



CONSUMER AFFAIRS

B E R M U D A

Promoting Confident Consumers and Responsible Traders

Audio & Visual Guidance Mac Accessibility Handbook

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1. Introducing Accessibility Features on Mac

Macintosh Operating Systems include many accessibility features to support your vision, hearing, and physical motor needs, and more. If you didn't turn on the features when you set up your Mac, you can do so at any time in Accessibility System Preferences.

1.1 Getting Started With Accessibility Features

On your Mac, click the Apple icon in the top left of your main menu bar, select system preferences and then click Accessibility.



MacOS accessibility features are grouped by category in the sidebar of the preference pane:



- **Vision:** Use these features to zoom in on the screen, make the pointer or menu bar bigger, apply color filters, and more. Or have your Mac speak what's on the screen. See [macOS accessibility features for vision](#).
- **Hearing:** Use these features to show and customize captions on the screen, make and receive [Real-Time Text \(RTT\)](#) calls, and more. See [macOS accessibility features for hearing](#).
- **Motor:** Use these features to control your Mac and apps using spoken commands, the Tab key, an onscreen keyboard, the pointer, or assistive devices. You can also set options that make it easier to use a mouse and trackpad. See [macOS accessibility features for mobility](#).
- **General:** Use these features to easily turn various accessibility features on or off, and to type your Siri requests. See [macOS general accessibility features](#).

2. Accessibility and VoiceOver

Use VoiceOver, the built-in screen reader on your Mac, to speak what's on the screen, and the text in documents, webpages, and windows. With VoiceOver, you can control your Mac with the keyboard, trackpad gestures, or a refreshable braille display.

2.1 How to use VoiceOver Utility

To open VoiceOver Utility on your Mac, do one of the following:

- When VoiceOver is on, press VO-F8.
- Choose Apple menu  > System Preferences, click Accessibility , click VoiceOver, then click Open VoiceOver Utility.

Search for an option in VoiceOver Utility

1. Interact with the toolbar in the VoiceOver Utility window.
2. Type what you're looking for in the search field.
3. Navigate the list of search results by pressing VO-Down Arrow or VO-Up Arrow.

For each result, VoiceOver Utility shows the pane where the option is located and highlights the option.

2.2 How to use VoiceOver Gestures

If you have a trackpad and the Trackpad Commander is on, you can use VoiceOver gestures to navigate and interact with items on the screen.

To turn on the Trackpad Commander, hold down the VoiceOver modifier (see [Use the VoiceOver modifier](#)) and rotate two fingers clockwise anywhere on the trackpad. To turn it off, hold down the VoiceOver modifier and rotate two fingers counterclockwise.

- VoiceOver includes standard gestures for navigating and interacting with items on the screen. You can't change these gestures.
 - [VoiceOver standard gestures on Mac](#)
- You can customize other gestures by assigning VoiceOver commands to them.
 - [Assign VoiceOver commands to gestures on Mac](#)
- You can use a rotor to navigate text areas, windows, dialogs, and webpages, and adjust controls such as sliders, steppers, and splitters.
 - [Use the VoiceOver gestures rotor on Mac](#)
- If you don't know your location on the screen, tap three times. VoiceOver tells you what's in the VoiceOver cursor.
- When you drag a finger and you hear something you want to select, keep your finger on the trackpad and use a second finger to tap. This gesture is called a "split-tap."

When you use VoiceOver gestures, you can't use the mouse button on the trackpad, unless the mouse button is used with a modifier key, as in Control-click.

2.3 How to Browse Webpages with VoiceOver

There are several ways you can browse and navigate webpages with the use of VoiceOver:

- Choose a default navigation mode, by Document Object Model (DOM) or by grouping related items. You can switch between modes to use the mode best suited for the current webpage.

- See [Use VoiceOver to navigate webpages by DOM or group mode](#)
- Use the VoiceOver rotor when viewing webpages to quickly jump to web items such as links, headings, web spots, tables, and more.
 - See [Use the VoiceOver rotor](#)
- Use the web settings of the gestures rotor to navigate using gestures.
 - See [Use the VoiceOver gestures rotor](#)
- With Quick Nav, navigate webpages and apps using only arrow keys, or webpages using single keys.
 - See [Use VoiceOver Quick Nav in apps and webpages](#)
- Use auto web spots and web spots you create to quickly scan webpages.
 - See [Use VoiceOver to navigate webpages using web spots](#)
- Hear a summary of a table and its cells as you press the arrow keys to navigate the table. Interact with the table only if you hear something of interest.
 - See [Use VoiceOver to navigate webpage tables](#)

To streamline navigation on some webpages, VoiceOver may automatically interact with a group. If you don't want VoiceOver to automatically interact with a group, press VO-Shift-Right Arrow or Left Arrow. If Quick Nav is on, press Shift-Right Arrow or Left Arrow.

Some websites use keyboard commands for specific purposes, such as using an arrow key to jump to another item, which renders the commands unavailable for navigating text on the website. To set an option to always use keyboard commands to navigate text, open VoiceOver Utility (press VO-F8 when VoiceOver is on), click Web, then click Navigation.

Web developers can assign keyboard shortcuts, called “access keys,” to webpage items such as links and buttons, to make them easier to interact with. VoiceOver can announce when it detects access keys, saying for example “Access key available: s” for a link; then you press Control-S to open the link. To set an option to hear access keys, open VoiceOver Utility (press VO-F8 when VoiceOver is on), click Verbosity, then click Hints.

2.4 How to use VoiceOver with Braille

If you connect a [supported braille display](#) to your Mac, VoiceOver detects it and sends it information about what's displayed on the screen. You can connect multiple braille displays to your Mac; each display mirrors the same content at the same time, useful in a classroom setting.

You can customize settings for your display in the Braille category of VoiceOver Utility, and set verbosity levels in the Verbosity category.

2.4.1 Uncontracted and Contracted Braille

By default, VoiceOver displays braille output and input using eight-dot braille, but you can choose a different mode in VoiceOver Utility.

- **Six dot:** VoiceOver automatically translates each word you type on your braille display into braille output, after it determines you've completed a word or after you press the Space bar on your braille display.
- **Contracted six dot:** VoiceOver dynamically changes the display under the cursor from contracted to uncontracted braille, so that you can read and edit more easily, and then changes back to contracted braille when you move the cursor.
- **Eight dot:** VoiceOver automatically translates each character you type on your braille display into braille output, as you type it.

2.4.2 Pan Lines

By default, VoiceOver shows multiple items on a braille display and not just where the VoiceOver cursor is focused. For example, when the VoiceOver cursor is focused on an item in a window, the braille device displays items like icons, checkboxes, and pop-up menus, as well as text to the left and right of the VoiceOver cursor. You can change this setting in VoiceOver Utility so that only the item in the VoiceOver cursor is shown.

If a line is too wide to fit on the braille display, you can “pan” the line using the left and right buttons on the display. Each left or right pan moves according to the number of cells (including status cells) your display contains. When you move the VoiceOver cursor, the braille display pans when necessary to follow it, even wrapping to the previous or next line.

You can assign a command to keys on your braille display to control whether VoiceOver automatically advances to the next line when panning; you can set an option in VoiceOver Utility to control how long VoiceOver waits before automatically advancing.

By default, VoiceOver wraps long words that don't fit on the current braille line to the next line, which is displayed after you pan.

2.4.3 Dots 7 and 8

When the option to show multiple items on the braille display is set in VoiceOver Utility, VoiceOver raises dots 7 and 8 to indicate the position of the VoiceOver cursor and, when you edit or select text, the text selection. VoiceOver indicates the position of the text selection cursor, called the “I-beam,” by flashing dot 8 of the braille cell preceding the I-beam and dot 7 of the braille cell trailing it.



2.4.4 Status Cells

VoiceOver uses three status cells to provide additional information about what's on the screen. You can set the number of status cells that are used and their location on the braille display. For example, you can use the cell that shows text status and set its location to be on the left of your display.

3. Zoom Features

Make content on the screen larger and easier to see by zooming the entire screen or an area of it. If you're using a second display, you can set the zoom for it separately.

On your Mac, use the Zoom pane of Accessibility preferences to make the entire screen larger or to enlarge just the area where the pointer is located. To change these preferences:

- choose Apple menu  > System Preferences, click Accessibility , then click Zoom.

Option	Description
Use keyboard shortcuts to zoom	Use the listed shortcuts to zoom in or out. For example, to zoom in, press Option-Command-Equal Sign.
Use scroll gesture with modifier keys to zoom	<p>Press and hold the selected modifier key while scrolling with your trackpad or the scroll wheel on your mouse.</p> <p>For example, with the default trackpad settings, press and hold the Control key and drag two fingers up (to zoom in) or down (to zoom out).</p>
Zoom Style	<p>Choose to zoom the entire screen (Full screen), a custom area of the screen (Split screen), or just the area where the pointer is located (Picture-in-picture).</p> <p>When you use full-screen zoom, you can zoom the screen of an available second display (sometimes called <i>Zoom Display</i>). Click Choose Display, then choose a display.</p>
Advanced	Specify options for the selected zoom style.
Enable Hover Text	<p>Display a high-resolution zoom of text, text fields, menu items, buttons, and more in a dedicated window. See Use Hover Text.</p> <p>To customize Hover Text, click Options, then set any of the following options:</p> <ul style="list-style-type: none"><i>Text size</i> and <i>Text font</i>: Choose the size and font for text shown in the Hover Text window. By default, the font is the same as your system font.

Option	Description
	<ul style="list-style-type: none"> • <i>Text-entry location:</i> Choose the position of the Hover Text window when you enter text—for example, you can position it near the line where you’re entering text or at the bottom left of the screen. <p>To set your own position, choose Custom, then drag the window to where you want it shown. If you don’t want the window shown when you enter text, choose None.</p> <ul style="list-style-type: none"> • <i>Activation modifier:</i> Choose the modifier key to press to activate Hover Text. • <i>Activation lock:</i> Keep the Hover Text window on the screen. When you need the window shown for a period of time—for example, when filling out a form—quickly press the selected modifier key three times. To stop showing the window, quickly press the key three times again. • <i>Colors:</i> Specify the text color used in the Hover Text window, and colors for the window itself.
Enable Touch Bar zoom	If your Mac has a Touch Bar , display a larger version of it on the screen. See Zoom in on the Touch Bar .



3.1 Hover Text

Use Hover Text to zoom whatever is under the pointer—for example, text, fields, menu items, or buttons—in high resolution in a separate window.

When you enable Hover Text on your Mac, you can move the pointer over something on the screen—for example, text, an input field, a menu item, or a button—and display a high-resolution zoomed version of it in a separate window.

If your Mac has a [Touch Bar](#) and items in the Touch Bar are hard to see, turn on Touch Bar zoom to display a larger version of the Touch Bar on the screen. See [Zoom in on the Touch Bar](#).

3.1.1 Turn on and customize Hover Text

1. On your Mac, choose Apple menu  > System Preferences, click Accessibility , then click Zoom.
2. Select Enable Hover Text.

If you want to customize Hover Text, click Options. For example, you can specify:

- The position of the window when you enter text. Click the “Text-entry location” pop-up menu, then choose a location. If you don’t want the window shown when you enter text, choose None.
- The modifier key you press to activate Hover Text. Click the “Activation modifier” pop-up menu, then choose a key. By default, you can press the Command key to activate Hover Text.

You can lock the window so it’s shown automatically when you move the pointer over an item; for example, when filling out a form. Select the “Activation lock” checkbox. Then when you need to lock or unlock the window, quickly press the selected modifier key three times.

- The colors used for the text shown in the window and the window itself. Click Colors, then click the pop-up menus to choose a color or to create a custom color.

3.1.2 Use Hover Text

Move the pointer over an item on the screen, then press the activation modifier (by default, the Command key) to display the Hover Text window.

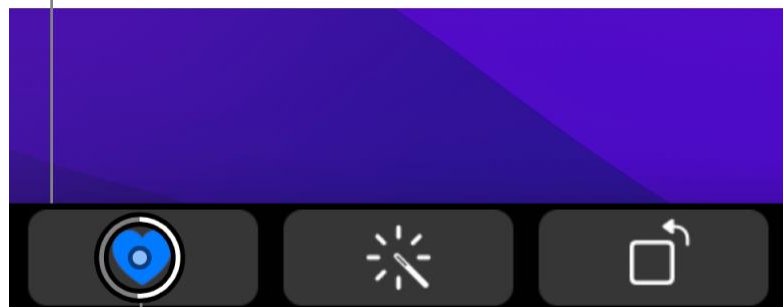
If you set the option to be able to lock the window, quickly press the modifier key three times to keep the Hover Text window on the screen. When you don’t need to show it, quickly press the key three times again.

If you chose to show the text entry window, a window appears at the location you specified, such as the top-left corner of the screen, whenever you’re in a text entry field or area. As you type, a larger version of what you’re typing is displayed in the window.



3.2 Zoom In On the Touch Bar

If your Mac has a [Touch Bar](#) and items in the Touch Bar are hard to see, you can turn on Touch Bar zoom, which displays a larger version of the Touch Bar on the screen.

The zoomed-in Touch Bar on the screen.



The circle changes color when an item is selected.

- **Turn Touch Bar zoom on or off:** On your Mac, choose Apple menu  > System Preferences, click Accessibility , click Zoom, then select Enable Touch Bar zoom. To turn it off, deselect the checkbox.
- **Show the zoomed Touch Bar on the screen:** Hold a finger on the Touch Bar. If you just tap the Touch Bar, the zoomed-in version isn't shown on the screen; you must keep a finger on the Touch Bar.
- **Increase or decrease the zoom:** Press and hold the Command key on the keyboard while you pinch two fingers open or closed on the Touch Bar.
- **Select and activate an item:** Slide your finger on the Touch Bar until the circle on the screen is on the item you want to select, hold your finger there until the circle changes color (when the item is selected), then lift your finger to activate the item.



You can also split-tap an item. Touch and hold the item you want to select with one finger, then tap anywhere on the Touch Bar with another finger to activate the item. You don't need to wait until the circle changes color.

Touch Bar zoom isn't available when you use VoiceOver.

4. Spoken Content Features

Customize the voice your Mac uses to speak text, and have your Mac speak announcements, items under the pointer, and whatever you type or select.

On your Mac, use the Spoken Content pane of Accessibility preferences to customize the system voice, be notified when an alert or app needs your attention, and set other options for content your Mac can speak aloud.

To change these preferences, choose Apple menu  > System Preferences, click Accessibility , then click Spoken Content.

Option	Description
System Voice	Choose a voice to speak text and alerts; click Play to hear a sample. See Change the voice your Mac uses to speak text .
Speaking Rate	Set the speed at which text is spoken.

Option	Description
Volume	Set the volume at which text is spoken. Setting the volume here doesn't affect the volume set for your Mac in Sound System Preferences.
Speak announcements	<p>Have your Mac announce and speak dialogs and other announcements. See Have your Mac speak announcements.</p> <p>To customize, click Options, then select a voice, the phrase you want to hear (such as the app name or "Attention!") before an announcement is spoken, and how long your Mac waits before it speaks. Click Play to hear a sample.</p>
Speak selection	<p>Have your Mac speak selected text when you press the specified keyboard shortcut. See Have your Mac speak text that's on the screen.</p> <p>To customize, click Options:</p> <ul style="list-style-type: none"> • <i>Keyboard shortcut</i>: Press the key combination you want to use. For example, press the Option and Tab keys together to set the keyboard shortcut as Option+Tab. • <i>Highlight content</i>: Choose to have spoken words, sentences, or both highlighted. If you don't want spoken content highlighted, choose Never. • <i>Word color</i>: Choose the color to use to highlight words as they're spoken. • <i>Sentence color</i>: Choose the color to use to highlight sentences as they're spoken. • <i>Sentence style</i>: Choose how to indicate sentences as they're spoken (Underline or Background Color). • <i>Show controller</i>: Choose when to show the controller (Automatically, Never, or Always).
Speak items under the pointer	<p>Have your Mac identify items under the pointer.</p> <p>To customize, click Options, then choose when your Mac speaks the item (all the time or only when you use zoom), the level of detail (called <i>verbosity</i>) (High, Medium, or Low), and how long to have your Mac wait before speaking.</p>
Speak feedback	<p>typing Have your Mac speak what you type, select, or press using the keyboard.</p> <p>To customize, click Options:</p> <ul style="list-style-type: none"> • <i>Echo characters</i>: Your Mac speaks each character you type.



Option	Description
	<ul style="list-style-type: none"> • <i>Echo words:</i> Your Mac speaks each word you type. • <i>Echo selection changes:</i> Your Mac speaks each time you select something on the screen. • <i>Echo modifier keys:</i> Your Mac speaks each modifier key you press, including the Caps Lock key.

If your Mac is speaking even though you didn't set options for it to do so, you may have inadvertently turned on VoiceOver, the built-in screen reader that describes aloud what appears on your screen. To quickly turn off VoiceOver, press Option-Command-F5 (or if your Mac or Magic Keyboard has [Touch ID](#), quickly press Touch ID three times), then deselect the Enable VoiceOver option.

5. Descriptions

Listen to a description of the visual content in movies, TV shows, and other media, if available.

On your Mac, use the Descriptions pane of Accessibility preferences to listen to a description of the visual content in movies, TV programs, and other media, if available.

To change these preferences, choose Apple menu  > System Preferences, click Accessibility , then click Descriptions.

Option	Description
Play audio descriptions when available	If available, automatically play the description of the visual content.

6. VoiceOver on iPhone

With VoiceOver — a gesture-based screen reader — you can use iPhone even if you can't see the screen. VoiceOver gives audible descriptions of what's on your screen—from battery level, to who's calling, to which app your finger is on. You can also adjust the speaking rate and pitch to suit your needs.


When you touch the screen or drag your finger over it, VoiceOver speaks the name of the item your finger is on, including icons and text. To interact with the item, such as a button or link, or to navigate to another item, [use VoiceOver gestures](#).

When you go to a new screen, VoiceOver plays a sound, then selects and speaks the name of the first item on the screen (typically in the top-left corner). VoiceOver tells you when the display changes to landscape or portrait orientation, when the screen becomes dimmed or locked, and what's active on the Lock Screen when you wake iPhone.

6.1 Turn VoiceOver On or Off

Important: VoiceOver changes the gestures you use to control iPhone. When VoiceOver is on, you must use VoiceOver gestures to operate iPhone.


To turn VoiceOver on or off, use any of the following methods:

- [Activate Siri](#) and say “Turn on VoiceOver” or “Turn off VoiceOver.”
- [Triple-click the side button](#) (on an iPhone with Face ID).
- [Triple-click the Home button](#) (on an iPhone with a Home button).
- [Use Control Center](#).
- Go to Settings  > Accessibility > VoiceOver, then turn the setting on or off.

6.2 Learn and Practice VoiceOver Gestures

You can practice VoiceOver gestures in a special area without affecting iPhone or its settings. When you practice a gesture, VoiceOver describes the gesture and the resulting action.

Try different techniques to discover which works best for you. If a gesture doesn't work, try a quicker movement, especially for a double-tap or swipe gesture. To swipe, try brushing the screen quickly with your finger or fingers. For best results using multifinger gestures, touch the screen with some space between your fingers.

1. Go to Settings  > Accessibility > VoiceOver.
2. Turn on VoiceOver, tap VoiceOver Practice, then double-tap to start.
3. Practice the following gestures with one, two, three, and four fingers:
 - Tap
 - Double-tap
 - Triple tap
 - Swipe left, right, up, or down
4. When you finish practicing, tap Done, then double-tap to exit.

7. VoiceOver on iPad

With VoiceOver — a gesture-based screen reader — you can use iPad even if you can't see the screen. VoiceOver gives audible descriptions of what's on your screen—from battery level, to who's calling, to which app your finger is on. You can also adjust the speaking rate and pitch to suit your needs.


When you touch the screen or drag your finger over it, VoiceOver speaks the name of the item your finger is on, including icons and text. To interact with the item, such as a button or link, or to navigate to another item, [use VoiceOver gestures](#).

When you go to a new screen, VoiceOver plays a sound, then selects and speaks the name of the first item on the screen (typically in the top-left corner). VoiceOver tells you when the display changes to landscape or portrait orientation, when the screen becomes dimmed or locked, and what's active on the Lock Screen when you wake iPad.

7.1 Turn VoiceOver On or Off

Important: VoiceOver changes the gestures you use to control iPad. When VoiceOver is on, you must use VoiceOver gestures to operate iPad.


To turn VoiceOver on or off, use any of the following methods:

- [Activate Siri](#) and say “Turn on VoiceOver” or “Turn off VoiceOver.”
- [Triple-click the Home button](#) (on an iPad with a Home button).
- [Triple-click the top button](#) (on other iPad models).
- [Use Control Center](#).
- Go to Settings  > Accessibility > VoiceOver, then turn the setting on or off.

7.2 Learn and Practice Voiceover Gestures

You can practice VoiceOver gestures in a special area without affecting iPad or its settings. When you practice a gesture, VoiceOver describes the gesture and the resulting action.

Try different techniques to discover which works best for you. If a gesture doesn't work, try a quicker movement, especially for a double-tap or swipe gesture. To swipe, try brushing the screen quickly with your finger or fingers. For best results using multifinger gestures, touch the screen with some space between your fingers.

1. Go to Settings  > Accessibility > VoiceOver.
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4. When you finish practicing, tap Done, then double-tap to exit.



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