update or purchase antivirus software. See **Using antivirus software on page 44**.
# More HP resources

To locate resources that provide product details, how-to information, and more, use this table.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup Instructions</td>
<td>● Overview of computer setup and features</td>
</tr>
<tr>
<td>Get started app</td>
<td>● A broad range of how-to information and troubleshooting tips</td>
</tr>
<tr>
<td></td>
<td>To access the Get started app:</td>
</tr>
<tr>
<td></td>
<td>▲ Select the Start button, and then select the Get started app.</td>
</tr>
<tr>
<td>HP support</td>
<td>● Online chat with an HP technician</td>
</tr>
<tr>
<td></td>
<td>● Support telephone numbers</td>
</tr>
<tr>
<td></td>
<td>● HP service center locations</td>
</tr>
<tr>
<td>Safety &amp; Comfort Guide</td>
<td>● Proper workstation setup</td>
</tr>
<tr>
<td></td>
<td>● Guidelines for posture and work habits that increase your comfort and decrease your risk of injury</td>
</tr>
<tr>
<td></td>
<td>● Electrical and mechanical safety information</td>
</tr>
<tr>
<td>Regulatory, Safety and Environmental Notices</td>
<td>● Important regulatory notices, including information about proper battery disposal, if needed.</td>
</tr>
<tr>
<td>Limited Warranty*</td>
<td>● Specific warranty information about this computer</td>
</tr>
<tr>
<td></td>
<td>To access this document:</td>
</tr>
<tr>
<td></td>
<td>1. Type support in the taskbar search box, and then select the HP Support Assistant app.</td>
</tr>
<tr>
<td></td>
<td>— or —</td>
</tr>
<tr>
<td></td>
<td>2. Select My PC, select the Specifications tab, and then select User Guides.</td>
</tr>
<tr>
<td></td>
<td>— or —</td>
</tr>
<tr>
<td></td>
<td>To access this document:</td>
</tr>
<tr>
<td></td>
<td>1. Type support in the taskbar search box, and then select the HP Support Assistant app.</td>
</tr>
<tr>
<td></td>
<td>— or —</td>
</tr>
<tr>
<td></td>
<td>Click the question mark icon in the taskbar.</td>
</tr>
<tr>
<td></td>
<td>2. Select My PC, select the Specifications tab, and then select User Guides.</td>
</tr>
<tr>
<td></td>
<td>— or —</td>
</tr>
</tbody>
</table>

## Chapter 1   Starting right

*You can find your HP Limited Warranty located with the user guides on your product and/or on the CD or DVD provided in the box. In some countries or regions, HP may provide a printed warranty in the box. For countries or regions where the warranty is not provided in printed format, you can request a copy from [http://www.hp.com/go/orderdocuments](http://www.hp.com/go/orderdocuments). For products purchased in Asia Pacific, you can write to HP at Hewlett Packard, POD, P.O. Box 200, Alexandra Post Office, Singapore 911507. Include your product name, and your name, phone number, and postal address.*
2 Getting to know your computer

Locating hardware

To find out what hardware is installed on your computer:

▲ Type device manager in the taskbar search box, and then select the Device Manager app.

A list displays all the devices installed on your computer.

For information about system hardware components and the system BIOS version number, press fn+esc (select products only).

Locating software

To find out what software is installed on your computer:

▲ Select the Start button, and then select All apps.

– or –

Right-click the Start button, and then select Programs and Features.
## Component Description

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory card reader</td>
<td>Reads optional memory cards that enable you to store, manage, share, or access information. To insert a card, see <a href="#">Inserting and removing microSD cards on page 12</a>.</td>
</tr>
<tr>
<td>Micro SIM card slot (select products only)</td>
<td>Supports a wireless micro subscriber identity module (SIM) card. If a micro SIM card is not pre-installed, insert the micro SIM card into the micro SIM card slot; see <a href="#">Installing a micro SIM card (select products only) on page 13</a>.</td>
</tr>
<tr>
<td>Speaker</td>
<td>Produces sound.</td>
</tr>
</tbody>
</table>
| AC adapter and battery light | - White: The AC adapter is connected and the battery is fully charged.  
- Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.  
- Amber: The AC adapter is connected and the battery is charging.  
- Off: The battery is not charging from this port. |
| USB Type-C (charging) port | Connects any USB device with a Type-C connector. **NOTE:** USB Type-C ports charge products such as cell phones, laptops, tablets, and MP3 players, even when the computer is off. Also, some USB Type-C ports connect DisplayPort, VGA, HDMI and other video devices to provide video output. **NOTE:** Adapters (purchased separately) may be required. |
## Component Description

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Kickstand release button</td>
<td>Releases the kickstand from the tablet.</td>
</tr>
</tbody>
</table>
| (2) USB Type-C (charging) port | Connects any USB device with a Type-C connector.  
**NOTE:** USB Type-C ports charge products such as cell phones, laptops, tablets, and MP3 players, even when the computer is off. Also, some USB Type-C ports connect DisplayPort, VGA, HDMI and other video devices to provide video output.  
**NOTE:** Adapters (purchased separately) may be required. |
| (3) AC adapter and battery light |  
- White: The AC adapter is connected and the battery is fully charged.  
- Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.  
- Amber: The AC adapter is connected and the battery is charging.  
- Off: The battery is not charging from this port. |
| (4) Speaker | Produces sound. |
| (5) Volume buttons | Control speaker volume.  
**NOTE:** Your computer may have a single button. |
| (6) Audio-out (headphone)/Audio-in (microphone) combo jack | Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional microphone-only devices.  
**WARNING!** To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the *Regulatory, Safety, and Environmental Notices*.  
To access this guide:  
1. Type support in the taskbar search box, and then select the **HP Support Assistant** app.  
--- or ---  
Click the question mark icon in the taskbar.  
2. Select **My PC**, select the **Specifications** tab, and then select **User Guides**.  
**NOTE:** When a device is connected to the jack, the computer speakers are disabled. |
### Display

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) WLAN antennas*</td>
<td>Send and receive wireless signals to communicate with wireless local area networks (WLANs).</td>
</tr>
<tr>
<td>(2) Internal microphones</td>
<td>Receive and record sound.</td>
</tr>
<tr>
<td>(3) WWAN antennas* (select products only)</td>
<td>Send and receive wireless signals to communicate with wireless wide area networks (WWANs).</td>
</tr>
<tr>
<td>(4) Webcam (front)</td>
<td>Records video and captures photographs. Some products allow you to video conference and chat online using streaming video. To use a webcam (integrated camera): ▲ Type camera in the taskbar search box, and then select Camera.</td>
</tr>
<tr>
<td>(5) Webcam light</td>
<td>On: The front or rear webcam is in use.</td>
</tr>
</tbody>
</table>

*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.*

For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

To access this guide:

1. Type support in the taskbar search box, and then select the HP Support Assistant app.
   - or –
   Click the question mark icon in the taskbar.
2. Select My PC, select the Specifications tab, and then select User Guides.
## Buttons and speakers

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Power button</td>
<td><img src="image.png" alt="Image" /></td>
</tr>
</tbody>
</table>
|   | - 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.  
|   | **CAUTION:** Pressing and holding down the power button results in the loss of unsaved information. If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 11 seconds to turn off the computer. To learn more about your power settings, see your power options.  
|   | Type `power` in the taskbar search box, and then select **Power and sleep settings**.  
|   | - or -  
|   | Right-click the **Start** button, and then select **Power Options**. |
| (2) Speakers | Produce sound. |
### Back edge

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Alignment posts (2) Guide the keyboard to the correct connection with the tablet.</td>
</tr>
<tr>
<td>(2)</td>
<td>ZIF (Zero Insertion Force) expansion slot for docking Connects the tablet to the keyboard base using the POGO pin connector.</td>
</tr>
</tbody>
</table>
### Bottom

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 3D camera infrared laser projectors</td>
<td>Project a grid to determine object dimensions.</td>
</tr>
<tr>
<td>(2) 3D camera light</td>
<td>On: The 3D camera is in use.</td>
</tr>
</tbody>
</table>
| (3) 3D camera      | Records video and captures photographs. Some products allow you to video conference and chat online using streaming video. To use a 3D camera:  

▲ See [Using an integrated 3D camera on page 25](#). |
| (4) Webcam (rear)  | Records video and captures photographs. Some products allow you to video conference and chat online using streaming video. |
| (5) Kickstand      | Provides stability and the best viewing angle. The angle adjusts from about 30 degrees to 150 degrees. |
Using the kickstand

To change the angle for the display, follow these steps:

1. Hold the tablet with top edge up (the power button is on top).
2. Slide the kickstand release button (1) down to release the kickstand from the tablet.
3. Position the kickstand (2) at the desired angle.

**NOTE:** The kickstand angle can be set from about 30 degrees to 150 degrees.

To close the kickstand, push the kickstand against the bottom until it is flush with the bottom.
Inserting and removing microSD cards

Inserting a microSD card

⚠️ **CAUTION:** To reduce the risk of damage to the memory card connectors, use minimal force to insert a microSD card.

1. Insert a small straightened paper clip (1) into the card tray access hole.
2. Press in gently only until the card tray is ejected.
3. Remove the tray (2) from the computer, and then insert the card (3).
4. Replace the tray (4).
5. Press in gently on the tray until it is firmly seated.

You will hear a sound when the device has been detected, and a menu of options may be displayed.

Removing a microSD card

⚠️ **CAUTION:** To reduce the risk of loss of data or an unresponsive system, use the following procedure to safely remove the microSD card.

1. Save your information and close all programs associated with the microSD card.
2. Click the remove hardware icon on the Windows desktop in the notification area, at the far right of the taskbar. Then follow the on-screen instructions.
3. Insert a small straightened paper clip (1) into the card tray access hole.
4. Press in gently only until the card tray is ejected.
5. Remove the tray (2) from the computer, and then remove the card (3).
6. Replace the tray (4).
7. Press in gently on the tray until it is firmly seated.

Installing a micro SIM card (select products only)

⚠️ CAUTION: To prevent damage to a SIM card or a computer, do not change the size of a SIM card by cutting or sanding the card.

1. Insert a small straightened paper clip (1) into the card tray access hole.
2. Press in gently only until the card tray is ejected.
3. Remove the tray (2) from the computer, and then insert the card (3).
4. Replace the tray (4).
5. Press in gently on the tray until it is firmly seated.

To set your mobile network, refer to the documentation from your mobile provider.

Labels

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

**IMPORTANT:** Check the following locations for the labels described in this section: inside the kickstand and on the back edge.

- Service label—Provides important information to identify your computer. When contacting support, you will probably be asked for the serial number, and possibly for the product number or the model number. Locate these numbers before you contact support.

Your service label will resemble the example shown below.
### Component

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product number</td>
</tr>
<tr>
<td>2</td>
<td>Model number (select products only)</td>
</tr>
<tr>
<td>3</td>
<td>Warranty period</td>
</tr>
<tr>
<td>4</td>
<td>Serial number</td>
</tr>
<tr>
<td></td>
<td>Model number (select products only)</td>
</tr>
</tbody>
</table>

- Regulatory label(s)—Provide(s) regulatory information about the computer.
- Wireless certification label(s)—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.
## 3 Using the keyboard base

Your computer includes a full-size, detachable keyboard base for easy navigation.

### Keyboard base components

#### Keys

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) esc key</td>
<td>Displays system information when pressed in combination with the fn key.</td>
</tr>
<tr>
<td>(2) fn key</td>
<td>Executes frequently used system functions when pressed in combination with the esc key, action keys, or the spacebar.</td>
</tr>
<tr>
<td>(3) Windows key</td>
<td>Opens the Start menu. <strong>NOTE:</strong> Pressing the Windows key again will close the Start menu.</td>
</tr>
<tr>
<td>(4) Action keys</td>
<td>Execute frequently used system functions. <strong>NOTE:</strong> On select products, the f5 action key turns the backlight keyboard feature off or on.</td>
</tr>
</tbody>
</table>

### Using the action keys

- An action key performs an assigned function.
- The icon on each action key illustrates the function for that key.
- To use an action key, press and hold the key.
<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>Opens the Get started app, which provides a broad range of how-to information and troubleshooting tips.</td>
</tr>
<tr>
<td>⋋</td>
<td>Decreases the screen brightness incrementally as long as you hold down the key.</td>
</tr>
<tr>
<td>⋊</td>
<td>Increases the screen brightness incrementally as long as you hold down the key.</td>
</tr>
<tr>
<td></td>
<td>Switches the screen image between display devices connected to the system. For example, if a monitor is connected to the computer, repeatedly pressing this key alternates the screen image from the computer display to the monitor display to a simultaneous display on both the computer and the monitor.</td>
</tr>
</tbody>
</table>
| ⋒    | Turns the backlight keyboard off or on.  
**NOTE:** To conserve battery power, turn off this feature. |
| –     | Mutes or restores speaker sound. |
| ⋈    | Decreases speaker volume incrementally while you hold down the key. |
| ⋍    | Increases speaker volume incrementally while you hold down the key. |
| ⚪    | Plays the previous track of an audio CD or the previous section of a DVD or a Blu-ray Disc (BD). |
| ⌚    | Starts, pauses, or resumes playback of an audio CD, a DVD, or a BD. |
| ⌚    | Plays the next track of an audio CD or the next section of a DVD or a BD. |
| ☁    | Turns the airplane mode and wireless feature on or off.  
**NOTE:** The airplane mode key is also referred to as the wireless button.  
**NOTE:** A wireless network must be set up before a wireless connection is possible. |
## Lights

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Caps lock light</td>
<td>On: Caps lock is on, which switches the keys to all capital letters.</td>
</tr>
</tbody>
</table>
| (2) Mute light | ● Amber: Computer sound is off.  
● Off: Computer sound is on. |
### TouchPad

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) TouchPad zone</td>
<td>Reads your finger gestures to move the pointer or activate items on the screen.</td>
</tr>
<tr>
<td>(2) Left TouchPad button</td>
<td>Functions like the left button on an external mouse.</td>
</tr>
<tr>
<td>(3) Right TouchPad button</td>
<td>Functions like the right button on an external mouse.</td>
</tr>
</tbody>
</table>
Connecting the tablet to the keyboard base

To connect the tablet to the keyboard base, follow these steps:

1. Insert the tablet POGO pin connector docking port (1) into the keyboard base POGO pin docking connector.

2. Slide the kickstand release button (2) down to release the kickstand from the tablet.

3. Position the kickstand (3) at the desired angle. The kickstand angle can be set from about 30 degrees to 150 degrees.

For extra comfort and stability when you are typing, angle the keyboard up to the touchscreen. This raises the back of the keyboard about 10 degrees. Additional magnets hold the keyboard firmly in position.

NOTE: If you close the kickstand, you can leave the keyboard attached and position the keyboard behind the tablet. The keyboard keys and TouchPad are locked to prevent you from accidentally typing while the keyboard is in this position.
Removing the keyboard base from the tablet

To remove the keyboard base from the tablet, pull the keyboard away from the tablet.
4 Connecting to a network

Your computer can travel with you wherever you go. But even at home, you can explore the globe and access information from millions of websites using your computer and a wired or wireless network connection. This chapter will help you get connected to that world.

Connecting to a wireless network

Your computer may be equipped with one or more of the following wireless devices:

- **WLAN device**—Connects the computer to wireless local area networks (commonly referred to as Wi-Fi networks, wireless LANs, or WLANs) in corporate offices, your home, and public places such as airports, restaurants, coffee shops, hotels, and universities. In a WLAN, the mobile wireless device in your computer communicates with a wireless router or a wireless access point.

- **HP Mobile Broadband Module**—Gives you wireless connectivity over a wireless wide area network (WWAN), a much larger area. Mobile network operators install base stations (similar to cell phone towers) throughout large geographic areas, effectively providing coverage across entire states, regions, or even countries.

- **Bluetooth device**—Creates a personal area network (PAN) to connect to other Bluetooth-enabled devices such as computers, phones, printers, headsets, speakers, and cameras. In a PAN, each device communicates directly with other devices, and devices must be relatively close together—typically within 10 meters (approximately 33 feet) of each other.

For more information about wireless technology, the Internet, and networking, see the Get started app.

▲ Select the **Start** button, and then select the **Get started** app.

Using the wireless controls

You can control the wireless devices in your computer using one or more of these features:

- **Airplane mode key** (also called wireless button or wireless key) (referred to in this chapter as airplane mode key)

- **Operating system controls**

**Airplane mode key**

The computer may have an airplane mode key, one or more wireless devices, and one or two wireless lights. All the wireless devices on your computer are enabled at the factory.

The wireless light indicates the overall power state of your wireless devices, not the status of individual devices.

**Operating system controls**

The Network and Sharing Center allows you to set up a connection or network, connect to a network, and diagnose and repair network problems.
To use operating system controls:

1. **Type control panel** in the taskbar search box, and then select **Control Panel**.
2. Select **Network and Internet**, and then select **Network and Sharing Center**.

For more information, see the information provided in the Get started app.

▲ Select the **Start** button, and then select the **Get started** app.

### Connecting to a WLAN

**NOTE:** When you are setting up Internet access in your home, you must establish an account with an Internet service provider (ISP). To purchase Internet service and a modem, contact a local ISP. The ISP will help set up the modem, install a network cable to connect your wireless router to the modem, and test the Internet service.

To connect to a WLAN, follow these steps:

1. Be sure that the WLAN device is on.
2. Select the network status icon in the taskbar, and then connect to one of the available networks.
   - If the WLAN is a security-enabled WLAN, you are prompted to enter a security code. Enter the code, and then select **Next** to complete the connection.

**NOTE:** If no WLANs are listed, you may be out of range of a wireless router or access point.

**NOTE:** If you do not see the WLAN you want to connect to, right-click the network status icon in the taskbar, and then select **Open Network and Sharing Center**. Select **Set up a new connection or network**. A list of options is displayed, allowing you to manually search for and connect to a network or to create a new network connection.

3. Follow the on-screen instructions to complete the connection.

After the connection is made, select the network status icon at the far right of the taskbar, to verify the name and status of the connection.

**NOTE:** The functional range (how far your wireless signals travel) depends on WLAN implementation, router manufacturer, and interference from other electronic devices or structural barriers such as walls and floors.

### Using HP Mobile Broadband (select products only)

Your HP Mobile Broadband computer has built-in support for mobile broadband service. Your new computer, when used with a mobile operator’s network, gives you the freedom to connect to the Internet, send e-mail, or connect to your corporate network without the need for Wi-Fi hotspots.

**NOTE:** If your computer includes HP DataPass, the instructions in this section do not apply. See **Using HP DataPass (select products only)** on page 24.

You might need the HP Mobile Broadband Module IMEI and/or MEID number to activate mobile broadband service. The number may be printed on a label located on the bottom of your computer, inside the battery bay, under the service door, or on the back of the display.

– Or –
You can find the number following these steps:

1. From the taskbar, select the network status icon.

2. Select View Connection Settings.

3. Under the Mobile broadband section, select the network status icon.

Some mobile network operators require the use of a subscriber identity module (SIM) card. A SIM card contains basic information about you, such as a personal identification number (PIN), as well as network information. Some computers include a SIM card that is preinstalled. If the SIM card is not preinstalled, it may be included with the HP Mobile Broadband documents provided with your computer, or the mobile network operator may provide it separately from the computer.

For information about HP Mobile Broadband and how to activate service with a preferred mobile network operator, see the HP Mobile Broadband information included with your computer.

**Using HP DataPass (select products only)**

HP DataPass provides access to Mobile Broadband with no annual contracts, no credit card, and no overage fees. With HP DataPass, you simply turn on the device, register, and connect. HP DataPass includes a monthly data package with purchase of the device. For more information, go to [http://www.hp.com/go/hpdatapass](http://www.hp.com/go/hpdatapass).

**Using GPS (select products only)**

Your computer may be equipped with a Global Positioning System (GPS) device. GPS satellites deliver location, speed, and direction information to GPS-equipped systems.

For more information, see the HP GPS and Location software Help.

**Using Bluetooth wireless devices (select products only)**

A Bluetooth device provides short-range wireless communications that replace the physical cable connections that traditionally link electronic devices such as the following:

- Computers (desktop, notebook)
- Phones (cellular, cordless, smartphone)
- Imaging devices (printer, camera)
- Audio devices (headset, speakers)
- Mouse
- External keyboard

Bluetooth devices provide peer-to-peer capability that allows you to set up a PAN of Bluetooth devices. For information about configuring and using Bluetooth devices, see the Bluetooth software Help.

**Sharing data and drives and accessing software**

When your computer is part of a network, you are not limited to using only the information that is stored in your computer. Computers connected to the network can exchange software and data with each other.

For more information about sharing files, folders, or drives, see the information provided in the Get started app.

▲ Select the Start button, and then select the Get started app.

**NOTE:** When a disc like a DVD movie or game is copy-protected, it cannot be shared.
5 Enjoying entertainment features

Use your HP computer as an entertainment hub to socialize via the webcam, enjoy and manage your music, and download and watch movies. Or, to make your computer an even more powerful entertainment center, connect external devices like a monitor, projector, TV, speakers, or headphones.

Using a webcam

Your computer has a webcam (integrated camera) that records video and captures photographs. Some models allow you to video conference and chat online using streaming video.

▲ To access the camera, type camera in the taskbar search box, and then select Camera from the list of applications.

Using an integrated 3D camera

A 3D camera enables you to scan or capture 3D images or video. 3D apps for gaming, video chat, security, and immersive collaboration are available to maximize your 3D camera experience.

- To see what you can do with your 3D camera, type Intel RealSense Apps in the taskbar search box, or click the icon on the desktop, to go to the Intel® RealSense™ Showcase to view and download 3D apps.
- To practice using your 3D camera, type Intel RealSense Training in the taskbar search box, or click the icon on the desktop, to launch an introductory tutorial.

Using 3D scanning

A 3D scanning app is provided that allows you to scan a physical object to create a 3D digital model.

To see what you can do with 3D scanning, type Sense in the taskbar search box, or click the Sense for RealSense icon on the desktop, and then select the online help and tutorials.

Using audio

On your computer, or on select products using an external optical drive, you can play music CDs, download and listen to music, stream audio content from the web (including radio), record audio, or mix audio and video to create multimedia. To enhance your listening enjoyment, attach external audio devices such as speakers or headphones.

Connecting speakers

You can attach wired speakers to your computer by connecting them to a USB port or to the audio-out (headphone) jack on your computer or on a docking station.

To connect wireless speakers to your computer, follow the device manufacturer's instructions. Before connecting speakers, lower the volume setting.
Connecting headphones

⚠️ **WARNING!** To reduce the risk of personal injury, lower the volume setting before putting on headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety and Environmental Notices*.

To access this document:
1. Type *support* in the taskbar search box, and then select the **HP Support Assistant** app.
   - or –
   Click the question mark icon in the taskbar.
2. Select **My PC**, select the **Specifications** tab, and then select **User Guides**.

You can connect wired headphones to the headphone jack or to the audio-out (headphone)/audio-in (microphone) combo jack on your computer.

To connect wireless headphones to your computer, follow the device manufacturer’s instructions.

Connecting headsets

⚠️ **WARNING!** To reduce the risk of personal injury, lower the volume setting before putting on headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety and Environmental Notices*.

To access this document:
1. Type *support* in the taskbar search box, and then select the **HP Support Assistant** app.
   - or –
   Click the question mark icon in the taskbar.
2. Select **My PC**, select the **Specifications** tab, and then select **User Guides**.

Headphones combined with a microphone are called **headsets**. You can connect wired headsets to the audio-out (headphone)/audio-in (microphone) jack on your computer.

To connect *wireless* headsets to your computer, follow the device manufacturer’s instructions.

Using sound settings

Use sound settings to adjust system volume, change system sounds, or manage audio devices.

To view or change sound settings:

▲ Type *control panel* in the taskbar search box, select **Control Panel**, select **Hardware and Sound**, and then select **Sound**.
   - or –
   Right-click the **Start** button, select **Control Panel**, select **Hardware and Sound**, and then select **Sound**.

Your computer includes an enhanced sound system by Bang & Olufsen. As a result, your computer may include advanced audio features that can be controlled through an audio control panel specific to your audio system.

Use the audio control panel to view and control audio settings.
Type control panel in the taskbar search box, select Control Panel, select Hardware and Sound, and then select the audio control panel specific to your system.

— or —

Right-click the Start button, select Control Panel, select Hardware and Sound, and then select the audio control panel specific to your system.

Using video

Your computer is a powerful video device that enables you to watch streaming video from your favorite websites and download video and movies to watch on your computer when you are not connected to a network.

To enhance your viewing enjoyment, use one of the video ports on the computer to connect an external monitor, projector, or TV.

IMPORTANT: Be sure that the external device is connected to the correct port on the computer, using the correct cable. Follow the device manufacturer’s instructions.

For information on using your video features, refer to HP Support Assistant.

Discovering and connecting to Miracast-compatible wireless displays (select products only)

To discover and connect to Miracast-compatible wireless displays without leaving your current apps, follow the steps below.

To open Miracast:

Type project in the taskbar search box, and then click Project to a second screen. Click Connect to a wireless display, and then follow the on-screen instructions.

NOTE: To learn what type of display you have (Miracast-compatible or Intel WiDi), refer to the documentation that came with your TV or secondary display device.
Discovering and connecting to Intel WiDi certified displays (select Intel products only)

Use Intel WiDi to wirelessly project individual files such as photos, music, or videos, or to duplicate your entire computer screen to a TV or a secondary display device.

Intel WiDi, a premium Miracast solution, makes it easy and seamless to pair your secondary display device; provides for full-screen duplication; and improves speed, quality, and scaling. Intel WiDi Media Share (select products only) enables easy multitasking and provides tools to select and flick individual media files to your secondary display device.

To connect to Intel WiDi certified displays:

▲ Type project in the taskbar search box, and then click Project to a second screen. Click Connect to a wireless display, and then follow the on-screen instructions.

To open Intel WiDi:

▲ Type Intel WiDi in the taskbar search box, and then click Intel WiDi.

To open Intel WiDi Media Share:

▲ Type Intel WiDi Media Share in the taskbar search box, and then click Intel WiDi Media Share.
Navigating the screen

You can navigate the computer screen in the following ways:

- Use touch gestures directly on the screen
- Use touch gestures on the TouchPad
- Use keyboard and optional mouse (mouse purchased separately)
- Use a tablet pen directly on the screen

Using the TouchPad and touch screen gestures

The TouchPad helps you navigate the computer screen and control the pointer using simple touch gestures. You can also use the left and right TouchPad buttons as you would use the corresponding buttons on an external mouse. To navigate a touch screen (select products only), touch the screen directly using gestures described in this chapter.

You can also customize gestures and view demonstrations of how they work. Type control panel in the taskbar search box, select Control Panel, and then select Hardware and Sound. Under Devices and Printers, select Mouse.

NOTE: Unless noted, gestures can be used on the TouchPad or a touch screen (select products only).

Tap

Use the tap/double-tap gesture to select or open an item on the screen.

- Point to an item on the screen, and then tap one finger on the TouchPad zone or touch screen to select the item. Double-tap an item to open it.

Two-finger pinch zoom

Use the two-finger pinch zoom to zoom out or in on images or text.

- Zoom out by placing two fingers apart on the TouchPad zone or touch screen and then moving your fingers together.
- Zoom in by placing two fingers together on the TouchPad zone or touch screen and then moving your fingers apart.
Two-finger scroll (TouchPad only)

Use the two-finger scroll to move up, down, or sideways on a page or image.

- Place two fingers slightly apart on the TouchPad zone and then drag them up, down, left, or right.

Two-finger tap (TouchPad only)

Use the two-finger tap to open the menu for an object on the screen.

**NOTE:** The two-finger tap performs the same function as right-clicking with the mouse.

- Tap two fingers on the TouchPad zone to open the options menu for the selected object.
Three-finger swipe (TouchPad only)

Use the three-finger swipe to perform the following actions.

<table>
<thead>
<tr>
<th>Swipe direction</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>Display the task view to switch between open apps.</td>
</tr>
<tr>
<td>Down</td>
<td>Return to the Desktop.</td>
</tr>
<tr>
<td>Left or right</td>
<td>Switch to the previous app.</td>
</tr>
</tbody>
</table>
One-finger slide (touch screen only)

Use the one-finger slide to pan or scroll through lists and pages, or to move an object.

- To scroll across the screen, lightly slide one finger across the screen in the direction you want to move.
- To move an object, press and hold your finger on an object, and then drag your finger to move the object.

Using the keyboard and optional mouse

The keyboard and mouse allow you to type, select items, scroll and to perform the same functions as you do using touch gestures. The keyboard also allows you to use action keys and key combinations to perform specific functions.

💡 **TIP:** The Windows key on a keyboard allows you to quickly return to the Start screen from an open app or the Windows desktop. Press the button or key again to return to the previous screen.

ℹ️ **NOTE:** Depending on the country or region, your keyboard may have different keys and keyboard functions than those discussed in this section.

Using a tablet pen (select products only)

You can use the pen directly on the tablet. For details about using the pen, refer to the instructions included with the pen.
Managing power

Your computer can operate on either battery power or external power. When the computer is running on battery power only and an AC power source is not available to charge the battery, it is important to monitor and conserve the battery charge.

Initiating and exiting Sleep

Windows has the power-saving state of Sleep.

- **Sleep**—The Sleep state is automatically initiated after a period of inactivity. Your work is saved to memory, allowing you to resume your work very quickly. You can also initiate Sleep manually. For more information, see [Manually initiating and exiting Sleep on page 34](#).

⚠️ **CAUTION:** To reduce the risk of possible audio and video degradation, loss of audio or video playback functionality, or loss of information, do not initiate the Sleep state while reading from or writing to a disc or an external media card.
Manually initiating and exiting Sleep

You can initiate Sleep in any of the following ways:

- Close the display.
- Select the Start button, select the Power icon, and then select Sleep.

You can exit Sleep in any of the following ways:

- Briefly press the power button.
- If the computer is closed, raise the display.
- Press a key on the keyboard.
- Tap the TouchPad.

When the computer exits Sleep, the power lights turn on and your work returns to the screen.

NOTE: If you have set a password to be required on exiting Sleep, you must enter your Windows password before your work returns to the screen.

Setting password protection on wakeup (exiting Sleep)

To set the computer to prompt for a password when the computer exits Sleep, follow these steps:

1. Type power options in the taskbar search box, and then select Power Options.
   - or –
   Right-click the Power meter icon, and then select Power Options.

2. In the left pane, select Require a password on wakeup.

3. Select Change Settings that are currently unavailable.

4. Select Require a password (recommended).

   NOTE: To create a user account password or change your current user account password, select Create or change your user account password, and then follow the on-screen instructions. If you do not need to create or change a user account password, go to step 5.

5. Select Save changes.

Using the power meter and power settings

The power meter is located on the Windows taskbar. The power meter allows you to quickly access power settings and view the remaining battery charge.

- To view the percentage of remaining battery charge and the current power plan, place the mouse pointer over the power meter icon.

- To use Power Options, right-click the power meter icon, and then select an item from the list. You can also type power options in the task bar search box, and then select Power Options.

Different power meter icons indicate whether the computer is running on battery or external power. Placing the mouse pointer over the icon reveals a message if the battery has reached a low or critical battery level.
Running on battery power

When a charged battery is in the computer and the computer is not plugged into external power, the computer runs on battery power. When the computer is off and unplugged from external power, the battery in the computer slowly discharges. The computer displays a message when the battery reaches a low or critical battery level.

Computer battery life varies, depending on power management settings, programs running on the computer, screen brightness, external devices connected to the computer, and other factors.

Factory-sealed battery

To monitor the status of the battery, or if the battery is no longer holding a charge, run HP Battery Check in the HP Support Assistant app.

1. Type support in the taskbar search box, and then select the HP Support Assistant app.
   - or –
   Click the question mark icon in the taskbar.

2. Select My PC, select the Diagnostics and tools tab, and then select HP Battery Check. If HP Battery Check indicates that your battery should be replaced, contact support.

The battery[ies] in this product cannot be easily replaced by users themselves. Removing or replacing the battery could affect your warranty coverage. If a battery is no longer holding a charge, contact support. When a battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

Finding battery information

To access battery information:

1. Type support in the taskbar search box, and then select the HP Support Assistant app.
   - or –
   Click the question mark icon in the taskbar.

2. Select My PC, select the Diagnostics and tools tab, and then select HP Battery Check. If HP Battery Check indicates that your battery should be replaced, contact support.

HP Support Assistant provides the following tools and information about the battery:

- HP Battery Check
- Information about battery types, specifications, life cycles, and capacity

Conserving battery power

To conserve battery power and maximize battery life:

- Lower the brightness of the display.
- Select the Power saver setting in Power Options.
- Turn off wireless devices when you are not using them.
- Disconnect unused external devices that are not plugged into an external power source, such as an external hard drive connected to a USB port.
● Stop, disable, or remove any external media cards that you are not using.
● Before you leave your work, initiate Sleep or shut down the computer.

Identifying low battery levels

When a battery that is the sole power source for the computer reaches a low or critical battery level, the following behavior occurs:

● The battery light (select products only) indicates a low or critical battery level.
– or –
● The power meter icon shows a low or critical battery notification.

**NOTE:** For additional information about the power meter, see Using the power meter and power settings on page 34.

The computer takes the following actions for a critical battery level:

● If the computer is on or in the Sleep state, the computer remains briefly in the Sleep state and then shuts down and loses any unsaved information.

Resolving a low battery level

Resolving a low battery level when external power is available

Connect one of the following to the computer and to external power:

● AC adapter
● Optional docking or expansion device
● Optional power adapter purchased as an accessory from HP

Resolving a low battery level when no power source is available

Save your work and shut down the computer.

Running on AC power

For information about connecting to AC power, refer to the Setup Instructions poster provided in the computer box.

The computer does not use battery power when the computer is connected to AC power with an approved AC adapter or an optional docking/expansion device.

**WARNING!** To reduce potential safety issues, use only the AC adapter provided with the computer, a replacement AC adapter provided by HP, or a compatible AC adapter purchased from HP.

Connect the computer to AC power under any of the following conditions:

**WARNING!** Do not charge the computer battery while you are aboard aircraft.

● When charging or calibrating a battery
● When installing or modifying system software
● When writing information to a disc (select products only)
● When running Disk Defragmenter on computers with internal hard drives
● When performing a backup or recovery

When you connect the computer to AC power:
● The battery begins to charge.
● The screen brightness increases.
● The power meter icon changes appearance.

When you disconnect AC power:
● The computer switches to battery power.
● The screen brightness automatically decreases to save battery life.
● The power meter icon changes appearance.

Troubleshooting power problems
Test the AC adapter if the computer exhibits any of the following symptoms when it is connected to AC power:
● The computer does not turn on.
● The display does not turn on.
● The power lights do not turn on.

To test the AC adapter:
1. Shut down the computer.
2. Connect the AC adapter to the computer and to the power cord, and then plug the power cord into an AC outlet.
3. Turn on the computer.
   ● If the power lights turn on, the AC adapter is working properly.
   ● If the power lights remain off, check the connection from the AC adapter to the computer and the connection from the power cord to the AC outlet to be sure that the connections are secure.
   ● If the connections are secure and the power lights remain off, the AC adapter is not functioning and should be replaced.

Contact support for information about obtaining a replacement AC power adapter.

Shutting down (turning off) the computer

⚠️ CAUTION: Unsaved information is lost when the computer shuts down. Be sure to save your work before shutting down the computer.

The Shut down command closes all open programs, including the operating system, and then turns off the display and computer.
Shut down the computer under any of the following conditions:

- When you need to access components inside the computer
- When you are connecting an external hardware device that does not connect to a USB or video port
- When the computer will be unused and disconnected from external power for an extended period

Although you can turn off the computer with the power button, the recommended procedure is to use the Windows Shut down command.

**NOTE:** If the computer is in the Sleep state, first exit Sleep by briefly pressing the power button.

1. Save your work and close all open programs.
2. Select the **Start** button, select the **Power** icon, and then select **Shut down**.

If the computer is unresponsive and you are unable to use the preceding shutdown procedures, try the following emergency procedures in the sequence provided:

- Press `ctrl+alt+delete`, select the **Power** icon, and then select **Shut down**.
- Press and hold the power button for at least 11 seconds.
- Disconnect the computer from external power.
8 Maintaining your computer

It is important to perform regular maintenance to keep your computer in optimal condition. This chapter explains how to use tools like Disk Defragmenter and Disk Cleanup. It also provides instructions for updating programs and drivers, steps to clean the computer, and tips for traveling with (or shipping) the computer.

Improving performance

You can improve the performance of your computer by performing regular maintenance tasks with tools such as Disk Defragmenter and Disk Cleanup.

Using Disk Defragmenter

HP recommends using Disk Defragmenter to defragment your hard drive at least once a month.

NOTE: It is not necessary to run Disk Defragmenter on solid-state drives.

To run Disk Defragmenter:
1. Connect the computer to AC power.
2. Type defragment in the taskbar search box, and then select Defragment and optimize your drives.
3. Follow the on-screen instructions.

For additional information, access the Disk Defragmenter software Help.

Using Disk Cleanup

Use Disk Cleanup to search the hard drive for unnecessary files that you can safely delete to free up disk space and help the computer run more efficiently.

To run Disk Cleanup:
1. Type disk in the taskbar search box, and then select Free up disk space by deleting unnecessary files or Uninstall apps to free up disk space.
2. Follow the on-screen instructions.

Using HP 3D DriveGuard (select products only)

HP 3D DriveGuard protects a hard drive by parking the drive and halting data requests under either of the following conditions:
- You drop the computer.
- You move the computer with the display closed while the computer is running on battery power.

A short time after the end of one of these events, HP 3D DriveGuard returns the hard drive to normal operation.

NOTE: Only internal hard drives are protected by HP 3D DriveGuard. A hard drive installed in an optional docking device or connected to a USB port is not protected by HP 3D DriveGuard.
NOTE: Because solid-state drives (SSDs) lack moving parts, HP 3D DriveGuard is unnecessary for these drives.

For more information, see the HP 3D DriveGuard software Help.

Identifying HP 3D DriveGuard status

The hard drive light on the computer changes color to show that the drive in a primary hard drive bay and/or the drive in a secondary hard drive bay (select products only) is parked. To determine whether a drive is currently protected or whether it is parked, view the icon on the Windows desktop in the notification area, at the far right of the taskbar.

Updating programs and drivers

HP recommends that you update your programs and drivers on a regular basis. Updates can resolve issues and bring new features and options to your computer. For example, older graphics components might not work well with the most recent gaming software. Without the latest driver, you would not be getting the most out of your equipment.

Go to http://www.hp.com/support to download the latest versions of HP programs and drivers. In addition, register to receive automatic notifications when updates become available.

If you would like to update your programs and drivers, follow these instructions:

1. Type support in the taskbar search box, and then select the HP Support Assistant app.
   - or -
   Click the question mark icon in the taskbar.

2. Select My PC, select the Updates tab, and then select Check for updates and messages.

3. Follow the on-screen instructions.

Cleaning your computer

Use the following products to safely clean your computer:

- Dimethyl benzyl ammonium chloride 0.3 percent maximum concentration (for example, disposable wipes, which come in a variety of brands)
- Alcohol-free glass-cleaning fluid
- Solution of water and mild soap
- Dry microfiber cleaning cloth or a chamois (static-free cloth without oil)
- Static-free cloth wipes

CAUTION: Avoid strong cleaning solvents that can permanently damage your computer. If you are not sure that a cleaning product is safe for your computer, check the product contents to make sure that ingredients such as alcohol, acetone, ammonium chloride, methylene chloride, and hydrocarbons are not included in the product.

Fibrous materials, such as paper towels, can scratch the computer. Over time, dirt particles and cleaning agents can get trapped in the scratches.

Cleaning procedures

Follow the procedures in this section to safely clean your computer.
WARNING! To prevent electric shock or damage to components, do not attempt to clean your computer while it is on.

1. Turn off the computer.
2. Disconnect AC power.
3. Disconnect all powered external devices.

CAUTION: To prevent damage to internal components, do not spray cleaning agents or liquids directly on any computer surface. Liquids dripped on the surface can permanently damage internal components.

Cleaning the display

Gently wipe the display using a soft, lint-free cloth moistened with an alcohol-free glass cleaner. Be sure that a display is dry before you close the computer.

Cleaning the sides or cover

To clean the sides or cover, use a soft microfiber cloth or chamois moistened with one of the cleaning solutions listed previously, or use an acceptable disposable wipe.

NOTE: When cleaning the cover of the computer, use a circular motion to aid in removing dirt and debris.

Cleaning the TouchPad, keyboard, or mouse (select products only)

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.

CAUTION: To prevent damage to internal components, do not allow liquids to drip between the keys.

- To clean the TouchPad, keyboard, or mouse, use a soft microfiber cloth or a chamois moistened with one of the cleaning solutions listed previously or use an acceptable disposable wipe.
- To prevent keys from sticking and to remove dust, lint, and particles from the keyboard, use a can of compressed air with a straw extension.

Traveling with or shipping your computer

If you have to travel with or ship your computer, follow these tips to keep your equipment safe.

- Prepare the computer for traveling or shipping:
  - Back up your information to an external drive.
  - Remove all discs and all external media cards, such as memory cards.
  - Turn off and then disconnect all external devices.
  - Shut down the computer.
- Take along a backup of your information. Keep the backup separate from the computer.
- When traveling by air, carry the computer as hand luggage; do not check it in with the rest of your luggage.

CAUTION: Avoid exposing a drive to magnetic fields. Security devices with magnetic fields include airport walk-through devices and security wands. Airport conveyer belts and similar security devices that check carry-on baggage use X-rays instead of magnetism and do not damage drives.
● If you plan to use the computer during a flight, listen for the in-flight announcement that tells you when you are allowed to use your computer. In-flight computer use is at the discretion of the airline.

● If you are shipping the computer or a drive, use suitable protective packaging and label the package “FRAGILE.”

● The use of wireless devices may be restricted in some environments. Such restrictions may apply aboard aircraft, in hospitals, near explosives, and in hazardous locations. If you are uncertain of the policy that applies to the use of a wireless device in your computer, ask for authorization to use your computer before you turn it on.

● If you are traveling internationally, follow these suggestions:
  ◦ Check the computer-related customs regulations for each country or region on your itinerary.
  ◦ Check the power cord and adapter requirements for each location in which you plan to use the computer. Voltage, frequency, and plug configurations vary.

⚠️ **WARNING!** To reduce the risk of electric shock, fire, or damage to the equipment, do not attempt to power the computer with a voltage converter kit sold for appliances.
9 Securing your computer and information

Computer security is essential for protecting the confidentiality, integrity, and availability of your information. Standard security solutions provided by the Windows operating system, HP applications, the Setup Utility (BIOS), and other third-party software can help protect your computer from a variety of risks, such as viruses, worms, and other types of malicious code.

⚠️ **IMPORTANT:** Some security features listed in this chapter may not be available on your computer.

**Using passwords**

A password is a group of characters that you choose to secure your computer information and to protect online transactions. Several types of passwords can be set. For example, when you set up your computer for the first time, you were asked to create a user password to secure your computer. Additional passwords can be set in Windows or in HP Setup Utility (BIOS), which is preinstalled on your computer.

You may find it helpful to use the same password for a Setup Utility (BIOS) feature and for a Windows security feature.

To create and save passwords, use the following tips:

- To reduce the risk of being locked out of the computer, record each password and store it in a secure place away from the computer. Do not store passwords in a file on the computer.
- When creating passwords, follow requirements set by the program.
- Change your passwords at least every 3 months.
- An ideal password is long and has letters, punctuation, symbols, and numbers.
- Before you send your computer for service, back up your files, delete confidential files, and then remove all password settings.

For additional information about Windows passwords, such as screen-saver passwords:

▲ Type `support` in the taskbar search box, and then select the **HP Support Assistant** app.

– or –

Click the question mark icon in the taskbar.

**Setting Windows passwords**

<table>
<thead>
<tr>
<th>Password</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>User password</td>
<td>Protects access to a Windows user account.</td>
</tr>
<tr>
<td>Administrator password</td>
<td>Protects administrator-level access to computer contents.</td>
</tr>
</tbody>
</table>

**NOTE:** This password cannot be used to access Setup Utility (BIOS) contents.
Setting Setup Utility (BIOS) passwords

<table>
<thead>
<tr>
<th>Password</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator password</td>
<td>• Must be entered each time you access Setup Utility (BIOS).</td>
</tr>
<tr>
<td></td>
<td>• If you forget your administrator password, you cannot access Setup Utility (BIOS).</td>
</tr>
<tr>
<td>Power-on password</td>
<td>• Must be entered each time you turn on or restart the computer.</td>
</tr>
<tr>
<td></td>
<td>• If you forget your power-on password, you cannot turn on or restart the computer.</td>
</tr>
</tbody>
</table>

To set, change, or delete an administrator or power-on password in Setup Utility (BIOS):

⚠️ **CAUTION:** Use extreme care when making changes in Setup Utility (BIOS). Errors can prevent the computer from operating properly.

⚠️ **NOTE:** To start Setup Utility, your computer must be in notebook mode and you must use the keyboard attached to your notebook. The on-screen keyboard, which displays in tablet mode, cannot access Setup Utility.

1. Start Setup Utility (BIOS):
   - Computers or tablets with keyboards:
     1. Turn on or restart the computer, quickly press `esc`, and then press `f10`.
   - Tablets without keyboards:
     1. Turn on or restart the tablet, and then quickly hold down the volume up button.
     2. Tap `f10`.

2. Select Security, and then follow the on-screen instructions.

Your changes take effect when the computer restarts.

Using Internet security software

When you use your computer to access email, a network, or the Internet, you potentially expose your computer to computer viruses, spyware, and other online threats. To help protect your computer, Internet security software that includes antivirus and firewall features may be preinstalled on your computer as a trial offer. To provide ongoing protection against newly discovered viruses and other security risks, security software must be kept up to date. It is strongly recommended that you upgrade the security software trial offer or purchase the software of your choice in order to fully protect your computer.

Using antivirus software

Computer viruses can disable programs, utilities, or the operating system, or cause them to function abnormally. Antivirus software can detect most viruses, destroy them, and in most cases, repair any damage they have caused.

To provide ongoing protection against newly discovered viruses, antivirus software must be kept up to date.

An antivirus program may be preinstalled on your computer. It is strongly recommended that you use the antivirus program of your choice in order to fully protect your computer.
For more information about computer viruses, type support in the taskbar search box, and then select the HP Support Assistant app.

—or—

Click the question mark icon in the taskbar.

**Using firewall software**

Firewalls are designed to prevent unauthorized access to a system or network. A firewall can be software you install on your computer and/or network, or it can be a combination of both hardware and software.

There are two types of firewalls to consider:

- **Host-based firewalls**—Software that protects only the computer it is installed on.
- **Network-based firewalls**—Installed between your DSL or cable modem and your home network to protect all the computers on the network.

When a firewall is installed on a system, all data sent to and from the system is monitored and compared with a set of user-defined security criteria. Any data that does not meet those criteria is blocked.

**Installing software updates**

HP, Windows, and third-party software installed on your computer should be regularly updated to correct security problems and improve software performance.

⚠ **CAUTION:** Microsoft sends out alerts regarding Windows updates, which may include security updates. To protect the computer from security breaches and computer viruses, install all updates from Microsoft as soon as you receive an alert.

You can install these updates automatically.

To view or change the settings:

1. Select the Start button, select Settings, and then select Update & Security.
2. Select Windows Update, and then follow the on-screen instructions.
3. To schedule a time for installing updates, select Advanced Options, and then follow the on-screen instructions.

**Using HP Touchpoint Manager (select products only)**

HP Touchpoint Manager is a cloud-based IT solution that enables businesses to effectively manage and secure their company assets. HP Touchpoint Manager helps protect devices against malware and other attacks, monitors device health, and enables you to reduce time spent solving end-user device and security issues. You can quickly download and install the software, which is highly cost effective relative to traditional in-house solutions.

**Securing your wireless network**

When you set up a WLAN or access an existing WLAN, always enable security features to protect your network from unauthorized access. WLANs in public areas (hotspots) like coffee shops and airports may not provide any security.
Backing up your software applications and information

Regularly back up your software applications and information to protect them from being permanently lost or damaged through a virus attack or a software or hardware failure.
Setup Utility, or Basic Input/Output System (BIOS), controls communication between all the input and output devices on the system (such as disk drives, display, keyboard, mouse, and printer). Setup Utility (BIOS) includes settings for the types of devices installed, the startup sequence of the computer, and the amount of system and extended memory.

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook. The on-screen keyboard, which displays in tablet mode, cannot access Setup Utility.

Starting Setup Utility (BIOS)

CAUTION: Use extreme care when making changes in Setup Utility (BIOS). Errors can prevent the computer from operating properly.

NOTE: To start Setup Utility on convertible computers, your computer must be in notebook mode and you must use the keyboard attached to your notebook. The on-screen keyboard, which displays in tablet mode, cannot access Setup Utility.

- Computers or tablets with keyboards:
  ▲ Turn on or restart the computer, quickly press esc, and then press f10.

- Tablets without keyboards:
  1. Turn on or restart the tablet, and then quickly hold down the volume up button.
  2. Tap f10.

Updating Setup Utility (BIOS)

Updated versions of Setup Utility (BIOS) may be available on the HP website.

Most BIOS updates on the HP website are packaged in compressed files called SoftPaqs.

Some download packages contain a file named Readme.txt, which contains information regarding installing and troubleshooting the file.

Determining the BIOS version

To decide whether you need to update Setup Utility (BIOS), first determine the BIOS version on your computer.

To reveal the BIOS version information (also known as ROM date and System BIOS):

1. Type support in the taskbar search box, and then select the HP Support Assistant app.
   – or –
   Click the question mark icon in the taskbar.

2. Select My PC, and then select Specifications.
   – or –
Use Setup Utility (BIOS).

To use Setup Utility (BIOS):

2. Select Main, select System Information, and then make note of the BIOS version.
3. Select Exit, select No, and then follow the on-screen instructions.

To check for later BIOS versions, see Downloading a BIOS update on page 48.

**Downloading a BIOS update**

⚠️ **CAUTION:** To reduce the risk of damage to the computer or an unsuccessful installation, download and install a BIOS update only when the computer is connected to reliable external power using the AC adapter. Do not download or install a BIOS update while the computer is running on battery power, docked in an optional docking device, or connected to an optional power source. During the download and installation, follow these instructions:

- Do not disconnect power from the computer by unplugging the power cord from the AC outlet.
- Do not shut down the computer or initiate Sleep.
- Do not insert, remove, connect, or disconnect any device, cable, or cord.

**NOTE:** If your computer is connected to a network, consult the network administrator before installing any software updates, especially system BIOS updates.

1. Type `support` in the taskbar search box, and then select the HP Support Assistant app.
   
   or

    Click the question mark icon in the taskbar.

2. Click Updates, and then click Check for updates and messages.

3. Follow the on-screen instructions.

4. At the download area, follow these steps:

   a. Identify the most recent BIOS update and compare it to the BIOS version currently installed on your computer. If the update is more recent than your BIOS version, make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.

   b. Follow the on-screen instructions to download your selection to the hard drive.

      Make a note of the path to the location on your hard drive where the BIOS update is downloaded. You will need to access this path when you are ready to install the update.

BIOS installation procedures vary. Follow any instructions that appear on the screen after the download is complete. If no instructions appear, follow these steps:

1. Type `file` in the taskbar search box, and then select File Explorer.

2. Click your hard drive designation. The hard drive designation is typically Local Disk (C:).

3. Using the hard drive path you recorded earlier, open the folder that contains the update.

4. Double-click the file that has an .exe extension (for example, `filename.exe`).

   The BIOS installation begins.

5. Complete the installation by following the on-screen instructions.
NOTE: After a message on the screen reports a successful installation, you can delete the downloaded file from your hard drive.

**Synchronizing a tablet and keyboard (select products only)**

For a tablet with a detachable keyboard, when you attach the tablet to the keyboard and restart the computer, Setup Utility (BIOS) checks to see if the Embedded Controller firmware on the keyboard needs to be synchronized. If so, synchronization begins. If the synchronization is interrupted, a notification screen displays for 10 seconds before the tablet restarts and attempts to synchronize again.

NOTE: The Embedded Controller firmware will synchronize ONLY if the tablet or keyboard battery is more than 50% charged, or if your tablet is connected to AC power.
11 Using HP PC Hardware Diagnostics (UEFI)

HP PC Hardware Diagnostics is a Unified Extensible Firmware Interface (UEFI) that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs outside the operating system so that it can isolate hardware failures from issues that are caused by the operating system or other software components.

NOTE: To start BIOS on a convertible computer, your computer must be in notebook mode and you must use the keyboard attached to your tablet. The on-screen keyboard, which displays in tablet mode, cannot access BIOS.

To start HP PC Hardware Diagnostics UEFI:

1. Start BIOS:
   - Computers or tablets with keyboards:
     ▲ Turn on or restart the computer, quickly press esc.
   - Tablets without keyboards:
     ▲ Turn on or restart the tablet, and then quickly hold down the volume up button.

2. Press or tap f2.

   The BIOS searches three places for the diagnostic tools, in the following order:
   a. Connected USB drive

      NOTE: To download the HP PC Hardware Diagnostics (UEFI) tool to a USB drive, see Downloading HP PC Hardware Diagnostics (UEFI) to a USB device on page 50.

   b. Hard drive

   c. BIOS

3. When the diagnostic tool opens, select the type of diagnostic test you want to run, and then follow the on-screen instructions. On a tablet, press the volume down button to stop a diagnostic test.

   NOTE: If you need to stop a diagnostic test on computers or tablets with a keyboard, press esc.

**Downloading HP PC Hardware Diagnostics (UEFI) to a USB device**

There are two options to download HP PC Hardware Diagnostics to a USB device:

**Download the latest UEFI version:**


2. In the HP PC Hardware Diagnostics section, click the **Download** link, and then select **Run**.

**Download any version of UEFI for a specific product:**

1. Go to [http://www.hp.com/support](http://www.hp.com/support), and then select your country. The HP Support page is displayed.

2. Click **Drivers & Downloads**.
3. In the text box, enter the product name, and then click Go.
   – or –
   Click Find Now to let HP automatically detect your product.
4. Select your computer, and then select your operating system.
5. In the Diagnostic section, follow the on-screen instructions to select and download the UEFI version you want.
12 Backing up, restoring, and recovering

This chapter provides information about the following processes. The information in the chapter is standard procedure for most products.

- Creating recovery media and backups
- Restoring and recovering your system

For additional information, refer to the HP support assistant app.

▲ Type support in the taskbar search box, and then select the HP Support Assistant app.

- or –

Click the question mark icon in the taskbar.

**IMPORTANT:** If you will be performing recovery procedures on a tablet, the tablet battery must be at least 70% charged before you start the recovery process.

**IMPORTANT:** For a tablet with a detachable keyboard, connect the keyboard to the keyboard dock before beginning any recovery process.

Creating recovery media and backups

The following methods of creating recovery media and backups are available on select products only. Choose the available method according to your computer model.

- Use HP Recovery Manager to create HP Recovery media after you successfully set up the computer. This step creates a backup of the HP Recovery partition on the computer. The backup can be used to reinstall the original operating system in cases where the hard drive is corrupted or has been replaced. For information on creating recovery media, see Creating HP Recovery media (select products only) on page 52. For information on the recovery options that are available using the recovery media, see Using Windows tools on page 53.

- Use Windows tools to create system restore points and create backups of personal information.

For more information, see Recovering using HP Recovery Manager on page 54.

**NOTE:** If storage is 32 GB or less, Microsoft System Restore is disabled by default.

Creating HP Recovery media (select products only)

If possible, check for the presence of the Recovery partition and the Windows partition. From the Start menu, select File Explorer, and then select This PC.

- If your computer does not list the Windows partition and the Recovery partition, you can obtain recovery media for your system from support. See the Worldwide Telephone Numbers booklet included with the computer. You can also find contact information on the HP website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.
You can use Windows tools to create system restore points and create backups of personal information, see Using Windows tools on page 53.

- If your computer does list the Recovery partition and the Windows partition, you can use HP Recovery Manager to create recovery media after you successfully set up the computer. HP Recovery media can be used to perform system recovery if the hard drive becomes corrupted. System recovery reinstall the original operating system and software programs that were installed at the factory and then configures the settings for the programs. HP Recovery media can also be used to customize the system or restore the factory image if you replace the hard drive.
  - 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 media that will be required.
  - To create recovery discs, your computer must have an optical drive with DVD writer capability, and you must use only high-quality blank DVD-R, DVD+R, DVD-R DL, or DVD+R DL discs. Do not use rewritable discs such as CD±RW, DVD±RW, double-layer DVD±RW, or BD-RE (rewritable Blu-ray) discs; they are not compatible with HP Recovery Manager software. Or, instead, you can use a high-quality blank USB flash drive.
  - If your computer does not include an integrated optical drive with DVD writer capability, but you would like to create DVD recovery media, you can use an external optical drive (purchased separately) to create recovery discs. If you use an external optical drive, it must be connected directly to a USB port on the computer; the drive cannot be connected to a USB port on an external device, such as a USB hub. If you cannot create DVD media yourself, you can obtain recovery discs for your computer from HP. See the Worldwide Telephone Numbers booklet included with the computer. You can also find contact information on the HP website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.
  - Be sure that the computer is connected to AC power before you begin creating the recovery media.
  - The creation process can take an hour or more. Do not interrupt the creation process.
  - If necessary, you can exit the program before you have finished creating all of the recovery DVDs. HP Recovery Manager will finish burning the current DVD. The next time you start HP Recovery Manager, you will be prompted to continue.

To create HP Recovery media:

**IMPORTANT:** For a tablet with a detachable keyboard, connect the keyboard to the keyboard dock before beginning these steps.

1. Type recovery in the taskbar search box, and then select HP Recovery Manager.
2. Select Create recovery media, and then follow the on-screen instructions.

If you ever need to recover the system, see Recovering using HP Recovery Manager on page 54.

### Using Windows tools

You can create recovery media, system restore points, and backups of personal information using Windows tools.

**NOTE:** If storage is 32 GB or less, Microsoft System Restore is disabled by default.

For more information and steps, see the Get started app.

1. Select the Start button, and then select the Get started app.
Restore and recovery

There are several options for recovering your system. Choose the method that best matches your situation and level of expertise:

**IMPORTANT:** Not all methods are available on all products.

- **Windows** offers several options for restoring from backup, refreshing the computer, and resetting the computer to its original state. For more information see the Get started app.
  
  ▲ Select the **Start** button, and then select the **Get started** app.

- If you need to correct a problem with a preinstalled application or driver, use the Reinstall drivers and/or applications option (select products only) of HP Recovery Manager to reinstall the individual application or driver.
  
  ▲ Type **recovery** in the taskbar search box, select **HP Recovery Manager**, select **Reinstall drivers and/or applications**, and then follow the on-screen instructions.

- If you want to recover the Windows partition to original factory content, you can choose the System Recovery option from the HP Recovery partition (select products only) or use the HP Recovery media. For more information, see **Recovering using HP Recovery Manager** on page 54. If you have not already created recovery media, see **Creating HP Recovery media (select products only)** on page 52.

- On select products, if you want to recover the computer’s original factory partition and content, or if you have replaced the hard drive, you can use the Factory Reset option of HP Recovery media. For more information, see **Recovering using HP Recovery Manager** on page 54.

- On select products, if you want to remove the recovery partition to reclaim hard drive space, HP Recovery Manager offers the Remove Recovery Partition option.

  For more information, see **Removing the HP Recovery partition (select products only)** on page 57.

### Recovering using HP Recovery Manager

HP Recovery Manager software allows you to recover the computer to its original factory state by using the HP Recovery media that you either created or that you obtained from HP, or by using the HP Recovery partition (select products only). If you have not already created recovery media, see **Creating HP Recovery media (select products only)** on page 52.

#### What you need to know before you get started

- 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 media provided by the manufacturer.

  **IMPORTANT:** Recovery through HP Recovery Manager should be used as a final attempt to correct computer issues.

- HP Recovery media must be used if the computer hard drive fails. If you have not already created recovery media, see **Creating HP Recovery media (select products only)** on page 52.

- To use the Factory Reset option (select products only), you must use HP Recovery media. If you have not already created recovery media, see **Creating HP Recovery media (select products only)** on page 52.

- If your computer does not allow the creation of HP Recovery media or if the HP Recovery media does not work, you can obtain recovery media for your system from support. See the **Worldwide Telephone Numbers** booklet included with the computer. You can also find contact information from the HP
website. Go to http://www.hp.com/support, select your country or region, and follow the on-screen instructions.

**IMPORTANT:** HP Recovery Manager does not automatically provide backups of your personal data. Before beginning recovery, back up any personal data you want to retain.

Using HP Recovery media, you can choose from one of the following recovery options:

**NOTE:** Only the options available for your computer display when you start the recovery process.

- System Recovery—Reinstalls the original operating system, and then configures the settings for the programs that were installed at the factory.
- Factory Reset—Restores the computer to its original factory state by deleting all information from the hard drive and re-creating the partitions. Then it reinstalls the operating system and the software that was installed at the factory.

The HP Recovery partition (select products only) allows System Recovery only.

### Using the HP Recovery partition (select products only)

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

To start HP Recovery Manager from the HP Recovery partition:

**IMPORTANT:** For a tablet with a detachable keyboard, connect the keyboard to the keyboard dock before beginning these steps (select products only).

1. Type `recovery` in the taskbar search box, select **Recovery Manager**, and then select **HP Recovery Environment**.
   - or-
   For computers or tablets with keyboards attached, press **f11** while the computer boots, or press and hold **f11** as you press the power button.
   For tablets without keyboards:
   Turn on or restart the tablet, and then quickly hold down the volume up button; then select **f11**.

2. Select **Troubleshoot** from the boot options menu.

3. Select **Recovery Manager**, and then follow the on-screen instructions.

### Using HP Recovery media to recover

You can use HP Recovery media to recover the original system. This method can be used if your system does not have an HP Recovery partition or if the hard drive is not working properly.

1. If possible, back up all personal files.
2. Insert the HP Recovery media, 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 56.

3. Follow the on-screen instructions.
Changing the computer boot order

If your computer does not restart in HP Recovery Manager, you can change the computer boot order, which is the order of devices listed in BIOS where the computer looks for startup information. You can change the selection to an optical drive or a USB flash drive.

To change the boot order:

**IMPORTANT:** For a tablet with a detachable keyboard, connect the keyboard to the keyboard dock before beginning these steps.

1. Insert the HP Recovery media.
2. Access BIOS:
   - For computers or tablets with keyboards attached:
     - Turn on or restart the computer or tablet, quickly press `esc`, and then press `f9` for boot options.
   - For tablets without keyboards:
     - Turn on or restart the tablet, and then quickly hold down the volume up button; then select `f9`.
3. Select the optical drive or USB flash drive from which you want to boot.
4. Follow the on-screen instructions.
**Removing the HP Recovery partition (select products only)**

HP Recovery Manager software allows you to remove the HP Recovery partition to free up hard drive space.

**IMPORTANT:** After you remove the HP Recovery partition, you will not be able to perform System Recovery or create HP recovery media from the HP Recovery partition. So before you remove the Recovery partition, create HP Recovery media; see [Creating HP Recovery media (select products only) on page 52](#).

**NOTE:** The Remove Recovery Partition option is only available on products that support this function.

Follow these steps to remove the HP Recovery partition:

1. Type `recovery` in the taskbar search box, and then select **HP Recovery Manager**.
2. Select **Remove Recovery Partition**, and then follow the on-screen instructions.
13 Specifications

Input power

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

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

The computer can operate on DC power within the following specifications. Operating voltage and current varies by platform. The voltage and current for your computer is located on the regulatory label.

<table>
<thead>
<tr>
<th>Input power</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage and current</td>
<td>15 V dc @ 3 A – 45 W</td>
</tr>
</tbody>
</table>

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

Operating environment

<table>
<thead>
<tr>
<th>Factor</th>
<th>Metric</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>5°C to 35°C</td>
<td>41°F to 95°F</td>
</tr>
<tr>
<td>Nonoperating</td>
<td>-20°C to 60°C</td>
<td>-4°F to 140°F</td>
</tr>
<tr>
<td>Relative humidity (noncondensing)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>10% to 90%</td>
<td>10% to 90%</td>
</tr>
<tr>
<td>Nonoperating</td>
<td>5% to 95%</td>
<td>5% to 95%</td>
</tr>
<tr>
<td>Maximum altitude (unpressurized)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>-15 m to 3,048 m</td>
<td>-50 ft to 10,000 ft</td>
</tr>
<tr>
<td>Nonoperating</td>
<td>-15 m to 12,192 m</td>
<td>-50 ft to 40,000 ft</td>
</tr>
</tbody>
</table>
14 Electrostatic Discharge

Electrostatic discharge is the release of static electricity when two objects come into contact—for example, the shock you receive when you walk across the carpet and touch a metal door knob.

A discharge of static electricity from fingers or other electrostatic conductors may damage electronic components.

To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

- If removal or installation instructions direct you to unplug the computer, first be sure that it is properly grounded.
- Keep components in their electrostatic-safe containers until you are ready to install them.
- Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.
- Use nonmagnetic tools.
- Before handling components, discharge static electricity by touching an unpainted metal surface.
- If you remove a component, place it in an electrostatic-safe container.
15 Accessibility

HP designs, produces, and markets products and services that can be used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

Supported assistive technologies

HP products support a wide variety of operating system assistive technologies and can be configured to work with additional assistive technologies. Use the Search feature on your device to locate more information about assistive features.

NOTE: For additional information about a particular assistive technology product, contact customer support for that product.

Contacting support

We are constantly refining the accessibility of our products and services and welcome feedback from users. If you have an issue with a product or would like to tell us about accessibility features that have helped you, please contact us at +1 (888) 259-5707, Monday through Friday, 6 a.m. to 9 p.m. North American Mountain Time. If you are deaf or hard-of-hearing and use TRS/VRST/WebCapTel, contact us if you require technical support or have accessibility questions by calling +1 (877) 656-7058, Monday through Friday, 6 a.m. to 9 p.m. North American Mountain Time.

NOTE: Support is in English only.
Symbols/Numerics

3D camera
- identifying 10
- using 25
3D camera infrared laser projectors,
- identifying 10
3D camera light, identifying 10
3D scanning, using 25

A
AC adapter and battery 5, 6
AC adapter, testing 37
accessibility 60
action keys 16
- identifying 16
airplane mode 22
airplane mode key 17, 22
antivirus software, using 44
Audio 26
audio-out (headphone)/audio-in
- (microphone) jack, identifying 6

B
backing up software and
- information 46
backups 52
battery
- conserving power 35
- discharging 35
- factory-sealed 35
- finding information 35
- low battery levels 36
- resolving low battery level 36
- battery information, finding 35
- battery power 35
best practices 1
BIOS
- determining version 47
- downloading an update 48
- starting the Setup Utility 47
- updating 47
Bluetooth device 22, 24
Bluetooth label 15
boot order
- changing 56
bottom 15
buttons
- left TouchPad 19
- power 8
- right TouchPad 19
C
caps lock light, identifying 18
caring for your computer 40
cleaning your computer 40
components
- back edge 9
- bottom 10
- display 7
- keyboard base 16
- kickstand 11
- left side 6
- right side 5
connecting to a WLAN 23
corporate WLAN connection 23
critical battery level 36

D
Disk Cleanup software 39
Disk Defragmenter software 39
docking port, identifying 9

E
electrostatic discharge 59
esc key, identifying 16
external AC power, using 36

F
firewall software 45
fn key, identifying 16

G
GPS 24
HP 3D DriveGuard 39
HP Apps Store, visiting 1
HP DataPass 24
HP Mobile Broadband
- activating 23
- IMEI number 23
- MEID number 23
HP PC Hardware Diagnostics (UEFI)
- using 50
HP Recovery Manager
- correcting boot problems 56
- starting 55
HP Recovery media
- creating 52
- recovery 55
HP Recovery partition
- recovery 55
- removing 57
HP resources 2
HP Touchpoint Manager 45
IMEI number 23
initiating Sleep 33
input power 58
internal microphones, identifying 7
Internet security software, using 44
jacks
- audio-out (headphone)/audio-in
- (microphone) 6

K
keyboard and optional mouse
- using 32
keyboard base
- components 16
- connecting 20
- using 16
keys
- action 16
- airplane mode 17
- esc 16
- fn 16
- Windows 16
kickstand release button, identifying 6
kickstand, identifying 10

L
labels
- Bluetooth 15
- regulatory 15
- serial number 14
- service 14
- wireless certification 15
- WLAN 15

lights
- AC adapter and battery light 5, 6
- caps lock 18
- mute 18
locating information
- hardware 4
- software 4

low battery level 36

M
magnetic latches, identifying 9
maintenance
- Disk Cleanup 39
- Disk Defragmenter 39
- HP 3D DriveGuard 39
- updating programs and drivers 40
managing power 33
MEID number 23
memory card reader, identifying 5
memory card, identifying 5
microSD card
- inserting 12
- removing 12
minimized image recovery 55
minimized image, creating 54
Miracast 27
mobile broadband
- activating 23
- IMEI number 23
- MEID number 23
Mute light 18

O
one-finger slide touch screen gesture 32
operating environment 58
original system recovery 54

P
passwords
- Setup Utility (BIOS) 44
- Windows 43
ports
- Miracast 27
- USB Type-C (charging) 5, 6
power
- AC 36
- battery 35
power button, identifying 8
power meter, using 34
power settings, using 34
product name and number, computer 14
public WLAN connection 23

R
recover
- options 54
recovery
- discs 53, 55
- HP Recovery Manager 54
- media 55
- starting 55
- supported discs 53
- system 54
- USB flash drive 55
- using HP Recovery media 53
recovery media
- creating 52
- creating using HP Recovery Manager 53
recovery partition
- removing 57
regulatory information
- regulatory label 15
wireless certification labels 15

S
serial number 14
serial number, computer 14
service labels, locating 14
setting password protection on wakeup 34
Setup Utility (BIOS) passwords 44
shipping the computer 41
shutdown 37
SIM slot, identifying 5

Sleep
- exiting 34
- initiating 33, 34

slots
- memory card reader 5
- SIM 5
software
- Disk Cleanup 39
- Disk Defragmenter 39
- HP 3D DriveGuard 39
software updates, installing 45
sound settings, using 26
speakers
- connecting 25
- identifying 5, 6, 8
supported discs, recovery 53
system recovery 54
system restore point
- creating 53
- system restore point, creating 52

T
tap TouchPad and touch screen gesture 29
testing an AC adapter 37
three-finger swipe TouchPad gesture 31
touch screen gestures
- one-finger slide 32
TouchPad
- buttons 19
- using 29
TouchPad and touch screen gestures
- tap 29
- two-finger pinch zoom 29
TouchPad gestures
- three-finger swipe 31
- two-finger scroll 30
- two-finger tap 30
TouchPad zone, identifying 19
traveling with the computer 15, 41
turning off the computer 37
two-finger pinch zoom TouchPad and touch screen gesture 29
two-finger scroll TouchPad gesture 30
two-finger tap TouchPad gesture 30

U
unresponsive system 37
updating programs and drivers 40
USB Type-C (charging) port, identifying 5, 6
using external AC power 36
using passwords 43
using power meter settings 34
using power settings 34
using sound settings 26
using the keyboard and optional mouse 32
using the TouchPad 29

V
video 27
volume button 6

W
webcam
identifying 7, 10
using 25
webcam light, identifying 7
Windows
system restore point 52, 53
Windows key, identifying 16
Windows passwords 43
Windows tools
using 53
wireless button 22
wireless certification label 15
wireless controls
button 22
operating system 22
wireless light 22
wireless network (WLAN)
connecting 23
corporate WLAN connection 23
functional range 23
public WLAN connection 23
wireless network, securing 45
WLAN antennas, identifying 7
WLAN device 15
WLAN label 15
WWAN antennas, identifying 7
WWAN device 23