



User Guide

SUMMARY

This guide provides information about components, network connection, power management, security, backing up, and more.

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. See <http://www.microsoft.com>.

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

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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.

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.
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1 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 1-1 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 .
<i>Regulatory, Safety, and Environmental Notices</i>	See the <i>Regulatory, Safety, and Environmental Notices</i> for product regulatory information. You can also see the Agency/Environmental label. To access this guide: ▲ Type HP Documentation in the taskbar 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 <i>Maintenance and Service Guide</i> on the web at http://www.hp.com/support . Follow the instructions to find your product, and then select Manuals .
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 1-2 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: <ul style="list-style-type: none">• Online chat with an HP technician• Support telephone numbers• HP service center locations
Warranty information	To access this document:

Table 1-2 Where to find support information (continued)

Topic	Location
	<p>▲ Type HP Documentation in the taskbar search box, and then select HP Documentation.</p> <p>– or –</p> <p>▲ Go to http://www.hp.com/go/orderdocuments.</p> <p>IMPORTANT: You must be connected to the internet to access the latest version of the warranty.</p> <p>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.</p>

Product documentation

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

Table 1-3 Where to find product documentation

Topic	Location
HP user documentation, white papers, and third-party documentation	User documentation is located on your hard drive. Type HP Documentation in the taskbar 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 Manuals . The documentation includes this user guide and the <i>Maintenance and Service Guide</i> .
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: <ol style="list-style-type: none">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 1-4 Where to find diagnostics tools

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

Product updates

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

Table 1-5 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 .

2 Computer features

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

Standard features

To identify a typical computer configuration, read this section. Features vary depending on the model.



The HP Engage One Essential All-in-One System is designed for long-term deployment within general retail, hospitality, and other markets. It includes the following features:

- Modern design form factor fan-less system with options for integrated peripherals
- **35.6 cm (14.0 in)** display panel; 16:9 high definition (1920 × 1080) resolution, 250 nit, multitouch, direct bond, anti-smudge, 1.1 mm soda-lime glass
- Choice of three stands (with tilt):
 - Essential Stand
 - Advanced Stand
 - Advanced Swivel Stand
- Major integrated peripherals:
 - Near-field communication (NFC) authentication
 - Magnetic stripe reader (MSR) (optional)
 - Barcode scanner with integrated audio feedback (optional)
 - Customer-facing display (CFD) (optional)
 - Fingerprint reader (optional)

- Integrated payment card scanner (available in the US only) (optional)
- Essential Stand (including hub):
 - Two USB ports
 - Two USB Type-C® power connector and SuperSpeed 5 Gbps ports, one with DisplayPort™ output
 - RJ-45 (network) jack
- Advanced Stand or Advanced Swivel Stand (including hub):
 - Two powered serial ports (0 V, 5 V, 12 V)
 - Four USB 2.0 ports
 - USB Type-C power connector and SuperSpeed 5 Gbps port with DisplayPort output
 - RJ-12 (cash drawer) jack
 - 24 V powered USB port
 - RJ-45 (network) jack
 - Power connector
- Essential VESA Hub:
 - Two USB ports
 - Two USB Type-C power connector and SuperSpeed 5 Gbps ports; one with DisplayPort output
 - RJ-45 (network) jack
- Pro VESA Hub:
 - 12 V powered USB port
 - 24 V powered USB port
 - Three USB SuperSpeed 5 Gbps ports
 - RJ-45 (network) jack
 - USB Type-C SuperSpeed 5 Gbps port with DisplayPort output
 - Power connector

Integrated features

To identify the computer features, use this illustration and table.



NOTE: The integrated devices shown are optional.

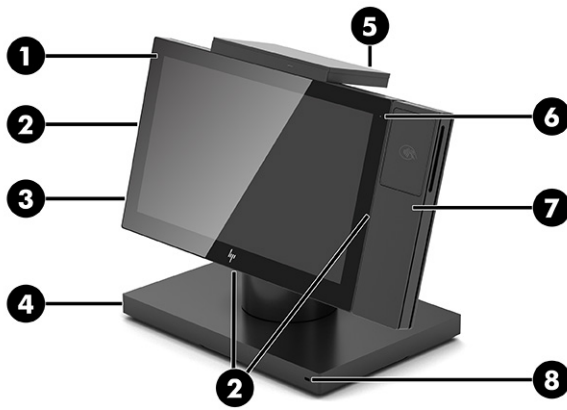


Table 2-1 Identifying the integrated features

Features			
1	35.6 cm (14.0 in), 1920 × 1080, high definition display	5	Peripheral bay (top): <ul style="list-style-type: none"> • Customer-facing display (CFD) (optional)
2	Peripheral bays (left side, right side or bottom) (3): <ul style="list-style-type: none"> • Barcode scanner with integrated audio feedback (optional) 	6	Magnetic stripe reader (MSR) (optional)
3	Fingerprint reader (optional)	7	Integrated payment card scanner (available in the US only) (optional)
4	Advanced Swivel Stand (select products only)	8	Security cable slot (available only on stands)

Stand options

To identify the available stands, use this illustration and table.

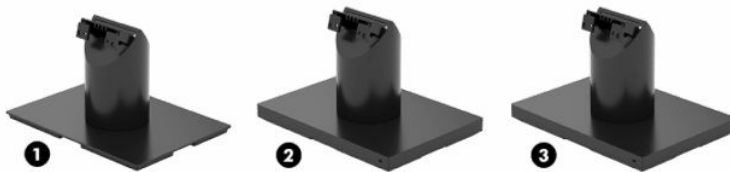


Table 2-2 Identifying the stands

Options	
1	Essential Stand with 15°–40° tilt
2	Advanced Stand with 15°–40° tilt
3	Advanced Swivel Stand with 15°–40° tilt

Essential Stand components

To identify the Essential Stand features, use this illustration and table.

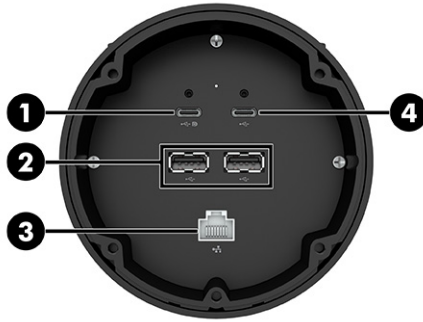


Table 2-3 Identifying the Essential Stand features

Features			
1	USB Type-C power connector and SuperSpeed 5 Gbps port with DisplayPort output	3	RJ-45 (network) jack
2	USB 2.0 ports (2)	4	USB Type-C power connector and SuperSpeed 5 Gbps port

Advanced Stand and Advanced Swivel Stand components

To identify the Advanced Stand and Advanced Swivel Stand features, use this illustration and table.

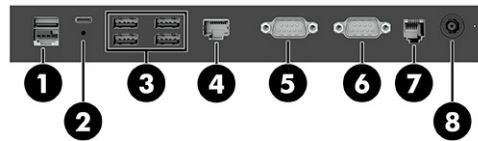


Table 2-4 Advanced Stand and Advanced Swivel Stand features

Features			
1	Powered USB 24 V port	5	Powered serial port (COM B 0V/5V/12V) You can configure the serial port as a standard (unpowered) serial port or powered serial port. Some devices use a powered serial port. If the serial port is configured as a powered port, devices that support a powered serial interface do not require an external power source. To configure the powered serial port, see Configuring the powered serial ports on the Advanced Stand or Advanced Swivel Stand on page 19.
2	USB Type-C power connector and SuperSpeed 5 Gbps port with DisplayPort output	6	Powered serial port (COM A 0V/5V/12V) You can configure the serial port as a standard (unpowered) serial port or powered serial port. Some

Table 2-4 Advanced Stand and Advanced Swivel Stand features (continued)

Features	
	devices use a powered serial port. If the serial port is configured as a powered port, devices that support a powered serial interface do not require an external power source. To configure the powered serial port, see Configuring the powered serial ports on the Advanced Stand or Advanced Swivel Stand on page 19.
3	USB 2.0 ports (4)
4	RJ-45 (network) jack
7	RJ-12 (cash drawer) jack
8	Power connector

IMPORTANT: To avoid damage to the computer, **do not** plug a telephone cable into the cash drawer jack.

Essential VESA Hub components

To identify the Essential VESA Hub features, use this illustration and table.

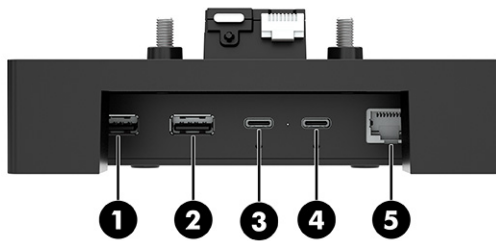


Table 2-5 Essential VESA Hub features

Features	
1	USB 2.0 port
2	USB 2.0 port
3	USB Type-C power connector and SuperSpeed 5 Gbps port
4	USB Type-C power connector and SuperSpeed 5 Gbps port with DisplayPort output
5	RJ-45 (network) jack

Pro VESA Hub components

To identify the Pro VESA Hub features, use this illustration and table.





Table 2-6 Pro VESA Hub features

Features	
1	RJ-45 (network) jack
2	Power connector
3	Powered USB 24 V port
4	Powered USB 12 V port
5	USB Type-C port with DisplayPort output
6	USB SuperSpeed 5 Gbps ports (3)

Connecting an AC adapter to power

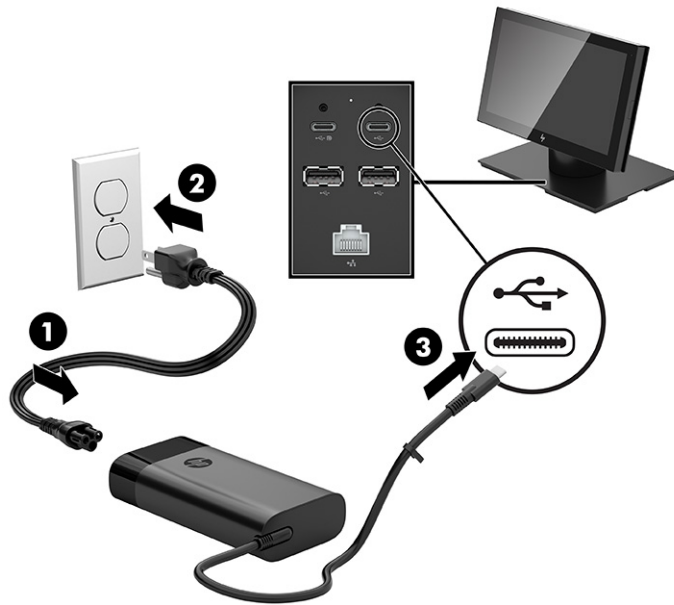
To connect an AC adapter to the stand or hub options, use these procedures and illustrations.

 **NOTE:** Refer to the illustration that most closely matches your stand or hub option.

 **NOTE:** The power light illuminates when a valid AC adapter is used. If an invalid AC adapter is used, the light does not turn on or blink, even if the adapter is plugged into a wall socket.

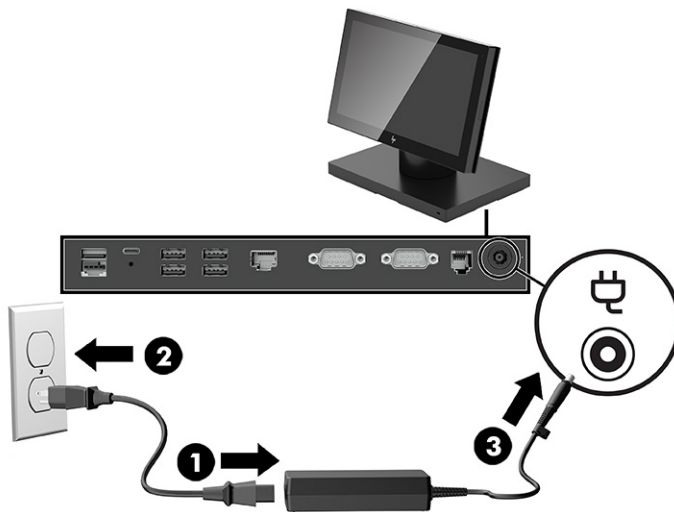
Connecting power to the Essential Stand

To connect an AC adapter to the Essential Stand, connect one end of the power cord to the AC adapter **(1)** and the other end to a grounded AC outlet **(2)**, and then connect the power adapter's USB Type-C connector to the USB Type-C power port on the underside of the stand **(3)**.



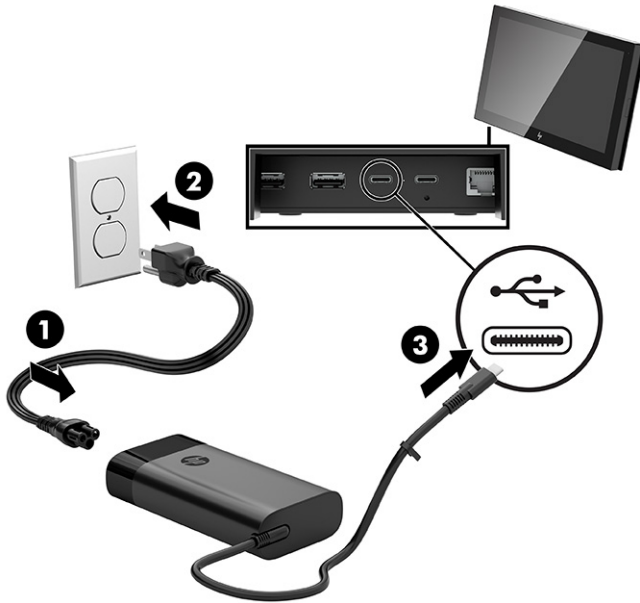
Connecting power to the Advanced Stand or Advanced Swivel Stand

To connect an AC adapter to the Advanced Stand or the Advanced Swivel Stand, connect one end of the power cord to the AC adapter (1) and the other end to a grounded AC outlet (2), and then connect the AC adapter to the power connector on the stand (3).



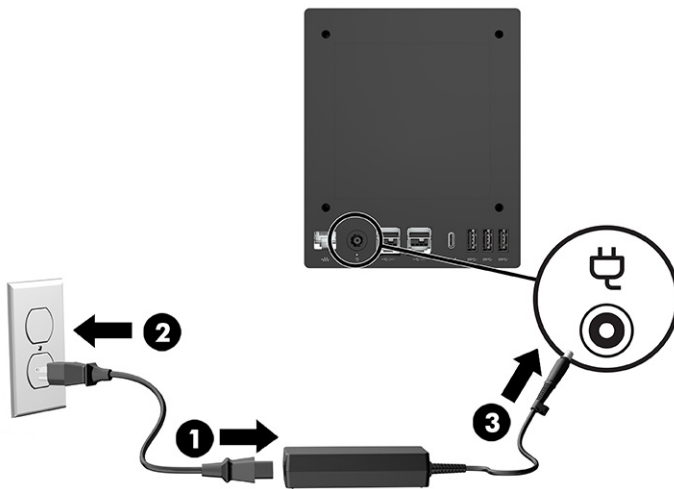
Connecting power to the Essential VESA Hub

To connect an AC adapter to the Essential VESA Hub, connect one end of the power cord to the AC adapter (1) and the other end to a grounded AC outlet (2), and then connect the power adapter's USB Type-C connector to the USB Type-C power port on the underside of the hub (3).



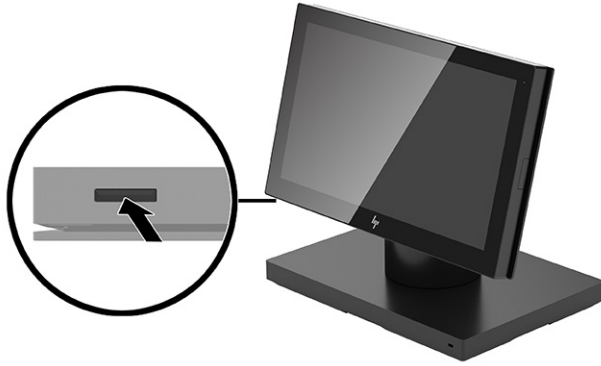
Connecting power to the Pro VESA Hub

To connect an AC adapter to the Pro VESA Hub, connect one end of the power cord to the AC adapter (1) and the other end to a grounded AC outlet (2), and then connect the AC adapter to the power port on the back of the hub (3).



Locating the system power button

The computer power button is located on the bottom left edge of the bezel.



Adjusting the head unit

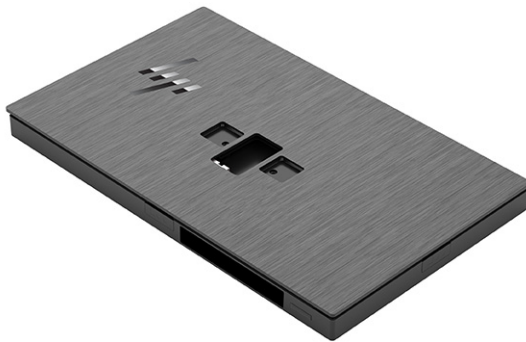
You can tilt the head unit on each stand option by as much as 25° when you set the angle between 15° and 40°.



NOTE: You can swivel the Advanced Swivel Stand head unit 180° in either direction.

System serial number location

Each computer has a unique serial number and a product ID number that are located on the exterior of the computer at the bottom of the display bezel. Keep these numbers available when you contact customer service for assistance.



Essential Stand serial number location

Each Essential Stand has a unique serial number and a product ID number that is located on the exterior of the base. Keep these numbers available when you contact customer service for assistance.



Regulatory information is located in the base plate or wall mount.

Advanced Stand and Advanced Swivel Stand serial number location

Each Advanced Stand and Advanced Swivel Stand has a unique serial number and a product ID number that is located on the exterior of the base. Keep these numbers available when you contact customer service for assistance.



Regulatory information is located in the base plate or wall mount.

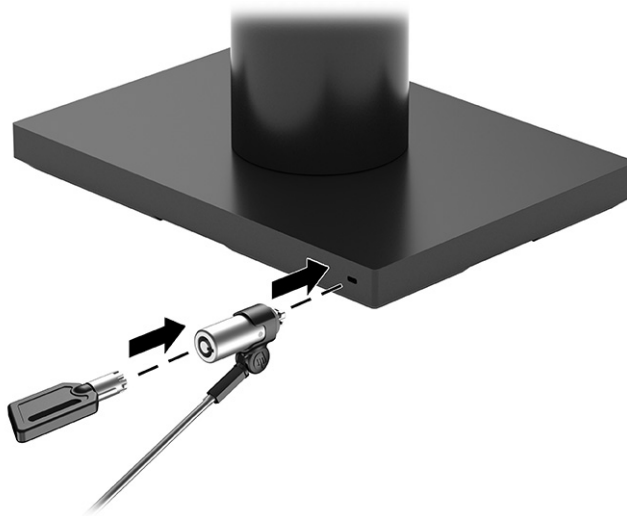
Installing a security cable on the Advanced Stand or the Advanced Swivel Stand

You can secure the Advanced Stand to a fixed object with an optional security cable available from HP.

 **NOTE:** The security cable is sold separately as an aftermarket option kit only.


1. Locate the security cable slot on the back of the stand.

2. Insert the security cable lock into the slot, and then use the key to lock it.

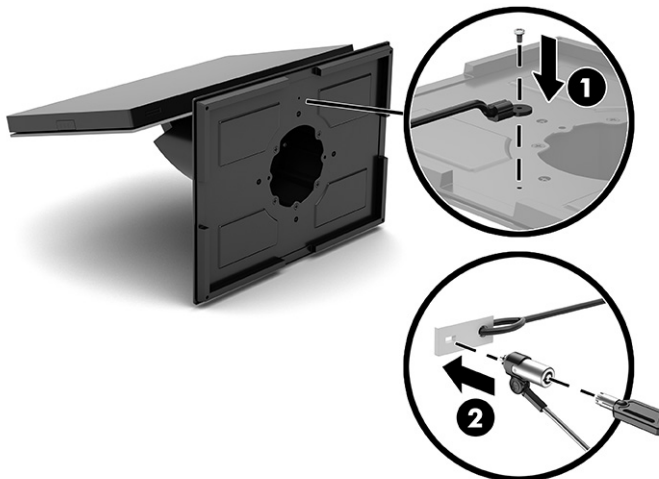


Installing a security cable on the Essential Stand

You can secure the Essential Stand to a fixed object with an optional security cable lock extension and security cable available from HP.

 **NOTE:** The security cable extension is sold separately and must be selected at purchase. The security cable is sold separately as an after-market option kit only.

1. Attach the security cable extension (that you ordered at the time of purchase) to the bottom of the base plate using the tamper-resistant screw (1).
2. Secure the other end of the security cable extension with a security cable (2).



3 Hardware setup


Use these sections to set up and configure your system.

Tools needed

You need a Phillips screwdriver and a Torx T15 screwdriver for procedures described in this guide.

Warnings and cautions

Before performing upgrades, be sure to carefully read all of the applicable instructions, cautions, and warnings in this guide.

 **WARNING!** To reduce the risk of personal injury from electric shock, hot surfaces, or fire:

Disconnect the power cord from the AC outlet before removing the enclosure. Energized parts are inside.

Allow the internal system components to cool before you touch them.

Replace and secure the enclosure before restoring power to the equipment.


Do not connect telecommunications or telephone connectors to the network interface controller (NIC) receptacles.

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

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

For your safety, do not place anything on power cords or cables. Arrange them so that no one can 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*. It describes proper workstation setup and provides guidelines for posture and work habits that increase your comfort and decrease your risk of injury. It also provides electrical and mechanical safety information. This guide is located on the web at <http://www.hp.com/ergo>.

 **IMPORTANT:** Static electricity can damage the electrical components of the computer or optional equipment. Before beginning these procedures, be sure that you are discharged of static electricity by briefly touching a grounded metal object.


When the computer is plugged into an AC power source, voltage is always applied to the system board. You must disconnect the power cord from the power source and wait 30 seconds before opening the computer to prevent damage to internal components.

Installing an Essential VESA mount

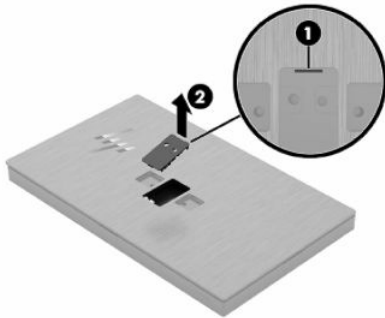
To install an Essential VESA mount, use this procedure and illustration.

 **NOTE:** This VESA product uses standard M4 × 10 mm screws. Confirm that the product you are mounting to can use this size screw.

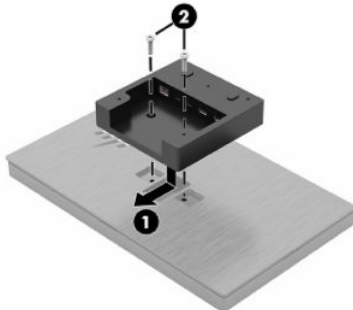
1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord.

 **NOTE:** Regardless of the power state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

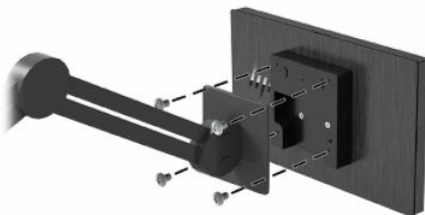
3. Locate the access door cover on the back of the head unit (1).
4. Remove the access door cover (2) from the head unit.



5. Insert the Essential VESA mount bracket into the head unit (1), and then tighten the two screws (2).




6. Connect the control arm to the Essential VESA mount bracket, and then tighten the four screws.




Installing an Pro VESA mount

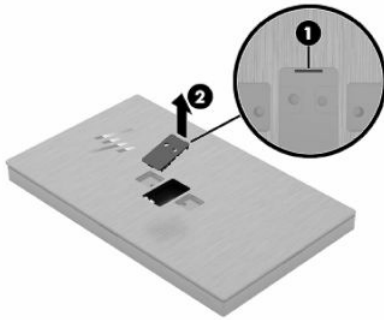
To install an Pro VESA mount, use this procedure and illustration.

 **NOTE:** This VESA product uses standard M4 × 10 mm screws. Confirm that the product you are mounting to can use this size screw.

1. Turn off the computer properly through the operating system, and turn off any external devices.
2. Disconnect the power cord.

 **NOTE:** Regardless of the power state, voltage is always present on the system board as long as the system is plugged into an active AC outlet. You must disconnect the power cord and wait approximately 30 seconds for the power to drain to avoid damage to the internal components of the computer.

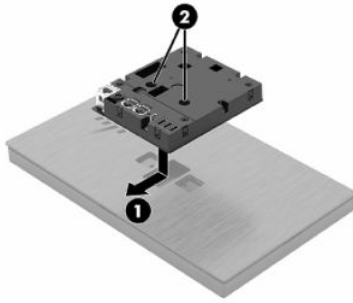
3. Locate the access door cover on the back of the head unit **(1)**.
4. Remove the access door cover **(2)** from the head unit.



5. Remove the Pro VESA mount cover.



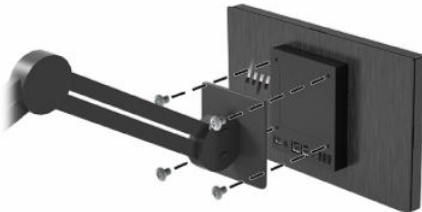
6. Insert the Pro VESA mount bracket into the head unit (1), and then tighten the two captive screws (2).



7. Press the Pro VESA mount cover onto the bracket until it snaps into place.



8. Connect the control arm to the Pro VESA mount bracket and then tighten the four screws.



4 Configuring the software

You can configure the computer and integrated peripherals and calibrate the touch screen.

Configuring the powered serial ports on the Advanced Stand or Advanced Swivel Stand

You can configure the serial ports as standard (unpowered) serial ports or powered serial ports. Some devices use a powered serial port. If the serial port is configured as a powered port, devices that support a powered serial interface do not require an external power source.

 **NOTE:** The Advanced Stand and Advanced Swivel Stand ships with all serial ports configured in standard unpowered serial mode (0 volts) by default.

Each serial port has three voltage settings.

- 0 volts
- 5 volts
- 12 volts

To change the voltage settings for each powered serial port:

1. Turn on or restart the computer, quickly press **esc**, and then press **f10**.
2. Select **Configuration**.
3. Select the Power Serial Port Voltage by changing the output voltage to 0V, 5V, or 12V.
4. Select **Exit**, and then select **Save Changes and Exit** to save your settings.

Touch screen calibration for Windows 10 Professional and Windows 10 IoT Enterprise for Retail

The Windows calibration tool works only in digitizer touch mode. If you install a retail touch utility, it sets the touch screen to mouse mode by default and does not allow the Windows calibration tool to run.

To calibrate the touch module in Windows 10 Professional and Windows 10 IoT Enterprise for Retail:

1. Open Control Panel. You can type **Control Panel** in the Search box to access it.
2. In Control Panel, type **calibrate** in the Search box. Under **Tablet PC Settings**, tap the **Calibrate the screen for pen or touch input** link. In the Tablet PC Settings dialog box, tap the **Calibrate** button, and then proceed to step 3.

3. Follow the on-screen instructions to press the target marks on the touch screen. At the end of the calibration process, the touch module should be aligned with the video, and the touch points will be accurate.

Configuring optional HP integrated peripheral modules

Use this information to configure peripheral modules.

To configure the integrated USB peripheral, see the HP Point of Sale Configuration Guide (available in English only). The guide is located with the documentation on your retail computer and at <http://www.hp.com/support>. To access the guide on the retail computer, select **Start**, and then select **HP Point of Sale Information**.



NOTE: Check <http://www.hp.com/support> for updated software or documentation that became available between the time your product was manufactured and the time it was delivered to you.

Updating the system

Use these sections to update the system.

Downloading HP Firmware Installer

Use these steps to download the firmware installation app.

1. Go to <http://www.hp.com/support>.
2. Select **Software and Drivers**, and follow the on-screen instructions to find your docking station.
3. Follow the on-screen instructions to select and download **HP Firmware Installer**.
4. Complete the installation wizard.
5. Choose to restart now or later. The computer might not work until the next restart. Select **Finish**.

Installing updates

You can update the system immediately or the next time it is shut down.

To install updates:

1. Open Windows Explorer, and navigate to where you saved HP Firmware Installer.
2. Double-click **HPFirmwareInstaller.exe**, and then select **OK**.
3. Verify that updates are available, select which updates to install, and then select **Install**.



TIP: You must be connected to the internet for new updates to download to HP Firmware Installer.

4. Select one of the following options:
 - **Shut down now:** Installs the update immediately.





NOTE: You might see the display flicker and hear some audio clicks, your internet connection might be intermittent, and your mouse and keyboard could become unresponsive until installation is complete.

- **Close and shut down later:** Installs the update the next time you shut down the computer.

The computer turns on automatically after the firmware update is complete.

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 will be 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.

-
-  **IMPORTANT:** Windows is the only option that allows you to back up your personal information. Schedule regular backups to avoid information loss.
 -  **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 recovery media (select products only)

You can use the HP Cloud Recovery Download Tool to create HP Recovery media on a 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.
-
-  **NOTE:** If you cannot create recovery media yourself, contact support to obtain recovery discs. 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 23](#) to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to a working state sooner than using the HP recovery discs. 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 23](#).

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 HP Recovery media. For more information, see [Recovering using HP Recovery media on page 23](#).

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 HP Recovery media

You can use HP Recovery media to recover the original operating system and software programs that were installed at the factory. On select products, it can be created 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 recovery media \(select products only\) on page 22](#).



NOTE: If you cannot create recovery media yourself, contact support to obtain recovery discs. 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 media, and then restart the computer.



NOTE: HP recommends that you follow the [Restoring and recovery methods on page 23](#) to restore your computer before you obtain and use the HP recovery discs. Using a recent backup can return your machine to

a working state sooner than using the HP recovery discs. 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 media, you can change the computer boot order, the order of devices listed in BIOS for startup information. You can select an optical drive or a USB flash drive, depending on the location of your HP Recovery media.



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 media.
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, quickly press and hold the volume up button, and then select **f9**.

– or –

Turn on or restart the tablet, quickly press and hold the volume down button, and then select **f9**.

3. Select the optical drive or USB flash drive from which you want to boot, 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 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 26](#) 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 26](#) 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 26](#) 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 26](#), 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.

7 Specifications

This chapter provides specifications for your computer.

Computer specifications

This section provides specifications for your computer. When you travel with your computer, the computer dimensions and weights, as well as input power ratings and operating specifications, provide helpful information.

Table 7-1 Computer specifications

	Metric	U.S.
Temperature		
Operating	0°C to 35°C	32°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 9,144 m	-50 ft to 30,000 ft

Input power

The power information in this section may be helpful if you plan to travel internationally with the computer.

The computer operates on DC power, which can be supplied by an AC or a DC power source. The AC power source must be rated at 100 V–240 V, 50–60 Hz. Although the computer can be powered from a standalone DC power source, it should be powered only with an AC adapter or a DC power source supplied and approved by HP for use with this computer.

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

Table 7-2 Input power

Input power	Rating
Operating voltage and current	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 / 19.5 V dc @ 7.7 A – 150 W / 20 V dc @ 3.2 A – 65 W USB-C®

8 Electrostatic discharge

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

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



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.
-

9 Accessibility

HP's goal is to design, produce, and market products, services, and information that everyone everywhere can use, either on a stand-alone 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 32](#).

The HP commitment

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

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

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

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

- Support internal and external research and development that improves assistive technology relevant to HP products and services.
- Support and contribute to industry standards and guidelines for accessibility.

International Association of Accessibility Professionals (IAAP)

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

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

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

Finding the best assistive technology

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

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

Assessing your needs

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

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

Accessibility for HP products

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** 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 35](#).

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. These links provide information about key legislation, regulations, and standards.

- [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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