# User Guide

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First Edition: December 2018

Document Part Number: L47040-001

**Product notice**

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

**Software terms**

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

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

## Safety warning notice

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

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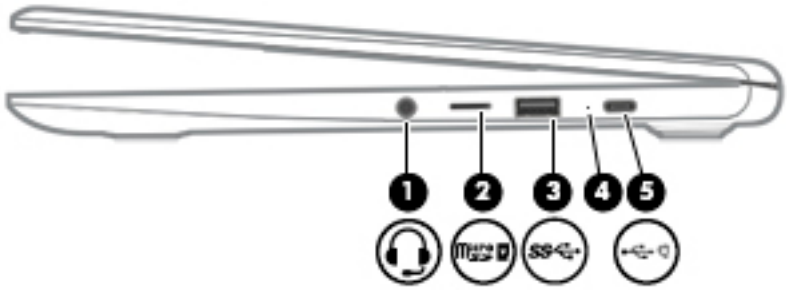
# 1 Getting to know your computer

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

## Right side



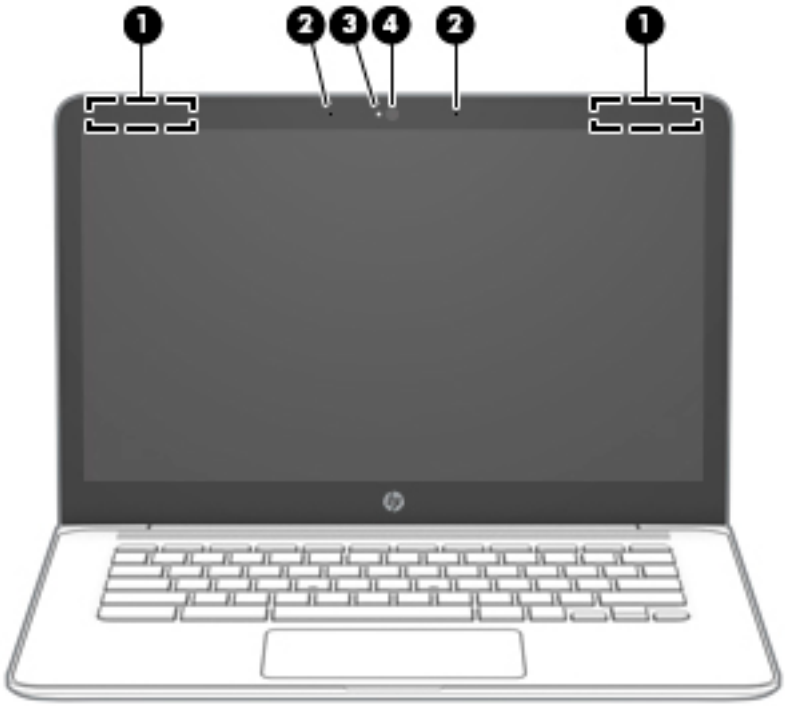

| Component | | | Description |
|---|---|---|---|
| (1) | | Audio-out (headphone)/Audio-in (microphone) combo jack | Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones.<br>**WARNING!** To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, refer to the *Regulatory, Safety, and Environmental Notices*.<br>**NOTE:** When a device is connected to the jack, the computer speakers are disabled. |
| (2) | SD | MicroSD memory card reader | Reads optional memory cards that enable you to store, manage, share, or access information.<br>To insert a card:<br>1. Hold the card label-side up, with connectors facing the computer.<br>2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated.<br>To remove a card:<br>▲ Press in on the card, and then remove it from the memory card reader. |
| (3) | SS | USB SuperSpeed port | Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer. |
| (4) | | AC adapter and battery light | • White: The AC adapter is connected and the battery is fully charged.<br>• Amber: The AC adapter is connected and the battery is charging. |

| Component | | Description |
|---|---|---|
| | | • Blinking amber: The battery has an error.<br>• Off: The battery is not charging. |
| **(5)** | USB Type-C power connector and port | Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery.<br>– and –<br>Connects a USB device that has a Type-C connector, such as a cell phone, camera, activity tracker, or smartwatch, and provides data transfer.<br>– and –<br>Connects a display device that has a USB Type-C connector, providing DisplayPort output.<br>**NOTE:** Cables and/or adapters (purchased separately) may be required. |

# Left side

| Component | | Description |
|---|---|---|
| **(1)** | Security cable slot | Attaches an optional security cable to the computer.<br>**NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen. |
| **(2)** | USB Type-C port with HP Sleep and Charge | Connects a USB device that has a Type-C connector, provides data transfer, and even when the computer is off, charges most products such as a cell phone, camera, activity tracker, or smartwatch.<br>– and –<br>Connects a display device that has a USB Type-C connector, providing DisplayPort output.<br>**NOTE:** Cables and/or adapters (purchased separately) may be required. |
| **(3)** | USB SuperSpeed port | Connects a USB device, such as a cell phone, camera, activity tracker, or smartwatch, and provides high-speed data transfer. |

# Display



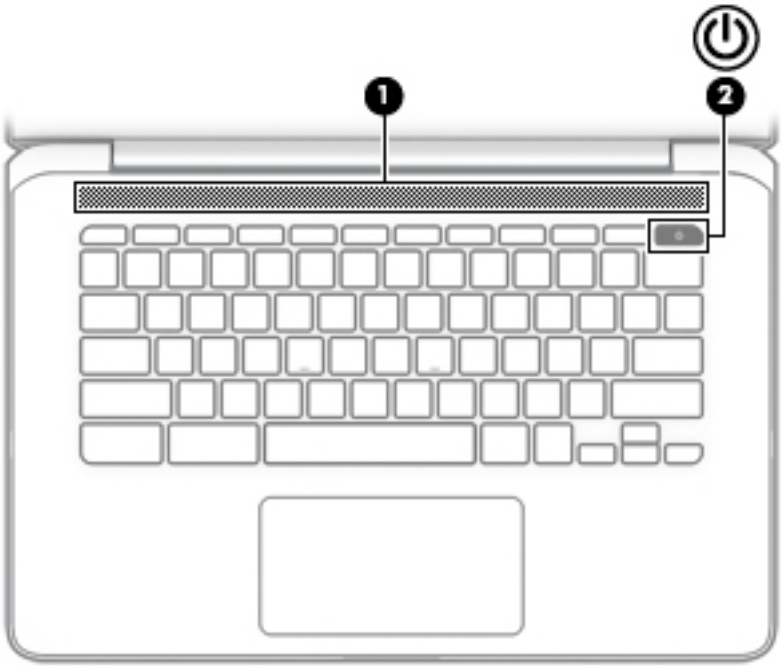

| Component | | Description |
|---|---|---|
| **(1)** | WLAN antennas* | Send and receive wireless signals to communicate with wireless local area networks (WLANs). |
| **(2)** | Internal microphones (2) | Record sound. |
| **(3)** | Camera light | On: The camera is in use. |
| **(4)** | Camera | Allows you to video chat, record video, and record still images. |

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

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

To access this guide, go to http://www.hp.com/support, and follow the instructions to find your product. Then select **User Guides**.

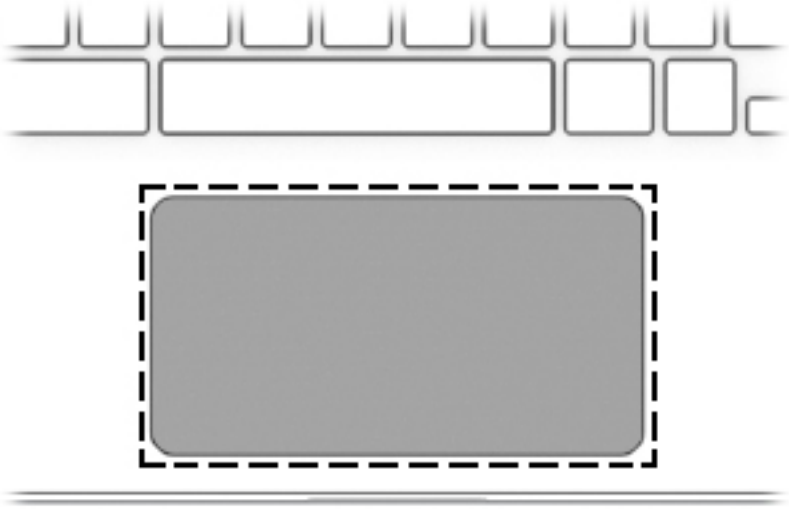
# Speakers




| Component | | Description |
|---|---|---|
| **(1)** | Speaker | Produces sound. |
| **(2)** | Power button | • When the computer is off, press the button to turn on the computer.<br>• When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only).<br>• When the computer is on and you want to turn it off, press and hold the button to lock the screen, and then continue to press the button until the computer turns off. |

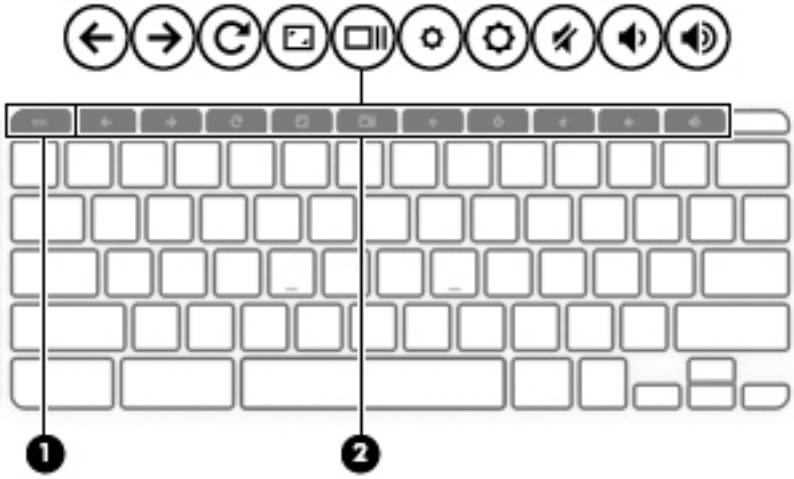
# Keyboard area

## TouchPad



| Component | Description |
|---|---|
| TouchPad zone | Reads your finger gestures to move the pointer or activate items on the screen.<br>**NOTE:** For more information, see Using TouchPad and touch screen gestures on page 11. |

## Special keys




| Component | | Description |
|---|---|---|
| **(1)** | esc key | Activates certain computer functions when pressed in combination with other keys, such as Tab or Shift. |
| **(2)** | Action keys | Execute frequently used system functions. |

## Action keys

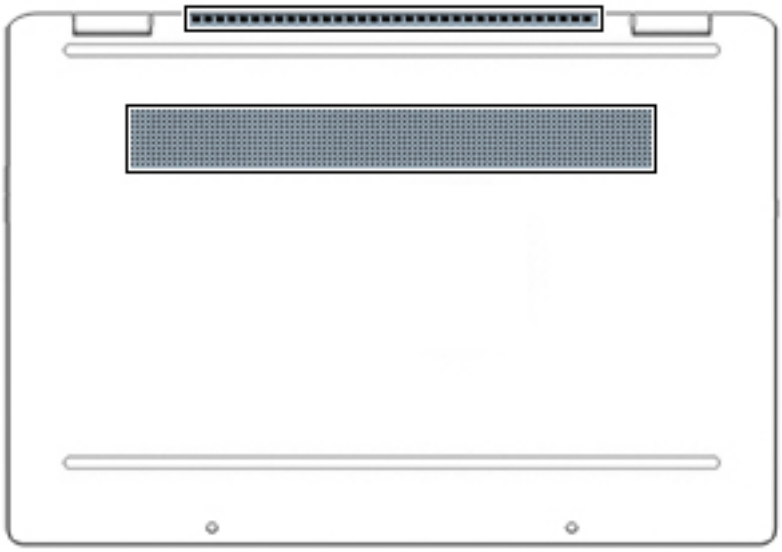
An action key performs the function indicated by the icon on the key. To determine which keys are on your product, see Special keys on page 7.

▲ 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.

| 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.<br>**NOTE:** Pressing this button in conjunction with ctrl takes a screenshot. |
| | Brightness down | Decreases the screen brightness incrementally as long as you hold down the key. |
| | Brightness up | Increases the screen brightness 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. |

# Bottom



| Components | Description |
|---|---|
| Vents | Enable airflow to cool internal components.<br><br>**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. |

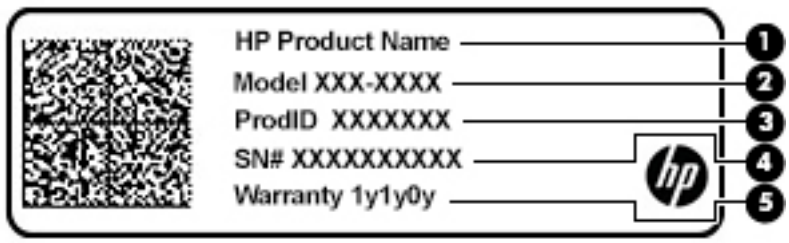
# Labels

The labels affixed to the computer provide information 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.

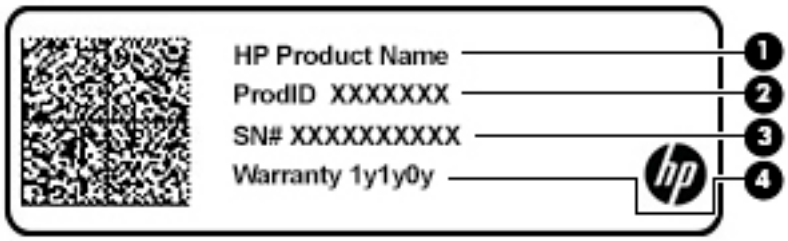
**IMPORTANT:** Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, on the back of the display, or on the bottom of a tablet kickstand.

- 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.



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




| 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.

# 2 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.

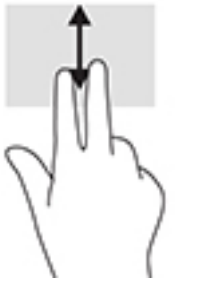
- Tap two fingers on the TouchPad zone or touch screen to bring up a context-sensitive menu.

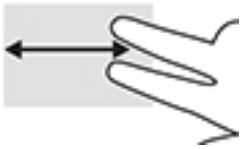
## Scrolling (TouchPad only)

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.

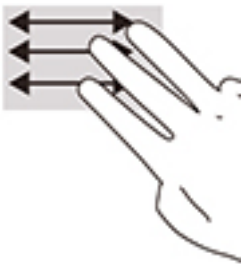
- Place two fingers slightly apart on the TouchPad zone, and then drag them up, down, left, or right.

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





- 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.

# 3 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.

| 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.

# 4 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.

## 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.

# 5 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.

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

4. Follow the on-screen instructions to reset your computer.
5. Once 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.

**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.

**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. All data is erased from this storage device when the recovery media is created, so 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.

**NOTE:** You must have administrative rights to the computer.

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 displays, 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 displays, 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 using a formatting tool provided by your operating system.

# 6 More HP resources

## More HP resources

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

| Resource | Contents |
|---|---|
| *Setup Instructions* | • Overview of computer setup and features |
| HP support<br><br>For HP support, go to http://www.hp.com/support, and follow the instructions to find your product. | • Online chat with an HP technician<br>• Support telephone numbers<br>• Replacement parts videos (select product only)<br>• Maintenance and service guides<br>• HP service center locations |
| *Safety & Comfort Guide*<br><br>Go to http://www.hp.com/ergo. | • Proper workstation setup<br>• Guidelines for posture and work habits that increase comfort and decrease risk of injury<br>• Electrical and mechanical safety information |
| *Regulatory, Safety, and Environmental Notices*<br><br>Go to http://www.hp.com/support, and follow the instructions to find your product. Then select **User Guides**. | • Important regulatory notices, including information about proper battery disposal, if needed. |
| *Limited Warranty**<br><br>Go to http://www.hp.com/go/orderdocuments. | • Specific warranty information about this computer |
| *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. | |

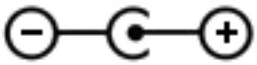
# 7 Specifications

## 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.

| 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<br>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<br>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<br>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<br>5 V dc @ 3 A / 9 V dc @ 3A / 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<br>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<br>19.5 V dc @ 2.31 A – 45 W<br>19.5 V dc @ 3.33 A – 65 W<br>19.5 V dc @ 4.62 A – 90 W<br>19.5 V dc @ 6.15 A – 120 W<br>19.5 V dc @ 6.9 A – 135 W<br>19.5 V dc @ 7.70 A – 150 W<br>19.5 V dc @ 10.3 A – 200 W<br>19.5 V dc @ 11.8 A – 230 W<br>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

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

# 8 Electrostatic Discharge

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

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

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

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

# 9 Accessibility

## Accessibility

HP is working to weave diversity, inclusion and work/life into the fabric of our company, so it is reflected in everything we do. Here are some examples of how we are putting differences to work 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 24.

### Our commitment

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

Our 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 our goal, this Accessibility Policy establishes seven key objectives to guide our actions as a company. 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 our company, and provide our 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 our 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 will improve assistive technology relevant to our 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.

HP is a founding member, and we joined to participate with other organizations to advance the field of accessibility. This commitment supports our company's accessibility goal of designing, producing, and marketing products and services that can be effectively used by people with disabilities.

IAAP will make our 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 may 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, may 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 on 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 29.

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 multi-media, 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. This section provides links to information on key legislation, regulations, and standards.

- United States
- Canada
- Europe

- United Kingdom
- Australia
- Worldwide

## United States

Section 508 of the Rehabilitation Act specifies that agencies must identify which standards apply to the procurement of ICT, perform market research to determine the availability of accessible products and services, and document the results of their market research. The following resources provide assistance in meeting Section 508 requirements:

- www.section508.gov
- Buy Accessible

The U.S. Access Board is currently updating the Section 508 standards. This effort will address new technologies and other areas where the standards need to be modified. For more information, go to Section 508 Refresh.

Section 255 of the Telecommunications Act requires telecommunications products and services to be accessible to people with disabilities. FCC rules cover all hardware and software telephone network equipment and telecommunications equipment used in the home or office. Such equipment includes telephones, wireless handsets, fax machines, answering machines, and pagers. FCC rules also cover basic and special telecommunications services, including regular telephone calls, call waiting, speed dialing, call forwarding, computer-provided directory assistance, call monitoring, caller identification, call tracing, and repeat dialing, as well as voice mail and interactive voice response systems that provide callers with menus of choices. For more information, go to Federal Communication Commission Section 255 information.

## 21st Century Communications and Video Accessibility Act (CVAA)

The CVAA updates federal communications law to increase the access of persons with disabilities to modern communications, updating accessibility laws enacted in the 1980s and 1990s to include new digital, broadband, and mobile innovations. Regulations are enforced by the FCC and documented as 47 CFR Part 14 and Part 79.

- FCC Guide on the CVAA

Other U.S. legislation and initiatives

- Americans with Disabilities Act (ADA), Telecommunications Act, the Rehabilitation Act and others

## Canada

The Accessibility for Ontarians with Disabilities Act was established to develop and implement accessibility standards to make goods, services, and facilities accessible to Ontarians with disabilities and to provide for the involvement of persons with disabilities in the development of the accessibility standards. The first standard of the AODA is the customer service standard; however, standards for transportation, employment, and information and communication are also being developed. The AODA applies to the Government of Ontario, the Legislative Assembly, every designated public sector organization, and to every other person or organization that provides goods, services, or facilities to the public or other third parties and that has at least one employee in Ontario; and accessibility measures must be implemented on or before January 1, 2025. For more information, go to Accessibility for Ontarians with Disability Act (AODA) .

## Europe

EU Mandate 376 ETSI Technical Report ETSI DTR 102 612: "Human Factors (HF); European accessibility requirements for public procurement of products and services in the ICT domain (European Commission Mandate M 376, Phase 1)" has been released.

Background: The three European Standardization Organizations have set up two parallel project teams to carry out the work specified in the European Commission "Mandate 376 to CEN, CENELEC and ETSI, in Support of Accessibility Requirements for Public Procurement of Products and Services in the ICT Domain."

ETSI TC Human Factors Specialist Task Force 333 has developed ETSI DTR 102 612. Further details about the work performed by STF333 (e.g., Terms of Reference, specification of the detailed work tasks, time plan for the work, previous drafts, listing of comments received and means to contact the task force) can be found at the Special Task Force 333.

The parts relating to the assessment of suitable testing and conformity schemes were carried out by a parallel project, detailed in CEN BT/WG185/PT. For further information, go to the CEN project team website. The two projects are closely coordinated.

- CEN project team
- European Commission mandate for e-accessibility (PDF 46KB)

## United Kingdom

The Disability Discrimination Act of 1995 (DDA) was enacted to ensure that websites are accessible to blind and disabled users in the United Kingdom.

- W3C UK Policies

## Australia

The Australian government has announced their plan to implement Web Content Accessibility Guidelines 2.0.

All Australian government websites will require Level A compliance by 2012, and Double A by 2015. The new standard replaces WCAG 1.0, which was introduced as a mandated requirement for agencies in 2000.

## Worldwide

- JTC1 Special Working Group on Accessibility (SWG-A)
- G3ict: The Global Initiative for Inclusive ICT
- Italian accessibility legislation
- W3C Web Accessibility Initiative (WAI)

# Useful accessibility resources and links

The following organizations may 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 may encounter on the Internet. Listing on this page does not imply endorsement by HP.

## 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
- Business & Disability network
- EnableMart
- European Disability Forum
- Job Accommodation Network
- Microsoft Enable
- U.S. Department of Justice - A Guide to disability rights Laws

## HP links

Our contact webform

HP comfort and safety guide

HP public sector sales

# Contacting support

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

- Customers who are deaf or hard of hearing that 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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