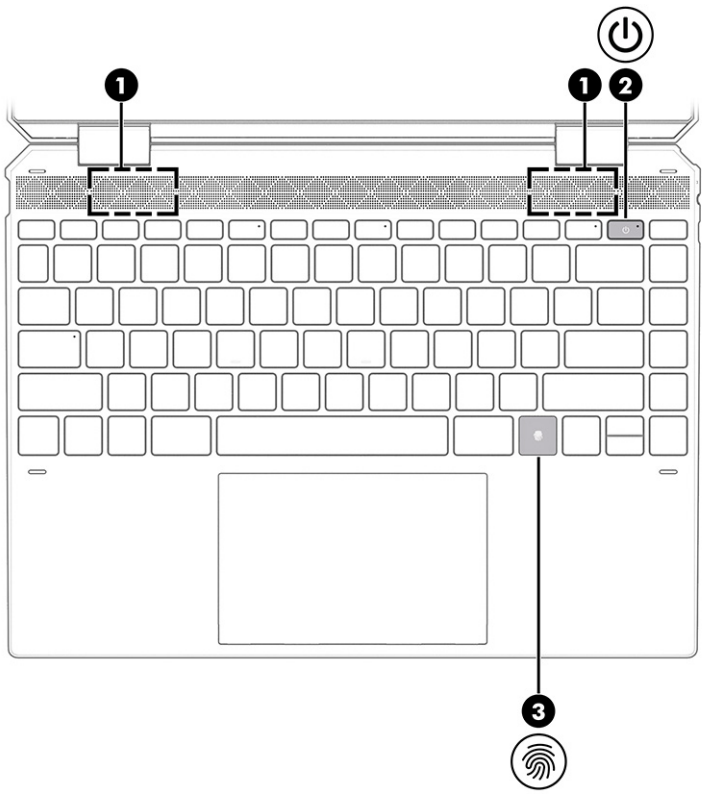
Table 2-5 Lights and their descriptions (continued)

Component	Description
	• Blinking (select products only): The computer is in the Sleep state, a power-saving state. The computer shuts off power to the display and other unnecessary components. • Off: Depending on your computer model, the computer is off, in Hibernation, or in Sleep. Hibernation is the power-saving state that uses the least amount of power.

Button, speakers, and fingerprint reader

Identify the computer button, speakers and fingerprint reader.



Fingerprint readers, which enable a fingerprint logon, can be located on the touchpad, on a side panel of the computer, or on the top cover below the keyboard.

Table 2-6 Button, speakers, and fingerprint reader and their descriptions

Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Power button	• When the computer is off, press the button briefly 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 (select products only).

Table 2-6 Button, speakers, and fingerprint reader and their descriptions (continued)

Component			Description
			• When the computer is in Hibernation, press the button briefly to exit Hibernation. **IMPORTANT:** 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 10 seconds to turn off the computer. To learn more about your power settings, see your power options: ▲ Right-click the **Power** icon, and then select **Power Options**.
(3)		Fingerprint reader	Allows a fingerprint logon to Windows, instead of a password logon. ▲ Touch your finger to the fingerprint reader. See Using Windows Hello (select products only) on page 40 for details. **IMPORTANT:** To prevent fingerprint logon issues, make sure when you register your fingerprint that all sides of your finger are registered by the fingerprint reader.

Special keys

Identify the special keys.

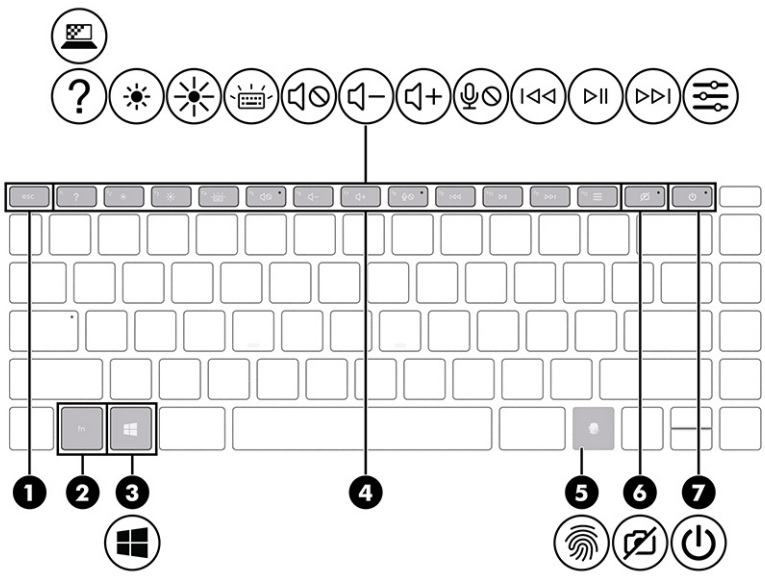


Table 2-7 Special keys and their descriptions

Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.

Table 2-7 Special keys and their descriptions (continued)

Component			Description
(2)		fn key	Executes specific functions when pressed in combination with another key.
(3)		Windows key	Opens the Start menu. **NOTE:** Pressing the Windows key again will close the Start menu.
(4)		Action keys	Execute frequently used system functions as defined by the icon symbols on f1 through f12 function keys. See Action keys on page 11.
(5)		Fingerprint reader	Allows a fingerprint logon to Windows, instead of a password logon. ▲ Touch your finger to the fingerprint reader. See Using Windows Hello (select products only) on page 40 for details. **IMPORTANT:** To prevent fingerprint logon issues, make sure when you register your fingerprint that all sides of your finger are registered by the fingerprint reader.
(6)		Camera privacy key	Turns the camera off and on. **NOTE:** For more information, see Using the camera on page 20.
(7)		Power button	• When the computer is off, press the button briefly 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 (select products only). • When the computer is in Hibernation, press the button briefly to exit Hibernation. **IMPORTANT:** 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 10 seconds to turn off the computer. To learn more about your power settings, see your power options: ▲ Right-click the **Power** icon , and then select **Power Options**.

Action keys

Identify the action keys.

The action keys execute frequently used system functions as defined by the icon symbols on f1 through f12. The Action keys vary by computer.

▲ To use an action key, press and hold the key.

NOTE: On some products, you must press the fn key in combination with the action key.

Table 2-8 Action keys and their descriptions

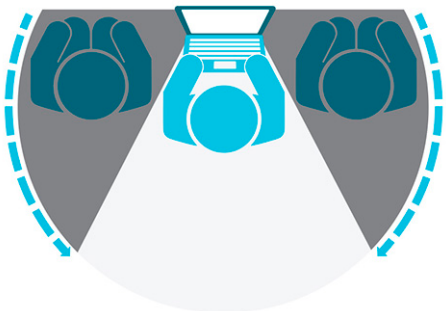
Icon	Description
?	Opens the “How to get help in Windows 10” webpage.
	Helps prevent side-angle viewing from onlookers. If needed, decrease or increase brightness for well-lit or darker environments. Press the key again to turn off the privacy screen. 
	Decreases the screen brightness incrementally as long as you hold down the key.
	Increases the screen brightness incrementally as long as you hold down the key.
	Turns the keyboard backlight off or on. On select products, you can adjust the brightness of the keyboard backlight. Press the key repeatedly to adjust the brightness from high (when you first start up the computer), to low, to off. After you adjust the keyboard backlight setting, the backlight will revert to your previous setting each time you turn on the computer. The keyboard backlight will turn off after 30 seconds of inactivity. To turn the keyboard backlight back on, press any key or tap the touchpad (select products only). 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.
	Mutes the microphone.
	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.

Table 2-8 Action keys and their descriptions (continued)

Icon	Description
▶▶|	Plays the next track of an audio CD or the next section of a DVD or a BD.
	Opens the HP Command Center app. This app allows you to adjust the temperature and cooling preferences on your computer.

Bottom

Identify the bottom components.

NOTE: Your computer might look slightly different from the illustration in this section.

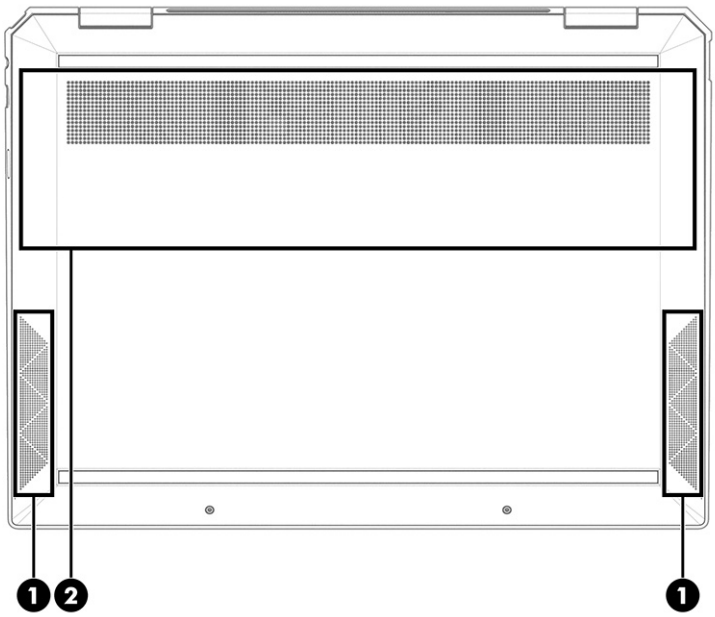


Table 2-9 Bottom components and their descriptions

Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

Labels

The labels affixed to the computer provide information that you might need when you troubleshoot system problems or travel internationally with the computer. Labels can be in paper form or imprinted on the product.

IMPORTANT: Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, on the back of the display, or on the bottom of a tablet kickstand.

- Service label—Provides important information to identify your computer. When contacting support, you might be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

  Your service label will resemble one of the following examples. Refer to the illustration that most closely matches the service label on your computer.

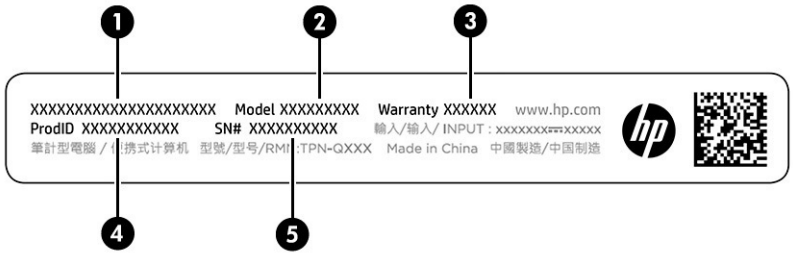


Table 2-10 Service label components

Component	
(1)	HP product name
(2)	Model number
(3)	Warranty period
(4)	Product ID
(5)	Serial number

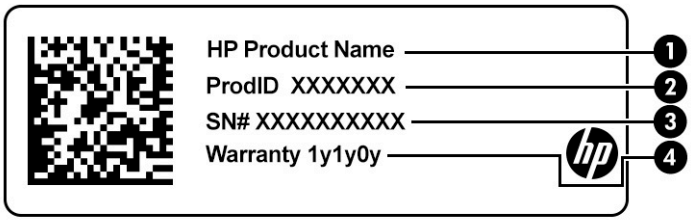


Table 2-11 Service label components

Component	
(1)	HP product name
(2)	Product ID
(3)	Serial number
(4)	Warranty period

- 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.

Using a SIM card (select products only)

Use these instructions to insert a SIM card.

IMPORTANT: You can damage the SIM card if you insert the wrong size card or insert it or the SIM card tray in the wrong direction. The card might also become stuck in the slot. Do not use SIM card adapters. To prevent damage to the SIM card or connectors, use minimal force when inserting or removing a SIM card.

Determining the correct SIM card size for your computer

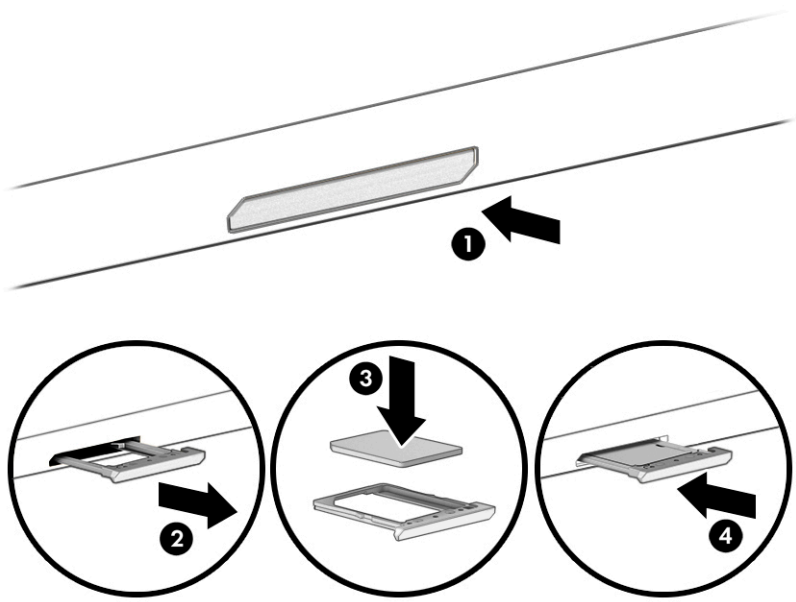
Before purchasing a SIM card, follow these instructions to determine the correct SIM card size for your computer.

1. Go to http://www.hp.com/support, and then search for your computer by product name or number.
2. Select **Product Information**.
3. Refer to the listed options to determine which card to purchase.

Inserting a nano SIM card

To insert a nano SIM card, follow these steps.

1. Position the computer display-side up on a flat surface.
2. Press in gently on the SIM card access tray to disengage the SIM lock, and the tray will pop out of the slot **(1)**.
3. Remove the tray **(2)** from the computer and insert the card **(3)**.
4. Replace the tray in the computer. Press in gently on the tray **(4)** until it is firmly seated.



To remove the SIM card, press in gently on the SIM card access tray to disengage the SIM lock, and the tray will pop out of the slot. Remove the SIM card. Replace the tray in the computer and press in gently on the tray until it is firmly seated.

3 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 by using your computer and a wired or wireless network connection. This chapter helps you get connected to that world.

Connecting to a wireless network

Your computer might be equipped with one or more 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. The WLAN 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 m (approximately 33 ft) of each other.

Using the wireless controls

You can control the wireless devices in your computer using one or more features.

- Airplane mode key (also called *wireless button* or *wireless key*)
- Operating system controls

Airplane mode key

The computer might 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:

On the taskbar, right-click the network status icon, and then select **Open Network & Internet settings**.

– or –

On the taskbar, select the network status icon, and then select **Network & Internet settings**.

Connecting to a WLAN

Before you can connect to a WLAN with this procedure, you must first set up internet access.

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.

1. Be sure that the WLAN device is on.
2. On the taskbar, select the network status icon, 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 might be out of range of a wireless router or access point.

   NOTE: If you do not see the WLAN that you want to connect to:

   On the taskbar, right-click the network status icon, and then select **Open Network & Internet settings**.

   – or –

   On the taskbar, select the network status icon, and then select **Network & Internet settings**.

   Under the **Change your network settings** section, select **Network and Sharing Center**.

   Select **Set up a new connection or network**.

   A list of options is displayed, which allows 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, right-click 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 email, or connect to your corporate network without the need for Wi-Fi hotspots.

You might need the HP Mobile Broadband Module IMEI number, MEID number, or both to activate mobile broadband service. The number might 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 –

1. On the taskbar, select the network status icon.
2. Select **Network & Internet settings**.
3. Under the **Network & Internet** section, select **Cellular**, and then select **Advanced Options**.

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

might be included with the HP Mobile Broadband documents provided with your computer, or the mobile network operator might 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 eSIM (select products only)

Your computer might be equipped with an eSIM. An eSIM is a programmable version of the commonly used SIM that you can use to download different profiles from selected carriers.

An eSIM lets you connect to the internet over a cellular data connection. With an eSIM, you do not need to get a SIM card from your mobile operator, and you can quickly switch between mobile operators and data plans. For example, you might have one cellular data plan for work and a different plan with another mobile operator for personal use. If you travel, you can connect in more places by finding mobile operators with plans in that area.

You can implement eSIMs in two ways:

- The eSIM chip can be embedded (eUICC). The notebook then operates as a dual SIM, one as eUICC and the second as standard micro or nano SIM card on a SIM card tray. Only one SIM can be active at a time.
- A removable physical eSIM is placed on a SIM card tray like a standard micro or nano SIM card, but the eSIM is not limited to a single carrier (physical blank eSIM).

You must add an eSIM profile to connect to the internet using cellular data. To add a profile, manage SIM profiles, and learn how to use an eSIM, go to https://www.support.microsoft.com , and type `Use an eSIM` in the search bar.

Using GPS (select products only)

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

To enable GPS, be sure location is enabled under the Location setting.

▲ Type `location` in the taskbar search box, select **Location privacy settings**, and then select a setting.

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.

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

Connecting Bluetooth devices

Before you can use a Bluetooth device, you must establish a Bluetooth connection.

1. Type `bluetooth` in the taskbar search box, and then select **Bluetooth and other devices settings**.
2. Enable **Bluetooth**, if it is not already enabled.
3. Select **Add Bluetooth or other device**, and then in the **Add a device** dialog box, select **Bluetooth**.
4. Select your device from the list, and then follow the on-screen instructions.

NOTE: If the device requires verification, a pairing code is displayed. On the device that you are adding, follow the on-screen instructions to verify that the code on your device matches the pairing code. For more information, see the documentation provided with the device.

NOTE: If your device does not appear in the list, be sure that Bluetooth on that device is turned on. Some devices might have additional requirements; see the documentation provided with the device.

Connecting to a wired network—LAN (select products only)

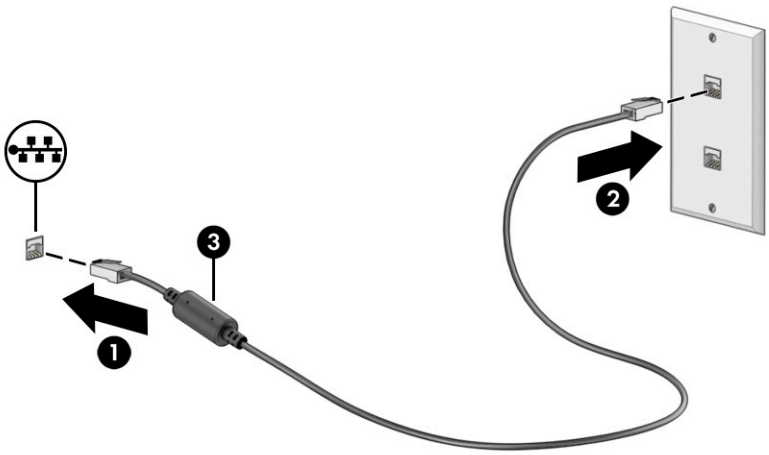
Use a LAN connection if you want to connect the computer directly to a router in your home (instead of working wirelessly) or if you want to connect to an existing network at your office.

If there is no RJ-45 port on the computer, connecting to a LAN requires a network cable and a network jack or an optional docking device or expansion product.

To connect the network cable, follow these steps:

1. Plug the network cable into the network jack **(1)** on the computer.
2. Plug the other end of the network cable into a network wall jack **(2)** or router.

NOTE: If the network cable contains noise suppression circuitry **(3)**, which prevents interference from TV and radio reception, orient the circuitry end of the cable toward the computer.



4 Enjoying entertainment features

Use your HP computer as an entertainment hub to socialize via the camera, 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 the camera

Your computer has one or more cameras that enable you to connect with others for work or play. Cameras can be front facing, rear facing, or pop up.

To determine which camera or cameras are on your product, see Getting to know your computer on page 3.

Most cameras allow you to video chat, record video, and record still images. Some also provide HD (high-definition) capability, apps for gaming, or facial recognition software like Windows Hello. See Securing your computer and information on page 39 for details about using Windows Hello.

On select products, you can also enhance your camera privacy by turning the camera off. By default, the camera is turned on. To turn off your camera, press the camera privacy key. The camera privacy light turns on. To turn the camera back on, press the key again.

To use your camera, type `camera` in the taskbar search box, and then select **Camera** from the list of applications.

Using audio

You can download and listen to music, stream audio content (including radio) from the web, record audio, or mix audio and video to create multimedia. You can also play music CDs on the computer (on select products) or attach an external optical drive to play CDs. 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)/audio-in (microphone) combo 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

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

⚠ **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:

▲ Type `HP Documentation` in the taskbar search box, and then select **HP Documentation**.

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

Connecting headsets

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

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:

▲ Type `HP Documentation` in the taskbar search box, and then select **HP Documentation**.

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.

Sound settings

To view or change sound settings, follow these steps.

▲ Type `control panel` in the taskbar search box, select **Control Panel**, select **Hardware and Sound**, and then select **Sound**.

Audio settings

Your computer might include an enhanced sound system by Bang & Olufsen, B&O, or another provider. As a result, your computer might include advanced audio features that can be controlled through an audio control panel specific to your sound 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.

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.

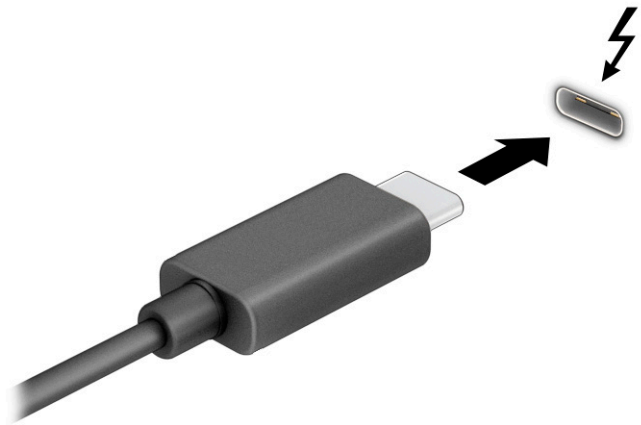
For information about using your USB Type-C features, go to http://www.hp.com/support, and follow the instructions to find your product.

Connecting a Thunderbolt device using a USB Type-C cable (select products only)

To see video or high-resolution display output on an external Thunderbolt device, connect the Thunderbolt device according to the instructions.

NOTE: To connect a USB Type-C Thunderbolt™ device to your computer, you need a USB Type-C cable, purchased separately.

1. Connect one end of the USB Type-C cable to the USB Type-C Thunderbolt port on the computer.



2. Connect the other end of the cable to the external Thunderbolt device.
3. Press the Windows key + p to cycle through one of four display states:
   - **PC screen only:** View the screen image on the computer only.
   - **Duplicate:** View the screen image simultaneously on both the computer and external device.
   - **Extend:** View the screen image extended across both the computer and external device.
   - **Second screen only:** View the screen image on the external device only.

   Each time you press the Windows key + p, the display state changes.

NOTE: For best results, especially if you choose the **Extend** option, increase the screen resolution of the external device, as follows. Select the **Start** button, select **Settings**, and then select **System**. Under **Display**, select the appropriate resolution, and then select **Keep changes**.

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

Follow these steps to discover and connect to Miracast®-compatible wireless displays without leaving your current apps.

1. Type `project` in the taskbar search box, and then select **Project to a second screen**.
2. Select **Connect to a wireless display**, and then follow the on-screen instructions.

Using data transfer

Your computer is a powerful entertainment device that enables you to transfer photos, videos, and movies from your USB devices to view on your computer.

To enhance your viewing enjoyment, use one of the USB Type-C ports on the computer to connect a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and transfer the files to your computer.

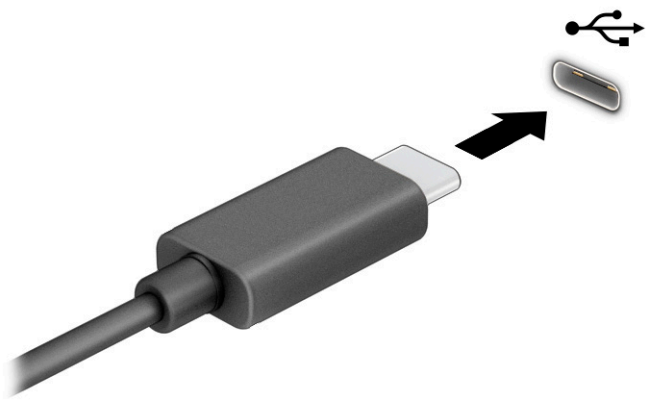
IMPORTANT: Be sure that the external device is connected to the correct port on the computer, using the correct cable. Follow the device manufacturer's instructions.

For information about using your USB Type-C features, go to http://www.hp.com/support, and follow the instructions to find your product.

Connecting devices to a USB Type-C port (select products only)

To connect a USB Type-C device to your computer, you need a USB Type-C cable, purchased separately.

1. Connect one end of the USB Type-C cable to the USB Type-C port on the computer.



2. Connect the other end of the cable to the external device.

5 Navigating the screen

Depending on your computer model, you can navigate the computer screen using one or more methods.

- Use touch gestures directly on the computer screen.
- Use touch gestures on the touchpad.
- Use an optional mouse or keyboard (purchased separately).
- Use an on-screen keyboard.
- Use a pointing stick.

Using 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.

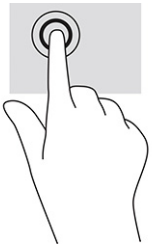
To customize gestures and see videos of how they work, type `control panel` in the taskbar search box, select **Control Panel**, and then select **Hardware and Sound**. Under **Devices and Printers**, select **Mouse**.

Some products include a precision touchpad, which provides enhanced gesture functionality. To determine if you have a precision touchpad and find additional information, select **Start**, select **Settings**, select **Devices**, and then select **touchpad**.

NOTE: Unless noted, gestures can be used on both the touchpad and a touch screen.

Tap

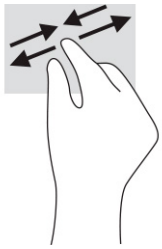
Point to an item on the screen, and then tap one finger on the touchpad zone or touch screen to select the item. Double-tap an item to open it.



Two-finger pinch zoom

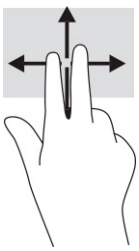
Use the two-finger pinch zoom to zoom out or in on images or text.

- 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 slide (touchpad and precision touchpad)

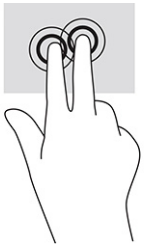
Place two fingers slightly apart on the touchpad zone and then drag them up, down, left, or right to move up, down, or sideways on a page or image.



Two-finger tap (touchpad and precision touchpad)

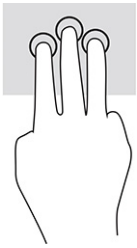
Tap two fingers on the touchpad zone to open the options menu for the selected object.

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



Three-finger tap (touchpad and precision touchpad)

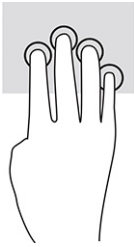
By default, the three-finger tap opens the taskbar search box. Tap three fingers on the touchpad zone to perform the gesture.



To change the function of this gesture on a precision touchpad, select **Start**, select **Settings**, select **Devices**, and then select **touchpad**. Under **Three-finger gestures**, in the **Taps** box, select a gesture setting.

Four-finger tap (touchpad and precision touchpad)

By default, the four-finger tap opens the Action Center. Tap four fingers on the touchpad zone to perform the gesture.

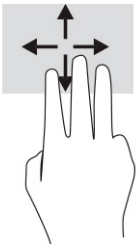


To change the function of this gesture on a precision touchpad, select **Start**, select **Settings**, select **Devices**, and then select **touchpad**. Under **Four-finger gestures**, in the **Taps** box, select a gesture setting.

Three-finger swipe (touchpad and precision touchpad)

By default, the three-finger swipe switches between open apps and the desktop.

- Swipe 3 fingers away from you to see all open windows.
- Swipe 3 fingers toward you to show the desktop.
- Swipe 3 fingers left or right to switch between open windows.

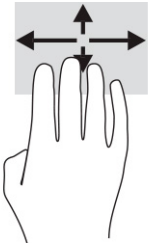


To change the function of this gesture on a precision touchpad, select **Start**, select **Settings**, select **Devices**, and then select **touchpad**. Under **Three-finger gestures**, in the **Swipes** box, select a gesture setting.

Four-finger swipe (precision touchpad)

By default, the four-finger swipe switches between open desktops.

- Swipe 4 fingers away from you to see all open windows.
- Swipe 4 fingers toward you to show the desktop.
- Swipe 4 fingers left or right to switch between desktops.

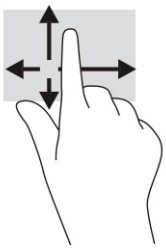


To change the function of this gesture, select **Start**, select **Settings**, select **Devices**, and then select **touchpad**. Under **Four-finger gestures**, in the **Swipes** box, select a gesture setting.

One-finger slide (touch screen)

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 an optional keyboard or mouse

An optional keyboard or mouse allows you to type, select items, scroll, and perform the same functions as you do using touch gestures. The keyboard also allows you to use action keys and hot keys to perform specific functions.

Using an on-screen keyboard (select products only)

Select products have an on-screen keyboard.

1. To display an on-screen keyboard, tap the keyboard icon in the notification area, at the far right of the taskbar.
2. Begin typing.

NOTE: Suggested words might be displayed above the on-screen keyboard. Tap a word to select it.

NOTE: Action keys and hot keys do not display or function on the on-screen keyboard.

6 Managing power

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

Some power management features described in this chapter might not be available on your computer.

Using Sleep and Hibernation

Windows has two power-saving states, Sleep and Hibernation.

IMPORTANT: Several well-known vulnerabilities exist when a computer is in the Sleep state. To prevent an unauthorized user from accessing data on your computer, even encrypted data, HP recommends that you always initiate Hibernation instead of Sleep anytime the computer will be out of your physical possession. This practice is particularly important when you travel with your computer.

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

- 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 Initiating and exiting Sleep on page 28.
- Hibernation—The Hibernation state is automatically initiated if the battery reaches a critical level or the computer has been in the Sleep state for an extended period of time. In the Hibernation state, your work is saved to a hibernation file and the computer powers down. You can also initiate Hibernation manually. For more information, see Initiating and exiting Hibernation (select products only) on page 29.

Initiating and exiting Sleep

You can initiate Sleep several ways.

- Select the **Start** button, select the **Power** icon, and then select **Sleep**.
- Close the display (select products only).
- Press the Sleep hot key (select products only); for example, fn+f1or fn+f12.
- Briefly press the power button (select products only).

You can exit Sleep in any of the following ways:

- Briefly press the power button.
- If the computer is closed, raise the display (select products only).
- Press a key on the keyboard (select products only).
- Tap the touchpad (select products only).

When the computer exits Sleep, 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.

Initiating and exiting Hibernation (select products only)

You can enable user-initiated Hibernation and change other power settings and timeouts using Power Options.

1. Right-click the **Power** icon , and then select **Power Options**.
2. In the left pane, select **Choose what the power buttons do** (wording might vary by product).
3. Depending on your product, you can enable Hibernation for battery power or external power in any of the following ways:
   - **Power button**—Under **Power and sleep buttons and lid settings** (wording might vary by product), select **When I press the power button**, and then select **Hibernate**.
   - **Sleep button** (select products only)—Under **Power and sleep buttons and lid settings** (wording might vary by product), select **When I press the sleep button**, and then select **Hibernate**.
   - **Lid** (select products only)—Under **Power and sleep buttons and lid settings** (wording might vary by product), select **When I close the lid**, and then select **Hibernate**.
   - **Power menu**—Select **Change Settings that are currently unavailable**, and then, under **Shutdown settings**, select the **Hibernate** check box.

     The Power menu can be accessed by selecting the **Start** button.
4. Select **Save changes**.

To initiate Hibernation, use the method that you enabled in step 3.

To exit Hibernation, briefly press the power button.

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

Shutting down (turning off) the computer

The Shut down command closes all open programs, including the operating system, and then turns off the display and the computer.

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

Shut down the computer when it will be unused and disconnected from external power for an extended period.

The recommended procedure is to use the Windows Shut down command.

NOTE: If the computer is in the Sleep state or in Hibernation, first exit Sleep or Hibernation 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 10 seconds.

- If your computer has a user-replaceable battery (select products only), disconnect the computer from external power, and then remove the battery.

Using the Power icon and Power Options

Different Power 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.

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

- To view the percentage of remaining battery charge, place the mouse pointer over the **Power** icon .
- To use Power Options, right-click the **Power** icon , and then select **Power Options**.

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.

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

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.

NOTE: Select computer products can switch between graphic controllers to conserve battery charge.

Using HP Fast Charge (select products only)

The HP Fast Charge feature allows you to quickly charge your computer battery. The charging time might vary by ± 10%. When the remaining battery charge is between 0 and 50%, the battery will charge to 50% of full capacity in no more than 30 to 45 minutes, depending on your computer model.

To use HP Fast Charge, shut down your computer, and then connect the AC adapter to your computer and to external power.

Displaying battery charge

When you are using your computer while running on battery power only, periodically check the battery charge.

To view the percentage of remaining battery charge, place the mouse pointer over the **Power** icon .

Finding battery information in HP Support Assistant (select products only)

You can access battery information in several ways.

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

   – or –

   Select the question mark icon in the taskbar.

2. Select **Troubleshooting and fixes**, and then in the **Diagnostics** section, 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

Be sure to conserve battery power and maximize battery life.

- Lower the brightness of the display.
- 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 battery light and power icon indicate a low battery level.

- The battery light (select products only) indicates a low or critical battery level.

– or –

- The Power icon shows a low or critical battery notification.

NOTE: For additional information about the Power icon, see Using the Power icon and Power Options on page 30.

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

- If Hibernation is disabled and 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.
- If Hibernation is enabled and the computer is on or in the Sleep state, the computer initiates Hibernation.

Resolving a low battery level

You can quickly resolve low battery level conditions.

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 device or expansion product
- 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.

Resolving a low battery level when the computer cannot exit Hibernation

When the battery level is low and you cannot bring the computer out of Hibernation, connect the AC adapter.

1. Connect the AC adapter to the computer and to external power.
2. Exit Hibernation by pressing the power button.

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 (select products only).

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

   – or –

   Select the question mark icon in the taskbar.
2. Select **Troubleshooting and fixes**, and then in the **Diagnostics** section, 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.

Running on external power

For information about connecting to external power, see the *Setup Instructions* poster provided in the computer box.

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

⚠ **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.

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

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

- When charging or calibrating a battery
- When installing or updating system software
- When updating the system BIOS
- 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 external power:

- The battery begins to charge.
- The Power icon changes appearance.

When you disconnect external power:

- The computer switches to battery power.
- The Power icon changes appearance.

7 Maintaining your computer

Performing regular maintenance keeps 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 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 **Disk Cleanup**.
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 some 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 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.

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, the secondary hard drive bay (select products only), or both are parked.

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 do not get the most out of your equipment.

To update programs and drivers, choose one of the following methods:

- Updating programs and drivers using Windows 10 on page 35
- Updating programs using Windows 10 S on page 35
- Updating drivers using Windows 10 S on page 35

Updating programs and drivers using Windows 10

Use this procedure to update programs and drivers.

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

   – or –

   Select the question mark icon in the taskbar.
2. Select **My notebook**, select the **Updates** tab, and then select **Check for updates and messages**.
3. Follow the on-screen instructions.

Updating programs using Windows 10 S

Use this procedure to update programs.

1. Select **Start**, and then select **Microsoft Store**.
2. Select your account profile picture next to the search box, and then select **Downloads and updates**.
3. On the **Downloads and updates** page, make the selection for updates and follow the on-screen instructions.

Updating drivers using Windows 10 S

Use this procedure to update drivers.

1. Type `windows update settings` in the taskbar search box, and then select **Windows Update settings**.
2. Select **Check for updates**.

NOTE: If Windows does not find a new driver, go to the device manufacturer's website, and follow the instructions.

Cleaning your computer

Cleaning your computer regularly removes dirt and debris so that your device continues to operate at its best. Use the following information to safely clean the external surfaces of your computer.

Enabling HP Easy Clean (select products only)

HP Easy Clean helps you to avoid accidental input while you clean the computer surfaces. This software disables devices such as the keyboard, touch screen, and touchpad for a preset amount of time so that you can clean all computer surfaces.

1. Start HP Easy Clean in one of the following ways:
   - Select the **Start** menu, and then select **HP Easy Clean**.

     – or –
   - Select the **HP Easy Clean** icon in the taskbar.

     – or –
   - Select **Start**, and then select the **HP Easy Clean** tile.
2. Now that your device is disabled for a short period, see Removing dirt and debris from your computer on page 36 for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See Cleaning your computer with a disinfectant on page 37 for guidelines to help prevent the spread of harmful bacteria and viruses.

Removing dirt and debris from your computer

Here are the recommended steps to clean dirt and debris from your computer.

For computers with wood veneer, see Caring for wood veneer (select products only) on page 37.

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.

   CAUTION: To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.
3. Moisten a microfiber cloth with water. The cloth should be moist, but not dripping wet.

   IMPORTANT: To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.
4. Wipe the exterior of the product gently with the moistened cloth.

   IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.
5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.
7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

See Cleaning your computer with a disinfectant on page 37 for recommended steps to clean the high-touch, external surfaces on your computer to help prevent the spread of harmful bacteria and viruses.

Cleaning your computer with a disinfectant

The World Health Organization (WHO) recommends cleaning surfaces, followed by disinfection, as a best practice for preventing the spread of viral respiratory illnesses and harmful bacteria.

After cleaning the external surfaces of your computer using the steps in Removing dirt and debris from your computer on page 36, Caring for wood veneer (select products only) on page 37, or both, you might also choose to clean the surfaces with a disinfectant. A disinfectant that is within HP's cleaning guidelines is an alcohol solution consisting of 70% isopropyl alcohol and 30% water. This solution is also known as rubbing alcohol and is sold in most stores.

Follow these steps when disinfecting high-touch, external surfaces on your computer:

1. Wear disposable gloves made of latex (or nitrile gloves, if you are latex-sensitive) when cleaning the surfaces.
2. Turn off your device and unplug the power cord and other connected external devices. Remove any installed batteries from items such as wireless keyboards.

   CAUTION: To prevent electric shock or damage to components, never clean a product while it is turned on or plugged in.

3. Moisten a microfiber cloth with a mixture of 70% isopropyl alcohol and 30% water. The cloth should be moist, but not dripping wet.

   CAUTION: Do not use any of the following chemicals or any solutions that contain them, including spray-based surface cleaners: bleach, peroxides (including hydrogen peroxide), acetone, ammonia, ethyl alcohol, methylene chloride, or any petroleum-based materials, such as gasoline, paint thinner, benzene, or toluene.

   IMPORTANT: To avoid damaging the surface, avoid abrasive cloths, towels, and paper towels.

4. Wipe the exterior of the product gently with the moistened cloth.

   IMPORTANT: Keep liquids away from the product. Avoid getting moisture in any openings. If liquid makes its way inside your HP product, it can cause damage to the product. Do not spray liquids directly on the product. Do not use aerosol sprays, solvents, abrasives, or cleaners containing hydrogen peroxide or bleach that might damage the finish.

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.
6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.
7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

Caring for wood veneer (select products only)

Your product might feature high-quality wood veneer. As with all natural wood products, proper care is important for best results over the life of the product. Because of the nature of natural wood, you might see unique variations in the grain pattern or subtle variations in color, which are normal.

- Clean the wood with a dry, static-free microfiber cloth or chamois.
- Avoid cleaning products containing substances such as ammonia, methylene chloride, acetone, turpentine, or other petroleum-based solvents.

- Do not expose the wood to sun or moisture for long periods of time.
- If the wood becomes wet, dry it by dabbing with an absorbent, lint-free cloth.
- Avoid contact with any substance that might dye or discolor the wood.
- Avoid contact with sharp objects or rough surfaces that might scratch the wood.

See Removing dirt and debris from your computer on page 36 for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See Cleaning your computer with a disinfectant on page 37 for sanitizing guidelines to help prevent the spread of harmful bacteria and viruses.

Traveling with or shipping your computer

If you must 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 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 with the rest of your luggage.

IMPORTANT: 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 can 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 might be restricted in some environments. Such restrictions might 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 run the computer from a voltage converter kit that is sold for appliances.

8 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.

NOTE: 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. You can set several types of passwords. For example, when you set up your computer for the first time, you were asked to create a user password to secure your computer. You can set additional passwords 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.

NOTE: 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 –

Select the question mark icon in the taskbar.

Setting Windows passwords

Windows passwords can help protect your computer from unauthorized access.

Table 8-1 Types of Windows passwords and their functions

Password	Function
User password	Protects access to a Windows user account.
Administrator password	Protects administrator-level access to computer contents. **NOTE:** This password cannot be used to access Setup Utility (BIOS) contents.

Setting Setup Utility (BIOS) passwords

BIOS passwords provide additional layers of security for your computer.

Table 8-2 Types of BIOS passwords and their functions

Password	Function
Administrator password	• Must be entered each time you access Setup Utility (BIOS). • If you forget your administrator password, you cannot access Setup Utility (BIOS).
Power-on password	• Must be entered each time you turn on or restart the computer. • If you forget your power-on password, you cannot turn on or restart the computer.

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

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

1. Start Setup Utility (BIOS):
   - 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.

        - or -

        Turn on or restart the tablet, and then quickly hold down the volume down button.

        - or -

        Turn on or restart the tablet, and then quickly hold down the Windows button.
     2. Tap **f10**.
2. Select **Security**, and then follow the on-screen instructions.

To save your changes, select **Exit**, select **Save Changes and Exit**, and then select **Yes**.

NOTE: If you are using arrow keys to highlight your choice, you must then press enter.

Your changes take effect when the computer restarts.

Using Windows Hello (select products only)

On products equipped with a fingerprint reader or an infrared camera, Windows Hello allows you to enroll your fingerprint, your facial ID, and set up a PIN. After enrollment, you can use your fingerprint reader, facial ID, or PIN to sign in to Windows.

To set up Windows Hello:

1. Select the **Start** button, select **Settings**, select **Accounts**, and then select **Sign-in options**.
2. To add a password, select **Password**, and then select **Add**.

3. Under **Windows Hello Fingerprint** or **Windows Hello Face**, select **Set up**.
4. Select **Get Started**, and then follow the on-screen instructions to enroll your fingerprint or facial ID and set up a PIN.

IMPORTANT: To prevent fingerprint logon issues, be sure when you register your fingerprint that all sides of your finger are registered by the fingerprint reader.

NOTE: The PIN is not limited in length. The default setting is for numbers only. To include alphabetic or special characters, select the **include letters and symbols** check box.

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. HP strongly recommends that you upgrade the security software trial offer or purchase the software of your choice 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 that they cause.

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. HP strongly recommends that you use the antivirus program of your choice 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 –

Select 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, network, or both, 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.

IMPORTANT: 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 Device as a Service (select products only)

HP DaaS is a cloud-based IT solution that enables businesses to effectively manage and secure their company assets.

HP DaaS helps protect devices against malware and other attacks, monitors device health, and helps reduce time spent solving device and security issues. You can quickly download and install the software, which is highly cost-effective relative to traditional in-house solutions. For more information, go to https://www.hptouchpointmanager.com/.

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.

Using an optional security cable (select products only)

A security cable (purchased separately) is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen. To connect a security cable to your computer, follow the device manufacturer's instructions.

9 Using Setup Utility (BIOS)

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.

Starting Setup Utility (BIOS)

You have several ways to access the Setup Utility (BIOS).

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

▲ Turn on or restart the computer and quickly press f10.

– or –

Turn on or restart the computer, quickly press esc, and then press f10 when the Start menu is displayed.

Updating Setup Utility (BIOS)

Updated versions of Setup Utility (BIOS) might 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*), use one of these options.

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

     – or –

     Select the question mark icon in the taskbar.
  2. Select **My notebook**, and then select **Specifications**.
- Setup Utility (BIOS)
  1. Start Setup Utility (BIOS) (see Starting Setup Utility (BIOS) on page 43).
  2. Select **Main**, and then make note of the BIOS version.
  3. Select **Exit**, select one of the options, and then follow the on-screen instructions.
- In Windows, press ctrl+alt+s.

To check for later BIOS versions, see Preparing for a BIOS update on page 44.

Preparing for a BIOS update

Be sure to follow all prerequisites before downloading and installing a BIOS update.

IMPORTANT: 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.

Downloading a BIOS update

After you review the prerequisites, you can check for and download BIOS updates.

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

   – or –

   Select the question mark icon in the taskbar.
2. Select **Updates**, and then select **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 might 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.

Installing a BIOS 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. Select 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.