User Guide

SUMMARY

This guide provides basic information for using and upgrading this product, including topics such as components, features, and HP resources.

Legal information

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Product notice

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

Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated, which is always enabled. High-speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com. **If your product ships with Windows in S Mode:** Windows in S Mode works exclusively with apps from the Microsoft Store within Windows. Certain default settings, features, and apps cannot be changed. Some accessories and apps that are compatible with Windows may not work (including some antivirus, PDF writers, driver utilities, and accessibility apps), and performance may vary, even if you switch out of S Mode. If you switch to Windows, you cannot switch back to S Mode. Learn more at Windows.com/SmodeFAQ.

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

To help us improve this document, please send any suggestions, comments, or errors to mailto:hp.doc.feedback@hp.com. Include the document part number when submitting your feedback.

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.

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1 About this guide

This guide provides basic information for using and upgrading this product.

WARNING! Indicates a hazardous situation that, if not avoided, **could** result in serious injury or death.

CAUTION: Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.

IMPORTANT: Indicates information considered important but not hazard-related (for example, messages related to property damage). 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.



This product incorporates HDMI® technology.

2 Locating HP resources

Read this chapter to learn about where to find additional HP resources.

Product information

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

Table 2-1 Where to find product information

Topic	Location
Technical specifications	To find the QuickSpecs for your product, go to http://www.hp.com/go/quickspecs, and then select the link. Select **Search all QuickSpecs**, type your model name in the search box, and then select **Go**.
Regulatory, Safety, and Environmental Notices	See the *Regulatory, Safety, and Environmental Notices* for product regulatory information. You can also see the Agency/Environmental label. To access this guide: ■ Select the Search icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.
System board	A diagram of the system board is located on the inside of the chassis. Additional information is located in the computer *Maintenance and Service Guide* on the web at http://www.hp.com/support. Follow the instructions to find your product, and then select **Setup & User Guides**.
Serial number, Agency/Environmental, and operating system labels	The serial number, Agency/Environmental, and operating system labels might be on the bottom of the computer, on the rear panel of the computer, or under the service door.

Support

To locate resources that provide support and warranty information, use this table.

Table 2-2 Where to find support information

Topic	Location
Product support	For HP support, go to http://www.hp.com/support. Here you can access the following types of support: • Online chat with an HP technician • Support telephone numbers • HP service center locations

Table 2-2 **Where to find support information (continued)**

Topic	Location
Warranty information	To access this document, perform one of these actions: • Select the Search icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**. • Go to http://www.hp.com/go/orderdocuments. **IMPORTANT:** You must be connected to the internet to access the latest version of the warranty. You can find your HP Limited Warranty located with the user guides on your product. The warranty might be on a CD or DVD provided in the box. In some countries or regions, HP might 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 name, phone number, address, and product name.

Product documentation

To locate resources that provide product documentation, use this table.

Table 2-3 **Where to find product documentation**

Topic	Location
HP user documentation, white papers, and third-party documentation	User documentation is located on your hard drive. Select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**. For the latest online documentation, go to http://www.hp.com/support and follow the instructions to find your product. Then select **Setup & User Guides**. The documentation includes this user guide and the *Maintenance and Service Guide*.
Product notifications	Subscriber's Choice is an HP program that allows you to sign up to receive driver and software alerts, proactive change notifications (PCNs), the HP newsletter, customer advisories, and more. Sign up at https://h41369.www4.hp.com/.
Technical specifications	The Product Bulletin application contains QuickSpecs for HP computers. QuickSpecs include information about the operating system, power supply, memory, processor, and many other system components. To access the QuickSpecs, go to http://www.hp.com/go/quickspecs/.
Bulletins and Notices	To find advisories, bulletins, and notices: 1. Go to http://www.hp.com/support. 2. Follow the instructions to find your product. 3. Select **Advisories** or **Bulletins and Notices**.

Product diagnostics

To locate resources that provide product diagnostics tools, use this table.

Table 2-4 Where to find diagnostics tools

Topic	Location
Diagnostics tools	For additional information, see the computer *Maintenance and Service Guide* at http://www.hp.com/support. Follow the instructions to find your product, and then select **Setup & User Guides**.
Audible beep and light code definitions	See the computer *Maintenance and Service Guide* at http://www.hp.com/support. Follow the instructions to find your product, and then select **Setup & User Guides**.
POST error codes	See the computer *Maintenance and Service Guide* at http://www.hp.com/support. Follow the instructions to find your product, and then select **Setup & User Guides**.

Product updates

To locate resources that provide product updates, use this table.

Table 2-5 Where to find product updates

Topic	Location
Driver and BIOS updates	Go to http://www.hp.com/support and select **Software and Drivers** to verify that you have the latest drivers for the computer.
Operating systems	For information about Windows® operating systems, go to http://www.support.microsoft.com.

3 Computer features

This chapter provides you with an overview of your computer's features.

IMPORTANT: Your keyboard might include a Copilot key. Copilot in Windows (select products only) requires Windows® 11. Some features require a neural processing unit (NPU). The timing of feature delivery and availability varies by market and device. You must have a Microsoft account to use the Copilot feature. When the Copilot feature is not available, pressing the Copilot key opens the Bing search engine. See http://aka.ms/WindowsAIFeatures.

Standard configuration features

To identify a typical computer configuration, read this section. Features vary depending on the model. For support assistance and to learn more about the hardware and software installed on your computer model, run the HP Support Assistant utility.

Front panel components

To identify the front panel components, use these illustrations and tables.

NOTE: Refer to the illustration that most closely matches your computer.

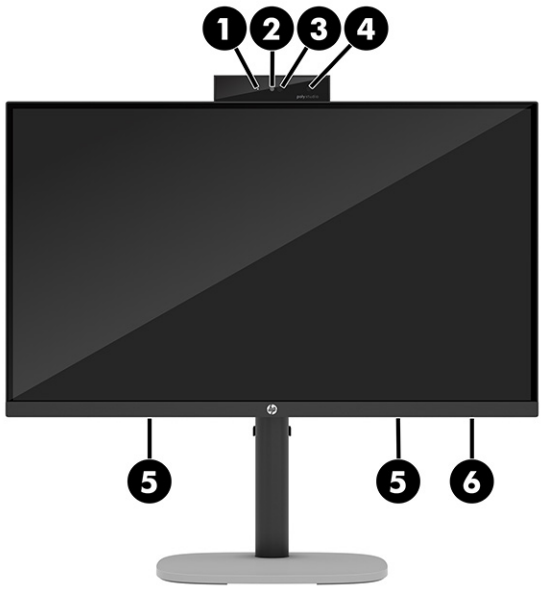


Table 3-1 Identifying the front panel components

	Front panel components		
1	Camera light (select products only) • On: The camera is in use.	4	IR Camera light (select products only)

Table 3-1 Identifying the front panel components (continued)

	Front panel components		
2	Camera (select products only) **NOTE:** Allows you to video chat, record video, and record still images. Some cameras also allow a facial recognition logon to Windows®, instead of a password logon. For more information, see Using Windows Hello (select products only) on page 22.	5	Integrated speakers (2) (select products only)
3	IR Camera lens (select products only)	6	Power light • White: The computer is on. • Off: The computer is off. **NOTE:** The light on the power button is normally white when the power is on. If the light blinks red, the computer displays a diagnostic code to indicate a problem. See the *Maintenance and Service Guide* to interpret the code.

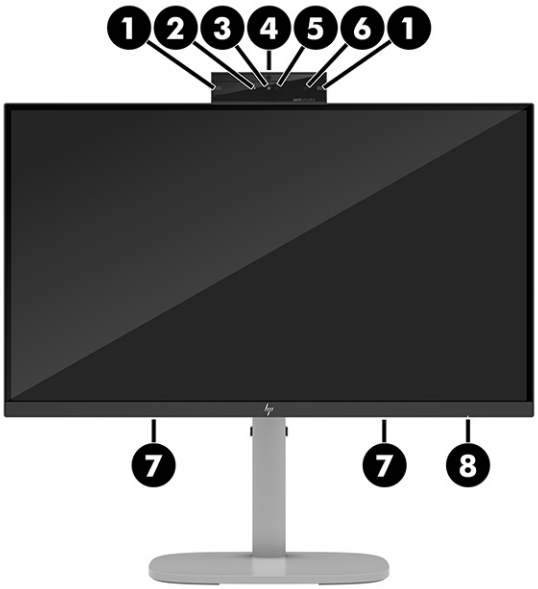


Table 3-2 Identifying the front panel components

	Front panel components		
1	Camera tilt levers (2)	5	IR Camera lens (select products only)
2	Camera light (select products only) • On: The camera is in use.	6	IR Camera light (select products only)

Table 3-2 Identifying the front panel components (continued)

	Front panel components		
3	Camera (select products only) NOTE: Allows you to video chat, record video, and record still images. Some cameras also allow a facial recognition logon to Windows®, instead of a password logon. For more information, see Using Windows Hello (select products only) on page 22.	7	Integrated speakers (2) (select products only)
4	Ambient color sensor	8	Power light • White: The computer is on. • Off: The computer is off. NOTE: The light on the power button is normally white when the power is on. If the light blinks red, the computer displays a diagnostic code to indicate a problem. See the *Maintenance and Service Guide* to interpret the code.

Rear panel components

To identify the rear panel components, use these illustrations and tables.

NOTE: Refer to the illustration that most closely matches your computer.

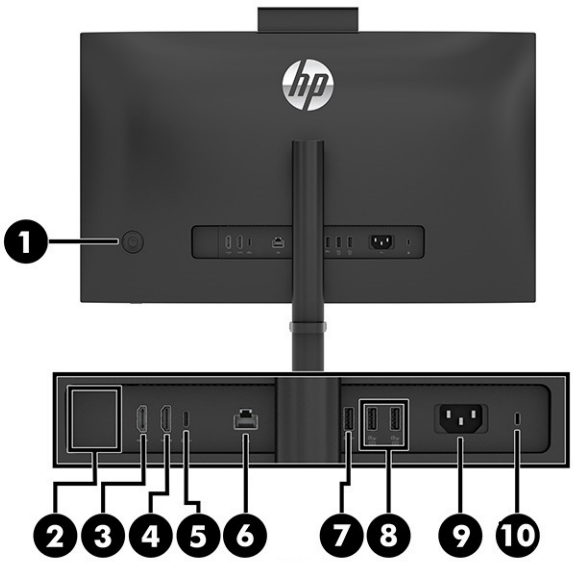


Table 3-3 Identifying the rear panel components

	Rear panel components		
1	OSD button	6	RJ-45 (network) jack

Table 3-3 Identifying the rear panel components (continued)

	Rear panel components		
2	Optional port	7	USB 10 Gbps port NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device such as a smartphone.
3	HDMI-in port	8	USB 5 Gbps ports with keyboard connection (2) NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device such as a smartphone.
4	HDMI-out port	9	Power connector
5	USB Type-C® 10 Gbps port	10	Security cable slot

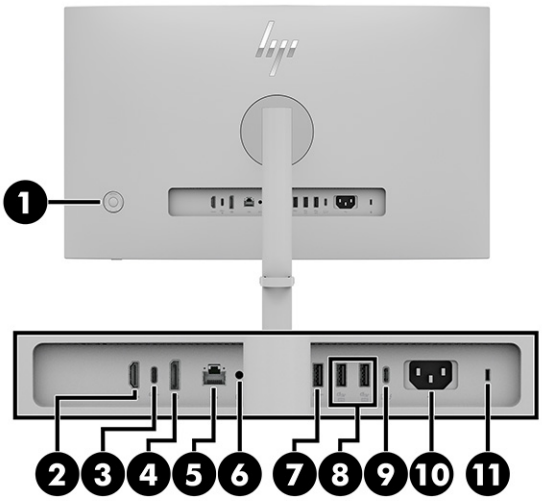


Table 3-4 Identifying the rear panel components

	Rear panel components		
1	OSD button	7	USB 10 Gbps port NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device such as a smartphone.

Table 3-4 Identifying the rear panel components (continued)

	Rear panel components			
2	HDMI-out port	8		USB 5 Gbps ports with keyboard connection (2) NOTE: Use a standard USB Type-A charging cable or cable adapter (purchased separately) when charging a small external device such as a smartphone.
3	USB Type-C® 10 Gbps port and DisplayPort output	9		USB Type-C Thunderbolt™ port with HP Sleep and Charge and DisplayPort output
4	Dual-Mode DisplayPort™ monitor connector	10		Power connector
5	RJ-45 (network) jack	11		Security cable slot
6	Audio-out jack for powered audio devices			

Top components

To identify the top components, use this illustration and table.

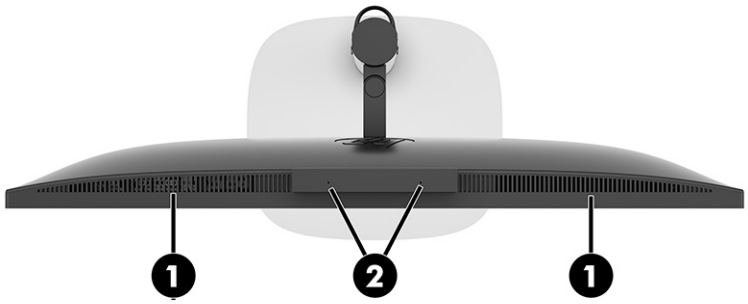


Table 3-5 Identifying the top components

	Top components
1	Vents (2)
2	Integrated microphones (2) (select peoducts only)

Bottom components

To identify the bottom components, use this illustration and table.

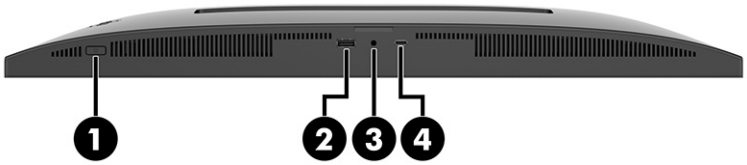


Table 3-6 Identifying the bottom components

	Bottom components			
1	Power button	3		Audio-out (headphone)/Audio-in (microphone) combo jack **WARNING!** To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the *Regulatory, Safety, and Environmental Notices*. To access this guide: ■ Select the **Search** icon in the taskbar, type `HP Documentation` in the search box, and then select **HP Documentation**.
2	USB 10 Gbps port	4		USB Type-C 20 Gbps port

Serial number location

Each computer has a unique serial number and a product ID number that are located on the exterior of the computer. Keep these numbers available when contacting customer service for assistance.



4 Setup

This chapter provides detailed computer setup instructions.

Overview

Read this section for an overview of the setup process.

Set up the computer in the following order.

- Complete one of these tasks:
  - Attach a stand. See Attaching and removing a stand on page 11.
  - Attach the computer to a mounting fixture. See Attaching the computer to a mounting fixture on page 15.
- Connect the cables for peripherals and power. See Connecting and disconnecting cables on page 16.
- Connect an additional display, if you want. See Attaching the computer to a mounting fixture on page 15.
- Select a comfortable computer position and viewing angle. See Adjusting the computer on page 18.
- Install a security cable. See Security lock on page 16.
- Turn on the power. See Connecting power on page 17.
- The mouse and keyboard are paired at the factory. If you ever need to synchronize the mouse and keyboard again, see Synchronizing the optional wireless keyboard and mouse on page 23.

Attaching and removing a stand

To attach or remove a stand, follow these instructions.

You can attach or remove the following stands:

- Fixed-height stand
- Adjustable-height stand
- Articulating stand

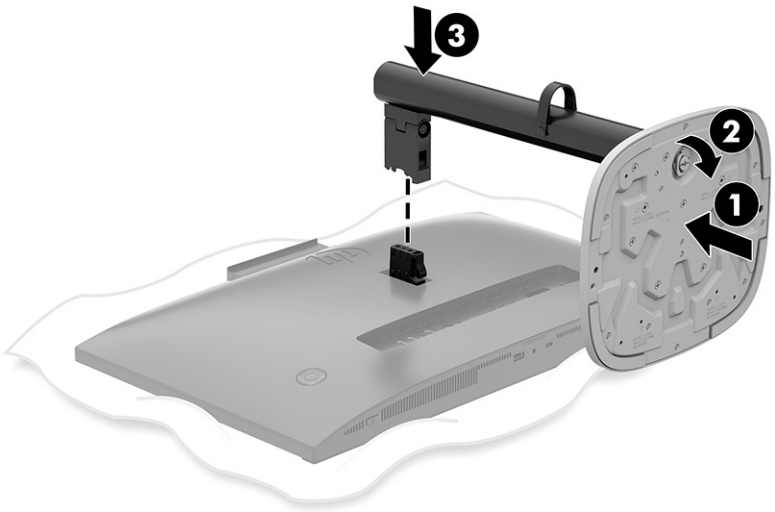
Attaching and removing a fixed-height or adjustable-height stand

You can attach or remove a fixed-height or adjustabl-height stand.

Attaching a fixed-height or adjustable-height stand

Attach a fixed-height or adjustable-height stand to your computer by following these steps.

1. Place the computer facedown on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the bezel and screen surface from scratches or other damage.
2. Attach the base to the stand **(1)**, and tighten the screws to secure the base **(2)**.
3. Press down on the stand to install into place **(3)**. Confirm that the stand is firmly attached to the computer by pulling up on the stand arm.

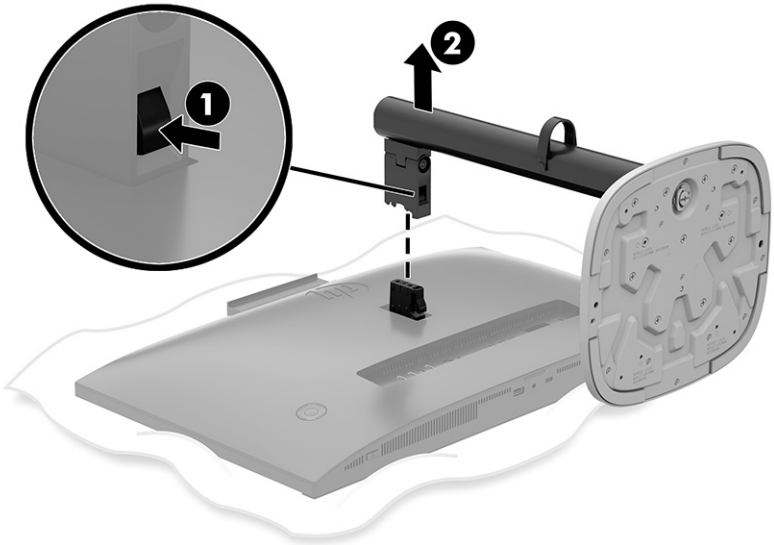


Removing a fixed-height or adjustable-height stand

Remove a fixed-height or adjustable-height stand from your computer by following these steps.

1. Remove all removable media, such as optical discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system. Then turn off any external devices.
3. Disconnect the power cord from the AC outlet, and then disconnect any external devices.
4. Place the computer facedown on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the bezel and screen surface from scratches or other damage.
5. Press the stand release latch **(1)**.

6. Lift the stand away from the computer **(2)**.



Attaching and removing an articulating stand

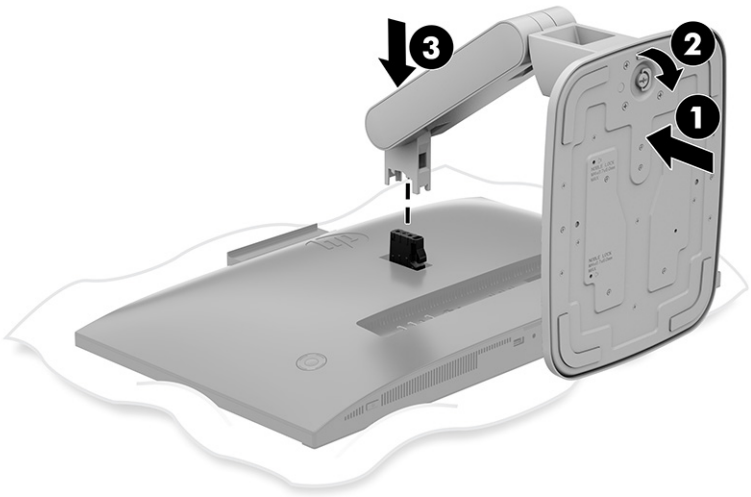
You can attach or remove an articulating stand.

Attaching an articulating stand

Attach an articulating stand to your computer by following these steps.

1. Place the computer facedown on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the bezel and screen surface from scratches or other damage.
2. Attach the base to the stand **(1)**, and tighten the screws to secure the base **(2)**.

3. Press down on the stand to install into place **(3)**. Confirm that the stand is firmly attached to the computer by pulling up on the stand arm.

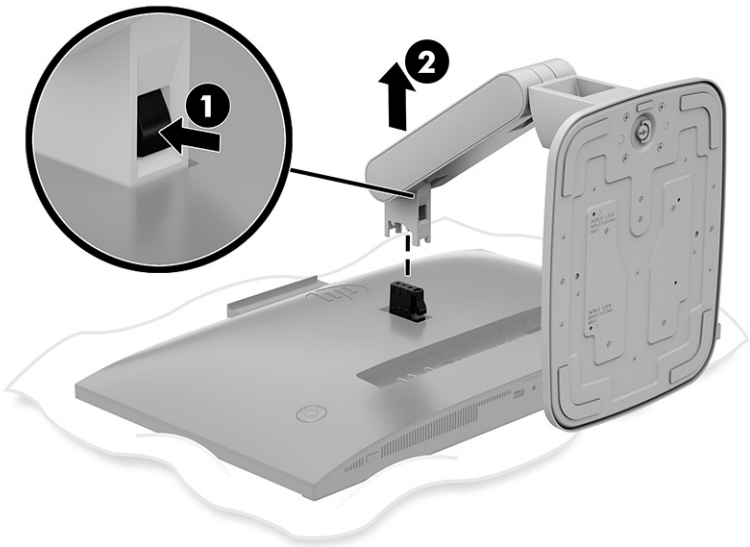


Removing an articulating stand

Remove an articulating stand from your computer by following these steps.

1. Remove all removable media, such as optical discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system. Then turn off any external devices.
3. Disconnect the power cord from the AC outlet, and then disconnect any external devices.
4. Place the computer facedown on a soft flat surface. HP recommends that you set down a blanket, towel, or other soft cloth to protect the bezel and screen surface from scratches or other damage.
5. Press the stand release latch **(1)**.

6. Lift the stand **(2)** away from the computer.

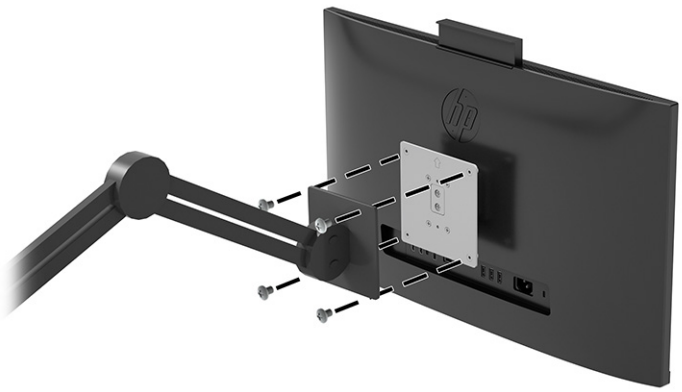


Attaching the computer to a mounting fixture

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

NOTE: The computer must be attached in landscape orientation with the camera on top.

- To attach the computer head to a swing arm or other mounting device, insert four mounting screws through the holes on the mounting device and into the VESA screw holes on the back of the computer.



Connecting and disconnecting cables

To connect or disconnect cables, follow these instructions.

Connecting cables

Connect cables to your computer by following these steps.

1. Connect the peripheral cables to the appropriate ports.
2. Connect the power cord to the power connector on the rear of the computer.

Connecting a monitor

The ports on the rear of the computer allow you to connect up to two monitors to the computer.

If you are adding a monitor that has a DisplayPort™ connector, no video adapter is required. If you are adding a monitor that does not have a DisplayPort connector, you can purchase a video adapter from HP for your configuration.

DisplayPort adapters and video cables are purchased separately. HP offers the following adapters:

- DisplayPort-to-VGA adapter
- DisplayPort-to-DVI adapter

To connect a monitor:

1. Turn off power to the computer and to the monitor that you are connecting to the computer.
2. If your monitor has a DisplayPort connector, connect a DisplayPort cable directly between the DisplayPort connector on the rear of the computer and the DisplayPort connector on the monitor.
3. If your monitor does not have a DisplayPort connector, connect a DisplayPort video adapter to the DisplayPort connector on the computer. Then connect a cable (VGA or DVI, depending on your application) between the adapter and the monitor.
4. Turn on power to the computer and the monitor.

NOTE: Use the graphics card software or the Windows Display Settings to configure the monitor as a mirrored image of the computer display or an extension of the computer display.

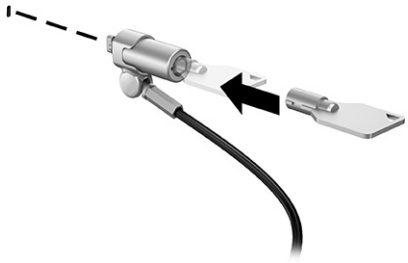
Disconnecting cables

Disconnect cables from your computer by following these steps.

1. You may need to remove the security cable, if one is installed on the rear of the computer.
2. Disconnect the cables from the ports.

Security lock

You can secure the computer with an optional security cable lock.



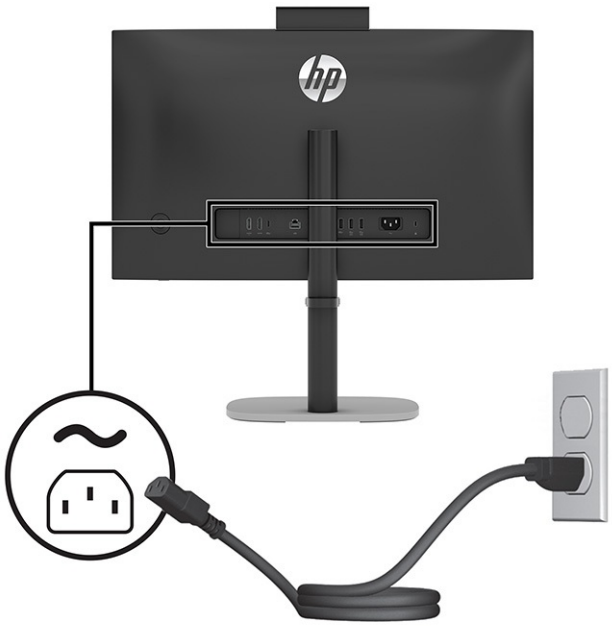
Connecting and disconnecting power

To connect power to or disconnect power from the computer, follow these instructions.

Connecting power

Connect a power cable to your computer by following these steps.

1. Connect one end of the power cord to a grounded AC outlet, and the other end to the power connector on the rear of the computer.



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

Disconnecting power

Disconnect a power cable from your computer by following these steps.

1. Remove all removable media, such as optical discs or USB flash drives, from the computer.
2. Turn off the computer properly through the operating system, and then turn off any external devices.
3. Disconnect the power cord from the AC outlet, and disconnect any external devices.

Adjusting the computer

This computer might ship with a fixed-height stand, adjustable height stand, or articulating stand.

Adjusting a fixed-height stand (select products only)

On select products, this stand allows you to tilt the computer from -5° to 23° from the desktop.

To tilt the computer, grasp both top and bottom of the computer and adjust to the appropriate tilt.



Adjusting an adjustable-height stand (select products only)

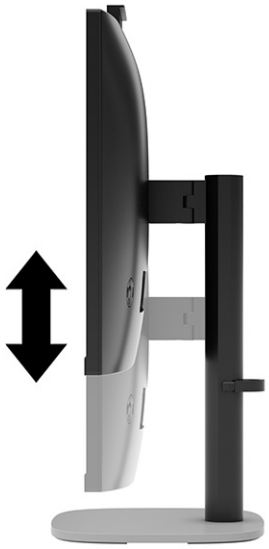
You can adjust the height, tilt, swivel, and pivot the computer.

IMPORTANT: Use caution when rotating or reclining a computer if a cable lock is installed. The cable or the lock might interfere with the rotation or the angle of recline.

This stand allows you to:

- Adjust the computer height within a range of 130 mm (5.1 in).
- Tilt the computer -5° to 23° from the desktop.
- Swivel the computer up to 45° to either side.
- Pivot the computer counterclockwise to 90°

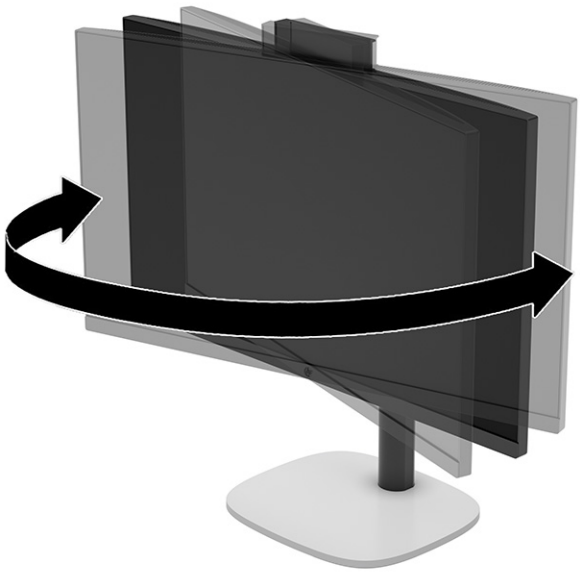
To change the height of the computer, grasp both sides of the computer and lift or lower to the appropriate height.



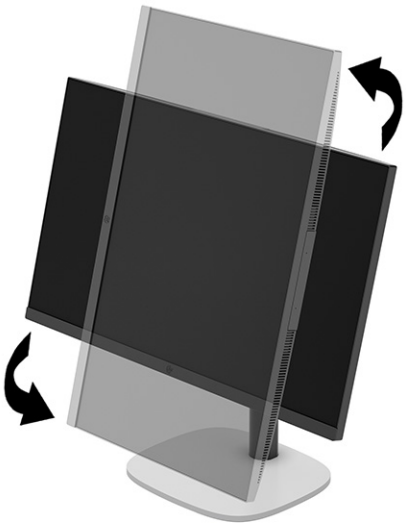
To tilt the computer, grasp the top and bottom of the computer and adjust to the appropriate tilt.



To swivel the computer, grasp both sides of the computer and swivel left or right.



To pivot the computer, grasp both sides of the computer and pivot counterclockwise.



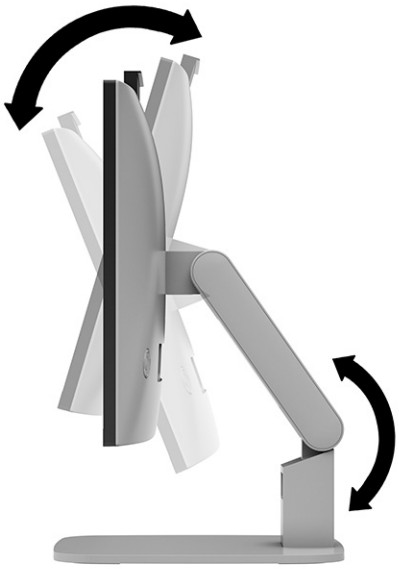
Adjusting an articulating stand (select products only)

On select products, you can adjust the height and tilt of the stand attached to your computer.

To tilt the computer, grasp both top and bottom of the computer and adjust to the appropriate tilt.

To raise the monitor, hold the top of the monitor with two hands and lift it up. To lower the monitor, hold the top and push it down.

- Tilt the computer –5° to 60° from the desktop.
- Raise and lower the stand from 0° to 75°.



Camera

With Skype for Business installed, you can use the camera in the following ways.

- Stream online video conferences
- Maintain security over conversations

Using the camera

Follow these steps to operate the camera.

To operate the camera on the HP ProStudio 4:

1. To open the camera, pull the camera module up to the uppermost position.
2. When the camera is not in use, gently press the camera module down until it is in the closed position.

To operate the camera on the HP EliteStudio 8:

1. To open the camera, gently press down on the camera until it clicks. The camera rises to the uppermost position.
2. When the camera is not in use, you can close the camera by pressing down on it until it clicks into the closed position.
3. To adjust the angle of the camera, gently push the camera tilt levers up or down.

IMPORTANT: Do not lift the computer by holding the camera module. Make sure that the camera module is up when you use the camera or microphone.

Using Windows Hello (select products only)

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

To set up Windows Hello:

1. Select the **Start** button, select **Settings**, select **Accounts**, and then select **Sign-in options**.
2. If you do not have a password set up, you must add one before you can use other sign-in options. Select **Password**, and then select **Add**.
3. Select **Facial recognition (Windows Hello)** or **Fingerprint recognition (Windows Hello)**, and then select **Set up**.
4. Select **Get started**, and then follow the on-screen instructions to enroll your fingerprint or facial ID and set up a PIN.

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

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

Adjusting low blue light mode (select products only)

Decreasing the blue light emitting from the monitor reduces the blue light exposure to your eyes. HP computers provide a setting to reduce blue light output and create a more relaxing and less stimulating image while you read content on the screen.

You can adjust the following settings.

- **Low Blue Light**: Reduces blue light for improved eye comfort.
- **Night**: Adjusts to the lowest blue light and reduces the impact on sleep.
- **Reading**: Optimizes blue light and brightness for indoor viewing.

WARNING! To reduce the risk of serious injury, read the *Safety & Comfort Guide*. 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 available on the web at http://www.hp.com/ergo.

Turning on the low blue light mode

To turn on the low blue light mode, follow these steps.

1. Press the power button to turn on the computer.
2. Press the OSD button located on the rear of the computer.
3. In the OSD menu, select **Low Blue Light** to enable the low blue light function.

Turning on the night light mode

To turn on the night light mode, follow these steps.

1. On the desktop, right-click and select **Display settings**.
2. Select the **Night Light** check box. The night light setting adjusts to 48%.

Synchronizing the optional wireless keyboard and mouse

The mouse and keyboard are synchronized at the factory. If they do not work, remove and replace the batteries. If the mouse and keyboard are still not synchronized, follow this procedure to manually resynchronize the pair.

1. Connect the receiver to a USB port on the computer.
2. To avoid signal interference with a USB device, place the receiver at least 3.0 cm (1.18 in) from the USB device.
3. Press the Connect button on the receiver for approximately 5 seconds. The status light on the receiver flashes for approximately 30 seconds after you press the Connect button.
4. While the status light on the receiver is flashing, press the Connect button on the underside of the keyboard for 5 to 10 seconds. After you release the Connect button, the status light on the receiver stops flashing, indicating that the devices have been synchronized.



NOTE: If the mouse and keyboard still do not work, remove and replace the batteries. If the mouse and keyboard are still not synchronized, synchronize the keyboard and mouse again.

5 Backing up, restoring, and recovering

You can use Windows tools or HP software to back up your information, create a restore point, reset your computer, create recovery media, or restore your computer to its factory state. Performing these standard procedures can return your computer to a working state faster.

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

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

Backing up information and creating recovery media

These methods of creating recovery media and backups are available on select products only.

Using Windows tools for backing up

HP recommends that you back up your information immediately after initial setup. You can do this task either using Windows Backup locally with an external USB flash drive or using online tools.

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

Using the HP Cloud Recovery Download Tool to create a recovery USB flash drive (select products only)

You can use the HP Cloud Recovery Download Tool to create an HP Recovery bootable USB flash drive.

For details:

- Go to http://www.hp.com, search for HP Cloud Recovery, and then select the result that matches the type of computer that you have and follow the on-screen instructions.

NOTE: In select countries, if you cannot create the HP Recovery USB flash drive yourself, contact support. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

IMPORTANT: HP recommends that you follow the Restoring and recovery methods on page 25 to restore your computer before you obtain and use the HP USB flash drive. Using a recent backup can return your machine to a working state sooner than using the HP USB flash drive. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Restoring and recovering your system

You have several tools available to recover your system both within and outside of Windows if the desktop cannot load.

HP recommends that you attempt to restore your system using the Restoring and recovery methods on page 25.

Creating a system restore

System Restore is available in Windows. The System Restore software can automatically or manually create restore points, or snapshots, of the system files and settings on the computer at a particular point.

When you use System Restore, it returns your computer to its state at the time you made the restore point. Your personal files and documents should not be affected.

Restoring and recovery methods

After you run the first method, test to see whether the issue still exists before you proceed to the next method, which might now be unnecessary.

1. Run a Microsoft System Restore.
2. Run Reset this PC.

NOTE: The options **Remove everything** and then **Fully clean the drive** can take several hours to complete and leave no information on your computer. It is the safest way to reset your computer before you recycle it.

3. Recover using the HP Recovery USB flash drive. For more information, see Recovering using the HP Recovery USB flash drive on page 25.

For more information about the first two methods, see the Get Help app:

- Select the **Start** button, select **All apps**, select the **Get Help** app, and then enter the task you want to perform.

NOTE: You must be connected to the internet to access the Get Help app.

Recovering using the HP Recovery USB flash drive

You can use the HP Recovery USB flash drive to recover the operating system and drivers that were installed at the factory. On select products, you can create recovery media on a bootable USB flash drive using the HP Cloud Recovery Download Tool.

For details, see Using the HP Cloud Recovery Download Tool to create a recovery USB flash drive (select products only) on page 24.

NOTE: In select countries, if you cannot create the HP Recovery USB flash drive yourself, contact support. Go to http://www.hp.com/support, select your country or region, and then follow the on-screen instructions.

To recover your system:

- Insert the HP Recovery USB flash drive, and then restart the computer.

NOTE: HP recommends that you follow the Restoring and recovery methods on page 25 to restore your computer before you obtain and use the HP USB flash drive. Using a recent backup can return your machine to a working state sooner than using the HP USB flash drive. After the system is restored, reinstalling all the operating system software released since your initial purchase can be a lengthy process.

Changing the computer boot order

If your computer does not restart using the HP Recovery USB flash drive, you can change the computer boot order, which is the order of devices listed in BIOS for startup information.

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

To change the boot order:

1. Insert the HP Recovery USB flash drive.
2. Access the system **Startup** menu.
   - For computers or tablets with keyboards attached, turn on or restart the computer or tablet, quickly press esc, and then press f9 for boot options.
   - For tablets without keyboards, turn on or restart the tablet, and then quickly press and hold one of the following buttons:
     - Volume up
     - Volume down

     Then select **f9**.
3. Select the USB flash drive to boot from, and then follow the on-screen instructions.

Using HP Sure Recover (select products only)

Select computer models are configured with HP Sure Recover, a PC operating system (OS) recovery solution built into the hardware and software. HP Sure Recover can fully restore the HP OS image without installed recovery software.

Using HP Sure Recover, an administrator or user can restore the system and install:

- Latest version of the operating system
- Platform-specific device drivers
- Software applications, in the case of a custom image

To access the latest documentation for HP Sure Recover, go to http://www.hp.com/support. Follow the on-screen instructions to find your product and locate your documentation.

6 Using HP PC Hardware Diagnostics

You can use the HP PC Hardware Diagnostics utility to determine whether your computer hardware is running properly. The three versions are HP PC Hardware Diagnostics Windows, HP PC Hardware Diagnostics UEFI (Unified Extensible Firmware Interface), and (for select products only) Remote HP PC Hardware Diagnostics UEFI, a firmware feature.

Using HP PC Hardware Diagnostics Windows (select products only)

HP PC Hardware Diagnostics Windows is a Windows-based utility that allows you to run diagnostic tests to determine whether the computer hardware is functioning properly. The tool runs within the Windows operating system to diagnose hardware failures.

If HP PC Hardware Diagnostics Windows is not installed on your computer, you must download and install it. To download HP PC Hardware Diagnostics Windows, see Downloading HP PC Hardware Diagnostics Windows on page 28.

Using an HP PC Hardware Diagnostics Windows hardware failure ID code

When HP PC Hardware Diagnostics Windows detects a failure that requires hardware replacement, a 24-digit failure ID code is generated for select component tests. For interactive tests, such as keyboard, mouse, or audio and video palette, you must perform troubleshooting steps before you can receive a failure ID.

You have several options after you receive a failure ID:

- Select **Next** to open the Event Automation Service (EAS) page, where you can log the case.
- Scan the QR code with your mobile device, which takes you to the EAS page, where you can log the case.
- Select the box next to the 24-digit failure ID to copy your failure code and send it to support.

Accessing HP PC Hardware Diagnostics Windows

After HP PC Hardware Diagnostics Windows is installed, you can access it from HP Support Assistant or the Start menu.

Accessing HP PC Hardware Diagnostics Windows from HP Support Assistant

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from HP Support Assistant:

1. Complete one of the following tasks:
   - Select the **Search** icon in the taskbar, type `support` in the search box, and then select the **HP Support Assistant** app.
   - Select the question mark icon in the taskbar.
2. Select **Fixes & Diagnostics**.

3. Select **Run hardware diagnostics**, and then select **Launch**.
4. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Accessing HP PC Hardware Diagnostics Windows from the Start menu (select products only)

After HP PC Hardware Diagnostics Windows is installed, follow these steps to access it from the Start menu:

1. Select the **Start** button, and then select **All apps**.
2. Select **HP PC Hardware Diagnostics Windows**.
3. When the tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

NOTE: To stop a diagnostic test, select **Cancel**.

Downloading HP PC Hardware Diagnostics Windows

The HP PC Hardware Diagnostics Windows downloading instructions are provided in English only. You must use a Windows computer to download this tool because only .exe files are provided.

Downloading the latest HP PC Hardware Diagnostics Windows version from HP

To download HP PC Hardware Diagnostics Windows from HP, follow these steps:

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.
2. Select **Diagnose PC Hardware issues in Windows**, scroll down to the expanded window that appears, and then select **Download**.
3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading the HP PC Hardware Diagnostics Windows from the Microsoft Store

You can download the HP PC Hardware Diagnostics Windows from the Microsoft Store:

1. Select the Microsoft Store app on your desktop or select the **Search** icon in the taskbar, and then type `Microsoft Store` in the search box.
2. Type `HP PC Hardware Diagnostics Windows` in the **Microsoft Store** search box.
3. Follow the on-screen directions.

The tool downloads to the selected location.

Downloading HP Hardware Diagnostics Windows by product name or number (select products only)

You can download HP PC Hardware Diagnostics Windows by product name or number.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.
2. Select **Software and Drivers**, select your type of product, and then enter the product name or number in the search box that is displayed.
3. In the **Diagnostics** section, select **Download**, and then follow the on-screen instructions to select the specific Windows diagnostics version to be downloaded to your computer or USB flash drive.

The tool downloads to the selected location.

Installing HP PC Hardware Diagnostics Windows

To install HP PC Hardware Diagnostics Windows, navigate to the folder on your computer or the USB flash drive where the .exe file downloaded, double-click the .exe file, and then follow the on-screen instructions.

Using HP PC Hardware Diagnostics UEFI

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

NOTE: For some products, you must use a Windows computer and a USB flash drive to download and create the HP UEFI support environment because only .exe files are provided. For more information, see Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive on page 30.

If your PC does not start in Windows, you can use HP PC Hardware Diagnostics UEFI to diagnose hardware issues.

Using an HP PC Hardware Diagnostics UEFI hardware failure ID code

When HP PC Hardware Diagnostics UEFI detects a failure that requires hardware replacement, a 24-digit failure ID code is generated.

For assistance in solving the problem, complete one of these tasks:

- Select **Contact HP**, accept the HP privacy disclaimer, and then use a mobile device to scan the failure ID code that appears on the next screen. The HP Customer Support - Service Center page appears with your failure ID and product number automatically filled in. Follow the on-screen instructions.
- Contact support, and provide the failure ID code.

Starting HP PC Hardware Diagnostics UEFI

To start HP PC Hardware Diagnostics UEFI, follow this procedure.

1. Turn on or restart the computer, and quickly press esc.
2. Press f2.

   The BIOS searches three places for the diagnostic tools, in the following order:

   a. Connected USB flash drive

   NOTE: To download the HP PC Hardware Diagnostics UEFI tool to a USB flash drive, see Downloading the latest HP PC Hardware Diagnostics UEFI version on page 31.

   b. Hard drive

   c. BIOS
3. When the diagnostic tool opens, select the type of diagnostic test that you want to run, and then follow the on-screen instructions.

Starting HP PC Hardware Diagnostics UEFI through HP Hotkey Support software (select products only)

This section describes how to start HP PC Hardware Diagnostics UEFI through HP Hotkey Support software.

NOTE: You must disable fast boot to access HP PC Hardware Diagnostics UEFI from the HP System Information application.

To disable fast boot:

1. Turn on or restart the computer, and when the HP logo appears, press f10 to enter Computer Setup.
2. Select **Advanced**, and then select **Boot Options**.
3. Clear **Fast Boot**.
4. Select **Save Changes and Exit**, and then select **Yes**.

To start HP PC Hardware Diagnostics UEFI through HP Hotkey Support software, follow this procedure:

1. From the **Start** menu, open the HP System Information Application or press fn+esc.
2. In HP System Information screen, select **Run System Diagnostics**, select **Yes** to run the application, and then select **Restart**.

IMPORTANT: To prevent loss of data, save your work in all open apps before restarting your computer.

NOTE: When the restart is complete, the computer opens the HP PC Hardware Diagnostics UEFI Application. Proceed with the troubleshooting tests.

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive

Downloading HP PC Hardware Diagnostics UEFI to a USB flash drive can be useful in some situations.

- HP PC Hardware Diagnostics UEFI is not included in the preinstallation image.
- HP PC Hardware Diagnostics UEFI is not included in the HP Tool partition.

- The hard drive is damaged.

NOTE: The HP PC Hardware Diagnostics UEFI downloading instructions are provided in English only, and you must use a Windows computer to download and create the HP UEFI support environment because only `.exe` files are provided.

Downloading the latest HP PC Hardware Diagnostics UEFI version

To download the latest HP PC Hardware Diagnostics UEFI version to a USB flash drive, follow these steps:

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.
2. Select **Diagnose PC Hardware Issues outside of the OS**, scroll down to the expanded window that appears, and then select **Download**.
3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading HP PC Hardware Diagnostics UEFI by product name or number (select products only)

You can download HP PC Hardware Diagnostics UEFI by product name or number (select products only) to a USB flash drive.

NOTE: For some products, you might have to download the software to a USB flash drive by using the product name or number.

1. Go to http://www.hp.com/support.
2. Enter the product name or number, select your computer, and then select your operating system.
3. In the **Diagnostics** section, follow the on-screen instructions to select and download the specific UEFI Diagnostics version for your computer.

Using Remote HP PC Hardware Diagnostics UEFI settings (select products only)

Remote HP PC Hardware Diagnostics UEFI is a firmware (BIOS) feature that downloads HP PC Hardware Diagnostics UEFI to your computer. It can then run the diagnostics on your computer, and it might upload results to a preconfigured server.

For more information about Remote HP PC Hardware Diagnostics UEFI, go to http://www.hp.com/go/techcenter/pcdiags, select **Diagnose Other Potential Issues**, scroll down to **Remote PC Hardware Diagnostics UEFI**, and then select **Learn More**.

Downloading Remote HP PC Hardware Diagnostics UEFI

Remote HP PC Hardware Diagnostics UEFI is also available as a SoftPaq that you can download to a server.

Downloading the latest Remote HP PC Hardware Diagnostics UEFI version

You can download the latest Remote HP PC Hardware Diagnostics UEFI version to a USB flash drive.

1. Go to http://www.hp.com/go/techcenter/pcdiags. The HP PC Diagnostics home page is displayed.

2. Select **Diagnose PC Hardware Issues outside of the OS**, scroll down to the expanded window that appears, and then select **Download**.

3. A pop-up that asks what you want to do with the file opens. Select **Open** or **Save As**. The latest version of the diagnostics tool opens or downloads to the selected location.

Downloading Remote HP PC Hardware Diagnostics UEFI by product name or number

You can download Remote HP PC Hardware Diagnostics UEFI by product name or number.

NOTE: For some products, you might have to download the software by using the product name or number.

1. Go to http://www.hp.com/support.

2. Select **Software and Drivers**, select your type of product, enter the product name or number in the search box that is displayed, select your computer, and then select your operating system.

3. In the **Diagnostics** section, follow the on-screen instructions to select and download the **Remote UEFI** version for the product.

Customizing Remote HP PC Hardware Diagnostics UEFI settings

Using the Remote HP PC Hardware Diagnostics setting in Computer Setup (BIOS), you can perform several customizations.

- Set a schedule for running diagnostics unattended. You can also start diagnostics immediately in interactive mode by selecting **Execute Remote HP PC Hardware Diagnostics UEFI**.
- Set the location for downloading the diagnostic tools. This feature provides access to the tools from the HP website or from a server that has been preconfigured for use. Your computer does not require the traditional local storage, such as a hard drive or USB flash drive, to run remote diagnostics.
- Set a location for storing the test results. You can also set the user name and password that you use for uploads.
- Display status information about the diagnostics run previously.

To customize Remote HP PC Hardware Diagnostics UEFI settings, follow these steps:

1. Turn on or restart the computer, and when the HP logo appears, press f10 to enter Computer Setup.

2. Select **Advanced**, and then select **Settings**.

3. Make your customization selections.

4. Select **Main**, then select **Save Changes and Exit** to save your settings.

Your changes take effect when the computer restarts.

7 Specifications

When you travel with or store your computer, the input power ratings and operating specifications provide helpful information.

Input power

The power information in this section might 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 V to 240 V, 50 Hz to 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 supplied and approved by HP for use with this computer.

The computer can operate on DC power within one or more of the following specifications. The voltage and current for your computer is located on the regulatory label.

Table 7-1 DC power specifications

Input Power	Rating
Operating voltage and current	5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 2.5 A / 15 V DC @2 A – 30 W USB-C®
	5 V DC @ 2 A / 12 V DC @ 3 A /15 V DC @ 3 A – 45 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 3.75 A /15 V DC @ 3 A – 45 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 5 A / 15 V DC @ 5 A / 20 V DC @ 5 A – 100 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 10 V DC @ 3.75 A / 12 V DC @ 3.75 A / 15 V DC @ 3 A / 20 V DC @ 2.25 A – 45 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 5 A / 15 V DC @ 4.33 A / 20 V DC @ 3.25 A – 65 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 10 V DC @ 5 A / 12 V DC @ 5 A / 15 V DC @ 4.33 A / 20 V DC @ 3.25 A – 65 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 10 V DC @ 5 A / 12 V DC @ 5 A / 15 V DC @ 5 A / 20 V DC @ 4.5 A – 90 W USB-C
	5 V DC @ 3 A / 9 V DC @ 3 A / 12 V DC @ 5 A / 15 V DC @ 5 A / 20 V DC @ 5 A / 5 V DC USB-A port @ 2 A – 100 W USB-C + 10 W USB-A
	19.5 V DC @ 2.31 A – 45 W
	19.5 V DC @ 3.33 A – 65 W
	19.5 V DC @ 4.62 A – 90 W
	19.5 V DC @ 6.15 A – 120 W
	19.5 V DC @ 6.9 A – 135 W
	19.5 V DC @ 7.70 A – 150 W
	19.5 V DC @ 9.23 A – 180 W
	19.5 V DC @ 10.3 A – 200 W
	19.5 V DC @ 11.8 A – 230 W
	19.5 V DC @ 16.92 A – 330 W
	20 V DC @ 14 A – 280 W

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

Operating environment

Use the operating specifications for helpful information when you travel with or store your computer.

Table 7-2 **Operating environment specifications**

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 Computer operating guidelines, routine care, and shipping preparation

Follow these guidelines to ensure the best performance and useful life of your computer.

Operating guidelines and routine care

HP has developed guidelines to help you properly set up and care for the computer and monitor.

- Keep the computer away from excessive moisture, direct sunlight, and extreme heat and cold.
- Operate the computer on a sturdy, level surface. Leave a 10.2 cm (4 inch) clearance on all vented sides of the computer and above the monitor to permit the required airflow.
- Never restrict the airflow into the computer by blocking any vents or air intakes. Do not place the keyboard, with the keyboard feet down, directly against the front of the desktop unit because this also restricts airflow.
- Never operate the computer with the access panel or any of the expansion card slot covers removed.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's recirculated or preheated air.
- To operate a computer within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the previous operating guidelines still apply.
- Keep liquids away from the computer and keyboard.
- Never cover the ventilation slots on the monitor with any type of material.
- Install or enable power management functions of the operating system or other software, including sleep states.
- Turn off the computer before you do either of the following tasks:
  - Wipe the exterior of the computer with a soft, damp cloth as needed. Cleaning products might discolor or damage the finish. See Removing dirt and debris from your computer on page 37 for the recommended steps to clean the high-touch, external surfaces on your computer. After you remove the dirt and debris, you can also clean the surfaces with a disinfectant. See Cleaning your computer with a disinfectant on page 37 for guidelines to help prevent the spread of harmful bacteria and viruses.
  - Occasionally clean the air vents on all vented sides of the computer. Lint, dust, and other foreign matter can block the vents and limit the airflow.

Cleaning your computer

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

Removing dirt and debris from your computer

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

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

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

3. Moisten a microfiber cloth with water. The cloth should be moist, but not dripping wet.

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

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

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

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

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

Cleaning your computer with a disinfectant

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

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

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

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

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

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

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

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

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

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

5. Start with the display (if applicable). Wipe carefully in one direction, and move from the top of the display to the bottom. Finish with any flexible cables, like power cord, keyboard cable, and USB cables.

6. Be sure that surfaces have completely air-dried before turning the device on after cleaning.

7. Discard the gloves after each cleaning. Clean your hands immediately after you remove the gloves.

Shipping preparation

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

1. Back up the hard drive files to an external storage device. Be sure that the backup media is not exposed to electrical or magnetic impulses while stored or in transit.

NOTE: The hard drive locks automatically when the system power is turned off.

2. Remove and store all removable media.

3. Turn off the computer and external devices.

4. Disconnect the power cord from the AC outlet, and then from the computer.

5. Disconnect the system components and external devices from their power sources and then from the computer.

NOTE: Be sure that all boards are seated properly and secured in the board slots before shipping the computer.

6. Pack the system components and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.

9 Electrostatic discharge

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

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

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

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

10 Accessibility

HP's goal is to design, produce, and market products, services, and information that everyone everywhere can use, either on a standalone basis or with appropriate third-party assistive technology (AT) devices or applications.

HP and accessibility

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

Finding the technology tools you need

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

For more information, see Finding the best assistive technology on page 41.

The HP commitment

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

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

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

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

- Support and contribute to industry standards and guidelines for accessibility.

International Association of Accessibility Professionals (IAAP)

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

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

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

Finding the best assistive technology

Everyone, including people with disabilities or age-related limitations, should be able to communicate, express themselves, and connect with the world using technology. HP is committed to increasing accessibility awareness within HP and with our customers and partners.

Whether it's large fonts that are easy on the eyes, voice recognition that lets you give your hands a rest, or any other assistive technology to help with your specific situation—a variety of assistive technologies make HP products easier to use. How do you choose?

Assessing your needs

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

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

Accessibility for HP products

These links provide information about accessibility features and assistive technology, if applicable and available in your country or region, that are included in various HP products. These resources will help you select the specific assistive technology features and products most appropriate for your situation.

- HP Aging & Accessibility: Go to http://www.hp.com, type `Accessibility` in the search box. Select **Office of Aging and Accessibility**.
- HP computers: For Windows products, go to http://www.hp.com/support, type `Windows Accessibility Options` in the **Search our knowledge library** search box. Select the appropriate operating system in the results.
- HP Shopping, peripherals for HP products: Go to http://store.hp.com, select **Shop**, and then select **Monitors** or **Accessories**.

If you need additional support with the accessibility features on your HP product, see Contacting support on page 44.

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

- Microsoft Accessibility information (Windows and Microsoft Office)
- Google Products accessibility information (Android, Chrome, Google Apps)

Standards and legislation

Countries worldwide are enacting regulations to improve access to products and services for persons with disabilities. These regulations are historically applicable to telecommunications products and services, PCs and printers with certain communications and video playback features, their associated user documentation, and their customer support.

Standards

The US Access Board created Section 508 of the Federal Acquisition Regulation (FAR) standards to address access to information and communication technology (ICT) for people with physical, sensory, or cognitive disabilities.

The standards contain technical criteria specific to various types of technologies, as well as performance-based requirements which focus on functional capabilities of covered products. Specific criteria cover software applications and operating systems, web-based information and applications, computers, telecommunications products, video and multimedia, and self-contained closed products.

Mandate 376 – EN 301 549

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

Web Content Accessibility Guidelines (WCAG)

Web Content Accessibility Guidelines (WCAG) from the W3C's Web Accessibility Initiative (WAI) helps web designers and developers create sites that better meet the needs of people with disabilities or age-related limitations.

WCAG advances accessibility across the full range of web content (text, images, audio, and video) and web applications. WCAG can be precisely tested, is easy to understand and use, and allows web developers flexibility for innovation. WCAG 2.0 has also been approved as ISO/IEC 40500:2012.

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

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

Legislation and regulations

Accessibility of IT and information has become an area of increasing legislative importance.

The HP policy landscape website provides information about key legislation, regulations, and standards in the following locations:

- United States
- Canada
- Europe
- Australia

Useful accessibility resources and links

These organizations, institutions, and resources might be good sources of information about disabilities and age-related limitations.

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

Organizations

These organizations are a few of the many that provide information about disabilities and age-related limitations.

- 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

Many educational institutions, including these examples, provide information about disabilities and age-related limitations.

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

- University of Minnesota computer accommodations program

Other disability resources

Many resources, including these examples, provide information about disabilities and age-related limitations.

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

HP links

These HP-specific links provide information that relates to disabilities and age-related limitations.

HP comfort and safety guide

HP public sector sales

Contacting support

HP offers technical support and assistance with accessibility options for customers with disabilities.

NOTE: Support is in English only.

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

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