



# User Guide

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First Edition: August 2019

Document Part Number: L69434-001

### **Product notice**

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

To access the latest user guides, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **User Guides**.

### **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

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 **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 applicable safety standards.

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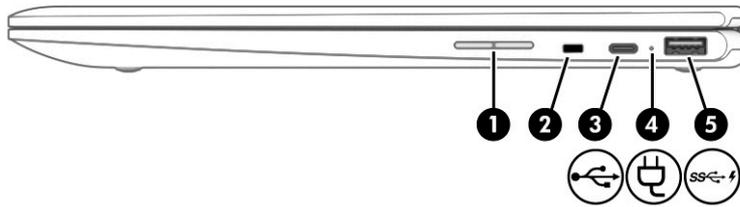


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# 1 Getting to know your computer

Your computer features top-rated components. This chapter provides details about your components, where they are located, and how they work.

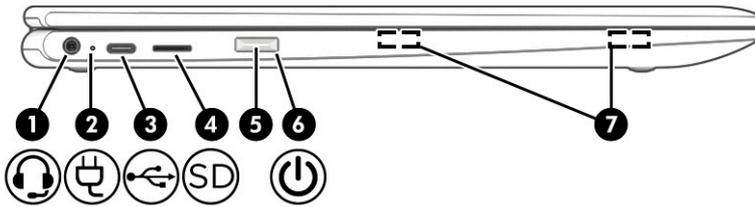
## Right side



**Table 1-1** Right-side components and their descriptions

Component	Description
(1) 	<p>Volume button</p> <p>Controls speaker volume on the computer.</p>
(2) 	<p>Security cable slot</p> <p>Attaches an optional security cable to the computer.</p> <p><b>NOTE:</b> The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.</p>
(3) 	<p>USB Type-C power connector and port</p> <p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.</p> <p><b>NOTE:</b> Cables and/or adapters (purchased separately) may be required.</p>
(4) 	<p>AC adapter and battery light</p> <ul style="list-style-type: none"> <li>• White: The AC adapter is connected and the battery is fully charged.</li> <li>• Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.</li> <li>• Amber: The AC adapter is connected and the battery is charging.</li> <li>• Off: The battery is not charging.</li> </ul>
(5) 	<p>USB SuperSpeed port with HP Sleep and Charge</p> <p>Connects a USB device, provides high-speed data transfer, and even when the computer is off, charges most products such as a cell phone, camera, activity tracker, or smartwatch.</p>

# Left side



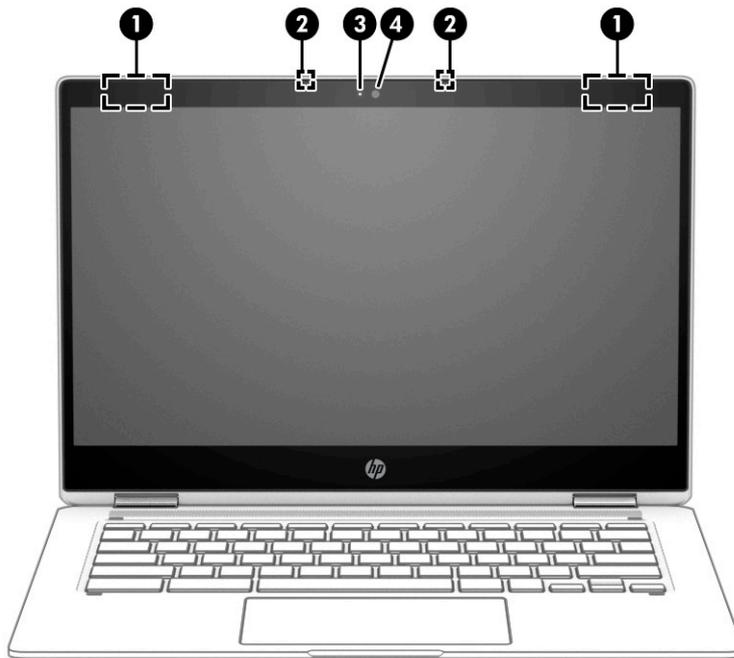
**Table 1-2 Left-side components and their descriptions**

Component	Description
<p>(1)  Audio-out (headphone)/Audio-in (microphone) combo jack</p>	<p>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 standalone microphones.</p> <p><b>WARNING!</b> To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety, and Environmental Notices</i>.</p> <p><b>NOTE:</b> When a device is connected to the jack, the computer speakers are disabled.</p>
<p>(2)  AC adapter and battery light</p>	<ul style="list-style-type: none"> <li>• White: The AC adapter is connected and the battery is fully charged.</li> <li>• Blinking white: The AC adapter is disconnected and the battery has reached a low battery level.</li> <li>• Amber: The AC adapter is connected and the battery is charging.</li> <li>• Off: The battery is not charging.</li> </ul>
<p>(3)  USB Type-C power connector and port</p>	<p>Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.</p> <p>– and –</p> <p>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.</p> <p>– and –</p> <p>Connects a display device that has a USB Type-C connector, providing DisplayPort output.</p> <p><b>NOTE:</b> Cables and/or adapters (purchased separately) may be required.</p>
<p>(4)  microSD™ memory card reader</p>	<p>Reads optional memory cards that enable you to store, manage, share, or access information.</p> <p>To insert a card:</p> <ol style="list-style-type: none"> <li>1. Hold the card label-side up, with connectors facing the computer.</li> <li>2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated.</li> </ol>

**Table 1-2 Left-side components and their descriptions (continued)**

Component	Description
	<p>To remove a card:</p> <ul style="list-style-type: none"> <li>▲ Press in on the card, and then remove it from the memory card reader.</li> </ul>
(5) Power button	<ul style="list-style-type: none"> <li>• When the computer is off, press the button to turn on the computer.</li> <li>• When the computer is on, press the button briefly to initiate Sleep.</li> <li>• When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only).</li> </ul> <p><b>IMPORTANT:</b> Pressing and holding down the power button results in the loss of unsaved information.</p> <p>If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button down for at least 5 seconds to turn off the computer.</p>
(6)  Power light	<ul style="list-style-type: none"> <li>• On: The computer is on.</li> <li>• Off: The computer is off or in the Sleep state.</li> </ul>
(7) Magnetic stylus docking	Connects an optional stylus.

## Display



**Table 1-3 Display components and their descriptions**

Component	Description
(1) WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).

**Table 1-3 Display components and their descriptions (continued)**

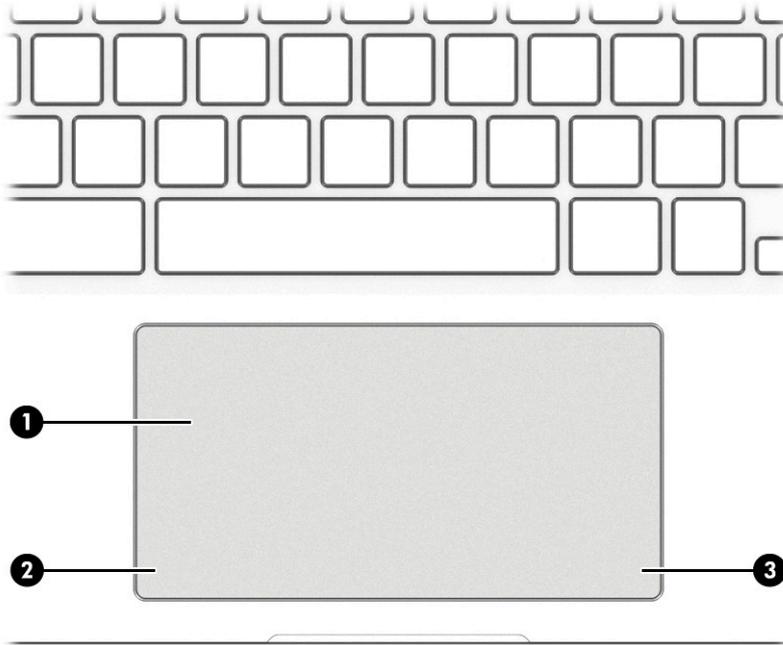
Component	Description
(2) Internal microphones	Record sound.
(3) Camera light	On: The camera is in use.
(4) Camera	Allows you to video chat, record video, and record still images. To use your camera, see <a href="#">Using the camera on page 13</a> . <b>NOTE:</b> Camera functions vary depending on the camera hardware and software installed on your product.

\*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.

# Keyboard area

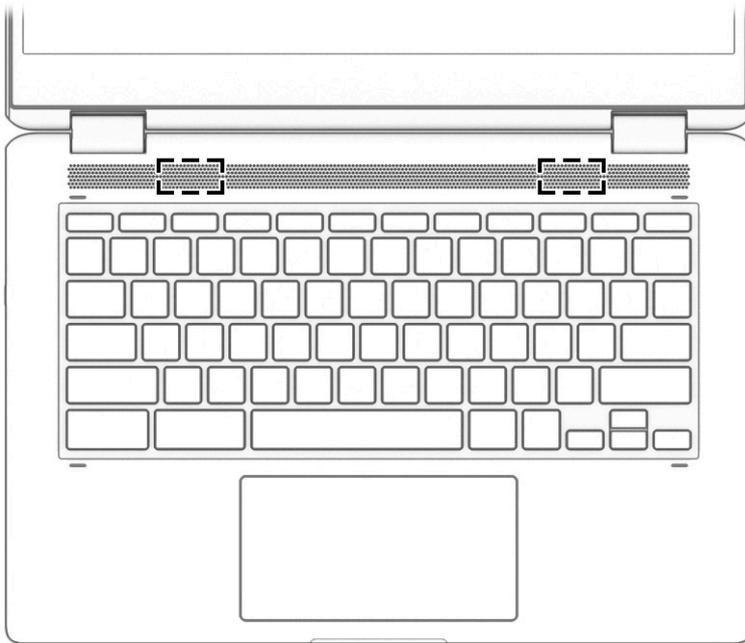
## Touchpad



**Table 1-4** Touchpad components and their descriptions

Component	Description
(1) Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen. <b>NOTE:</b> For more information, see <a href="#">Using touchpad and touch screen gestures on page 15</a> .
(2) Left touchpad button	Functions like the left button on an external mouse.
(3) Right touchpad button	Functions like the right button on an external mouse.

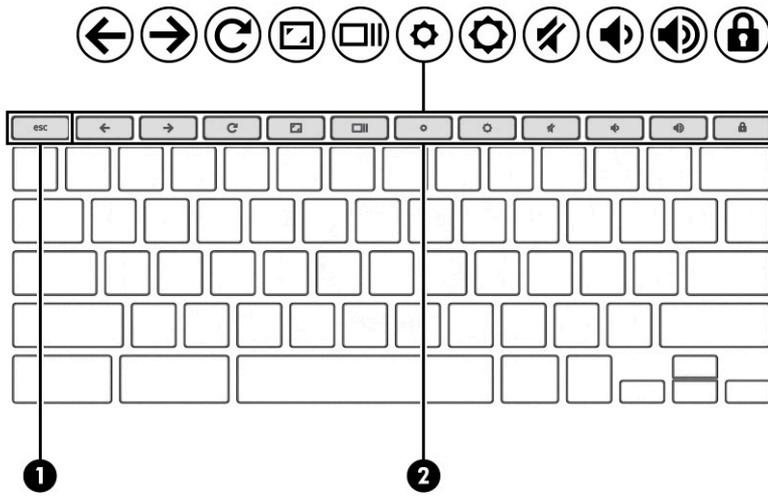
## Speakers



**Table 1-5 Speakers and their descriptions**

<b>Component</b>	<b>Description</b>
Speakers	Produce sound.

## Special keys



**Table 1-6** Special keys and their descriptions

Component	Description
(1) <a href="#">esc</a> key	Displays system information when pressed in combination with the <a href="#">fn</a> key.
(2) Action keys	Execute frequently used system functions. See <a href="#">Action keys on page 9</a> .

## Action keys

An action key performs the function indicated by the icon on the key. To determine which keys are on your product, see [Special keys on page 8](#).

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

For more information on action keys and keyboard shortcuts, go to <https://support.google.com/chromebook/answer/183101>. Select your language at the bottom of the page.

**Table 1-7 Action keys and their descriptions**

Icon	Key	Description
	Back	Displays the previous page in your browser history.
	Forward	Displays the next page in your browser history.
	Reload	Reloads your current page.
	Full screen	Opens your page in full-screen mode.
	Display apps	Displays open apps. <b>NOTE:</b> Pressing this button in conjunction with <b>ctrl</b> takes a screenshot.
	Brightness down	Decreases the screen brightness incrementally as long as you hold down the key.  Press simultaneously with <b>ctrl</b> to decrease the keyboard backlight (select products only) incrementally as long as you hold down the key.
	Brightness up	Increases the screen brightness incrementally as long as you hold down the key.  Press simultaneously with <b>ctrl</b> to increase the keyboard backlight (select products only) incrementally as long as you hold down the key.
	Mute	Mutes speaker sound.
	Volume down	Decreases speaker volume incrementally as long as you hold down the key.
	Volume up	Increases speaker volume incrementally as long as you hold down the key.
	Lock	Locks the action keys.

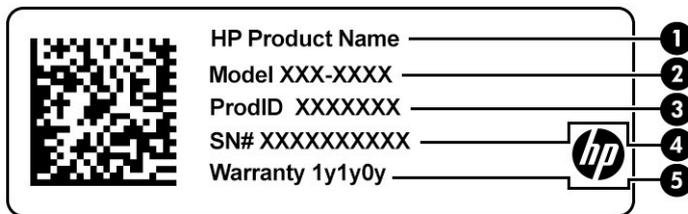
# Labels

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

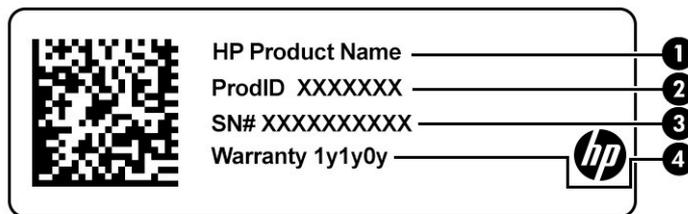
- Service label—Provides important information to identify your computer. When contacting support, you may be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

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



**Table 1-8 Service label components**

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



**Table 1-9 Service label components**

Component
(1) HP product name
(2) Product ID

**Table 1-9 Service label components (continued)**

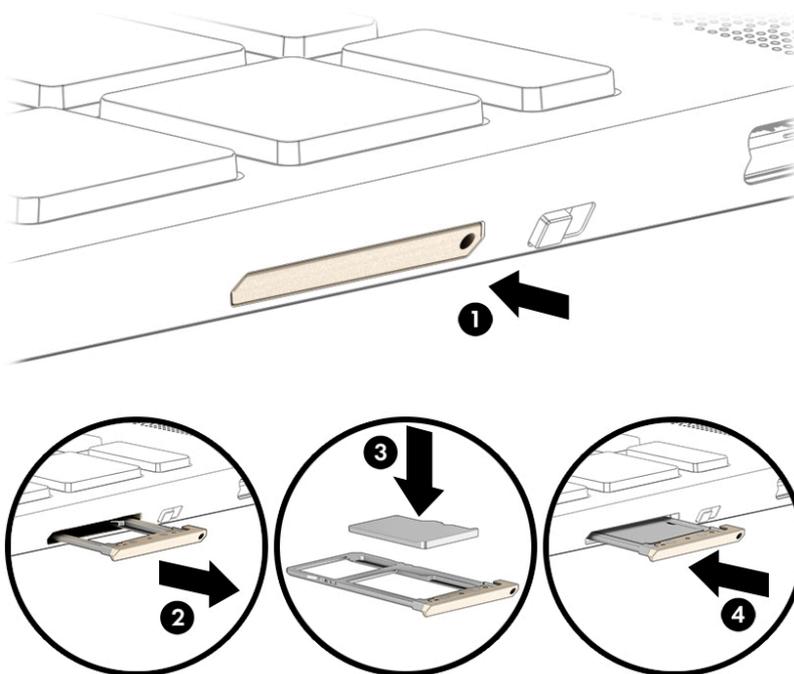
Component	
(3)	Serial number
(4)	Warranty period

- 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.

## Inserting a microSD card or a nano SIM card (select products only)

To insert a microSD card, follow these steps:

1. Position the computer display-side up on a flat surface.
2. Insert a small straightened paper clip into the card tray access hole.
3. Press in gently on the clip until the card tray is ejected. **(1)**
4. Remove the tray **(2)** from the computer and insert the card **(3)**.
5. Replace the tray in the computer. Press in gently on the tray **(4)** until it is firmly seated.



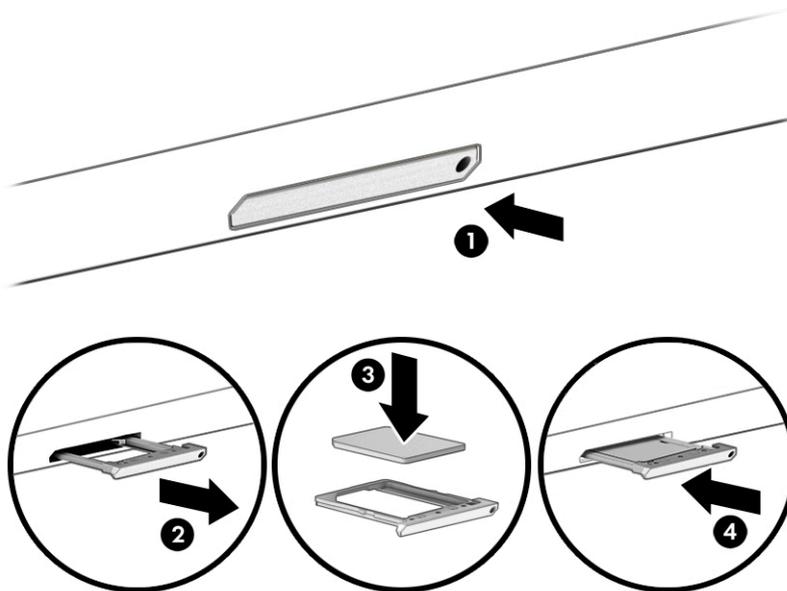
**⚠ CAUTION:** Inserting a SIM card of the wrong size could damage the SIM card or cause the SIM card to become stuck in the slot. The use of nano SIM card adapters is not recommended. To prevent damage to the nano SIM card or the connectors, use minimal force when inserting a nano SIM card.

**📝 NOTE:** Before purchasing a nano SIM card, follow these instructions to determine the correct nano 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.

To insert a nano SIM card, follow these steps:

1. Position the computer display-side up on a flat surface.
2. Insert a small straightened paper clip into the card tray access hole.
3. Press in gently on the clip until the card tray is ejected (1).
4. Remove the tray (2) from the computer and insert the card (3).
5. Replace the tray in the computer. Press in gently on the tray (4) until it is firmly seated.



To remove the card:

1. Release the card tray as described above, and then remove the card.
2. Replace the tray in the computer. Press in gently on the tray until it is firmly seated.

---

## 2 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 may 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 1](#).

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.

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, slide the camera privacy switch toward the icon next to the switch. To turn the camera back on, slide the switch away from the icon.

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

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 **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**.

---

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*.

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.

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

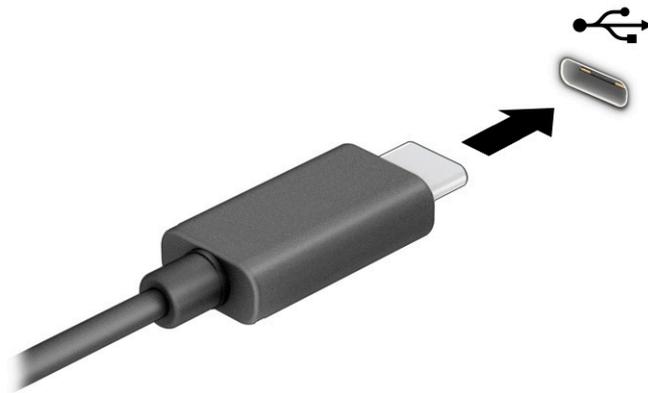
**📝 IMPORTANT:** Be sure that the external device is connected to the correct port on the computer, using the correct cable. Follow the device manufacturer's instructions.

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)

**📝 NOTE:** 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.

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## 3 Navigating the screen

You can navigate the computer screen in one or more of the following ways:

- Use touch gestures directly on the computer screen.
- Use touch gestures on the touchpad.

### Using touchpad and touch screen gestures

The touchpad helps you navigate the computer screen and control the pointer using simple touch gestures. To navigate a touch screen (select products only), touch the screen directly using gestures described in this chapter.

#### 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 to open it.



- Tap two fingers on the touchpad zone or touch screen to bring up a context-sensitive menu.



## Scrolling (touchpad only)

Scrolling is useful for moving up, down, or sideways on a page or image. Scrolling to the left or the right with two fingers will scroll the screen, if there is more content viewable to either side, or will move back and forth through web browser history.

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

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

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- To scroll between open tabs in Chrome, slide three fingers left or right on the touchpad zone.



## One-finger scrolling (touch screen only)

Scrolling to the left or the right with one finger will move back and forth through web browser history.

- Place one finger on the touch screen, and then drag it across the touch screen in a left or right motion.

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

---



## One-finger swipe (touch screen only)

Swiping up with one finger will hide or show your shelf. The shelf contains a list of popular shortcuts to apps so that you can find them easily.

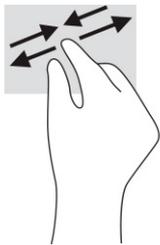
- Place your finger on the bottom of the screen, quickly slide your finger up a short distance, and then lift it.



## Two-finger pinch zoom (touch screen only)

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

- Zoom out by placing two fingers apart on the touch screen and then moving your fingers together.
- Zoom in by placing two fingers together on the touch screen and then moving your fingers apart.



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## 4 Power and battery

### Factory-sealed battery

The battery 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.

### Charging the battery

1. Connect the AC adapter to the computer.
2. Verify that the battery is charging by checking the AC adapter and battery light. This light is located on either the right or left side of the computer, next to the power connector.

**Table 4-1 AC adapter light and status description**

AC adapter light	Status
White	The AC adapter is connected and the battery is charged.
Amber	The AC adapter is connected and the battery is charging.
Off	The computer is using battery power.

3. While the battery is charging, keep the AC adapter connected until the AC adapter and battery light turns white.

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# 5 Printing

## Printing

Use one of the following methods to print from your computer:

- Print from Google Chrome™ using the HP Print for Chrome app.
- Print with Google Cloud Print™ Web printing service.



**NOTE:** If you use HP Print for Chrome, the printer cannot be registered with Google Cloud Print.

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## Printing from Google Chrome

To print from Google Chrome, use the HP Print for Chrome app. You can install the HP Print for Chrome app from the Chrome Web Store. For more information, see the HP website.

1. Go to <http://www.hp.com/support>.
2. In the **Search all support** box, type `Printing with the HP Print for Chrome App`, and then follow the on-screen instructions.

## Printing with Google Cloud Print Web printing service

Google Cloud Print Web printing service is a free service that allows you to print documents and photos securely from your computer. For information about prerequisites and steps for using Google Cloud Print, see the HP website.

1. Go to <http://www.hp.com/support>.
2. In the **Search all support** box, type `Connecting and Using Google Cloud Print`, and then follow the on-screen instructions.

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# 6 Backing up, resetting, and recovering

## Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive™. For detailed information about creating a backup, go to <http://www.support.google.com>.

## Resetting

A factory reset erases all the information on your computer hard drive, including all the files in the Downloads folder. Before you reset, make sure to back up your files to an optional USB flash drive, SD memory card, or through Google Drive. The factory reset won't delete any of your files on Google Drive or an external storage device.

---

 **IMPORTANT:** Resetting permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you reset your computer.

---

You might want to reset your computer in the following circumstances:

- You see the message "Reset this Chrome device."
- You are having problems with your user profile or settings.
- You have tried restarting your computer, and it's still not working properly.
- You want to change the owner of your computer.

To reset your computer:

1. Under the **Settings** menu, click **Advanced**.
2. In the **Powerwash** section, click **Powerwash**.
3. Click **Restart**, and then sign in with your Google account.

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 **NOTE:** The account you sign in with after you reset your computer will be recognized as the owner account.

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4. Follow the on-screen instructions to reset your computer.
5. After you complete the reset, you can set up your computer and check to see whether the problem is fixed.

## Recovering

When your Chrome operating system (OS) isn't working properly, you can perform a recovery. A recovery reinstalls the operating system and software programs and restores the original factory settings. Locally saved files and saved networks are deleted for all accounts. Your Google accounts and any data synced to your Google Drive are not affected by a system recovery.

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 **IMPORTANT:** Recovery permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you recover your computer.

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 **NOTE:** For more information about performing a system recovery on your computer, go to <http://www.support.google.com>.

---

Before beginning the recovery process, you need the following:

- A USB flash drive or SD memory card with a capacity of 4 GB or greater. Because all data is erased from this storage device when the recovery media is created, back up any files from the device before you begin.
- A computer with Internet access. You must also have administrative rights to the computer.
- Computer AC adapter. The computer must be plugged into AC power during recovery.
- The “Chrome OS is missing or damaged” screen displaying on your computer. If this message is not already displayed:
  - Turn on the computer, press and hold the **esc+f3** keys, and then press the power button. The computer restarts, and the screen shows the “Chrome OS is missing or damaged” screen.

## Installing the Chromebook Recovery Utility

The Chromebook Recovery Utility is an app used to recover the original operating system and software programs that were installed at the factory. This utility can be installed from the Chrome Web Store on any computer.

To install the Chromebook Recovery Utility:

- ▲ Open the Chrome Web Store, search for `chrome recovery`, click **Chromebook Recovery Utility** from the Apps list, and follow the on-screen instructions.

## Creating recovery media

Recovery media is used to recover the original operating system and software programs that were installed at the factory.

To create recovery media:

1. Turn on a computer that has Internet access.
- 
2. Click the **Launcher** icon, and then click **All Apps**.
  3. In the Apps window, click **Recovery**, and then click **Get started**.
  4. Follow the on-screen instructions to create the recovery media.

 **NOTE:** All data and partitions on your recovery media will be deleted. Do not remove the USB flash drive or SD memory card until the process is complete.

---

## Recovering the Chrome operating system

To recover the Chrome operating system on your computer using the recovery media you created:

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold **esc+f3**, and then press the power button. When the “Chrome OS is missing or damaged” screen displays, insert the recovery media into your computer. The recovery process begins immediately.

3. Wait while Chrome verifies the integrity of the recovery media.



**NOTE:** If you need to cancel the recovery during the verification process, press and hold the power button until the computer turns off. Do not disrupt the system recovery process after the verification step is complete.



**NOTE:** If an error message appears, you might need to run the Chrome Recovery Utility again, or use a different USB flash drive or SD memory card.

4. When the “System Recovery is complete” message appears, remove the recovery media.

The computer restarts with Chrome OS reinstalled.

## Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process. For details on setting up the computer, go to <http://www.support.google.com>.

## Erase and reformat the recovery media

During the process of creating recovery media, the USB flash drive or SD memory card is formatted for use as a recovery tool. After you recover your computer, you will need to erase the recovery media if you want to reuse your USB flash drive or SD memory card to store other files. Use the steps in this section to erase the recovery media using the Chromebook Recovery Utility.

1. Click the **Launcher** icon, and then click **All Apps**.
2. In the apps window, click **Recovery**.
3. Click the **Settings** icon, and then click **Erase recovery media**.
4. Select the USB flash drive or SD memory card you inserted, click **Continue**, and then click **Erase now**.
5. After the recovery media is erased, click **Done** to close the Chromebook Recovery Utility, and then remove the USB flash drive or SD memory card.

The media is ready to be formatted with a formatting tool provided by your operating system.

# 7 More HP resources

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

**Table 7-1 Additional information**

Resource	Contents
<i>Setup Instructions</i>	<ul style="list-style-type: none"><li>• How to set up the computer</li><li>• Help to identify computer components</li></ul>
HP website To access the latest user guide, go to <a href="http://www.hp.com/support">http://www.hp.com/support</a> , and follow the instructions to find your product. Then select <b>User Guides</b> .	<ul style="list-style-type: none"><li>• Support information</li><li>• Ordering parts and finding additional help</li><li>• Accessories available for the device</li></ul>
Worldwide support To get support in your language, go to <a href="http://www.hp.com/support">http://www.hp.com/support</a> , and select your country.	<ul style="list-style-type: none"><li>• Online chat with an HP technician</li><li>• Support telephone numbers</li><li>• HP service center locations</li></ul>
<i>Safety &amp; Comfort Guide</i> Go to <a href="http://www.hp.com/ergo">http://www.hp.com/ergo</a> .	<ul style="list-style-type: none"><li>• Proper workstation setup</li><li>• Guidelines for posture and work habits that increase comfort and decrease risk of injury</li><li>• Electrical and mechanical safety information</li></ul>
<i>Regulatory, Safety, and Environmental Notices</i> This guide is provided in the box.	<ul style="list-style-type: none"><li>• Regulatory and safety information</li><li>• Battery disposal information</li></ul>
<i>Limited Warranty*</i> Go to <a href="http://www.hp.com/go/orderdocuments">http://www.hp.com/go/orderdocuments</a> .	<ul style="list-style-type: none"><li>• Warranty information</li></ul>

\*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>. For products purchased in Asia Pacific, you can write to HP at POD, PO Box 161, Kitchener Road Post Office, Singapore 912006. Include your product name, and your name, phone number, and postal address.

# 8 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 8-1 DC power specifications**

Input power	Rating
Operating voltage and current	5 V dc @ 2 A / 12 V dc @ 3 A / 15 V dc @ 3 A – 45 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A – 45 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 3.75 A / 12 V dc @ 3.75 A / 15 V dc @ 3 A / 20 V dc @ 2.25 A – 45 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 4.33 A / 20 V dc @ 3.25 A – 65 W USB-C
	5 V dc @ 3 A / 9 V dc @ 3 A / 10 V dc @ 5 A / 12 V dc @ 5 A / 15 V dc @ 5 A / 20 V dc @ 4.5 A – 90 W USB-C
	19.5 V dc @ 2.31 A – 45 W
	19.5 V dc @ 3.33 A – 65 W
	19.5 V dc @ 4.62 A – 90 W
	19.5 V dc @ 6.15 A – 120 W
	19.5 V dc @ 6.9 A – 135 W
	19.5 V dc @ 7.70 A – 150 W
	19.5 V dc @ 10.3 A – 200 W
	19.5 V dc @ 11.8 A – 230 W
19.5 V dc @ 16.92 A – 330 W	

DC plug of external HP power supply (select products only)



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

# Operating environment

**Table 8-2 Operating environment specifications**

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

---

## 9 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.



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**IMPORTANT:** 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.
-

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# 10 Accessibility

## HP and accessibility

Because HP works to weave diversity, inclusion, and work/life into the fabric of the company, it is reflected in everything HP does. HP strives to create an inclusive environment focused on connecting people to the power of technology throughout the world.

### Finding the technology tools you need

Technology can unleash your human potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology helps increase, maintain, and improve the functional capabilities of electronic and information technology. For more information, see [Finding the best assistive technology on page 28](#).

### The HP commitment

HP is committed to providing products and services that are accessible for people with disabilities. This commitment supports the company's diversity objectives and helps ensure that the benefits of technology are available to all.

The HP accessibility goal is to design, produce, and market products and services that can be effectively used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

To achieve that goal, this Accessibility Policy establishes seven key objectives to guide HP actions. All HP managers and employees are expected to support these objectives and their implementation in accordance with their roles and responsibilities:

- Raise the level of awareness of accessibility issues within HP, and provide employees with the training they need to design, produce, market, and deliver accessible products and services.
- Develop accessibility guidelines for products and services, and hold product development groups accountable for implementing these guidelines where competitively, technically, and economically feasible.
- Involve people with disabilities in the development of accessibility guidelines and in the design and testing of products and services.
- Document accessibility features, and make information about HP products and services publicly available in an accessible form.
- Establish relationships with leading assistive technology and solution providers.
- Support internal and external research and development that improves assistive technology relevant to HP products and services.
- Support and contribute to industry standards and guidelines for accessibility.

### International Association of Accessibility Professionals (IAAP)

IAAP is a not-for-profit association focused on advancing the accessibility profession through networking, education, and certification. The objective is to help accessibility professionals develop and advance their careers and to better enable organizations to integrate accessibility into their products and infrastructure.

As a founding member, HP joined to participate with other organizations to advance the field of accessibility. This commitment supports HP's accessibility goal of designing, producing, and marketing products and services that people with disabilities can effectively use.

IAAP will make the profession strong by globally connecting individuals, students, and organizations to learn from one another. If you are interested in learning more, go to <http://www.accessibilityassociation.org> to join the online community, sign up for newsletters, and learn about membership options.

## Finding the best assistive technology

Everyone, including people with disabilities or age-related limitations, should be able to communicate, express themselves, and connect with the world using technology. HP is committed to increasing accessibility awareness within HP and with our customers and partners. Whether it's large fonts that are easy on the eyes, voice recognition that lets you give your hands a rest, or any other assistive technology to help with your specific situation—a variety of assistive technologies make HP products easier to use. How do you choose?

## Assessing your needs

Technology can unleash your potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology (AT) helps increase, maintain, and improve the functional capabilities of electronic and information technology.

You can choose from many AT products. Your AT assessment should allow you to evaluate several products, answer your questions, and facilitate your selection of the best solution for your situation. You will find that professionals qualified to do AT assessments come from many fields, including those licensed or certified in physical therapy, occupational therapy, speech/language pathology, and other areas of expertise. Others, while not certified or licensed, can also provide evaluation information. You will want to ask about the individual's experience, expertise, and fees to determine if they are appropriate for your needs.

## Accessibility for HP products

The following links provide information about accessibility features and assistive technology, if applicable, included in various HP products. These resources will help you select the specific assistive technology features and product(s) most appropriate for your situation.

- [HP Elite x3—Accessibility Options \(Windows 10 Mobile\)](#)
- [HP PCs—Windows 7 Accessibility Options](#)
- [HP PCs—Windows 8 Accessibility Options](#)
- [HP PC's—Windows 10 Accessibility Options](#)
- [HP Slate 7 Tablets—Enabling Accessibility Features on Your HP Tablet \(Android 4.1/Jelly Bean\)](#)
- [HP SlateBook PCs—Enabling Accessibility Features \(Android 4.3,4.2/Jelly Bean\)](#)
- [HP Chromebook PCs—Enabling Accessibility Features on Your HP Chromebook or Chromebox \(Chrome OS\)](#)
- [HP Shopping—peripherals for HP products](#)

If you need additional support with the accessibility features on your HP product, see [Contacting support on page 31](#).

Additional links to external partners and suppliers that may provide additional assistance:

- [Microsoft Accessibility information \(Windows 7, Windows 8, Windows 10, Microsoft Office\)](#)
- [Google Products accessibility information \(Android, Chrome, Google Apps\)](#)

- [Assistive Technologies sorted by impairment type](#)
- [Assistive Technologies sorted by product type](#)
- [Assistive Technology vendors with product descriptions](#)
- [Assistive Technology Industry Association \(ATIA\)](#)

## Standards and legislation

### Standards

Section 508 of the Federal Acquisition Regulation (FAR) standards was created by the US Access Board to address access to information and communication technology (ICT) for people with physical, sensory, or cognitive disabilities. The standards contain technical criteria specific to various types of technologies, as well as performance-based requirements which focus on functional capabilities of covered products. Specific criteria cover software applications and operating systems, web-based information and applications, computers, telecommunications products, video and multimedia, and self-contained closed products.

### Mandate 376 – EN 301 549

The EN 301 549 standard was created by the European Union within Mandate 376 as the basis for an online toolkit for public procurement of ICT products. The standard specifies the functional accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement.

### Web Content Accessibility Guidelines (WCAG)

Web Content Accessibility Guidelines (WCAG) from the W3C's Web Accessibility Initiative (WAI) helps web designers and developers create sites that better meet the needs of people with disabilities or age-related limitations. WCAG advances accessibility across the full range of web content (text, images, audio, and video) and web applications. WCAG can be precisely tested, is easy to understand and use, and allows web developers flexibility for innovation. WCAG 2.0 has also been approved as [ISO/IEC 40500:2012](#).

WCAG specifically addresses barriers to accessing the web experienced by people with visual, auditory, physical, cognitive, and neurological disabilities, and by older web users with accessibility needs. WCAG 2.0 provides characteristics of accessible content:

- **Perceivable** (for instance, by addressing text alternatives for images, captions for audio, adaptability of presentation, and color contrast)
- **Operable** (by addressing keyboard access, color contrast, timing of input, seizure avoidance, and navigability)
- **Understandable** (by addressing readability, predictability, and input assistance)
- **Robust** (for instance, by addressing compatibility with assistive technologies)

### Legislation and regulations

Accessibility of IT and information has become an area of increasing legislative importance. The links listed below provide information about key legislation, regulations, and standards.

- [United States](#)
- [Canada](#)
- [Europe](#)

- [United Kingdom](#)
- [Australia](#)
- [Worldwide](#)

## Useful accessibility resources and links

The following organizations might be good resources for information about disabilities and age-related limitations.



**NOTE:** This is not an exhaustive list. These organizations are provided for informational purposes only. HP assumes no responsibility for information or contacts you encounter on the Internet. Listing on this page does not imply endorsement by HP.

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### Organizations

- American Association of People with Disabilities (AAPD)
- The Association of Assistive Technology Act Programs (ATAP)
- Hearing Loss Association of America (HLAA)
- Information Technology Technical Assistance and Training Center (ITTATC)
- Lighthouse International
- National Association of the Deaf
- National Federation of the Blind
- Rehabilitation Engineering & Assistive Technology Society of North America (RESNA)
- Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
- W3C Web Accessibility Initiative (WAI)

### Educational institutions

- California State University, Northridge, Center on Disabilities (CSUN)
- University of Wisconsin - Madison, Trace Center
- University of Minnesota computer accommodations program

### Other disability resources

- ADA (Americans with Disabilities Act) Technical Assistance Program
- ILO Global Business and Disability network
- EnableMart
- European Disability Forum
- Job Accommodation Network
- Microsoft Enable

## HP links

[Our contact webform](#)

[HP comfort and safety guide](#)

[HP public sector sales](#)

## Contacting support

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**NOTE:** Support is in English only.

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- Customers who are deaf or hard of hearing who have questions about technical support or accessibility of HP products:
  - Use TRS/VRS/WebCapTel to call (877) 656-7058 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
- Customers with other disabilities or age-related limitations who have questions about technical support or accessibility of HP products, choose one of the following options:
  - Call (888) 259-5707 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
  - Complete the [Contact form for people with disabilities or age-related limitations](#).

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