



User Guide

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Product notice






This guide describes features that are common to most models. Some features may not be available on your product. To access the latest user guide, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **User Guides**.

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About This Guide

This guide provides information on monitor features, setting up the monitor, using the software and technical specifications.

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-  **WARNING!** Indicates a hazardous situation that, if not avoided, **could** result in bodily harm or loss of life.
 -  **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in damage to equipment or loss of information.
 -  **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). An Important alert warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
 -  **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
 -  **TIP:** Provides helpful hints for completing a task.
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This product incorporates HDMI technology.

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1 Getting started

Important safety information


An AC power cord may be included with the monitor. If another cord is used, use only a power source and connection appropriate for this monitor. For information about the correct AC power cord set to use with the monitor, refer to the *Product Notices* provided in your documentation kit.

 **WARNING!** To reduce the risk of electric shock or damage to the equipment:


- Plug the power cord into an AC outlet that is easily accessible at all times.
- Disconnect power from the computer by unplugging the power cord from the AC outlet.
- If provided with a 3-pin attachment plug on the power cord, plug the cord into a grounded (earthed) 3-pin outlet. Do not disable the power cord grounding pin, for example, by attaching a 2-pin adapter. The grounding pin is an important safety feature.

For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the AC outlet, grasp the cord by the plug.


To reduce the risk of serious injury, read the *Safety & Comfort Guide* (provided with your user guides). It describes proper workstation setup and proper posture, health, and work habits for computer users. The *Safety & Comfort Guide* also provides important electrical and mechanical safety information. The *Safety & Comfort Guide* is also available on the Web at <http://www.hp.com/ergo>.

 **IMPORTANT:** For the protection of the monitor, as well as the computer, connect all power cords for the computer and its peripheral devices (such as a monitor, printer, scanner) to some form of surge protection device such as a power strip or uninterruptible power supply (UPS). Not all power strips provide surge protection; the power strips must be specifically labeled as having this capability. Use a power strip whose manufacturer offers a damage replacement policy so you can replace the equipment if surge protection fails.

Use the appropriate and correctly sized furniture designed to properly support your HP LCD monitor.

 **WARNING!** LCD monitors that are inappropriately situated on dressers, bookcases, shelves, desks, speakers, chests, or carts may fall over and cause personal injury.

Care should be taken to route all cords and cables connected to the LCD monitor so that they cannot be pulled, grabbed, or tripped over.

 **NOTE:** This product is suitable for entertainment purposes. Consider placing the monitor in a controlled luminous environment to avoid interference from surrounding light and bright surfaces that may cause disturbing reflections from the screen.

Product features and components

Features

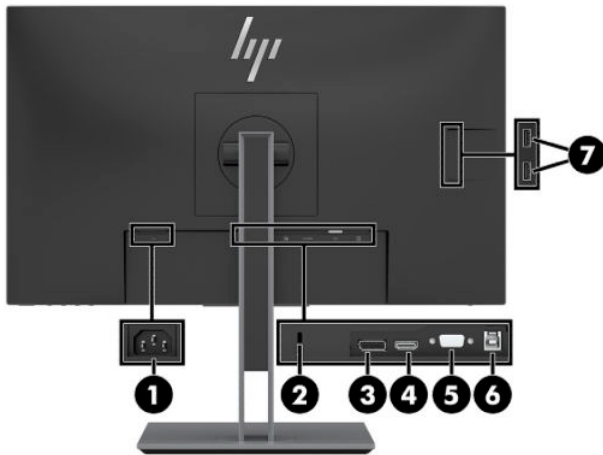
The monitor features include the following:

- 60.5 cm (23.8-inch) diagonal viewable screen area with 1920 × 1080 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- Nonglare panel with an LED backlight
- HP SureView button for privacy screen viewing
- Tilt capability
- Pivot capability to rotate the monitor head from landscape to portrait mode
- Swivel and height adjustment capabilities
- Removable stand for flexible monitor head mounting solutions
- DisplayPort and VGA video inputs (cables provided)
- HDMI (High-Definition Multimedia Interface) video input (cable not provided)
- USB hub with one upstream port (connects to the computer) and two downstream ports (connect to USB devices)
- USB cable provided to connect the monitor's USB hub to the USB port on the computer
- Plug and Play capability if supported by your operating system
- Security cable slot provision on rear of monitor for an optional security cable
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization
- HP Display Assistant software for adjusting monitor settings and enabling the theft deterrence features
- HDCP (High-bandwidth Digital Content Protection) used on digital inputs
- VESA mounting capability
- Energy saver feature to meet requirements for reduced power consumption



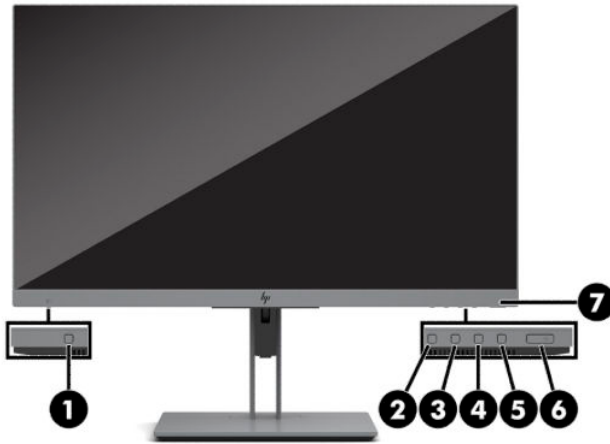
NOTE: For safety and regulatory information, refer to the *Product Notices* provided in your documentation kit. To access the latest user guide, go to <http://www.hp.com/support> and follow the instructions to find your product. Then select **User Guides**.

Rear components



Component	Function
1 Power connector	Connects the AC power cord.
2 Security cable slot	Connects an optional security cable.
3 DisplayPort connector	Connects the DisplayPort cable to the source device.
4 HDMI port	Connects the HDMI cable to the source device.
5 VGA port	Connects the VGA cable to the source device.
6 USB upstream port	Connects the USB hub cable to the source device.
7 USB ports (2)	Connect USB cables to peripheral USB devices.

Front bezel controls




Control	Function
1 HP SureView button	Switches between privacy viewing and shared viewing.
2 Menu button	Press to open the OSD menu, select a menu item from the OSD, or close the OSD menu.
3 Information/Auto-Adjustment/Minus Function button 3 (assignable)	<p>Information: If the OSD menu is closed and DisplayPort or HDMI is the primary video source, opens the Information menu.</p> <p>Auto-Adjustment: If the OSD menu is closed and VGA is the primary video source, activates the auto-adjustment feature to optimize the screen image.</p> <p>Minus: If the OSD menu is open, navigates backward through the OSD menu and decreases adjustment levels.</p>
4 Viewing Modes/Plus Function button 2 (assignable)	<p>Viewing Modes: If the OSD menu is closed, opens the Viewing Modes menu to choose different screen viewing settings.</p> <p>Plus: If the OSD menu is open, navigates forward through the OSD menu and increases adjustment levels.</p>
5 Input/Exit Function button 1 (assignable)	<p>Input: If the OSD menu is closed, switches to the next active video input (DisplayPort, HDMI, or VGA).</p> <p>Exit: If the OSD menu is open, saves changes and exits the OSD menu.</p>
6 Power button	Turns the monitor on or off.
7 Power light	<p>White: The monitor is on.</p> <p>Amber: Monitor is in a reduced power state because of inactivity.</p> <p>Blinking amber: Monitor is in a reduced power state because of an Energy Saver setting. See Energy saver feature on page 27.</p>

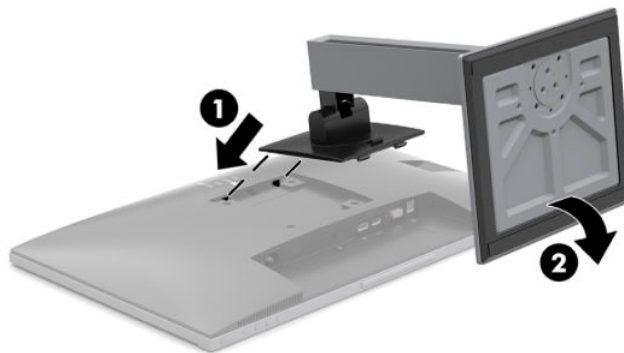
NOTE: You can reconfigure the function buttons in the OSD menu to quickly select the most commonly used operations. Press the **Menu** button to open the OSD menu, and then select **Menu**. Select **Assign Buttons**, and then select one of the available options for the button you want to assign.

Setting up the monitor


Installing the monitor stand

 **IMPORTANT:** To prevent damage to the monitor, do not touch the surface of the LCD panel. Pressure on the panel may cause non-uniformity of color or disorientation of the liquid crystals. If this occurs, the screen will not recover to its normal condition.

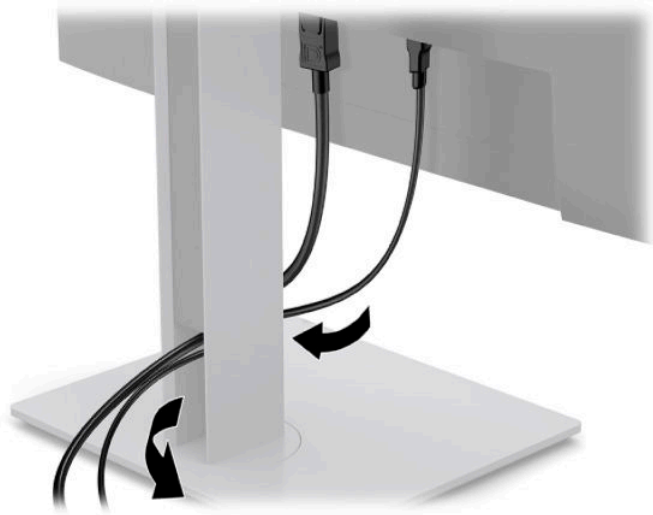
1. Position the monitor head facedown on a flat surface covered by a clean, dry cloth.
2. Slide the top of the mounting plate on the stand under the upper lip of the recess in the back of the panel (1).
3. Lower the bottom of the stand's base (2) so that the mounting plate snaps into place.
4. The latch that secures the bottom of the mounting plate pops up when the stand is locked in place.




Connecting the cables

 **NOTE:** The monitor ships with select cables. Not all cables shown in this section are included with the monitor.

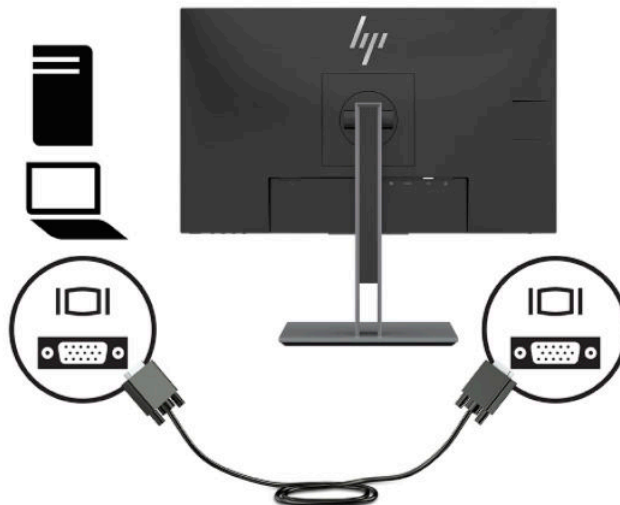
1. Place the monitor in a convenient, well-ventilated location near the computer.
2. Before connecting the cables, route the cables through the cable routing hole in the center of the stand.



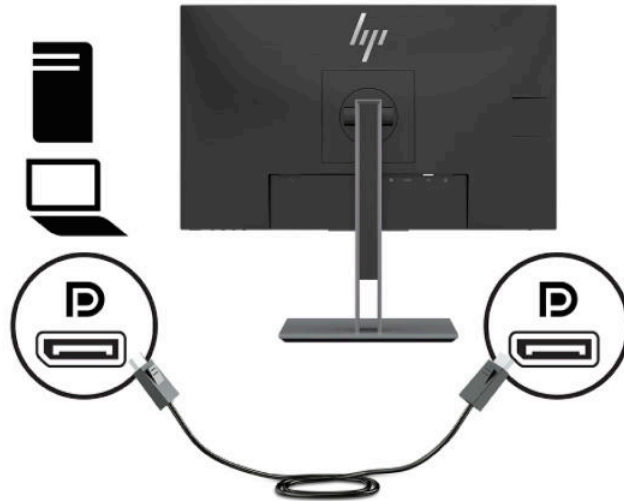
3. Connect a video cable.

 **NOTE:** The monitor will automatically determine which inputs have valid video signals. The inputs can be selected by pressing the **Menu** button to access the on-screen display (OSD) menu and selecting **Input**.

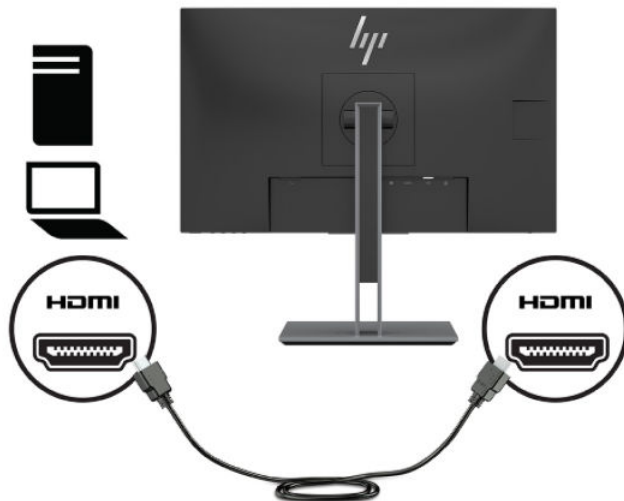
- Connect one end of a VGA cable to the VGA port on the rear of the monitor and the other end to the VGA port on the source device.



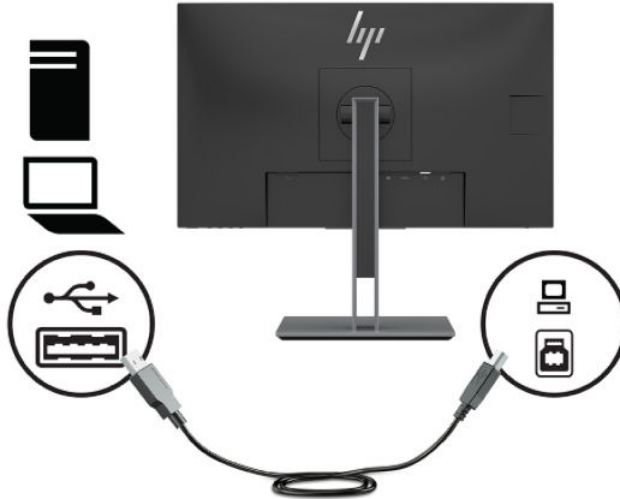
- Connect one end of a DisplayPort cable to the DisplayPort connector on the rear of the monitor and the other end to the DisplayPort connector on the source device.



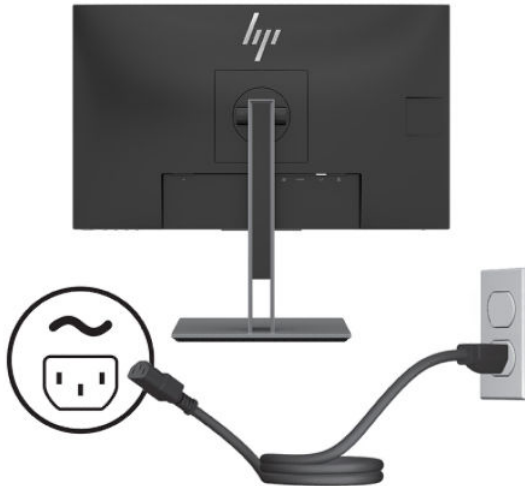
- Connect one end of an HDMI cable to the HDMI port on the rear of the monitor and the other end to the HDMI port on the source device.



4. Connect the Type-B connector of the USB upstream cable to the USB upstream port on the rear of the monitor. Then connect the cable's Type-A connector to the USB downstream port on the source device.



5. Connect one end of the AC power cord to the power connector on the rear of the monitor and the other end to an AC outlet.



⚠ WARNING! To reduce the risk of electric shock or damage to the equipment:

Do not disable the AC power cord grounding plug. The grounding plug is an important safety feature.

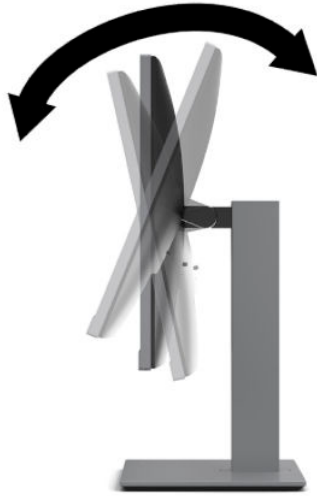
Plug the AC power cord into a grounded (earthed) AC outlet that is easily accessible at all times.

Disconnect power from the equipment by unplugging the AC power cord from the AC outlet.

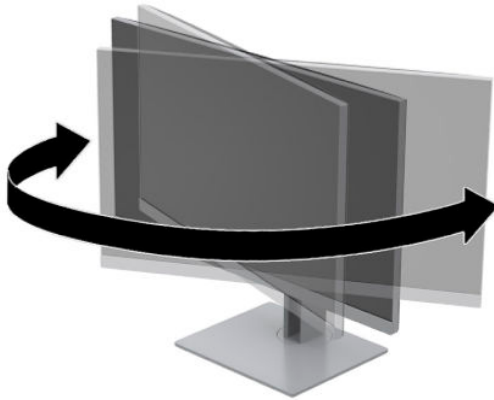
For your safety, do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging the AC power cord from the AC outlet, grasp the cord by the plug.

Adjusting the monitor

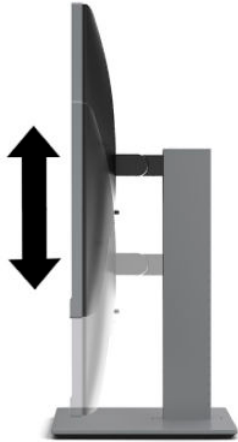
1. Tilt the monitor head forward or backward to set it to a comfortable eye level.



2. Swivel the monitor head to the left or right for the best viewing angle.

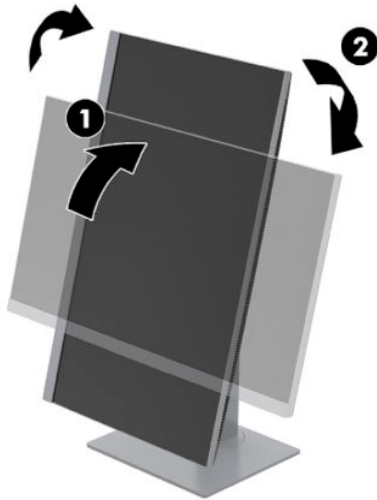


3. Adjust the monitor's height to a comfortable position for your individual workstation. The monitor's top bezel edge should be no higher than eye level. A monitor that is positioned low and reclined may be more comfortable for users with corrective lenses. The monitor should be repositioned as you adjust your working posture throughout the work day.



4. You can pivot the monitor head from landscape to portrait orientation viewing to adapt to your application.
 - a. Adjust the monitor to full height position and tilt the monitor head back to full tilt position (1).
 - b. Pivot the monitor head clockwise or counter-clockwise 90° from landscape to portrait orientation (2).

CAUTION: If the monitor is not in full-height and full-tilt position when pivoting, the bottom right corner of the monitor head will come in contact with the base and potentially cause damage to the monitor.



NOTE: To view information on the screen in portrait mode, you can install the HP Display Assistant software from <http://www.hp.com/support>. The position of the OSD menu can also be rotated to portrait mode. To rotate the OSD menu, press the **Menu** button on the front bezel, select **Menu**, and then select **Menu Rotation**.

Turning on the monitor

1. Press the power button on the computer to turn it on.
2. Press the power button on the monitor to turn it on.



CAUTION: Burn-in image damage may occur on monitors that display the same static image on the screen for 12 or more hours. To avoid burn-in image damage on the monitor screen, you should always activate a screen saver application or turn off the monitor when it will not be in use for a prolonged period of time. Image retention is a condition that may occur on all LCD screens. A burned-in image on the monitor is not covered under the HP warranty.

NOTE: If pressing the power button has no effect, the Power Button Lockout feature may be enabled. To disable this feature, press and hold the monitor power button for 10 seconds.

NOTE: You can disable the power light in the OSD menu. Press the **Menu** button on the front of the monitor, and then select **Power**. Select **Power LED**, and then select **Off**.

When the monitor is first turned on, a monitor status message is displayed for five seconds. The message shows which input is the current active signal, the current preset display resolution, and the recommended preset display resolution.

The monitor automatically scans the signal inputs for an active input and uses that input for the screen.

HP watermark and image retention policy

The monitor is designed with IPS (In-Plane Switching) display technology that provides ultra-wide viewing angles and advanced image quality. IPS monitors are suitable for a wide variety of advanced image quality applications. This panel technology, however, is not suitable for applications that exhibit static, stationary, or fixed images for long periods of time without the use of screen savers. These types of applications may include camera surveillance, video games, marketing logos, and templates that are displayed on the screen for a prolonged period of time. Static images may cause image retention damage that could look like stains or watermarks on the monitor's screen.

Image retention damage on monitors that are in use 24 hours per day is not covered under the HP warranty. To avoid image retention damage, either turn off the monitor when it is not in use or use the power management setting, if supported on your system, to turn off the monitor when the system is idle.

Installing a security cable

You can secure the monitor to a fixed object with an optional security cable available from HP. Use the key provided to attach and remove the lock.




Mounting the monitor head

The monitor head can be attached to a wall, swing arm, or other mounting fixture.

 **NOTE:** This apparatus is intended to be supported by UL- or CSA-Listed wall-mount bracket.

If the monitor is TCO certified, the power cord plugged into the monitor head must be a shielded power cable. The use of a shielded power cable meets the TCO Certified criteria for monitor products. For information on TCO requirements, go to www.tcodevelopment.com.

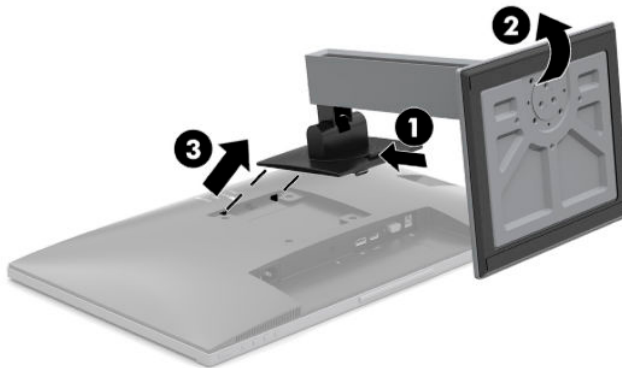
 **CAUTION:** This monitor supports the VESA industry-standard 100 mm mounting holes. To attach a third-party mounting solution to the monitor, four 4 mm, 0.7 pitch, and 10 mm-long screws are required. Longer screws may damage the monitor. It is important to verify that the manufacturer's mounting solution is compliant with the VESA standard and is rated to support the weight of the monitor head. For best performance, use the power and video cables provided with the monitor.

Removing the monitor stand

You can remove the monitor head from the stand to install the monitor head on a wall, a swing arm, or other mounting fixture.

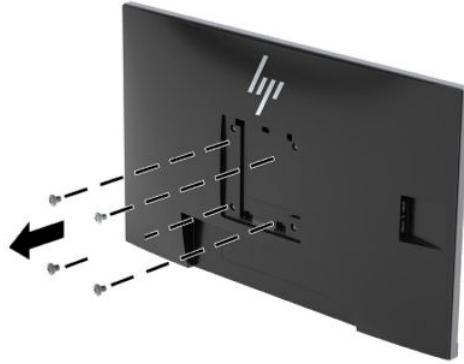
⚠ CAUTION: Before beginning to disassemble the monitor, be sure that the monitor is turned off and all cables are disconnected.

1. Disconnect and remove all cables from the monitor.
2. Position the monitor head facedown on a flat surface covered by a clean, dry cloth.
3. Push up on the latch (1) near the bottom center of the monitor's mounting plate.
4. Swing the bottom of the stand up (2) until the mounting plate clears the recess in the panel.
5. Slide the stand out of the recess (3).

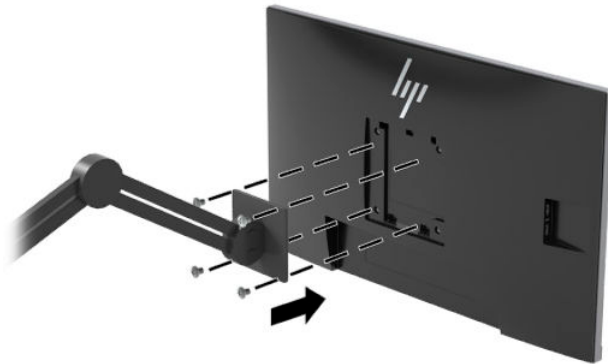


Attaching the monitor to a mounting device

1. Remove the four screws from the VESA holes located on the rear of the monitor head.



2. Install the mounting plate to the wall or swing arm of your choice using the four screws that were removed from the VESA holes on the rear of the monitor head.



2 Using the monitor

Software and utilities

You can download and install the following files from <http://www.hp.com/support>.

- INF (Information) file
- ICM (Image Color Matching) files
- HP Display Assistant software

To download the files:

1. Go to <http://www.hp.com/support>.
2. Select **Software and Drivers**.
3. Select your product type.
4. Enter your HP monitor model in the search field.

The Information file

The INF file defines monitor resources used by Windows® operating systems to ensure monitor compatibility with the computer's graphics adapter.

This monitor is Windows Plug and Play-compatible and the monitor will work correctly without installing the INF file. Monitor Plug and Play compatibility requires that the computer's graphic card is VESA DDC2-compliant and that the monitor connects directly to the graphics card. Plug and Play does not work through separate BNC-type connectors or through distribution buffers/boxes.

The Image Color Matching file

The ICM files are data files that are used in conjunction with graphics programs to provide consistent color matching from monitor screen to printer, or from scanner to monitor screen. This file is activated from within graphics programs that support this feature.



NOTE: The ICM color profile is written in accordance with the International Color Consortium (ICC) Profile Format specification.

HP SureView

HP SureView uses a unique system and LCD module design in order to achieve the switchable privacy function.




With HP SureView ON, the proprietary backlight focuses one light source through the light control film towards the middle of the monitor thus enabling a viewing cone that makes screen content easily visible to those who are centered in front of the monitor.


With HP SureView OFF, the proprietary backlight uses two light sources to disperse light across all areas of the monitor which allows screen content to be easily viewed from any position.

You can turn HP SureView on or off by pressing the HP SureView button on the bottom of the monitor's front bezel.



When the button is pressed, an icon will appear on the screen above the button, indicating the status of HP SureView.

Icon	Status
	The OSD is locked with HP SureView either on or off. To unlock the OSD so that you turn HP SureView on or off, hold down the Menu button for ten seconds.
	HP SureView is turned on for privacy viewing.
	HP SureView is turned off for shared viewing.

 **NOTE:** HP SureView works best when the monitor head is in the landscape orientation. If the monitor head is pivoted to the portrait orientation, the privacy viewing angle is not optimal.

Using the on-screen display (OSD) menu

Use the OSD menu to adjust the monitor screen image based on your preferences. You can access and make adjustments in the OSD menu using the buttons on the bottom side of the monitor's front bezel.

To access the OSD menu and make adjustments, do the following:

1. If the monitor is not already on, press the power button to turn on the monitor.
2. To access the OSD menu, press one of the four OSD buttons to activate the buttons. Then press the [Menu](#) button to open the OSD menu.
3. Use the three function buttons to navigate, select, and adjust the menu choices. The on-screen button labels vary depending on which menu or submenu is active.

The following table lists the menu selections in the OSD main menu.

Main menu	Description
Brightness	Adjusts the brightness or contrast level of the screen.
Color	Selects and adjusts the screen color.
Image	Adjusts the screen image.
Input	Selects the video input signal.
Power	Adjusts the power settings.
Menu	Adjusts the OSD controls.
Management	Adjusts the DDC/CI settings and returns all OSD menu settings to the factory default settings.
Information	Displays important information about the monitor.
Exit	Exits the OSD menu screen.

Using Auto-Sleep Mode

The monitor supports an OSD menu option called **Auto-Sleep Mode** that allows you to enable or disable a reduced power state for the monitor. When Auto-Sleep Mode is enabled (enabled by default), the monitor will enter a reduced power state when the computer signals low power mode (absence of either horizontal or vertical sync signal).

Upon entering this reduced power state (sleep mode), the monitor screen is blanked, the backlight is turned off, and the power light turns amber. The monitor draws less than 0.5 W of power when in this reduced power state. The monitor will wake from sleep mode when the computer sends an active signal to the monitor (for example, if you activate the mouse or keyboard).


You can disable Auto-Sleep Mode in the OSD. Press one of the four front bezel function buttons to activate the buttons, and then press the **Menu** button to open the OSD. Select **Power**, select **Auto-Sleep Mode**, and then select **Off**.

Adjusting Low Blue Light Mode

Decreasing the blue light emitted by the monitor reduces the blue light exposure to your eyes. This monitor allows you to select a setting to reduce blue light output and create a more relaxing and less stimulating image while reading content on the screen.

To adjust the blue light output from the monitor:

1. Select the **Viewing Modes** icon to open the Viewing Modes menu. Or, select the **Menu** icon, select **Color**, and then select **Viewing Modes**.
2. Select your desired setting:
 - **Low Blue Light** (TUV certified) reduces blue light for improved eye comfort.
 - **Reading** optimizes blue light and brightness for indoor viewing.
 - **Night** adjusts to the lowest blue light and reduces the impact on sleep.

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3 Support and troubleshooting

Solving common problems

The following table lists possible problems, the possible cause of each problem, and the recommended solutions.

Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is off.	Press the monitor power button.
	Video cable is not connected.	Connect a video cable between the source device and monitor. Be sure that the computer power is off while connecting the video cable. See Connecting the cables on page 6 for more information.
	System is in sleep mode.	Press any key on the keyboard or move the mouse to exit sleep mode.
	Video card is incompatible.	Replace the video card or connect the video cable to one of the computer's onboard video sources.
Image appears blurred, indistinct, or too dark.	Brightness setting is too low.	Open the OSD menu and select Brightness to adjust the brightness scale as needed.
"Input Signal Not Found" is displayed on the screen.	Video cable is disconnected.	Connect a video cable between the source device and monitor. Be sure that the computer power is off while connecting the video cable. See Connecting the cables on page 6 for more information.
"Input Signal Out of Range" is displayed on the screen.	Video resolution and/or refresh rate are set higher than the monitor supports.	Change the settings to a supported setting (see Preset display resolutions on page 26).
The monitor did not enter into a low-power sleep mode.	The monitor's power saving control is disabled.	Open the OSD menu and select Power , select Auto-Sleep Mode , and then set auto-sleep to On .

Button lockouts

Holding down the power button or **Menu** button for ten seconds will lock out the functionality of that button. You can restore the functionality by holding the button down again for ten seconds. This functionality is only available when the monitor is on, displaying an active signal, and the OSD menu is closed.

Using the auto-adjustment function (analog input)

The auto-adjustment feature automatically engages and attempts to optimize your screen under the following conditions:

- Monitor setup
- Factory reset of the computer
- Changing monitor resolution

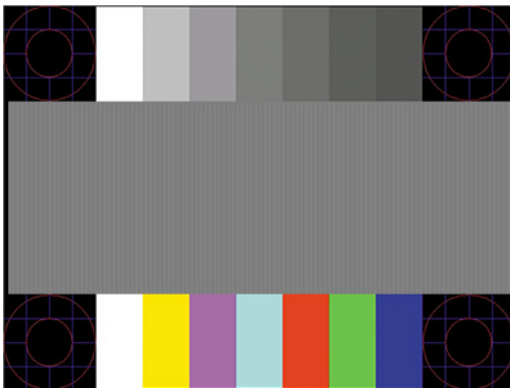
You can manually optimize the screen performance for the VGA (analog) input at any time from the Auto Adjustment menu in the OSD. You can download the auto-adjustment pattern software utility from <http://www.hp.com/support>.

Do not use this procedure if the monitor is using an input other than VGA. If the monitor is using a VGA (analog) input, this procedure can correct the following image quality conditions:

- Fuzzy or unclear focus
- Ghosting, streaking, or shadowing effects
- Faint vertical bars
- Thin, horizontal scrolling lines
- An off-center picture

To use the auto-adjustment feature:


1. Allow the monitor to warm up for 20 minutes before adjusting.
2. Press the **Menu** button to open the OSD menu, select **Image**, and then select **Auto Adjustment**. If the result is not satisfactory, continue with the procedure.
3. Open the auto-adjustment utility. (You can download this utility from <http://www.hp.com/support>.) The setup test pattern is displayed.



4. Press the **Esc** key or any other key on the keyboard to exit the test pattern.


Optimizing image performance (analog input)

Two controls in the on-screen display can be adjusted to improve image performance: Clock and Phase (available in the OSD menu). Use these controls only when the auto-adjustment function does not provide a satisfactory image.

 **NOTE:** The Clock and Phase controls are adjustable only when using an analog (VGA) input. These controls are not adjustable for digital inputs.

The Clock must first be set correctly since the Phase settings are dependent on the main Clock setting.

- **Clock:** Increases/decreases the value to minimize any vertical bars or stripes visible on the screen background.
- **Phase:** Increases/decreases the value to minimize video flickering or blurring.

 **NOTE:** When using the controls, you will obtain the best results by using the auto-adjustment pattern software utility. You can download this utility from <http://www.hp.com/support>.

When adjusting the Clock and Phase values, if the monitor images become distorted, continue adjusting the values until the distortion disappears. To restore the factory settings, press the **Menu** button to open the OSD menu, and then select **Management**, select **Factory Reset**, and then select **Yes**.

To eliminate vertical bars (Clock):

1. Press the **Menu** button to open the OSD menu, select **Image**, and then select **Clock and Phase**.
2. Select **Clock**, and then use the function buttons on the monitor that display up and down arrow icons to eliminate vertical bars. Press the buttons slowly so that you do not miss the optimum adjustment point.



3. After adjusting the Clock, if blurring, flickering, or bars appear on the screen, proceed to adjust the Phase.

To remove flickering or blurring (Phase):

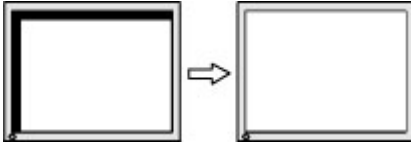
1. Press the **Menu** button to open the OSD menu, select **Image**, and then select **Clock and Phase**.
2. Select **Phase**, and then use the function buttons on the monitor that display up and down arrow icons to eliminate flickering or blurring. Flickering or blurring may not be eliminated, depending on the computer or graphics controller card installed.



To correct screen position (Horizontal Position or Vertical Position):

1. Press the **Menu** button to open the OSD menu, select **Image**, and then select **Image Position**.

2. Press the function buttons on the monitor that display up and down arrow icons to properly adjust the position of the image in the display area of the monitor. The **Horizontal Position** shifts the image left or right; the **Vertical Position** shifts the image up or down.



Contacting support

To resolve a hardware or software problem, go to <http://www.hp.com/support>. Use this site to get more information about your product, including links to discussion forums and instructions on troubleshooting. You can also find information about how to contact HP and open a support case.

Preparing to call technical support

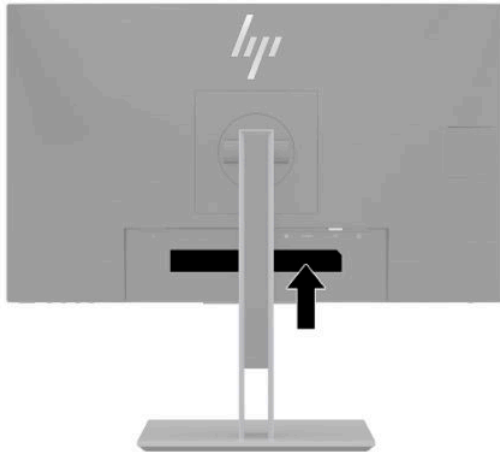
If you cannot solve a problem using the troubleshooting tips in this section, you may need to call technical support. Have the following information available when you call:

- Monitor model number
- Monitor serial number
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages received
- Hardware configuration
- Name and version of the hardware and software you are using

Locating the serial number and product number

The serial number and product number are located on a label on the rear of the monitor head. You may need these numbers when contacting HP about the monitor model.

 **NOTE:** You may need to partially pivot the monitor head to read the label.



4 Maintaining the monitor

Maintenance guidelines

To enhance the performance and extend the life of the monitor:

- Do not open the monitor cabinet or attempt to service this product yourself. Adjust only those controls that are covered in the operating instructions. If the monitor is not operating properly or has been dropped or damaged, contact an authorized HP dealer, reseller, or service provider.
- Use only a power source and connection appropriate for this monitor, as indicated on the label/back plate of the monitor.
- Be sure that the total ampere rating of the products connected to the outlet does not exceed the current rating of the AC outlet and that the total ampere rating of the products connected to the cord does not exceed the rating of the cord. Look on the power label to determine the ampere rating (AMPS or A) for each device.
- Install the monitor near an outlet that you can easily reach. Disconnect the monitor by grasping the plug firmly and pulling it from the outlet. Never disconnect the monitor by pulling the cord.
- Turn the monitor off when it is not in use and use a screen saver program. Doing this can substantially increase the life expectancy of the monitor.



NOTE: A burned-in image on the monitor is not covered under the HP warranty.

- Never block the slots and openings of the cabinet or push objects into them. These openings provide ventilation.
- Do not drop the monitor or place it on an unstable surface.
- Do not allow anything to rest on the AC power cord. Do not walk on the cord.
- Keep the monitor in a well-ventilated area, away from excessive light, heat, or moisture.

Cleaning the monitor

1. Turn off the monitor and unplug the AC power cord from the AC outlet.
 2. Disconnect any external devices.
 3. Dust the monitor by wiping the screen and the cabinet with a soft, clean antistatic cloth.
 4. For more difficult cleaning situations, use a 50/50 mix of water and Isopropyl alcohol.
- Do not use cleaners that contain any petroleum-based materials such as benzene, thinner, or any volatile substance to clean the monitor screen or cabinet. These chemicals may damage the monitor.
 - Spray the cleaner onto a cloth and use the damp cloth to gently wipe the screen surface. Never spray the cleaner directly on the screen surface. It may run behind the bezel and damage the electronics.
 - The cloth should be moist, but not wet. Water dripping into the ventilation openings or other points of entry can cause damage to the monitor. Allow the monitor to air-dry before use.

Shipping the monitor

Keep the original packing box in a storage area. You may need it later if you ship the monitor or move.

A Technical specifications



NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

For the latest specifications or additional specifications on this product, go to <http://www.hp.com/go/quickspecs/> and search for your specific monitor model to find the model-specific QuickSpecs.

Specifications		
Display, wide-screen	60.5 cm	23.8-inch
Type	IPS	
Viewable image size	60.5 cm diagonal	23.8-inch diagonal
Maximum weight (unpacked)	5.8 kg	12.79 lbs
Dimensions (include stand)		
Height	46.30 cm	18.22 inches
Depth	20.60 cm	8.07 inches
Width	53.88 cm	21.21 inches
Maximum graphic resolution	1920 × 1080	
Optimum graphic resolution	1920 × 1080	
Environmental requirements temperature		
Operating temperature	5°C to 35°C	41°F to 95 F
Storage temperature	-20°C to 60°C	-4°F to 140°F
Operating Humidity	20% to 80%	
Power source	100 V ac to 240 V ac 50/60 Hz	
Measured power consumption		
Maximum	55 W	
Typical	40 W	
Sleep	0.5 W	
Input terminal	One HDMI port, one DisplayPort connector, one VGA port	

Preset display resolutions

The display resolutions listed below are the most commonly used modes and are set as factory defaults. This monitor automatically recognizes these preset modes and they will appear properly sized and centered on the screen.

Preset	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	640 × 480	31.469	59.940
2	720 × 400	31.469	70.087
3	800 × 600	37.879	60.317
4	1024 × 768	48.363	60.004
5	1280 × 720	45.000	60.000
6	1280 × 800	49.702	59.810
7	1280 × 1024	63.981	60.020
8	1440 × 900	55.935	59.887
9	1600 × 900	60.000	60.000
10	1680 × 1050	65.290	59.954
11	1920 × 1080	67.500	60.000

High-definition video formats

Preset	Timing name	Pixel format	Horz freq (kHz)	Vert freq (Hz)
1	480p	720 × 480	31.469	59.94
2	576p	720 × 576	31.250	50.00
3	720p50	1280 × 720	37.500	50.00
4	720p60	1280 × 720	45.000	60.00
5	1080p50	1920 × 1080	56.250	50.00
6	1080p60	1920 × 1080	67.500	60.00

Entering user modes

The video controller signal may occasionally call for a mode that is not preset if:

- You are not using a standard graphics adapter.
- You are not using a preset mode.

If this occurs, you may need to readjust the parameters of the monitor screen by using the on-screen display. Your changes can be made to any or all of these modes and saved in memory. The monitor automatically stores the new setting, and then recognizes the new mode just as it does a preset mode. In addition to the factory preset modes, there are at least 10 user modes that can be entered and stored.

Energy saver feature

The monitor supports a reduced power state. The reduced power state will be initiated if the monitor detects the absence of either the horizontal sync signal or the vertical sync signal. Upon detecting the absence of these signals, the monitor screen is blanked, the backlight is turned off, and the power light turns amber. When the monitor is in the reduced power state, the monitor will utilize <0.5 watts of power. There is a brief warm-up period before the monitor returns to its normal operating state.

Refer to the computer manual for instructions on setting the energy saver mode (sometimes called power management feature).



NOTE: The above power saver feature works only when the monitor is connected to a computer that has energy saver features.

By selecting the settings in the monitor's Sleep Timer utility, you can also program the monitor to enter into the reduced power state at a predetermined time. When the monitor's Sleep Timer utility causes the monitor to enter the reduced power state, the power light blinks amber.

B 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 29](#).

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 34](#).

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 \(PDF 46KB\)](#)
- [Commission takes low profile on e-accessibility](#)

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](#).