




Collaborate with Messages. You can send an invitation to collaborate in Messages, and everyone on the thread is automatically added to the Pages document. Click the Share button in the menu bar, make sure Collaborate is selected, and then click Messages. Choose the name of the group you want to add as participants.

Work together in real time. With Activity Stream, a detailed list in the sidebar allows you to see edits and comments made by collaborators on a Pages document. It's easy to follow each change, as well as who has been added to the spreadsheet or what file management updates have occurred.

All your formatting tools, in one place. Click the Format button  in the toolbar to open the Format inspector. Select something in your document, and the formatting options for it appear.

Flow text around graphics. When you add an image to a text document, the text flows automatically around the image. You can fine-tune how the text wraps in the Format sidebar.



Move a graphic into a text block...




...and the text wraps around the graphic automatically.

Become a publisher. Pages comes with book templates that let you create interactive books in EPUB format. Add text and images—and even a table of contents. When you’re ready, you can make your book available for purchase or download in Apple Books.

Start on your Mac, finish on iPad. You can keep documents up to date across all your devices when you sign in with the same Apple ID. So you can start composing on one device, and pick up where you left off on another.

Translate in a snap. Select the text you want to translate, Control-click the selected text, choose Translate, then choose a language. To translate text you’ve typed, click “Replace with Translation.” You can also download languages so you can work offline—go to the Language & Region settings in System Settings, then click the Translation Languages button at the bottom. Not all languages are available. See [Translate on Mac](#) in the macOS User Guide.

 **Tip:** Turn on change tracking to see the changes you and others make to a document. Each person’s edits and comments are color-coded, so you can see who made each change. Choose Edit > Track Changes to show the change tracking toolbar.

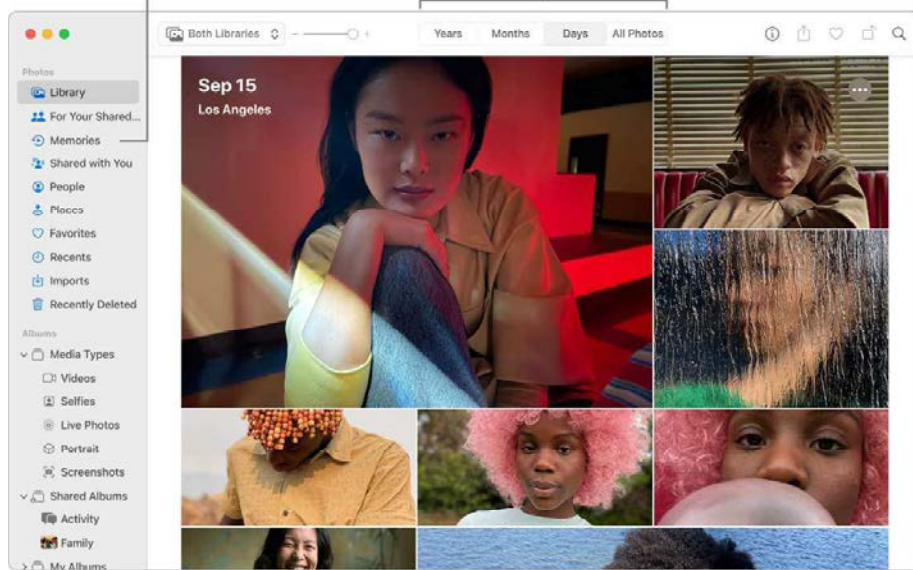
Learn more. See the [Pages User Guide](#).

Photos

Use Photos and iCloud Photos to organize, edit, and share your photos and videos, and keep your photo library up to date on all your devices. Photos showcases your best shots, and with more powerful search options, it’s easy to find and enjoy your favorites. Easy-to-use editing tools let you transform your photos and videos like a pro. And now with iCloud Shared Photo Library, you can share an album with up to five other people, and everyone can add photos and videos, organize and comment, and enjoy each other’s changes.

Automatically create a personalized video of special moments.

View your photos by Years, Months, Days, or All Photos.



All your photos on all your devices. With iCloud Photos, you can browse, search, and share all the photos and videos from all your devices that are signed in with the same Apple ID. When you use your iPhone to take a photo, it automatically appears on all of your devices. And if you edit photos, those edits appear on all of your devices. To get started, open System Settings, click your Apple ID in the sidebar, click iCloud, then turn on Photos. To learn more, see the Apple Support article [Set up and use iCloud Photos](#).

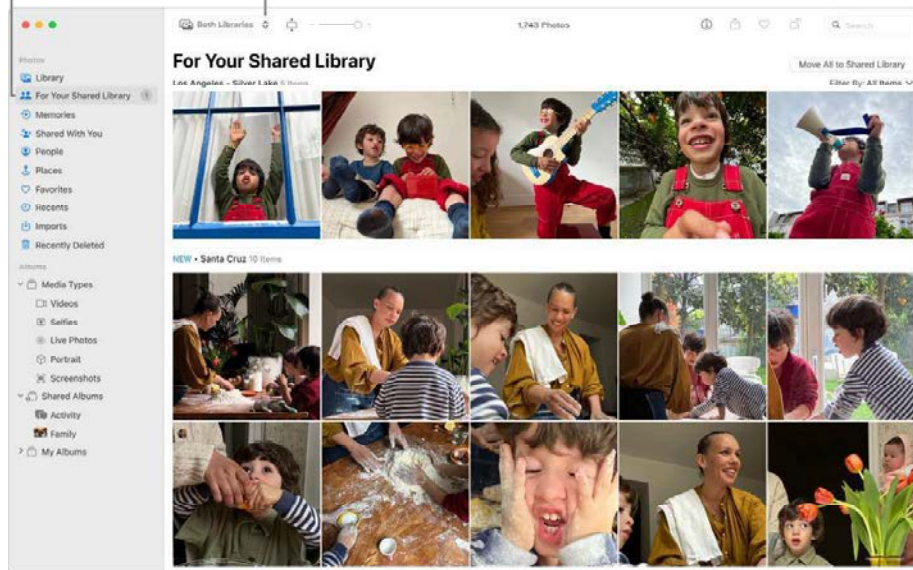
Set up iCloud Shared Photo Library. Make it easy to enjoy your favorite photos and videos with a photo library that you can share with up to five other people. When someone adds a photo or video to the Shared Library, or makes an edit, these changes appear for everyone who is part of the library.

To set up iCloud Shared Photo Library, you must be signed in with your Apple ID and have iCloud Photos turned on. Go to Photos > Settings, click the Shared Library tab, then choose Get Started. You can add participants right away, or choose to add them later. Select which of your past photos and videos you want to add to the Shared Library: all your photos and videos, photos and videos with certain people or taken after a certain date, or select photos and videos manually. After the Shared Library is set up, you can toggle between viewing your Personal Library, the Shared Library, or both libraries at once in Photos.

Add photos and videos to your Shared Library. To move individual photos or videos to your Shared Library, Control-click the photo or video in your Personal Library and choose "Move to Shared Library." To use suggestions for photos or videos you may want to add, go to Photos > Settings, click the Shared Library tab, then check Shared Library Suggestions and choose "Add People" to receive suggestions of photos or videos with selected people.

See suggestions for your Shared Library.

Choose to view Personal Library, Shared Library, or Both Libraries.



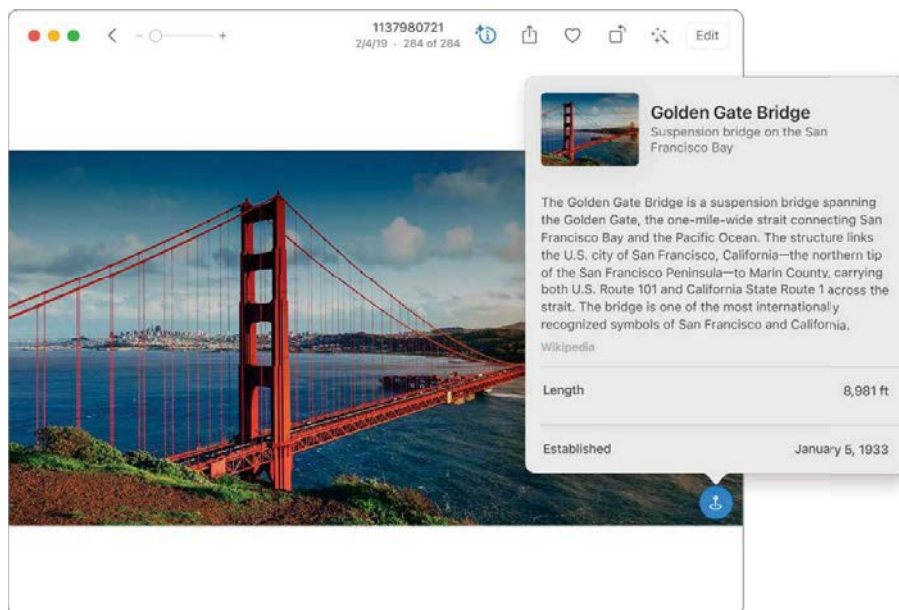
Shared with You. When friends in your Contacts send you photos in Messages, they automatically appear in the Shared with You section of the Photos app. Photos that you're most likely to care about, such as events you attended, appear in your library. When you're viewing the photos in the Photos app, you can click the message bubble on a photo to open Messages and continue the conversation.


Edit like a pro. Create standout photos and videos with powerful but easy-to-use editing tools. Use the editing buttons above your photo or video to improve it with just a click. For more powerful editing tools, click Edit, then use Smart Sliders to get professional results. You can add filters, rotate, increase exposure, and crop both photos and videos.



Interact with text. Live Text recognizes text in images on your computer and on the web. You can copy text from a photo to paste into any file on Mac, or click a phone number or website in the image to call the number or open the website. To translate text, select the text, Control-click it, then click Translate. Not all languages are available. See [Translate on Mac](#) in the macOS User Guide.

Relive meaningful moments. Photos highlights important moments like birthdays, anniversaries, and trips. Your photo library comes to life with Live Photos and videos that begin playing as you scroll. Click Memories in the sidebar to have Photos create a memorable movie—complete with music, titles, moods, and transitions—that you can personalize and share. Your Memories are available on all your other devices that use iCloud Photos.

Find what you're looking for. Photos showcases the best shots in your library and hides duplicates, receipts, and screenshots. Click the buttons at the top of the Photos window to view photos by year, month, or day—or click All Photos to quickly view your entire collection. Photos identifies objects, scenes, and people in your photos and videos so you can search your photos based on what's in them, the date they were taken, people you've named in them, captions you added, and their location—if provided. You can also use Spotlight and Siri to search for photos.



People, places, and things. Visual Lookup recognizes many objects in your photos. Swipe up on a photo or click the information button on a photo to highlight recognized objects and scenes. Learn more about popular art and landmarks around the world, plants and flowers, books, and breeds of pets. To have photos of people important to you always appear at the top of the People album, click the Favorites button  that appears on their photo. Use the Places album to view all your photos with location data on an interactive map. Zoom in on the map to reveal more photos from a specific location.

 **Tip:** You can add location info to any photo. While viewing the photo, click the Information button , click Assign a Location, and start typing. Choose a location from the list, or type the location and press Return.

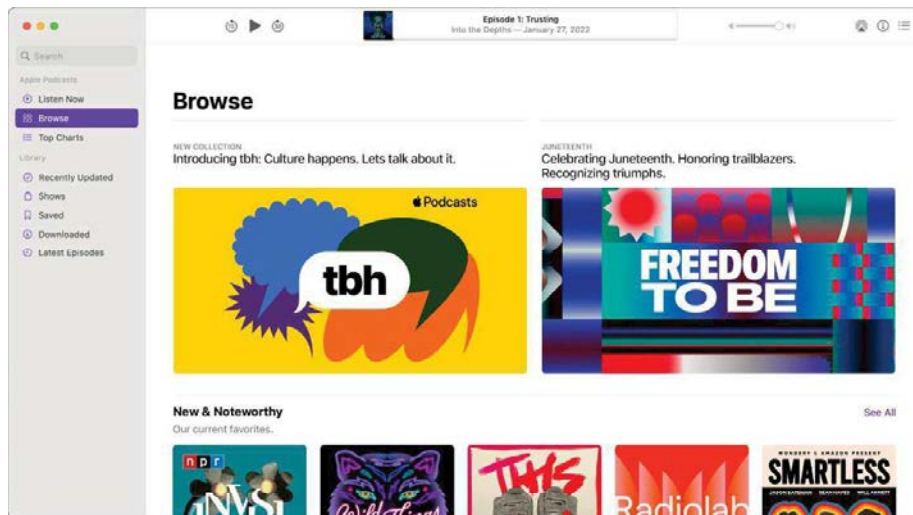
Get creative with Live Photos. With Live Photos, use the Loop effect to continuously loop the action, or use Bounce to play the animation forward and backward. For a professional DSLR look, use Long Exposure to blur motion in your Live Photos and turn an ordinary waterfall or flowing stream into a work of art.

Learn more. See the [Photos User Guide](#).

Podcasts

Use Apple Podcasts to browse, subscribe, and listen to favorite podcasts on your Mac. Personal recommendations help you discover new podcasts grouped by topics you care about.

Get started with Listen Now. See new episodes for the podcasts you're subscribed to, as well as personalized recommendations for podcasts you might be interested in, all in one place. When you're signed in with your Apple ID, any podcasts you're still listening to are saved in Listen Now, even if you started listening on another device.



Discover new podcasts. Find topic- and show-based suggestions for new podcasts in Listen Now, or see which shows are trending in Top Charts. If you see a show you like, subscribe to the podcast or add an episode to your library for later. You'll get suggestions for similar topics and shows based on what you enjoy and see the recommendations your friends make in Shared with You.

Shared with You. When friends in your Contacts share podcasts with you in Messages, the episodes automatically appear in the new Shared with You section of Listen Now in Apple Podcasts.

Save episodes to your library. To save a single episode to your library, click **+**. To keep up with new episodes for an entire podcast, click **Subscribe**. To download a podcast for offline listening, click **📶**.

Search by host or guest. When you search for a specific topic or person, you can see results for shows they host, shows that they're a guest on, and even shows where they're mentioned or discussed.

Follow your favorites. Click **Follow** to add a show to your favorites so that you never miss a new episode. See what's new in the **Recently Updated** section of your library.

Save ideas with Quick Note. Want to remember a podcast for your next road trip or to listen to while working out? Just create a Quick Note to save the information so you can easily find it later. In Podcasts, press **Fn-Q** or use a specified Hot Corner to open Quick Note and save the podcast link. You can find the Quick Note later in the sidebar of the [Notes](#) app.

💡 Tip: You can use AirPlay to play podcasts, music, or radio through an external speaker. Click the Control Center icon **🔧** in the menu bar, click **Screen Mirroring**, then select an available speaker.

Learn more. See the [Apple Podcasts User Guide](#).



Use the Preview app to view and make changes to PDFs and images, fill out and sign forms online, annotate PDFs, convert graphic file types, batch edit files, password protect a PDF, highlight and translate text, and much more.



Fill in a PDF form. In Preview, click a field in the form, then type your text. You can choose File > Export to save the form, open it later, and continue to fill it in.

Save a PDF with a password. To secure a PDF, give it a password that users must enter before they can see the contents. In Preview, open the PDF you want to save with a password, choose File > Export, then click Permissions. Select Permissions options, and type a password for Owner Password. Retype it to verify, click Apply, then click Save.


Tip: You can also enter a new name for the PDF before saving to create a copy of the password-secured PDF while keeping the original PDF unencrypted.

Add and remove PDF pages. Open a PDF in Preview and add, delete, or rearrange pages in the PDF:

- **Add a page:** Select the page you want to appear before the new page, choose Edit > Insert, then choose "Page from File" or "Blank Page." The new page is inserted after the current page.
- **Delete a page:** Choose View > Thumbnails or View > Contact Sheet, select the page or pages to delete, then press the Delete key on your keyboard (or choose Edit > Delete).
- **Move pages:** Choose View > Thumbnails or View > Contact Sheet, then drag the pages to their new location.
- **Copy a page from one PDF to another:** In each PDF, choose View > Thumbnails or View > Contact Sheet, then drag thumbnail images from one PDF to the other.

Translate in a snap. Select the text you want to translate, Control-click the selected text, choose Translate, then choose a language. You can also download languages so you can work offline—go to the Language & Region settings in System Settings, then click the Translation Languages button at the bottom. Not all languages are available. See [Translate on Mac](#) in the macOS User Guide.

View and convert image files. Preview can convert images to many file types including JPEG, JPEG 2000, PDF, PNG, PSD, TIFF, and others. With the image open in Preview, choose File > Export, click the Format menu, choose a file type, type a new name and choose a location for the file, then click Save. If you don't see the option you want in the Format menu, hold the Option key while you click the menu to view specialized or older formats.

 **Tip:** To convert more than one image file at a time, open the files in one window, select them in that window's sidebar (press Command-A to select all), then follow the steps above. You can also batch resize image files by selecting them all and choosing Tools > Adjust Size.

Learn more. See the [Preview User Guide](#).

Reminders

Reminders makes it easier than ever to keep track of all of your to-dos. Create reminders for grocery lists, projects at work, or anything else you want to track. Use flexible tools like Tags and Custom Smart Lists to organize your reminders to match your workflow, and save Reminders lists as templates to reuse them again in the future. You can also share a list with others to collaborate and work together.

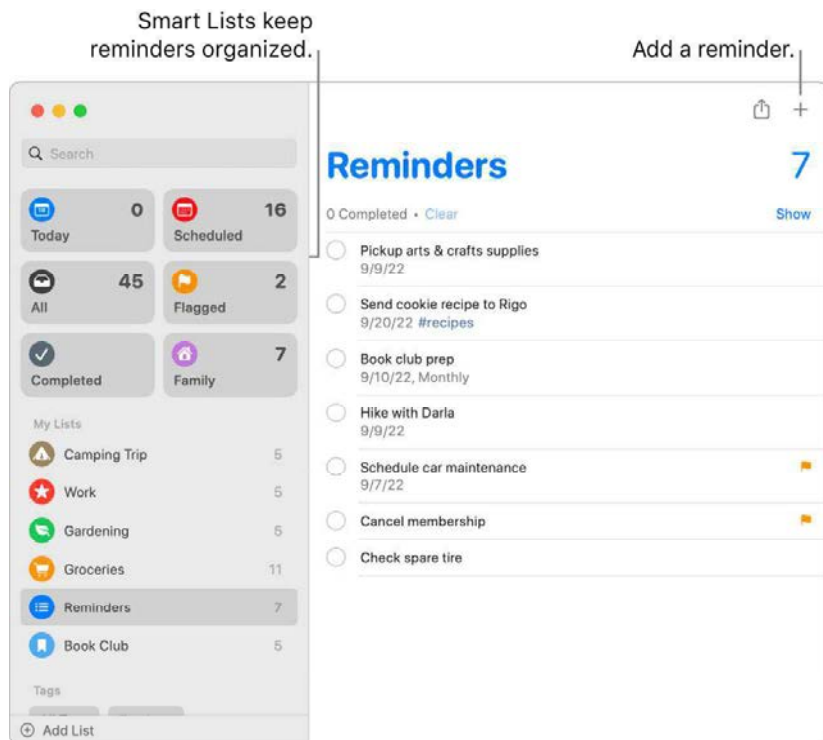
Add tags. Add tags to organize your reminders. Click one or more tags in the sidebar to quickly filter reminders.


Create Custom Smart Lists. Smart Lists automatically sort your upcoming reminders based on dates, times, tags, locations, flags, or priority. Create Custom Smart Lists by clicking Add List, select "Make into Smart List," then add filters.


Save a list as a template. When you create a list that you want to reuse, you can save it as a template. Select the list in the sidebar, then choose File > Save as Template.

See what's coming up. The Today and Scheduled lists in the sidebar group items based on time and date. Keep on top of upcoming reminders and make sure you never miss a beat.

Use smart suggestions. Reminders automatically suggests dates, times, and locations for a reminder based on similar reminders you've created in the past.



Collaborate on a list. You can send an invitation to collaborate on a list in Messages or Mail, or copy and share the link. Click  in the tool bar, choose Collaborate in the drop down, then select Messages, Mail, or Copy Link. If you share in Messages, everyone on the thread is automatically added to the list.

Assign responsibility. Assign reminders to people you share lists with, so that they receive a notification. Split up tasks and make sure everyone knows what they're responsible for. To share a list, click  in the menu bar and choose how to share.

Organize with subtasks and groups. To turn a reminder into a subtask, press Command-], or drag it on top of another reminder. The parent reminder becomes bold, and the subtask is indented underneath it. You can collapse or expand your subtasks to keep your view uncluttered.

To group reminders together, choose File > New Group. Name the group whatever you'd like. Add more lists by dragging them into the group, or remove them by dragging them out.

See what you've completed. The Completed Smart List in your sidebar lets you see all of your finished reminders, including when you checked them off.

Get reminder suggestions in Mail. When you're corresponding with someone in Mail, you can use Siri to recognize possible reminders and make suggestions for you to create them.

Add a reminder quickly. Use natural language to quickly add a reminder. For example, write "Take Amy to soccer every Wednesday at 5PM" to create a repeating reminder for that day and time.


Learn more. See the [Reminders User Guide](#).

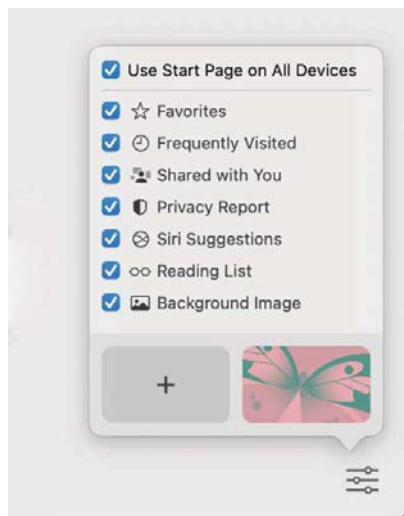
Safari


Safari is the browser users love for its performance, power efficiency, and innovative privacy protections, like passkeys. The tab bar, extensions, and start page are available across Mac, iPhone, and iPad, so you get the same Safari everywhere you browse, as long as you sign in to iCloud with the same Apple ID.

Start searching. Start typing a word or website address—Safari shows you matching websites, as well as suggested websites. Or select a favorite or frequently visited item from your Safari start page. When you already have a site open, you can type your search criteria in the active tab to launch a new search.

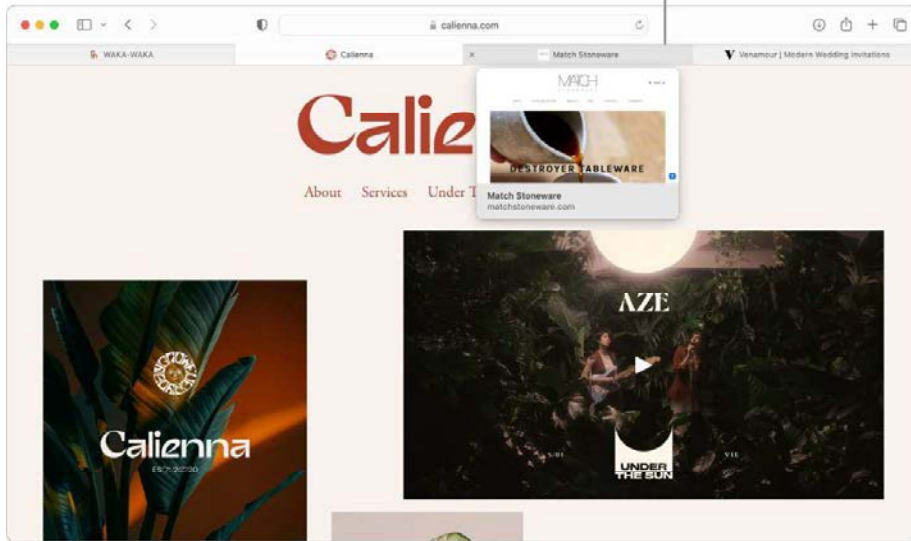


Customize your Safari start page. Your start page can show Favorites, Reading List items, a Privacy Report, and more. You can import a photo of your own to use as a background image, or choose one of the provided backgrounds. Share your start page across devices. To set options for the start page, click  in the bottom right of the start page.








View multiple webpages in one window. Click  at the far right of the tab bar or press Command-T to open a new tab, then enter an address. Tabs resize dynamically as you change the window size.


Hold the pointer over a tab to see a preview of the webpage.



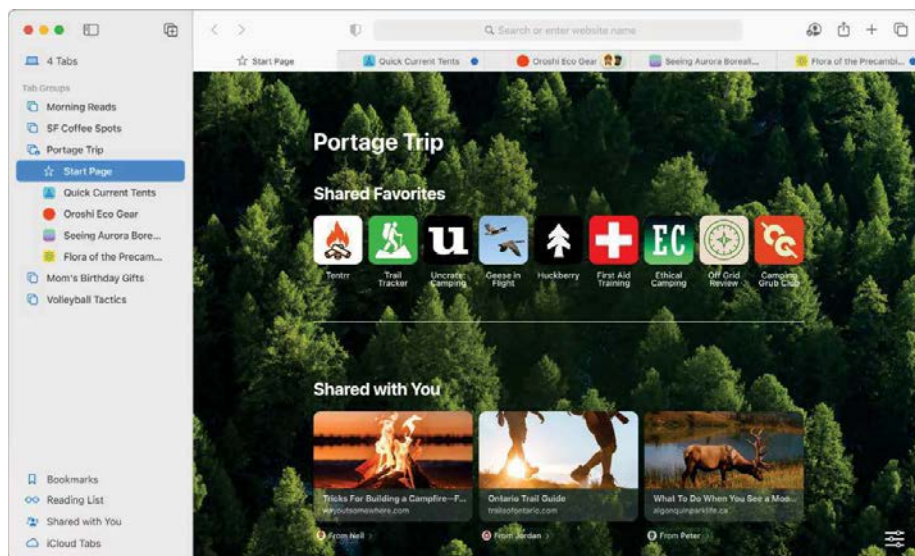
See tab contents quickly. Favicons—icons or logos associated with a website—on tabs let you identify the webpage at a glance. Hold the pointer over a tab to see a preview of the webpage contents.

View the sidebar. Click the Sidebar icon  to view the sidebar, where you can manage your Tab Groups, bookmarks, Reading List, and Shared with You links. You can also expand your Tab Groups to see all your tabs within a group by clicking  next to Tab Groups in the sidebar.

Organize with Tab Groups. When you're doing research for a project or vacation, you can open several tabs, then save and organize them in groups. When the sidebar  is open, click the Add Tab Group button  and choose New Tab Group to create a group from the tabs already open. Or choose New Empty Tab Group and search for tabs to add to a Tab Group. The Tab Groups are saved and visible in the sidebar. Switch between Tab Groups using the sidebar or the pop-up menu  if the sidebar is hidden.

Collaborate on Tab Groups. You can send an invitation to collaborate on a Tab Group in Messages, and everyone on the thread is automatically added to the Tab Group. In the sidebar, click  next to the Tab Group that you want to share, choose Share Tab Group, then click Messages. After you've shared a Tab Group, collaborators can add their own tabs, and you can see what page others are currently viewing when in the Tab Group.

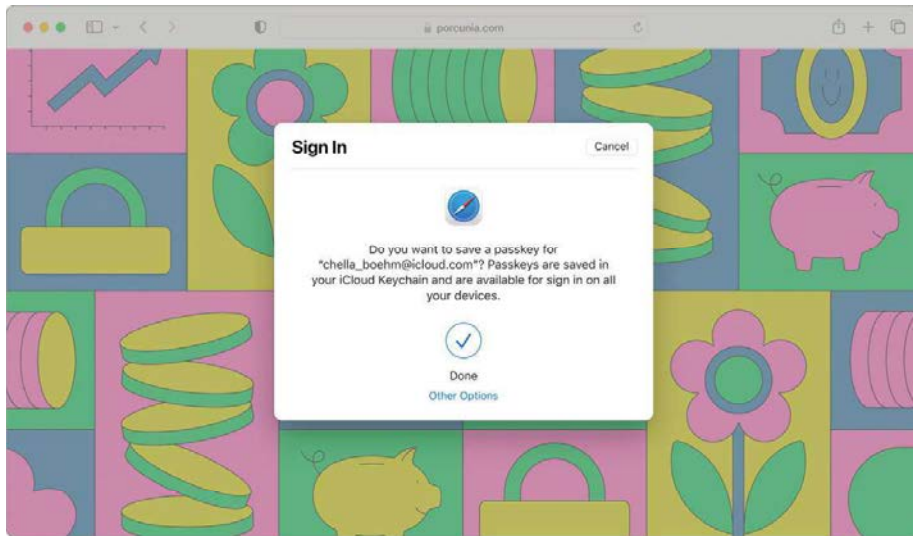
Note: Tab Groups are available across devices that are logged into iCloud with the same Apple ID, so you have access to your tabs from anywhere.



Filter your browsing with Focus. Set Tab Groups to a particular Focus to organize your browsing. For example, separate tabs you use for work from others you use on a regular basis. Choose Apple Menu > System Settings, then click Focus in the sidebar. Select a Focus, like Work, on the right, click }, and choose Add Filter under Focus Filters. To learn more about adding or customizing a Focus, see [Set up a Focus on Mac](#).


Protect your data with passkeys. Passkeys allow you to sign in, while staying safe from phishing and data leaks, and use Touch ID or Face ID—instead of a password. Passkeys work across non-Apple devices as well. When you use passkeys, they are saved in your iCloud keychain, and with end-to-end encryption they're even safer than two-factor authentication.

To use passkeys, you must have Password & Keychain turned on in Cloud Settings. When you sign into a website, choose to save a passkey for that site. To sign in, you can use Touch ID or your iPhone or iPad. To learn more about setting up and using passkeys, see [Sign in to an account on your Mac with a passkey](#).





Shared with You. When friends in your Contacts share interesting articles, recipes, and other links with you in Messages, they automatically appear in the Shared with You section on the Safari start page and in the sidebar. Stories found in both Safari and News appear in the sidebars of both apps, so you can read them where it's most convenient.



Discover extensions. Extensions add functionality to Safari to personalize your browsing experience. You can find extensions that block ads, find coupons, fix your grammar, and quickly save content from your favorite websites. Choose Safari > Safari Extensions to view the extensions category in the [App Store](#), which features spotlighted Safari extensions and categories (Browse Better, Read with Ease, Top Free Apps, and so on). After you get extensions, turn them on in Safari settings. Select the Extensions tab, then click checkboxes to turn on extensions.

Make notes on a webpage. Highlight and make notes directly on a webpage with Quick Note, so your notes will be saved for the next time you visit. Click the Share button  for the website and choose Add Quick Note. Open and view saved quick notes from the [Notes](#) sidebar or return to the website and tap the thumbnail of the saved note to open it.

Browse the web safely and privately. Safari automatically upgrades the sites you visit to HTTPS, and warns you when you visit a website that's not secure, or that may be trying to trick you into sharing your personal data. It also protects you from cross-site tracking, by identifying and removing the data that trackers leave behind. Safari asks your permission before letting a social network see what you're doing on third-party sites. And Safari defends you against web tracking by making your Mac harder to identify. Intelligent Tracking Prevention prevents trackers from profiling you by using your IP address.

Hide your email address. With an iCloud+ subscription, you can create a unique, random email address any time you need one (for example, when completing a form on a website), with no limit to the number of addresses you can use. When you create a Hide My Email address for a site, any email sent to that address gets forwarded to your personal email account. You can receive email without having to share your actual email address, and you can disable a Hide My Email address at any time. See [Create unique, random email addresses with Hide My Email in iCloud+](#).

View a privacy report. To better understand how a site treats your privacy, click the Privacy Report button  to the left of the active tab to view the cross-site trackers that Safari is blocking on each website. Click  to see a privacy report with more details about a website's active trackers.

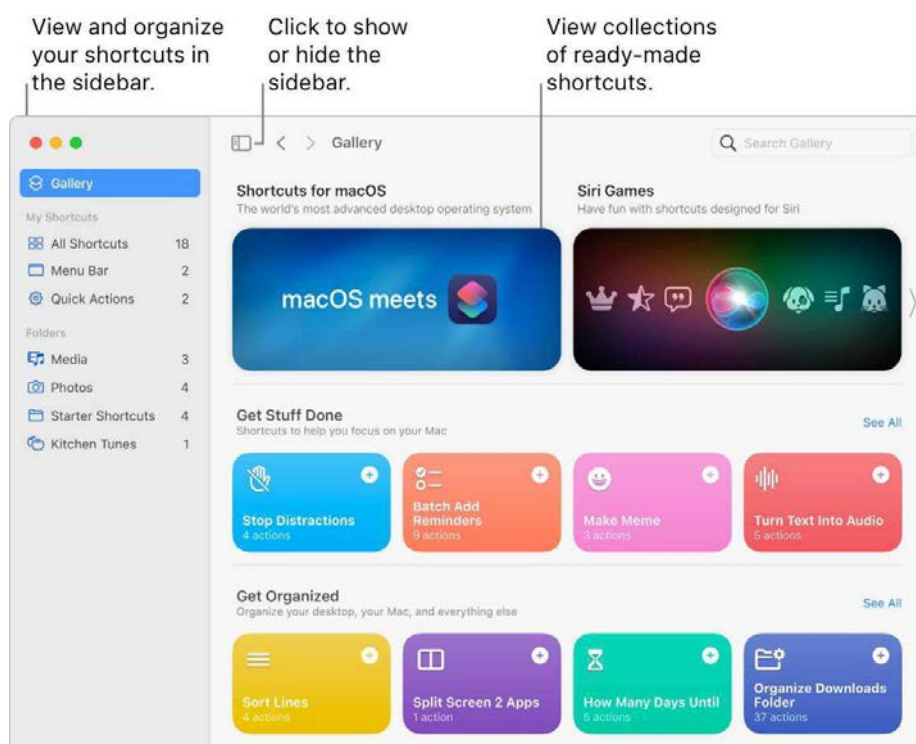
Translate webpages. You can instantly translate entire webpages in Safari. When you encounter a page that Safari can translate, you see a translate button  in the website address field. Click to translate between languages. The button changes color  to show when a webpage has been translated.


Note: Translation features are not available in all regions or languages. You can find a list of available languages at [Safari: Web Page Translation](#).

Learn more. See the [Safari User Guide](#).

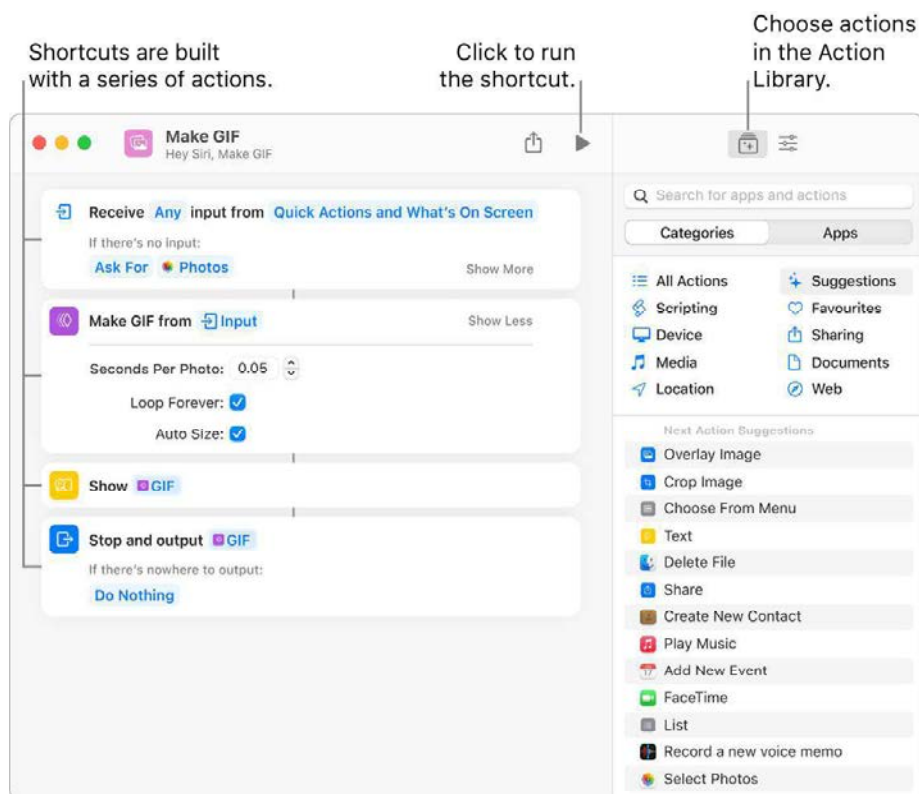
Shortcuts


The Shortcuts app lets you quickly perform multi-step tasks with just a click or by activating Siri. Create shortcuts to get directions to the next event in your Calendar, move text from one app to another, and more. Choose ready-made shortcuts from the Shortcuts Gallery or build your own using different apps to run multiple steps in a task.




A gallery of possibilities. Browse or search for shortcuts in the Gallery. Starter shortcuts are available for a range of common tasks grouped in collections. The shortcuts you create, and any ready-made shortcuts you choose or edit, are shown in My Shortcuts in the Gallery sidebar. To show or hide the Gallery sidebar, click the Sidebar button .

Build custom shortcuts. Create a new shortcut, then drag actions from the list on the right to the shortcut editor on the left to produce the result you want. Actions are the building blocks of a shortcut, like steps in a task. Choose from a wide range of actions, such as getting the latest photo from the Photos app, creating a folder, or copying the current URL from Safari. You can also use actions that run a script, such as rounding a number, setting airplane mode, and doing calculations. Shortcuts also provides “next action” suggestions to help you complete your shortcut.



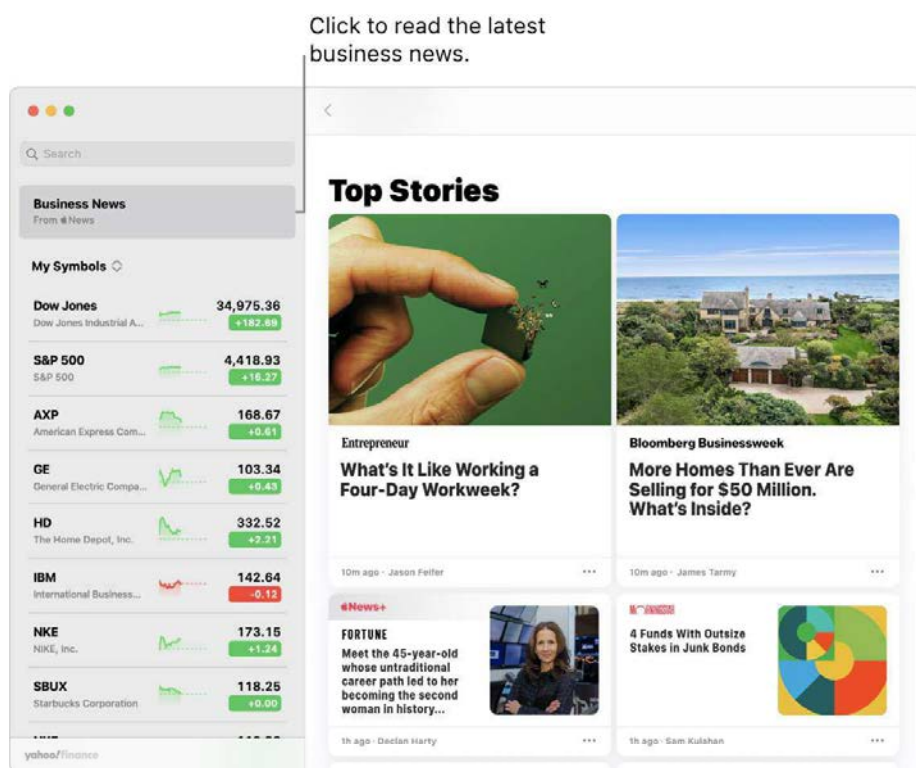
Shortcuts to your shortcuts. Using Siri to run a shortcut is the quickest way to get something done. You can also add shortcuts to the Dock, the menu bar, and the Services menu of apps. Double-click a shortcut, click Shortcut Details , then choose options under Use as Quick Action.

Sync and share shortcuts. Sign in to all your devices with the same Apple ID and your shortcuts appear on all of them. Edits you make on one device are automatically reflected on your other devices. You can also share your shortcuts with others and receive shared shortcuts from someone else. To share, double-click the shortcut, click , then choose how you want to share it. You can also add shortcuts to run common actions to the Share Sheet in the sidebar.

Learn more. See the [Shortcuts User Guide](#).



The Stocks app is the best way to track the market on your Mac. View prices in the custom watchlist, click a stock to see more details and an interactive chart, and read about what's driving the market, with stories from Apple News.



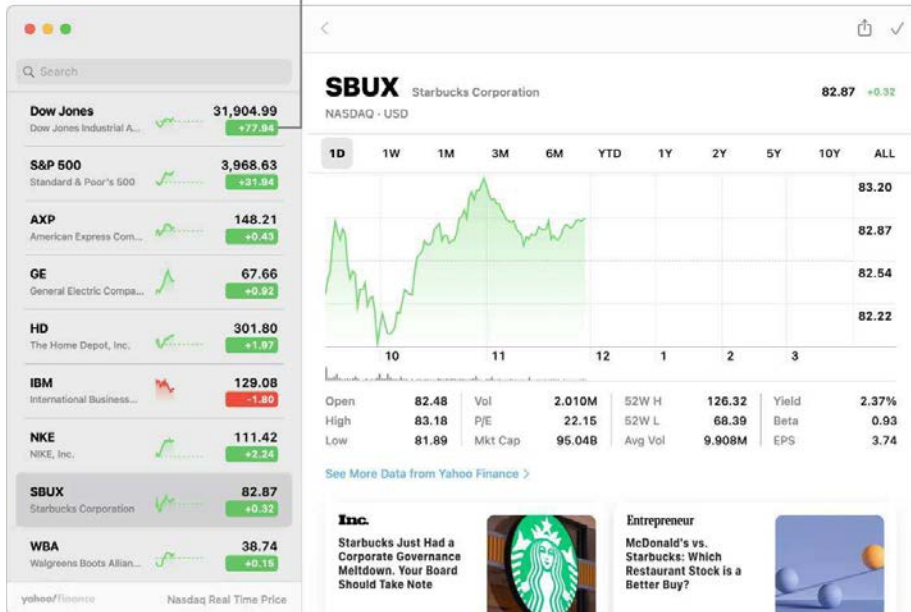
Note: Apple News stories and Top Stories are available in the U.S., Canada, the UK, and Australia. News stories in other countries and regions are provided by Yahoo.

Create and customize your watchlists. To add a watchlist, click My Symbols, then New Watchlist. To add a stock to a watchlist, enter a company name or stock symbol in the Search field. In the search results, double-click the stock symbol to view stock information. To add the stock to a watchlist, click the + in the top-right corner, then choose the watchlist that you would like the stock to appear in. To remove a stock, Control-click the stock symbol and choose "Manage Symbol", then deselect the checkbox from the watchlist you would like to remove it from. You can also Control-click a stock in your watchlist to open it in a new tab or window.

Check market changes. While viewing your watchlist, click the green or red button below each price to cycle among price change, percentage change, and market capitalization. The watchlist also includes color-coded sparklines that track performance throughout the day.

Read articles related to the companies you follow. Click a stock in your watchlist to see an interactive chart and additional details, and read the latest news about that company. Click Business News at the top of the watchlist to see a collection of timely business articles, curated by Apple News.

Click to cycle between price change, percentage change, and market capitalization.



Get a deeper view. Want to see what the market was doing last week, last month, or last year? Click the buttons above the chart to switch timeframes and see prices in the view you like best.

Your watchlist on all your devices. Keep your watchlist consistent across all your devices when you sign in with the same Apple ID.

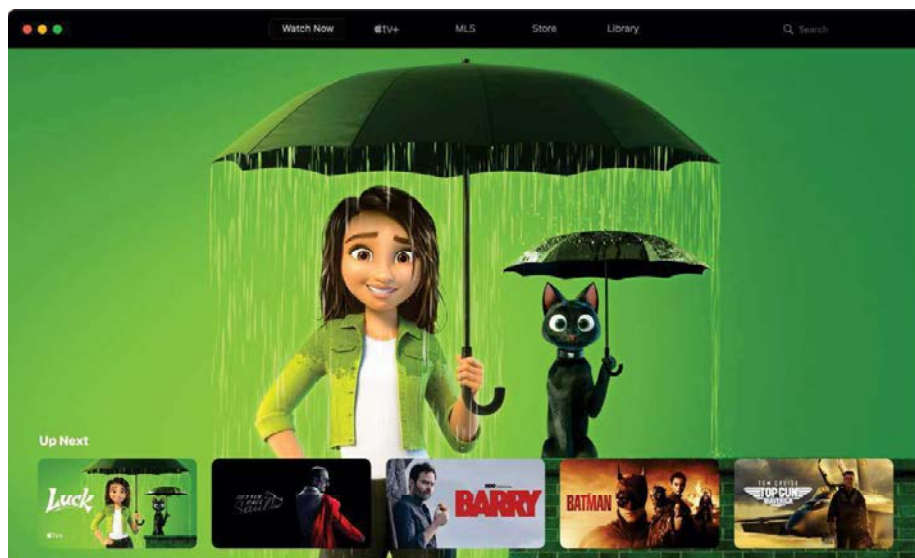
Tip: For a quick look at the stock market, check the Stocks widget in [Notification Center](#) on your Mac.

Learn more. See the [Stocks User Guide](#).



Watch all your movies and TV shows in the Apple TV app. Buy or rent movies and TV shows, subscribe to channels, and pick up where you left off watching from any of your devices.

Get started with Watch Now. In Watch Now, browse a curated feed of recommendations, based on channels you're subscribed to and movies or TV shows you've watched.



[Stream Luck on the Apple TV app](#) ↗

Keep watching in Up Next. In Up Next, you'll find movies or TV shows you're watching, as well as movies and TV shows you've added to your queue. To add a new movie or TV show to Up Next, click the Add to Up Next button.

Discover more in Movies, TV Shows, and Kids. If you're looking for something specific, click the Movies, TV Shows, or Kids tab in the menu bar, then browse by genre.

Buy, rent, or subscribe. When you find a movie or TV show you want to watch, you can choose to buy or rent it. Channels you've subscribed to are available on all devices, and can be used by up to six family members through Family Sharing.

See what your friends are sharing. When your friends and family use the Messages app to share shows and movies with you, you can watch them when it's convenient for you. Just look for them in the Apple TV app — in a new section in Watch Now, called Shared With You. Content only appears in Shared with You if the person who sent it is in your Contacts.

Watch together. Connect with your friends and family using FaceTime, then use SharePlay to watch a TV show or film together—and even share comments in Messages during the show. To start watching, move the pointer over any item in the TV app, then click the Play button. You can watch content on your Mac while chatting with friends on your iPhone. And with smart volume, audio is adjusted automatically so you can hear each other even during loud scenes. See [FaceTime](#) and [Share experiences with SharePlay](#).

Note: To use SharePlay, you must have macOS version 12.3 or later on your Mac and iPadOS 15.4 or later on your iPad. Some apps that support SharePlay require a subscription to participate. Not all features and content are available in all countries or regions.


Choose something from your own library. Click Library to see all the movies and TV shows you've purchased or downloaded, organized by genre. To start watching, just click the movie or TV show.

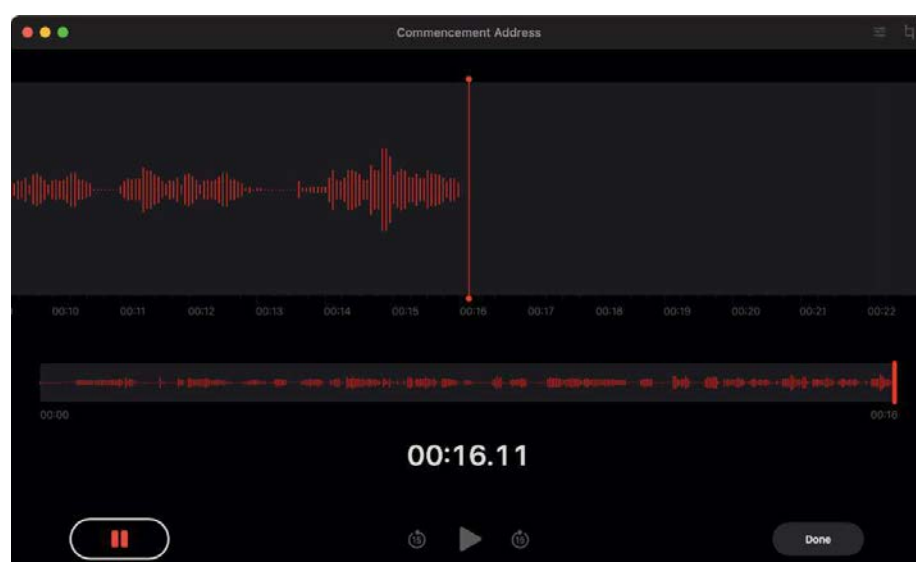
Learn more. See the [Apple TV App User Guide](#).



Subscription required for Apple TV+.

Voice Memos


Voice Memos makes it easier than ever to capture personal reminders, class lectures, and even interviews or song ideas. With iCloud, you can access the voice memos you record with your iPhone, right on your Mac Pro.

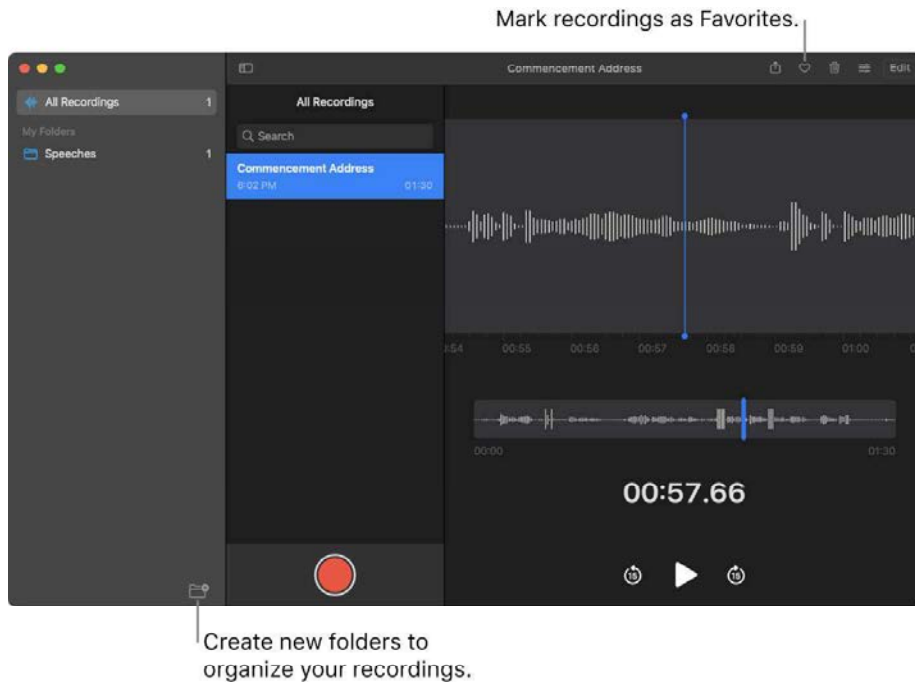
Important: Your Mac Pro doesn't have a built-in microphone, so you must connect an external microphone (sold separately) to use Voice Memos. After connecting your microphone, select it in Sound settings (choose Apple menu  > System Settings, then click Sound).





Record from your Mac Pro. Click the Record button  to start recording, then click Done to stop. You can rename a recording to make it easier to identify. Click the default name, then enter a new name. To play back your recording, click the Play button . (Requires an external microphone. Accessories are sold separately at apple.com, your local Apple Store, or other resellers.)

Your voice memos across all your devices. Your voice memos are available on all your devices when you sign in with the same Apple ID. You can access recordings you made with your iPhone or iPad right from your Mac.

Organize with folders. Create folders to help you keep your Voice Memos organized. To add a folder, click the Sidebar button , then click the New Folder button at the bottom of the sidebar. Enter a name for the folder, then click Save. To add a recording to the folder, press and hold the Option key while you drag the recording to the folder.



Mark a recording as a favorite. Select a recording, then click the Favorite button  in the toolbar so you can quickly find the recording later. Click the Sidebar button  to see all your favorites.

Skip silence. Skip over gaps in your audio. Click the Playback Settings button at the top of the Voice Memos window and turn on Skip Silence.

Change the playback speed. Speed up or slow down your audio. Click the Playback Settings button at the top of the Voice Memos window, then drag the slider left or right.


Enhance a recording. Improve the sound quality of your Voice Memos by reducing background noise and room reverberation. Click the Playback Settings button at the top of the Voice Memos window and turn on Enhance Recording.

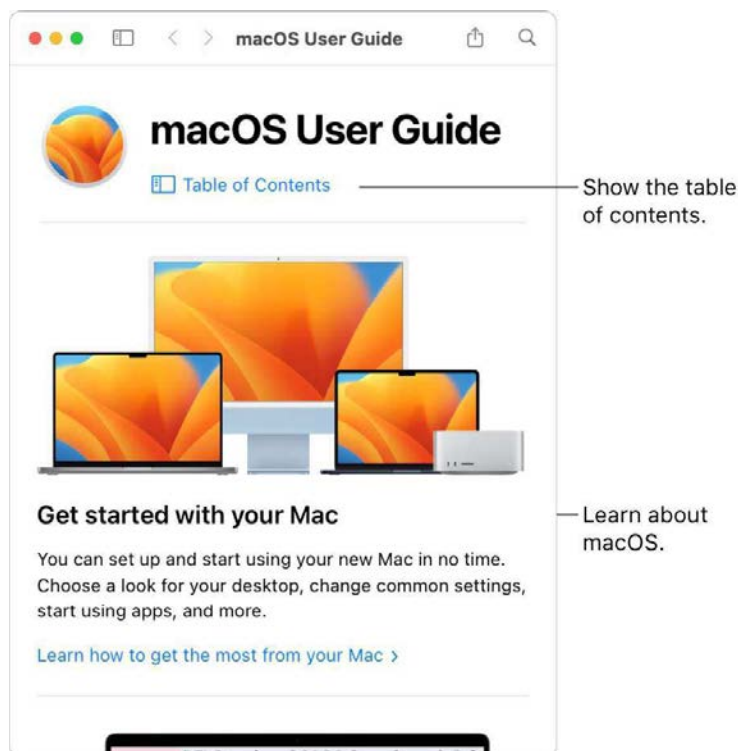
Learn more. See the [Voice Memos User Guide](#).

Find answers

Use the macOS User Guide

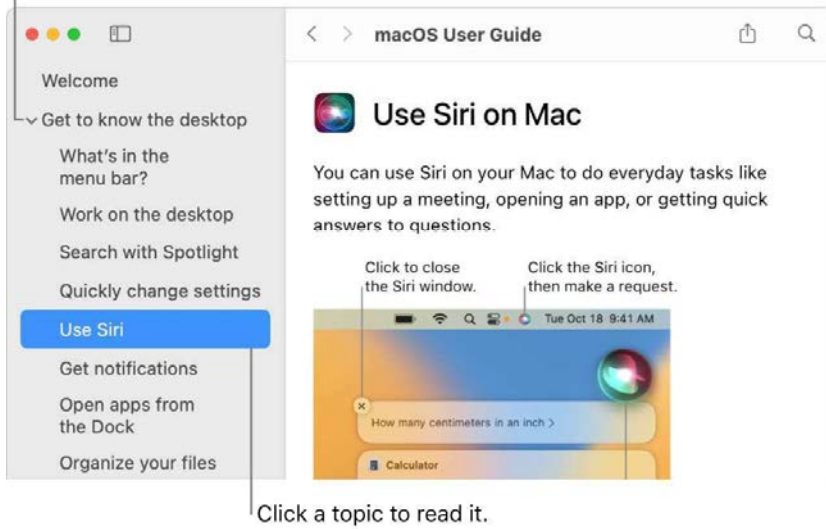
The macOS User Guide has a lot more information about how to use your Mac Pro.

Get help. Click the Finder icon  in the Dock, then click the Help menu in the menu bar and choose macOS Help to open the macOS User Guide. Or type a question or term in the search field, then choose a topic from the results list.




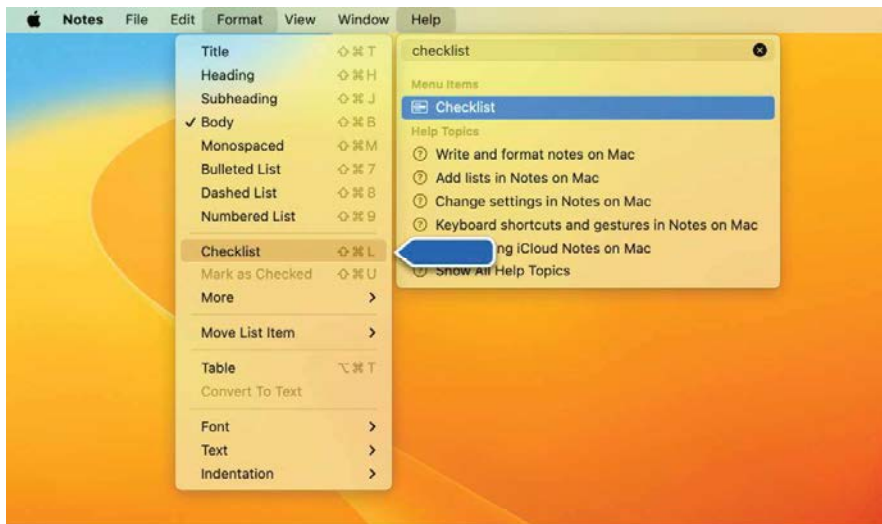
Explore topics. To find a topic in the macOS User Guide, you can browse or search. To browse, click "Table of Contents" to see the list of topics, then click a topic to read it. Or type what you want to find in the search field to go right to your answer.

Click > to view more topics.



Find out what's new. Click the Help menu, then choose “See What’s New in macOS” to find out more about the latest features of macOS.

 **Tip:** If you can't remember the location of a menu item in an app, search for it in Help. Place the pointer over the result, and an arrow shows you the command.

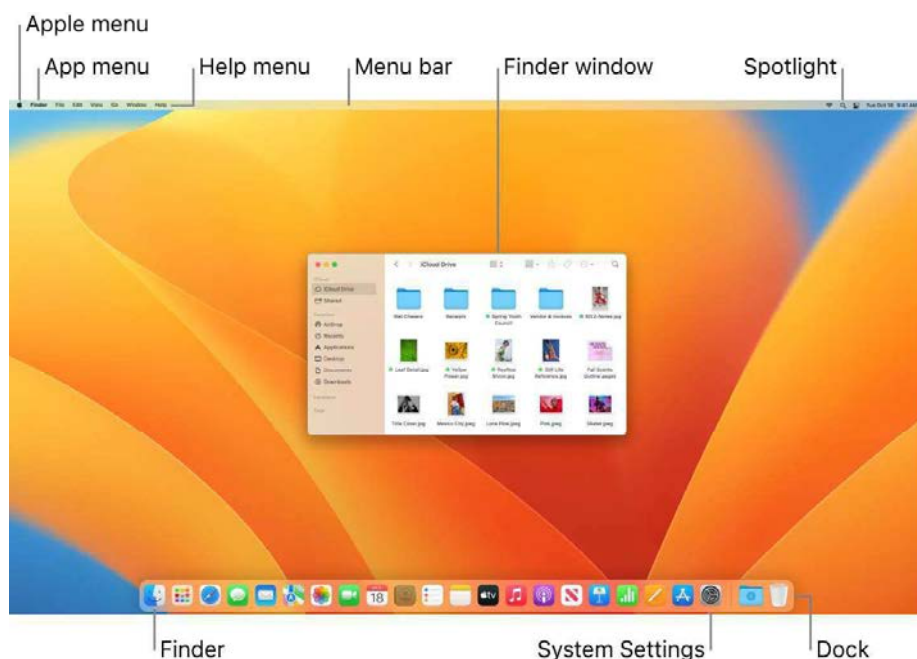


Learn more. See the [macOS User Guide](#).








Are you new to Mac?


If this is your first Mac computer, here is some helpful information to get you up to speed—especially if you came from a Windows environment.

Familiarize yourself with the desktop. The desktop is where you do your work, and where you can quickly open apps, search, and organize files.



On the desktop you'll find:

- *The menu bar:* The menu bar for the desktop or the active open app is always at the top of the screen. Use menus to find options and perform tasks in apps. For information about items in the menu bar, such as the Apple menu and the Help menu, see [Desktop and menu bar on your Mac](#).
- *The Dock:* The Dock is similar to the taskbar and Start menu in Windows and appears at the bottom of the desktop (but you can change its location in System Settings). The Dock makes it easy to see all the apps you have open and quickly launch your favorite apps. To open an app, click its icon in the Dock. You can also open apps using Launchpad. See [Dock on your Mac](#).
- *The Finder:* Click  in the Dock to open the Finder, where you organize and locate your files (similar to File Explorer in Windows). Use the buttons at the top of the Finder window to change how you view your files—as icons , in a list , in columns , or in a gallery . In any view, you can select a file and press the Space bar to see a Quick Look preview without opening the file. See [Finder on your Mac](#).
- *The Spotlight menu:* Spotlight lets you search for anything on your Mac, including documents, contacts, email messages, and more. You can also launch apps and search on the web. To open Spotlight, click the Spotlight icon  at the top right of the screen or press Command-Space bar. See [Spotlight on your Mac](#).
- *System Settings:* System Settings  is similar to the Control Panel in Windows. Customize your Mac with settings for the desktop, Dock, display, Bluetooth, network, and much more. See [System Settings on your Mac](#).




Get to know the keyboard. The Command key  on Mac is generally the same as the Control key on Windows. For example, use Command-C and Command-V to copy and paste content. The Return key on Mac is the same as the Enter key on Windows, while the Delete key is the same as Backspace. If you want to forward delete, Press Fn-Delete.

For a list of Mac keyboard shortcuts and differences between Mac and Windows keyboards, see the Apple Support article [Mac tips for Windows switchers](#). Also see [Windows keys on a Mac keyboard](#) in the macOS User Guide. For more shortcuts in this guide, see [Keyboard shortcuts on your Mac](#).

Install apps. You can download apps from the App Store or the internet. When you download an app from the internet, you get a disk image file (ending in .dmg) or package file (.pkg). To install the app, locate the .dmg or .pkg file in your Downloads folder, double-click it, then follow the onscreen instructions. You're prompted to delete the disk image or package file after you install the app.

To uninstall an app, find the app in the Applications folder in Finder, then drag the app to the Trash. Some apps have an Uninstaller, which you can use to delete the app and other files associated with it. See [Install and uninstall apps](#) in the macOS User Guide.

Maximize, minimize, and close windows. You can have multiple windows for an app open at a time. Use the buttons in the top-left corner of a window to resize and close windows.

- Click the Close Window button  or press Command-W to close the window, but not the app. Press Option-Command-W to close all open windows for the app. Press Command-Q to quit the app.
- Click the Minimize Window button  to minimize a window (or press Command-M). Minimizing a window leaves the app open but reduces the window to an icon on the right side of the Dock. Click the icon to restore the window to its previous size.
- Click the Full-Screen Window button  to open your app full-screen. To maximize the window, hold the Option key and click the button. Or hover on the button to see more options, such as tiling the window. Press Esc to return the window to its previous size.

Move windows. Drag the window by its title bar to put it where you want it. Some windows can't be moved. See [Manage windows on Mac](#) in the macOS User Guide.

Switch between app windows. Press Command-Tab to quickly switch to the previous app. When you have several app windows open, press and hold Command, then press Tab to see icons for all the open apps. While holding Command, press Tab (or the arrow keys) to move between the apps and select the one you want to be active. Release the Command key to work in the active app.

Take a screenshot. Press Command-Shift-5 to access the Screenshot Utility. See [Take a screenshot on your Mac](#).

Ask Siri to do tasks for you. To activate Siri, click the Siri icon at the top right of the screen. You can also press and hold Command-Space bar, or say "Hey Siri" (if the option is turned on). Ask Siri to open a folder, launch an app, make the screen brighter, and other tasks. See [Siri on your Mac](#).

Use your Mac with iPhone, iPad, and Apple Watch. If you sign in to your Apple devices with the same Apple ID, you can easily share files and photos, edit documents, answer email and calls, and send text among devices. See [Use Mac Pro with iCloud and Continuity](#).

Learn more. See the Apple Support articles [What's it called on my Mac?](#) and [Mac keyboard shortcuts](#).


Common questions about your Mac

How do I get support for my Mac Pro? Go to [Mac Pro Support](#).

I'm new to Mac. Are there tips for PC users? Yes! See [Are you new to Mac?](#) and the Apple Support article [Mac tips for Windows switchers](#). You might also be interested in [Keyboard shortcuts on your Mac](#).

How do I take a screenshot on my Mac? Press Command-Shift-3 to take a screenshot of the entire screen. Press Command-Shift-4 to take a screenshot of a selected area of the screen. To learn more, see [Take a screenshot on your Mac](#).

Where is my serial number? Choose Apple menu  > About This Mac. The serial number is listed.

How do I know which model of Mac Pro I have? See the Apple Support article [Identify your Mac Pro model](#). You can also choose Apple menu  > About This Mac to view the model information.

How can I find the documentation for my Mac? To find the *Mac Pro Essentials* guide, open System Settings, click the Help menu, then click User Manual. From the Help menu, you can also click "macOS Help" to open the user guide for the operating system. For other Mac models, visit [Browse manuals by product](#).

How do I get help for an app? When you're using the app, click the Help menu in the menu bar at the top of the screen.

Where is the safety information for my Mac Pro? See [Important safety information for your Mac](#).

How do I find the technical specifications? Open System Settings, click Help, then click Mac Pro Specifications.

How do I check my disk for problems? Use Disk Utility. See [Repair a storage device in Disk Utility on Mac](#) in the Disk Utility User Guide.

How do I reinstall macOS? Use macOS Recovery. See the Apple Support article [How to reinstall macOS](#).

Note: Beginning with macOS Big Sur, Time Machine backups don't include system files. See [Back up and restore your Mac](#).

What should I do before selling or trading in my Mac? Back up your data, then restore your Mac to factory settings. See the Apple Support article [What to do before you sell, give away, or trade in your Mac](#).

Keyboard shortcuts on your Mac

You can press key combinations to do things on your Mac Pro that you'd normally do with a trackpad, mouse, or other device. Here's a list of commonly used keyboard shortcuts.

Note: Keyboard shortcuts in apps may vary depending on the language and keyboard layout you're using on your Mac. If the shortcuts below don't work as you expect, look in the app menus in the menu bar to see the correct shortcuts. You can also use the keyboard viewer to see your current keyboard layout, known as an input source. See [Use the keyboard viewer on Mac](#) in the macOS User Guide.

Shortcut	Description
Command-X	Cut the selected item and copy it to the Clipboard.
Command-C	Copy the selected item to the Clipboard.
Command-V	Paste the contents of the Clipboard into the current document or app.
Command-Z	Undo the previous command. Press Command-Shift-Z to redo.
Command-A	Select all items.
Command-F	Open a Find window, or find items in a document.
Command-G	Find the next occurrence of the item you're searching for. Press Command-Shift-G to find the previous occurrence.
Command-H	Hide the windows of the front app. Press Command-Option-H to view the front app but hide all other apps.
Command-M	Minimize the front window to the Dock. Press Command-Option-M to minimize all windows of the front app.
Command-N	Open a new document or window.
Command-O	Open the selected item, or open a dialog to select a file to open.
Command-P	Print the current document.
Command-S	Save the current document.
Command-W	Close the front window. Press Command-Option-W to close all windows of the app.
Command-Q	Quit the current app.
Command-Option-Esc	Choose an app to Force Quit.

Shortcut	Description
Command-Tab	Switch to the next most recently used app among your open apps.
Command-Shift-5	Open the Screenshot utility. You can also take screenshots using the following shortcuts: <ul style="list-style-type: none">• Press Command-Shift-3 to take a screenshot of the entire screen.• Press Command-Shift-4 to take a screenshot of a selected area of the screen.

If you switched to the Mac from a PC, check out the Apple Support article [Mac tips for Windows switchers](#) for a list of Mac keyboard shortcuts and the differences between Mac and Windows keyboards. For more keyboard shortcuts, see the Apple Support article [Mac keyboard shortcuts](#).

Security features for Mac Pro

Your Mac Pro with Apple silicon provides security features to protect what's on your computer and prevent unauthorized software apps from loading during startup:

- *Secure startup*: Support for secure startup is turned on automatically. It's designed to verify that the operating system software loaded on your computer at startup is authorized by Apple.

If your Mac Pro doesn't start up because it detects an untrusted component, it starts up from a secure recovery partition and automatically corrects issues if possible. To learn how to set security options, see [Change security settings on the startup disk of a Mac with Apple silicon](#) in the macOS User Guide.

- *Secure storage*: Your Mac Pro internal SSD is encrypted with hardware keys to provide advanced levels of security. In the event of a catastrophic failure, data recovery may not be possible, so you need to back up your files to an external source. See [Use macOS Recovery on a Mac with Apple silicon](#) in the macOS User Guide.

You can set up Time Machine or another backup plan to regularly back up your files. See [Back up your files with Time Machine](#) in the macOS User Guide and the Apple Support article [Back up your Mac with Time Machine](#).


- *System integrity*: The Apple silicon in your Mac Pro verifies that the version of macOS software loaded during startup is authorized by Apple, and continues behind the scenes to protect the authorizations established for macOS. This makes it harder for malware or malicious websites to exploit your Mac Pro.
- *Data Protection*: In addition to the default storage drive encryption in Mac Pro, third-party app developers can use file-level encryption to better protect sensitive data, without impacting system performance.

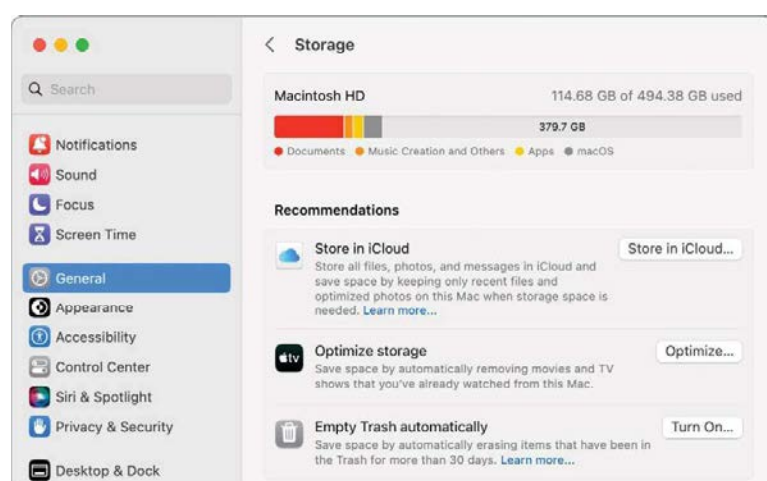
Note: In rare circumstances, such as a power failure during a macOS upgrade, your Mac Pro may become unresponsive and the firmware on the chip may need to be revived. See [Revive or restore a Mac with Apple silicon](#) in the Apple Configurator User Guide.

Learn more. See the [Apple Platform Security Guide](#).

Save space on your Mac Pro

With Optimize Storage, you can automatically free up space on your Mac Pro by making files available on demand. Your oldest files will be stored in iCloud and on your email IMAP or Exchange server, so you can download them at any time. There are also tools to identify and delete big files.

Optimize storage. To see storage recommendations, go to Apple menu  > System Settings, then click General on the side bar. Click Storage on the right to see different recommendations based on how you configured your Mac.



Set options to:

- *Store in iCloud:* Store all files, photos, and messages in iCloud and save space on your Mac.
- *Desktop and Documents:* Store all the files from your Desktop and Documents folders in iCloud Drive. When storage space is needed, iCloud Drive keeps recently opened files on your Mac and makes your oldest files available on demand.
- *Messages:* Store all messages and attachments in iCloud. When storage space is needed, iCloud keeps recent attachments on your Mac and makes your oldest files available on demand.

Even though your files are stored in the cloud, you can access them right where you left them on your Mac Pro. See [Access your iCloud content on your Mac Pro](#).

- *Optimize storage:* Save space on your Mac by optimizing the storage of movies and TV shows in the Apple TV app. You can choose to automatically remove movies or TV shows from your Mac Pro after you watch them. You can download them again at any time.
- *Empty Trash automatically:* Automatically erase items that have been in the Trash for more than 30 days.

To help you save space as you work, macOS also:



- Prevents you from downloading the same file twice from Safari
- Alerts you to remove installer software when you finish installing a new app
- Clears logs and caches that are safe to remove when you're low on storage

Learn more. See [Optimize storage space on your Mac](#) in the macOS User Guide.

Take a screenshot on your Mac


Explore the Screenshot menu to find all the controls you need to take screenshots and screen recordings. You can also capture your voice during a screen recording. The optimized workflow lets you take photos and videos of your screen, and then easily share, edit, or save them.

Access the screenshot controls. Press Command-Shift-5. You can capture the entire screen, a selected window, or a portion of a window. You can also record the entire screen or a selected portion of the screen.

Use the icons at the bottom of the screen to capture a selection , record your screen , and more. Click Options to modify your save location, set a timer before capturing, set microphone and audio options, or show the pointer. Click Capture or Record to take the screenshot or video.

After you take a screenshot or video, a thumbnail appears in the corner of the screen. Drag the thumbnail into a document or folder, swipe to the right to quickly save it, or click to edit or share it.

Note: You can also open the Screenshot utility from the Other folder in Launchpad, or go to the Apps > Utilities folder in the Finder.


Mark up your screenshot. Click the thumbnail of your screenshot to use Markup tools and make annotations. You can also click Share  to send your marked-up screen to colleagues or friends—right from the screenshot itself. See [Mark up files on Mac](#) in the macOS User Guide.



Learn more. See [Take screenshots or screen recordings on Mac](#) in the macOS User Guide.

Mac resources, service, and support

You can find more information about your Mac Pro in System Report, Apple Diagnostics, and through online resources.

System Report. To get information about your Mac Pro, use System Report. It shows you what hardware and software is installed, the serial number and operating system version, how much memory is installed, and more. To open System Report, choose Apple menu  > About This Mac, then click More Info. Then, click System Report.

Apple Diagnostics. You can use Apple Diagnostics to help determine if there's a problem with one of the computer's components, such as the memory or processor. Apple Diagnostics helps to identify the potential source of a hardware issue and provides first steps to try and resolve it. Apple Diagnostics will also help you get in touch with AppleCare Support if you need more help.

Before using Apple Diagnostics, disconnect any external devices, such as a hard disk or external display. Be sure the Mac Pro is connected to the Internet.

To start Apple Diagnostics on Mac Pro, restart the computer, then hold down the D key as it starts up. If prompted, select the language for your location. Press the Return key or click the right arrow button. The basic Apple Diagnostics test takes a few minutes to complete. If an issue is found, a description of the issue appears with additional instructions. Make a note of any reference codes before you exit Apple Diagnostics, in case you need to contact AppleCare Support.

Online resources. For online service and support information, go to [Apple Support](#). You can learn about Apple products, view online manuals, check for software updates, connect with other Apple users, and get service, support, and professional advice from Apple. For more information about your Mac Pro, go to [Mac Pro Support](#).

AppleCare support. If you need assistance, AppleCare representatives can help you with installing and opening apps, and with troubleshooting. Call the support center number nearest you (the first 90 days are complimentary). Have the purchase date and your Mac Pro serial number ready when you call.

A complete list of support telephone numbers is available on the web at [Contact Apple for support and service](#). Telephone numbers are subject to change, and local and national telephone rates may apply.

Your 90 days of complimentary telephone support begins on the date of purchase.

Safety, handling, and regulatory information

Important safety information for your Mac

⚠ WARNING: Failure to follow these safety instructions could result in fire, electric shock, or other injuries, or damage to your Mac Pro or other property. Read all safety information below before using your Mac Pro.

Handling. Set up your Mac Pro on a hard, stable work surface that allows for adequate air circulation under and around the computer. Do not block any ventilation openings. Your computer can get quite warm, and it needs adequate ventilation to ensure optimum performance and avoid damage to internal components. Never push objects into the ventilation openings. Your Mac Pro can be damaged if dropped, burned, punctured, or crushed, or if it comes in contact with liquids, oils, and lotions.

Important: Do not attempt to operate your Mac Pro with its cover removed. Doing so will affect cooling and may damage components.

Connect an Apple Pro Display XDR. If you connect a Pro Display XDR to your Mac Pro, read the safety and handling information in the [Getting Started with Apple Pro Display XDR](#) guide.

Install Mac Pro in a rack. Read the information below before installing Mac Pro in a rack.

- The rack must have adequate strength and stability to support the contents of the rack while each subassembly is being used in its intended operational position and while each component is extended for installation or servicing.
- Consideration should be given to how the rack will be used. For example, caution against sliding out more than one component at a time; doing so may create a stability hazard.
- When installing Mac Pro, the rack is at risk of tipping over and causing personal injury. Before extending the rack to the installation position, read the installation instructions that came with the rack.
- Don't put any load on top of Mac Pro while it's in the installation or servicing position.
- Don't leave Mac Pro in the installation or servicing position.

Optional Wheel Kit. Your configured Mac Pro must not weigh more than 25 kg (55 pounds) if it is fitted with the optional wheel kit. Computers that weigh more than 25 kg don't comply with safety standard stability requirements, if they're on wheels. Heavier computers should rest on the standard feet.

Liquid exposure. Keep your Mac Pro away from sources of liquid, such as drinks, oils, lotions, washbasins, bathtubs, shower stalls, and so on. Protect your Mac Pro from dampness, humidity, or wet weather, such as rain, snow, and fog.

Power. The only way to turn off power completely is to unplug the power cord. Make sure at least one end of the power cord is within easy reach so that you can unplug your Mac Pro when you need to. Unplug the power cord (by pulling the plug, not the cord) and disconnect all cables if any of the following conditions exists:

- You want to install expansion cards or SSD modules.
- The power cord or plug becomes frayed or otherwise damaged.
- You spill something into the case.
- Your Mac Pro is exposed to rain or excess moisture.
- Your Mac Pro has been dropped, or the case has been damaged.
- You suspect that your Mac Pro needs service or repair.
- You want to clean the case (use only the recommended procedure, described later in this document).

WARNING: Mac Pro incorporates an interlock circuit that helps to protect you from hazardous energy and injury from moving fan blades when the fan is operating at high speeds. Do not attempt to defeat the interlock circuitry.


Power specifications:

- *Line voltage:* 100 to 125 V AC @ 12 A
- *Line voltage:* 220 to 240 V AC @ 6 A
- *Maximum continuous power:* 1280 W @ 108 to 125 V or 220 to 240 V
- *Maximum continuous power:* 1180 W @ 100 to 107 V
- *Frequency:* 50 to 60 Hz, single phase

Note: A line voltage of at least 108 V is required for maximum power.

WARNING: Your AC cord has a three-wire grounding plug (a plug that has a grounding pin). This plug fits only a grounded AC outlet. If you're unable to insert the plug into an outlet because the outlet isn't grounded, contact a licensed electrician to replace the outlet with a properly grounded one. Do not defeat the purpose of the grounding pin.

Hearing loss. Listening to sound at high volumes may damage your hearing. Background noise, as well as continued exposure to high volume levels, can make sounds seem quieter than they actually are. Use only compatible earbuds, headphones, or earpieces with your Mac Pro. Turn on the audio and check the volume before inserting anything into your ear. See [Sound and Hearing](#).

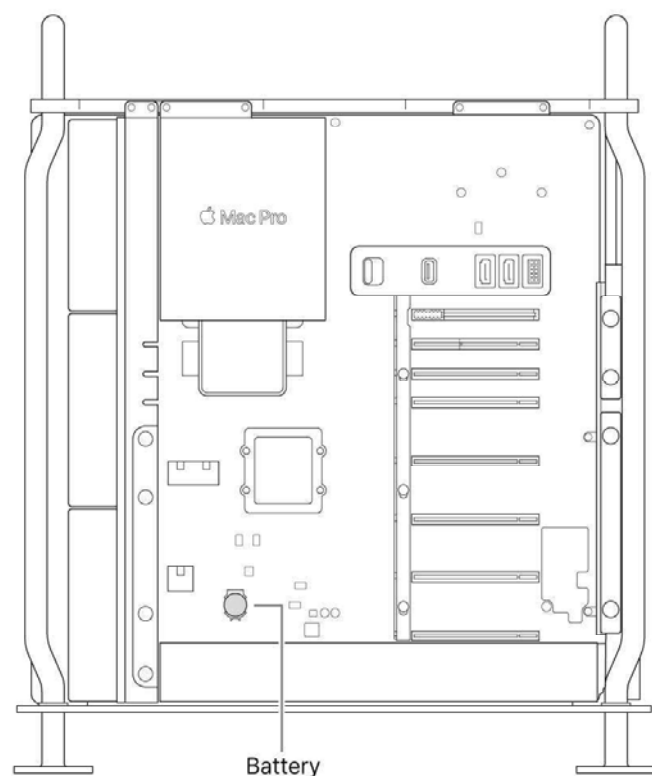
 **WARNING:** To prevent possible hearing damage, do not listen at high volume levels for long periods.

Repairing. Your Mac Pro contains several user-serviceable parts including expansion cards. If your Mac Pro is damaged, malfunctions, or comes in contact with liquid, you have several options for repair. Contact Apple or an Apple Authorized Service Provider for technical support and to help facilitate carry-in or onsite repairs. If a hardware failure can be verified remotely, it may be possible for you to complete the repair yourself with parts provided by Apple. You can find information about getting service at [Mac Repair and Service](#).

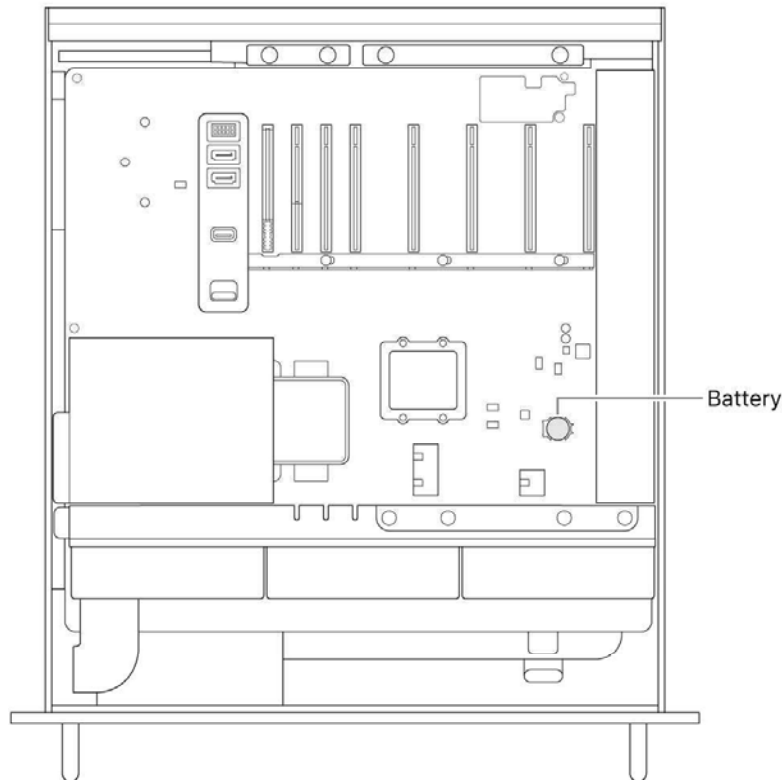
Coin Cell Battery. Do not ingest the battery. Chemical Burn Hazard. If the coin cell battery is swallowed, it can cause severe internal burns in just two hours and can lead to death. Keep new and used batteries away from children and pets. If the top cover cannot be replaced, stop using the computer and keep it away from children. If you think that batteries might have been swallowed or placed inside any part of anyone's body, seek immediate medical attention.

WARNING: The coin cell battery may need to be replaced during the life of the product. Replace it only with the same type (BR1632A) of battery, observing the correct polarity. There is a risk of explosion if the battery is replaced by an incorrect type.

Mac Pro (Tower)



Mac Pro (Rack)



Navigation. Maps, directions, and location-based apps depend on data services. These data services are subject to change and may not be available in all areas, resulting in maps, directions, or location-based information that may be unavailable, inaccurate, or incomplete. Compare the location-based information provided to your surroundings and defer to posted signs to resolve any discrepancies. Do not use these services while performing activities that require your full attention. Always comply with posted signs and the applicable laws and regulations in the areas where you are using navigation, and always use common sense.

Medical device interference. Mac Pro contains components and radios that emit electromagnetic fields. These electromagnetic fields may interfere with medical devices, such as pacemakers and defibrillators. Consult your physician and medical device manufacturer for information specific to your medical device and whether you need to maintain a safe distance of separation between your Mac Pro and your medical device (more than 6 inches or 15 cm apart). If you suspect Mac Pro is interfering with your medical device, stop using Mac Pro and consult your physician and your medical device manufacturer.

Medical conditions. If you have a medical condition that you believe could be affected by using Mac Pro (for example, seizures, blackouts, eyestrain, or headaches), consult with your physician prior to using Mac Pro.

Repetitive motion. When you perform repetitive activities such as typing or playing games on Mac Pro, you may experience discomfort in your hands, arms, wrists, shoulders, neck, or other parts of your body. If you experience discomfort, stop using Mac Pro and consult a physician.

High-consequence activities. Mac Pro is not intended for use where the failure of the computer could lead to death, personal injury, or severe environmental damage.

Explosive and other atmospheric conditions. Using Mac Pro in any area with a potentially explosive atmosphere may be hazardous—particularly in areas where the air contains high levels of flammable chemicals, vapors, or particles such as grain, dust, or metal powders. Exposing Mac Pro to environments having high concentrations of industrial chemicals, including near evaporating liquified gasses such as helium, may damage or impair Mac Pro functionality. Obey all signs and instructions.

Important handling information for your Mac

Operating environment. Operating your Mac Pro outside these ranges may affect performance:

- *Operating temperature:* 50° to 95° F (10° to 35° C)
- *Storage temperature:* -40° to 116° F (-40° to 47° C)
- *Relative humidity:* 5% to 95% (noncondensing)
- *Operating altitude:* Tested up to 16,400 feet (0 to 5000 meters)

Do not operate your Mac Pro in areas with significant amounts of airborne dust, or smoke from cigarettes, cigars, ashtrays, stoves, or fireplaces, or near an ultrasonic humidifier using unfiltered tap water. Tiny airborne particles produced by smoking, cooking, burning, or using an ultrasonic humidifier with unfiltered water may, in rare instances, enter the ventilation openings of your Mac Pro.

Carrying your Mac Pro. Before you lift or reposition your Mac Pro, shut it down and disconnect all cables and cords. To lift your Mac Pro, do one of the following:

- *For Mac Pro (Tower):* Hold it by the top handles; do not use the top latch. If your configured Mac Pro weighs more than 50 pounds, remove its cover to reduce the computer's weight or have a someone assist you.
- *For Mac Pro (Rack):* Use two people to lift your Mac Pro; one person should lift Mac Pro by its handles, while the other person supports it from the bottom.

Using connectors and ports. Never force a connector into a port. Before you plug the power cord into the power port, make sure the power port is completely free of debris. When connecting a device to a port, make sure the port is completely free of debris, that the connector matches the port, and that you have positioned the connector correctly in relation to the port.

Important: Use only the original cables that came with your computer or accessory, or cables sold at an Apple retail store or online at apple.com.

Storing your Mac Pro. If you are going to store your Mac Pro for an extended period of time, keep it in a cool location (ideally, 71° F or 22° C).