

SOME WEBSITES

A Guide to Picking the Right Phone Plan. From The New York Times, best guide i've seen in a long time. [nyti.ms/2ZhpKLA](https://www.nytimes.com/2019/08/01/technology/phone-plans-comparison.html).

Block Unwanted Messages and Emails. For Apple Mail, Google Mail, & Yahoo Mail. Blocking is a necessity these days. bit.ly/2ZeBej2.

How to Get Rid of a Virus on a Mac. The need doesn't happen too often, but it's best be prepared. bit.ly/2Ze3Uc9.

How to Change Your Wireless Router's Admin Password. Here's something you ought to do right away and it's not hard. bit.ly/2Zf6XR7.

Here's How to Fix When an Apple ID is Disabled. The need doesn't happen too often, but it's best be prepared. bit.ly/2ZeCvGQ.

The 9 Best USB Flash Drives of 2019. It can take a bit of time to read all the reviews, but if you're looking for new faster, more durable, or more secure flash drives, this is the place to go. bit.ly/2Zg8g2r.



FOUNDED MAY 1989

MEETINGS - SECOND

SATURDAY OF THE MONTH

NL FOCUS - iOS 13 & CATALINA

**MLMUG ON VACATION!**

No meeting this month. Enjoy a vacation, but try to keep current on technology.

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**MLMUG Journal
Masthead**

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MLMUG Journal is published monthly by the Main Line Macintosh Users Group and is available online. It is produced using Apple Pages with a Helvetica Neue font (Same as Yosemite).

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Membership dues are \$25 for individuals and \$35 for families. Memberships are based on your anniversary date, which is the month you joined. You will be e-mailed reminders when membership fee is due.

If you're just visiting to check us out, or if you've been visiting for some time, but haven't joined, consider these **BENEFITS OF MEMBERSHIP**:

- **Monthly meetings**, where you can learn, share, and meet everyone from working Mac professionals to new Mac users from all backgrounds.
- **Monthly newsletter**, which is full of interesting Mac news, tips, and information.
- Useful free items at the monthly **Raffles**.
- **Discounts**. Vendors offer special prices to User Group members.
- **Web Site** with 2-3 years of MLMUG newsletters, meeting information, a member directory, directions to our meetings, and much more! Our web site is www.mlmutg.org.
- **MLMUG Mailing List**, to post technical questions or comments to each other and the experts within the group.
- **Reviewers** keep items reviewed.

Are you ready to join? Please make a check payable to MLMUG and bring it to a monthly meeting or mail it to:

Treasurer, MLMUG

P.O. Box 1374

Southeastern, PA 19399



Apple
User Group

Typical Meeting Agenda

9:00 - 9:05: Call to order in main meeting room.

9:05 - 10:05: Two Concurrent Special Interest Groups (SIGs) convene in separate rooms. The two current SIGs are:

Multimedia - We discuss using your Mac/iDevices and applications for photo, video, audio, and print media.

OS - We go beyond basics to discuss Apple's current operating systems, using your Macs & iDevices, & various applications, & have Q&A.

10:05 - 10:15: Continuation of Q&A for all attendees.

10:15 - 10:30: Welcome and other business.

10:30 - 11:50: Main Presentation (by a member or guest)

11:50 - Noon: Raffles and silent auctions.

Come join some fellow MLMUG members for lunch after the meeting at a nearby restaurant.

MLMUG Email list

The Main Line Macintosh Users Group has its own email list, hosted at [Groups.io](https://groups.io). Compose your letter and email it to MLMUG@groups.io and your message will be sent to everyone on the mailing list. Contact Bob Barton (barton@bee.net) if you are a member and you are not on the list.

Please observe good email etiquette. If your message is humor or not Apple-related (off-topic), please include "Humor" or "OT" in the subject line. The [Groups.io](https://groups.io) Terms of Service are at groups.io/static/tos. Look for the section on "Conditions of Use"

The MLMUG list may be used to post Apple-related items for sale, but any solicitation of members through the list is forbidden without the written consent of a MLMUG officer. Violation of the [Groups.io](https://groups.io) terms of service or good email etiquette may result in removal from the list.

New Users SIG

You don't have to wait a whole month to get answers to your basic Mac questions! Get together with other members on the fourth Saturday (i.e., two weeks after each regular meeting) for the Startup Folder Lite.

Many new users have said that they can learn much more from face-to-face meetings than they do from manuals or other sources. That's what this meeting is all about. Go to www.mlmug.org/nusfl.html for details.



Bookmarks

By Mark Bazrod

Managing Old 32-Bit Applications

You probably know that 32-bit apps will not run on macOS Catalina (macOS 10.15). Users of Mohave have received warnings that Mohave would be the last macOS in which you could run or even open 32-bit apps.

If you have updated your apps, they have probably been updated to 64-bit software. There are, however, many apps which have not been updated. In fact, I was amazed by the number of 32-bit apps on my Mac. I noticed (and you probably will also) that I haven't used many of these for years.

My guess is that for many of these apps, the developer has abandoned the apps and we'll not be updating them to 64-bit. There are a number of third-party keyboard, mouse, and printer drivers which are still 32-bit, which will be updated to 64-bit before Catalina is available. Most printer manufacturers will issue updates and if your scanner driver is not updated, take a look third-party scanning software such as Vuescan.

If you have older 32-bit versions of Microsoft or Adobe software, you will have to transition to (purchase) newer 64-bit versions or look for alternative apps. More on this later.

It's easy to check which of your apps are 32-bit. Simply go to **About This Mac**, click on **System Report**, scroll down on the sidebar to **Software** and click on **Applications**.

A list of your apps will appear with the last column on the right indicating whether the app is 64-bit - "Yes" for 64-bit and "No" for 32-bit. If they are not 64-bit, check for updates, contact the developer, or perhaps make a decision to delete them.

Application Name	Version	Obtained from	Last Modified	64-Bit (Intel)
500nPaletteServer	1.1.0	Apple	5/22/19, 1:38 PM	Yes
A Better Finder Rename 8	8.86	Unknown	8/17/11, 1:59 PM	Yes
ABAssistantService	11.0	Apple	5/22/19, 1:38 PM	Yes
About This Mac	1.0	Apple	5/22/19, 1:38 PM	Yes
AccessibilityVisualsAgent	1.0	Apple	5/22/19, 1:38 PM	Yes
AccountEdge	15.0.11	Unknown	1/13/12, 2:02 PM	No
Acrobat Distiller	8.3.1	Unknown	9/24/18, 12:08 AM	No
Acrobat Uninstaller	Acrobat Uninstaller version 8.3.1	Unknown	9/24/18, 12:11 AM	No
Acrobat.com	1.7.186	Unknown	5/23/09, 9:54 AM	No
Activity Monitor	10.14	Apple	5/22/19, 1:38 PM	Yes
Activity Monitor	10.13	Apple	8/2/17, 7:47 PM	Yes
ADD DATE TO NAME	4.0	Unknown	7/26/10, 10:55 PM	No
AddPrinter	14.4	Apple	5/22/19, 1:38 PM	Yes
AddressBookManager	11.0	Apple	5/22/19, 1:38 PM	Yes
AddressBookSourceSync	11.0	Apple	5/22/19, 1:38 PM	Yes
AddressBookSync	11.0	Apple	5/22/19, 1:38 PM	Yes
AddressBookUrlForwarder	11.0	Apple	5/22/19, 1:38 PM	Yes

In any event, I understand that when you install Catalina, you will get a listing of the 32-bit apps that will not work in Catalina.

I will probably delete the 32-bit apps which I haven't used in years. More interestingly, I found that I have several versions of an app which I preliminarily think I have no need for and will consider deleting. Since I backup all my files, including applications, to Time Machine, I can bring back any app which I mistakenly deleted.

In addition, I found duplicate copies of the same app version. One is going. You probably find you have the same situation. Deleting them is an unexpected benefit of the transition to the 64-bit world.

If there are some 32-bit apps that you really need and use often, you have several options:

1. Stay with Mohave forever. That's not recommended because you'll miss out on improvements.
2. Purchase the 64-bit version.
3. Switch to an alternative app. I was using an old version of Microsoft Office. I've long ago switched to Pages for word processing and have started using LibreOffice's spreadsheet app. It handles all my old Excel files.
4. Keep an old Mac around to run 32-bit apps. It's not a bad idea to have an extra Mac in case your primary Mac is not available for use because of repairs or otherwise.

5. Partition your drive with different operating systems. It's not that hard and there's lots of information on the Internet as to how to do it.
6. Put Mohave on an external drive.

As the first article in this newsletter indicates, there are a number of new features and improvements in Catalina which, for most people, far outweigh the loss of 32-bit apps. We've known for sometime 64-bit computing has been coming - and should've been coming; it's more efficient. And as the last article by Jason Snell indicates, Apple has been transitioning it's software line for a long time and will continue to do so.

SPEAKER ROSTER FOR MLMUG'S 2019 MEETINGS

January 12	Nick Iacona - Mojave & iOS 12 Walkthrough
February 9	Jeff Porten - Productivity
March 9	Mark Bazrod - Search Strategies and Resources
April 13	Dave Comeau - 3D Projectors & New Technology
May 11	Dave Hamilton - Backup Strategies
June 9	Picnic
July	Recess - Summer
August	Recess - Summer
September 14	Jeff Gorman - TBA
October 12	Fran Rabuck - Internet of Things
November 9	Bob "Dr. Mac" LeVitus - TBA
December 8	Pot Luck Brunch, Members' Show & Tell, & Election of Officers

SOME SPEAKER ROSTER DETAILS

February 9 - Jeff Porten - An author of several Take Control eBooks.

March 9 - Mark Bazrod - Long time MLMUG member, presenter, and Newsletter Editor.

April 13 - Dave Comeau - Long time MLMUG member and entrepreneur.

May 11 - Dave Hamilton - Co-founder of The Mac Observer and publisher and co-host of the Mac Geek Gab Podcast

June 9- Picnic - Valley Creek Park, Route 29, East Whiteland

September 14 - Jeff Gorman - Apple Specialist, PMUG member; and owner of Creative Computing in New Hope, NJ.

October 12 - Fran Rabuck - Technology/Strategy Research Analyst, Visionary Communicator and Futurist

November 9 - Bob "Dr. Mac" LeVitus - a leading expert on Apple products and software. Has written or co-written more than 85 popular computer books. Known for his trademark humorous style and unerring ability to translate "techie" jargon into usable and fun advice for regular folks.

December 14 - Pot Luck Buffet, Member's Show and Tell, and Election of Officers for 2020 - An opportunity to enjoy friends, and good food, A "Show and Tell" session.

Michael Muchmore posted the following article to *pcmag.com* on June 4, 2019. bit.ly/2ZadWel. © Ziff Davis, LLC. He is PC Magazine's lead analyst for software and Web applications. He got his start in computing on the Radio Shack TRS-80.

What's New in macOS Catalina

Apple's next update of macOS leaves the Mojave desert for Catalina. Highlights include breaking up iTunes, Sidecar, and a Find My app for both people and devices.

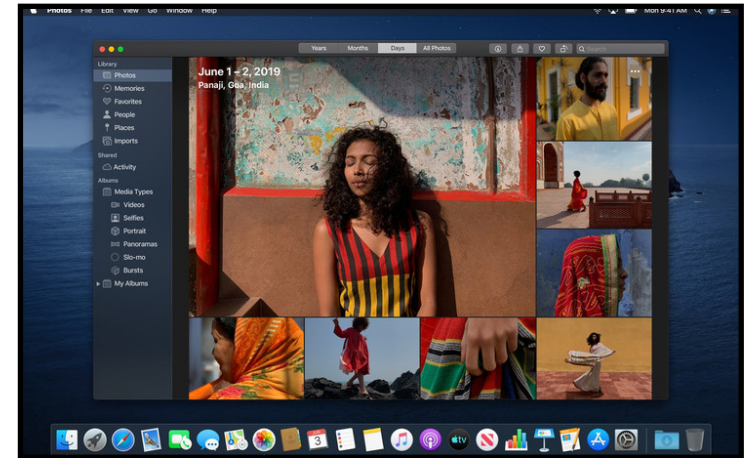
By Michael Muchmore

Every year at WWDC, we get a look at what's coming to the next version of Apple's macOS desktop operating system. In the past, we've had big updates like Leopard and less-ambitious ones like Snow Leopard. This time, Apple abandoned its naming convention, moving from the (Mojave) desert to the California coast of Catalina.

The island update is less extensive than its predecessor, but there are some welcome changes on tap. Maybe more important than any new features are developer tools Apple is releasing in order to make converting iOS apps to Mac apps a cinch. At WWDC 2019, Apple showed versions of GameLoft's Asphalt 9 Legends and Atlassian Jira ported from their respective iOS versions, with all the desktop options like keyboard shortcuts and drag-and-drop included.

If you don't mind running pre-release software, you can try Catalina by signing up for the Apple Beta Software Program. Look for a hands-on preview of Catalina in the coming days.

Photos App Redesigned



As on iOS, the Mac Photos app has been redesigned with a new home screen, video autoplay, and new organization of views that bring out the best by Day, Month, and Year. The update also removes duplicates and clutter such as screenshots, and uses AI to determine your best shots and important events like birthdays and trips.

Find My



The very useful Find Friends and Find My iPhone apps are now joined into a single Find My app. A new benefit will be that you can find a device even if it's offline, based on Wi-Fi and Bluetooth signals. Apple states that the info used to locate the device is anonymous and encrypted end-to-end. Nothing new about the Find My Friend part of the app was shown at WWDC, but it's a great utility.

Sidecar



This capability had been possible through third-party apps, but it's never worked as seamlessly. Sidecar lets you use your iPad as an external monitor and use an Apple Pencil for markup and drawing. It also adds a Touch Bar to Macs that don't have one. Sidecar works either wired or wireless, and in either extended or mirrored desktop views. Compatible sidecar apps for drawing include Adobe Illustrator, CorelDRAW, Cinema 4D, and ZBrush.

No More iTunes



At WWDC, Apple's Craig Federighi joked that people wanted more functions in iTunes, while in truth the media application has long been criticized for its feature bloat. With Catalina, Apple cuts the cord, completely removing iTunes as a standalone app. Instead, all its music functions will be covered by the Music app and all its video apps by the Apple TV app. Podcasts gets its own app, just as it has on iOS, but the new Mac app will be able to index spoken words in podcasts to help in searching.

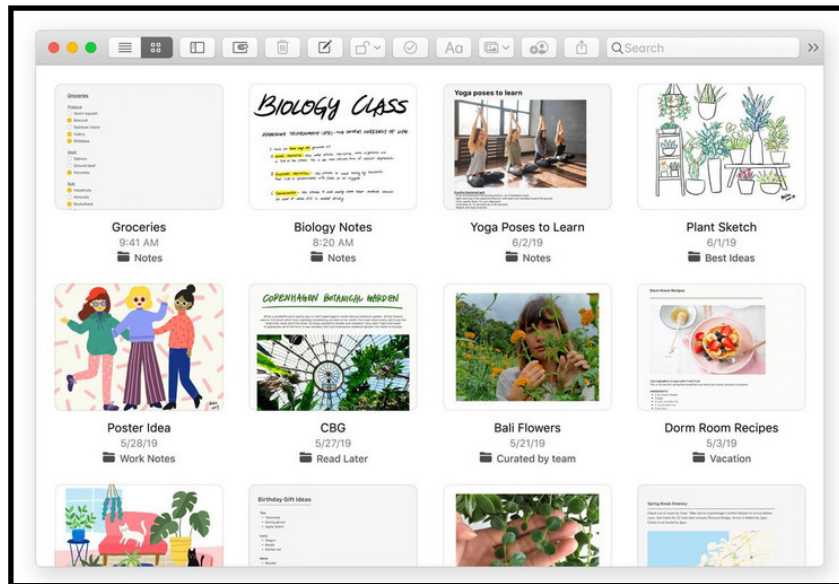
Screen Time



This is another feature that makes the move from iOS to the Mac with Catalina. Having Screen Time on all your devices will enable a full picture of your tech use. Set communication limits for

offspring, schedule offline time, and see which apps and websites are occupying you and your family. A new "One more minute" feature lets you add work time to finish up before breaks, and Family Sharing offers new child monitoring options.

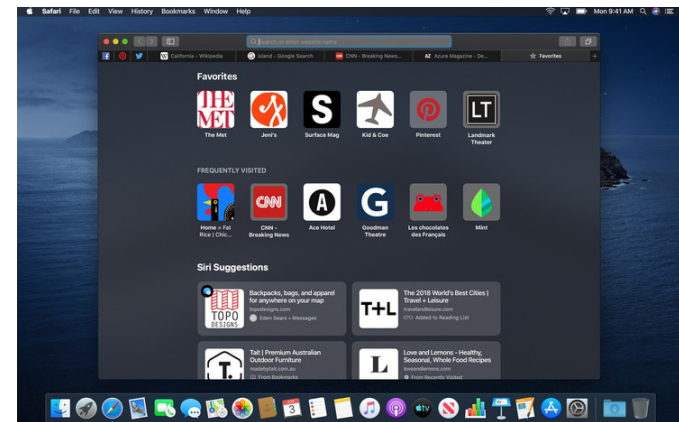
Notes App



Notes has a new gallery view, shared folders, and more powerful search. The latter means you can now search for text in scanned documents and objects in photos. It also suggests search terms as soon as you click into the search box. New checklist options let you reorder items with drag and drop, and reuse old checklists.

Safari Updates

Apple's default web browser has a new start page with suggested content based on your browsing history and even links from Messages. The browser now warns you about weak passwords, and lets you switch to picture-in-picture view from the tab audio button.



Accessibility and Voice Control

Voice control of computers has been around for over a decade, but with Catalina, Apple beefs it up with Siri AI smarts in the new Voice Control app. It works for both computer control and voice dictation, and offers a Hover Text zoomed-in window for easier text input. You can add custom words, or see suggested words or emoji.

Rob Marvin posted the following article to [pcmag.com](https://www.pcmag.com) on June 3, 2019. bit.ly/2Zgzmq7. © Ziff Davis, LLC. He's PCMag's Associate Features Editor. He writes features, news, and trend stories on all manner of emerging technologies.

The 13 Coolest Features in iOS 13

Check out the most interesting and useful new additions to Apple's iOS experience, from Dark Mode and video editing to privacy-focused features like Sign In with Apple.

By Rob Marvin



When Apple announces its newest operating systems each year at WWDC, the sheer amount of information the company throws at you can be overwhelming. In iOS alone is a laundry list of new apps and features, performance and UI improvements, and revamped experiences across Apple's flagship mobile OS.

Here are the most interesting new features and additions coming in iOS 13 this fall, from augmented reality and video editing to an arsenal of privacy-focused tools, and beyond.

Here are the most interesting new features and additions coming in iOS 13 this fall, from augmented reality and video editing to an arsenal of privacy-focused tools, and beyond.

1. Dark Model



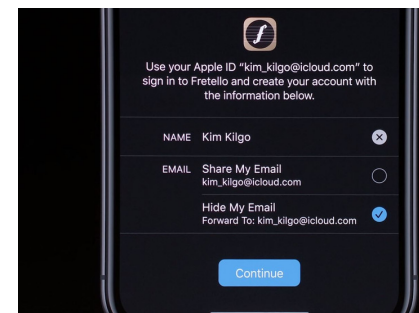
It's about time. Instead of manually enabling Dark Mode one by one in [whichever apps support it](#), iOS 13 adds OS-level Dark Mode that you can flip on to plunge your entire smartphone experience into darkness. Your eyes will thank you later.

2 Sign In with Apple

The biggest theme of iOS 13 is privacy. Apple fired another salvo in its [ongoing feud with Facebook](#) by rolling out Sign In with Apple, a simple API developers can integrate into their apps to replace "social sign-ins" and give users one-tap, Face ID-authenticated sign-in to any app without any third-party tracking or revealing any additional personal information.

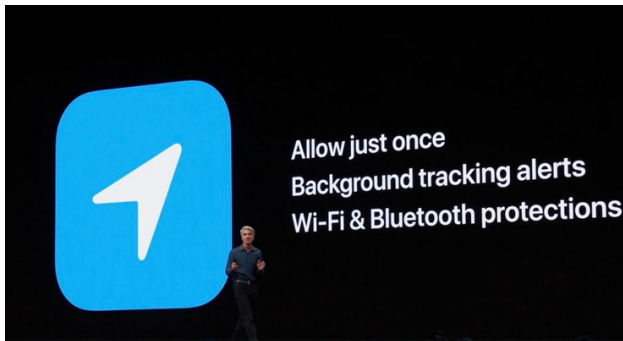
3 Anonymize Your Email Address

Not only is Apple making sign-ins more private, but they'll also throw spammy apps and marketers off your trail. Apple will now



give users the choice to share their own email address, or to hide it from whatever app or service they're subscribing to and instead allow Apple to create a unique random email address for each app that forwards to your real email address and can be disabled at any time.

4 See Which Apps Are Tracking You



Apple is also keeping a closer eye on location tracking, taking some not-so-subtle shots at Google. In iOS 13, users can share their location with an app just once and force the app to request permission again the next time it wants access. Apple will also compile reports on the apps that do have location access, and shut down backdoor location tracking mechanisms such as Bluetooth and Wi-Fi scanning.

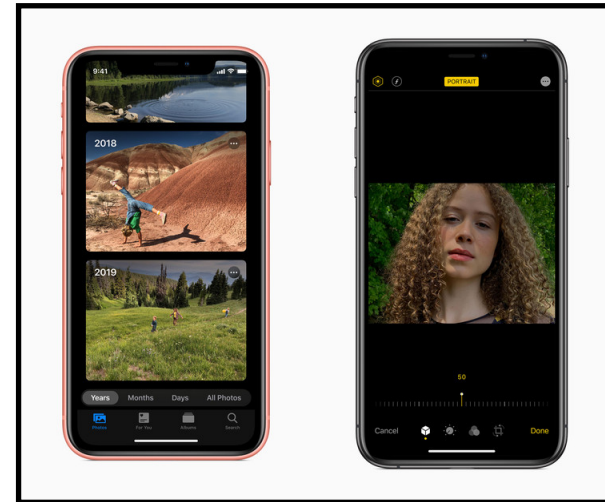
5 Video Editing



This one's big. For the first time, Apple will give users the ability to edit videos with the same array of tools, options, and filters as

in photo editing. You can now rotate a video, apply filters and effects, and more, all from within the Camera and Photos apps on your iPhone.

6 Intelligent Photos Organization



Speaking of photos, Apple has redesigned the Photos app itself with machine learning to reduce clutter and duplicates, and intelligently organize your photos and videos. Aside from UI enhancements such as pinch-to-zoom, a new tab categorizes your photos by day, month, and year, grouping meaningful events together using AI. Portrait Lighting, meanwhile, will support lighting adjustments.

7 Share Audio

With the new intuitive audio sharing in iOS 13, you can share a snippet of audio, whether it's a movie, a song, or a snippet from your life, with another iOS users with just a tap. The catch: it only works if you have AirPods.

8 Revamped Reminders

Apple completely overhauled the Reminders app in iOS 13 with a

more intuitive layout, labeled lists, and the ability to tag other contacts in your reminders. The app also got smarter: simply type in your reminder and iOS will know when and where to notify you about it.



9 Deeper Memoji Customization



Apple really wants you to trick out your virtual avatar. The iOS 13 release adds significantly more customization for Memoji, including makeup and accessories, from eye shadow and lipstick to hats, glasses, and yes, AirPods.

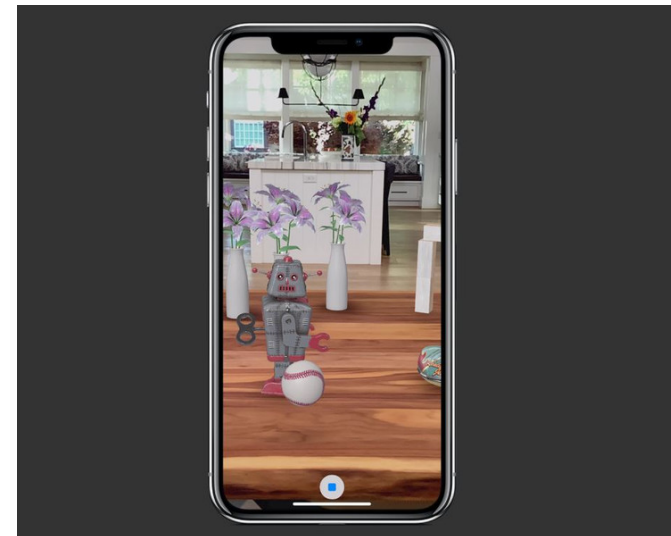
10 Memoji Stickers

Apple and Facebook do both agree on one thing: they have no qualms ripping off whatever Snapchat is doing. New Memoji Stickers, available in iOS 13, give users packs of different Memoji

expressions accessible right from the keyboard in iMessage or any other app.



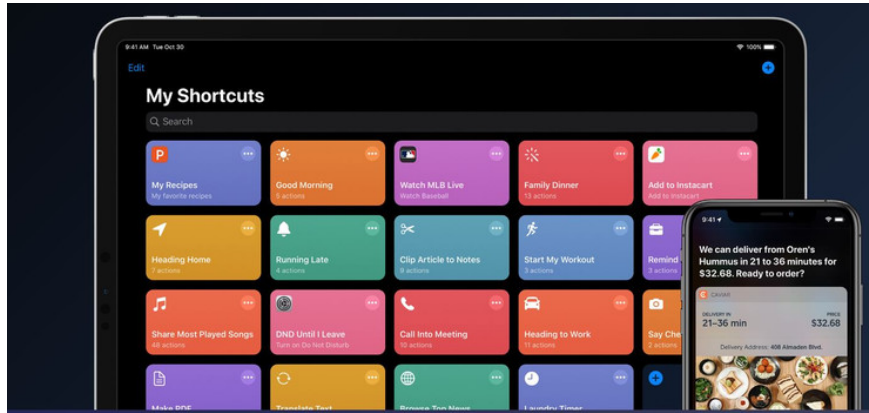
11 Improved AR Creation



Apple made three new announcements around its continued investment in mobile augmented reality creation available across iOS 13 and its other operating systems. In addition to ARKit 3, which boasts better motion capture and people occlusion, Apple

released two new tools: RealityKit, which leverages a native Swift API for photorealistic rendering and camera motion blur, and a new Reality Composer tool to build interactive AR experiences with a built-in AR content library.

12 Siri Suggested Automations



Siri will enjoy a host of improvements in iOS 13 across different platforms such as HomePod and CarPlay, but the most powerful capability comes in the Siri Shortcuts app. A new suggested automation feature will help those who've never used Siri Shortcuts before to take their habits and personalize them, adding AI-assisted templates for things like heading home to going to the gym.

13 Lookaround Mode in Apple Maps

Sure, it may be a carbon copy of Google Street View, except 3D and in Apple Maps. But that doesn't mean it won't be fun to tap around and explore new places in HD.



Leif Johnson posted the following article to macworld.com on June 19, 2019. bit.ly/2JLTtHI. © IDG Consumer & SMB. An Associate Editor at Macworld, he covers iOS, iPhones, iPads and more.

Safari On iPadOS 13: The Best New Features

Safari is about to get a lot better on the iPad. Here's what to expect this fall.

By Leif Johnson

Since the iPad was introduced in 2010, users have endured the same Safari experience they knew from the iPhone, which fueled jabs that Apple's tablet was little more than a gigantic version of the iPhone. Interfaces for commonly used sites like WordPress wouldn't load properly. Google Docs forced you to a dedicated app that lacked features of both the desktop and mobile versions. Sometimes you simply couldn't see key interface elements that you'd get on the desktop version of a site.

Apple has finally given us a Safari browsing experience that makes it easier to take the iPad seriously as a laptop alternative or replacement. When iPadOS 13 drops sometime this fall, here are some of the treats you can expect.

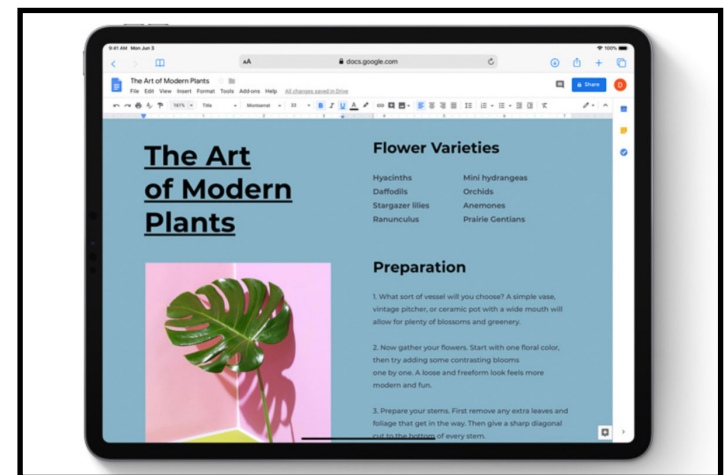
Desktop-class browsing

All the other changes essentially build off this one. The app's "user agent" now tells a website that the iPad's owner is using the macOS version of Safari, and so (for the most part), you'll see the same thing you'll see if you visited a certain webpage on a Mac. (It also means some interface options have flipped: Instead of seeing "Request Desktop Website," you'll now see "Request Mobile Website.")

[\[Further reading: Everything you need to know about iOS 12 \]](#)

Apple optimized all inputs for touch, so you should be able to interact with screen elements with your finger as easily as you might with a mouse. You can even use USB or Bluetooth mice on iPads now through an Accessibility setting called "Assistive Touch," but Apple isn't doing much to advertise the feature.

Desktop-class browsing on the iPad eliminates many of the core frustrations of using the iPad as a "laptop." The web interfaces for Gmail, Google Calendar, Facebook, Squarespace, and YouTube now work the same way they do on a Mac, and The Verge recently showed how Google Docs now works so well in Safari that it boasts features you won't even find in Google's dedicated app.



Thousands of freelancers are sighing in relief.

This is all good news for reasons that go beyond convenience. Google in particular always took its sweet time introducing and updating features such as Split-View multitasking for its iPad app, to the point that it was hard to shake the impression that it was delaying the updates out of spite. Since the web-based version of Google Docs now works fine on Safari on iPadOS, there's probably no more reason to worry about Google's feet-dragging if you're an iPad user working in an industry that relies heavily on Google's word processing app.

Keep in mind that you won't be getting exactly the same experience you'll get on a desktop computer. Safari on iPadOS still doesn't support Adobe Flash, for instance, likely owing to the same concerns Steve Jobs voiced almost a decade ago—and that's highly unlikely to change.

Finally, a Download Manager

Making Safari on iPad look like its Mac counterpart is one thing, but making it act like it is equally impressive. iPadOS mainly accomplishes this with the help of a new Download Manager, which you'll find on the new Safari toolbar in the form of an icon that looks like a downward-facing arrow within a circle.

It's basically a twin of its macOS counterpart. You can click on the icon to see a list of your current downloads, and you can cancel downloads in progress by clicking the "X" icon next to them. If you want to resume them later, you can press the refresh icon that replaces the X. If you want to see the files in the Downloads folder, just press the magnifying glass icon next to the file's name.

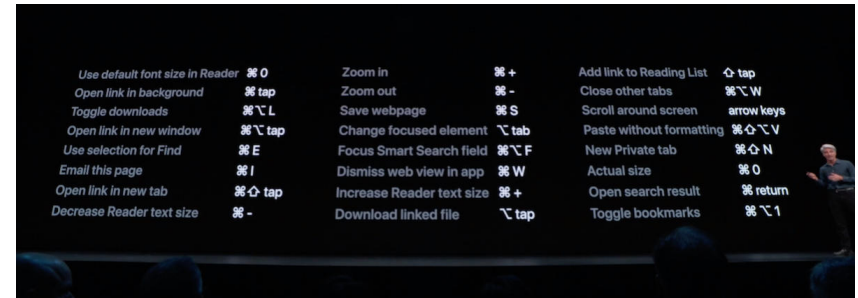
By default, pressing that icon takes you to the Downloads section of iCloud Drive, but—wonder of wonders—it's now possible to change the preferred folder for downloads by venturing into Settings > Safari and then selecting Downloads. From here you'll see an option to save the files on your iPad or to create a special folder with a name and location of your choosing.

If you visit that folder through the Files app, you'll easily be able to share downloaded files with friends or with colleagues on a shared network. Along with iPadOS's new support for USB thumb drives, the new Desktop Manager goes a long way toward transforming the iPad into a productivity beast.

A pile of new keyboard shortcuts

One of the best reasons for preferring macOS over iOS has long been Apple's extensive support for keyboard shortcuts. With

iPadOS, though, Apple is giving us a Mac-like shortcut experience on Safari when we're using either Apple's own Smart Keyboards or third-party Bluetooth peripherals like the Satechi Aluminum Bluetooth Keyboard. Apple says we'll have more than 30 new shortcuts to choose from, and it highlighted many of these in a slide during its WWDC keynote. Here's what Apple showed off at the time:



Use default font size in Reader (⌘-0)

Open link in background (⌘-tap)

Toggle downloads (⌘-Option)

Open link in new window (⌘-Option-tap)

Use selection for Find (⌘-E)

Email this page (⌘-I)

Open link in new tab (⌘-Shift-tap)

Decrease Reader text size (⌘-—)

Zoom in (⌘-+)

Zoom out (⌘-—)

Save webpage (⌘-S)

Change focused element (Option-Tab)

Focus Smart Search field (⌘-Option -F)

Dismiss web view in app (⌘-W)

Increase Reader text size (⌘-+)
Download linked file (Option-tap)
Add link to Reading List (Shift-tap)
Close other tabs (⌘-Option-W)
Scroll around screen (arrow keys)
Paste without formatting (⌘-Shift-Option-V)
New Private tab (⌘-Shift-N)
Actual size (⌘-0)
Open search result (⌘-Return)
Toggle bookmarks (⌘-Alt-1)

Better multitasking

One of iPadOS's best new features is that it now lets you use two versions of the same app in Split View—and you can have multiple Split View windows with the same app. That'll be particularly useful with Safari's new "desktop-class browsing." If a writer has one Safari webpage open on the left side of the Split View screen, she can open another Safari webpage on the right side with Google Docs, either for writing a draft or compiling notes.

Similarly, she'll be able to pair Safari pages with other apps such as Notes or iA Writer in multiple Split View windows, all of which will be easily visible through Exposé. Impressively, Safari in iPadOS 13 also grants access to the full range of toolbar options while in Split-View mode, which should remove some of the productivity speed bumps that formerly tarnished the experience.

Better toolbar options

In addition to the Download Manager, iPadOS 13 introduces some other improvements to the toolbar. For instance, you'll see an "AA" icon that, when pressed, gives you options for changing the text size of a website, an option to see the mobile version of

a site (as mentioned above), or a handy toggle for switching to Reader View. You'll also be able to hide the toolbar itself.

Resize photos for uploads

For years we've been able to resize photos that we upload to the Mail app, either to Small, Medium, Large or Actual Size. It's a handy way of making sure you don't unnecessarily cause someone to reach their cellular data cap or don't go overboard when you just want to show someone a simple photo.

With iPadOS, Safari will have the same feature, which will be great for uploading images to social media.

How To Do Everything Faster On Your Mac Leif Johnson posted the following article to macworld.com on July 17, 2019. bit.ly/2GuuExJ. © IDG Consumer & SMB. An Associate Editor at Macworld, he covers IOS, iPhones, iPads and more.

iOS 13: How To Use Look Around in Apple Maps

Apple Maps finally has a feature that resembles Google Maps' Street View, and it's just as easy to use.

By Leif Johnson



It only took 12 years, but Apple Maps will finally get a feature that resembles Google's Street View when iOS 13 and iPadOS 13 drop sometime later this year. (Unfortunately, it doesn't work with macOS.) Look Around works a lot like Street View, but it comes with some attractions of its own, including smoother transition animations and photos that use parallax in order deliver a 3D-like depth you don't find Google Maps.

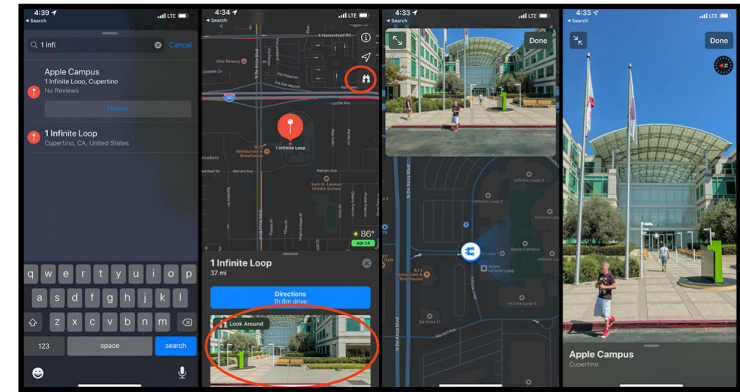
It's also really easy to use, as you can see below.

One catch: Look Around is currently a very limited feature, as you'll only be able to use it in the United States, and even then you can only use it in places like the Hawaiian island of Oahu and California's San Francisco Bay Area. Apple is steadily collecting imagery for other locations, though, and you can get an idea of its progress through this page.

How to use Look Around with a specific address

1. Open the Maps app.
2. Enter the location or address you'd like to see Look Around for in the search bar that says, "Search for a place or address" toward the bottom.
3. Press the proper address from the available selections.
4. Once the map for the location opens, you have two options:
 - For a minimized Look Around view, press the icon with binoculars in the upper right-hand corner, which should be under the icons for Settings and pinpointing your location. If Look Around data is available, you'll see a Look Around image pop up. You can either press Done to exit or press the expand icon with two arrows in the upper-left of the preview if you want to see the imagery in fullscreen mode.
 - For a more immediate fullscreen view, should also see a preview of the Look Around view under the address once Apple Maps pulls it up. Press the preview image, and it should immediately expand to fullscreen mode. Once you're

done, you can either use the minimize button in the upper left-hand corner or press Done.



How to use Look Around without entering an address

I often like to use Google's Street View as a "virtual tourist" by dropping Google's little orange man in a spot that looks interesting. This sort of thing is possible with Look Around—so long as Look Around is supported in the area, that is—but it's comparatively awkward.

For one thing, the binoculars icon that announces if Look Around is supported only shows up if you've zoomed in close to the desired location. Like, really close. Sometimes you'll even have to zoom in if you used the search tool: If you look up the Golden Gate Bridge, for instance, you'll find that the span is so long that the Look Around icon won't show up in the upper right unless you zoom in further manually.

1. Open Maps.
2. Use your fingers to navigate to a general location.
3. Zoom in close until the binoculars icon appears in the upper right. Press it.
4. The Look Around feature will choose a spot around the middle of the map, and the Look Around preview for that spot

will show up at the top. To look at other spots, simply pinch or swipe your fingers around to center the circular binocular icon on the map in a desired location. You can even zoom out during this process for a wider view, but if you go too far, you'll see warnings saying either, "Zoom in to see street imagery" or "Imagery is not available for this area." To get it to work, you'll have to zoom in again.



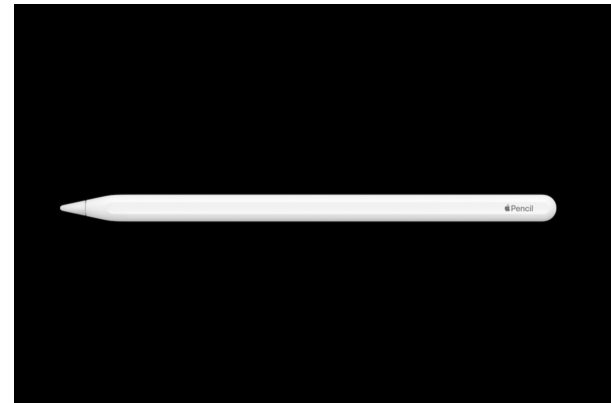
Considering how limited the rollout of Look Around currently is, you'll probably be seeing this error a lot. Hopefully many more locations will be available when iOS 13 drops in the fall.

Leif Johnson posted the following article to [macworld.com](https://www.macworld.com) on June 13, 2019. bit.ly/2Gr6zaN. © IDG Consumer & SMB. An Associate Editor at Macworld, he covers IOS, iPhones, iPads and more.

Apple Pencil: All the Changes Coming in iPadOS 13

Better latency and Markup improvements make a good device even better.

By Leif Johnson

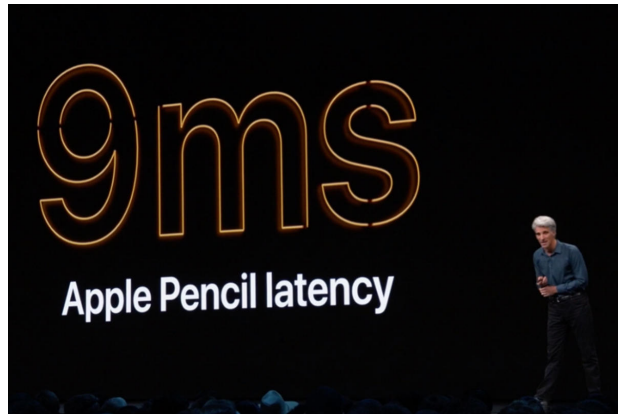


Apple didn't announce any new versions of the Apple Pencil hardware at this year's WWDC, but it did announce some substantial improvements to how we'll use it. The stylish stylus only took up a few minutes of Apple's iPadOS presentation, but those moments were enough to demonstrate that Apple's transforming it into more of a necessity than a novelty.

Apple is taking care to show that the Pencil isn't just a tool for artists. Indeed, the WWDC presentation spent more time showing how we might use it in an office environment—in other words, more like a pen and legal pad. Here's what you can expect when iPadOS drops later in the year.

Better latency, better writing experience

The Apple Pencil already has a very good latency of 20ms, but iPadOS will push that all the way down to 9ms. That means the iPad will do a better job of interpreting your subtle movements while handling the Pencil, which in turn should translate into a writing experience that better resembles writing with a pen. The differences will likely be subtle, but even subtle differences can leave a big impact when it comes to writing.



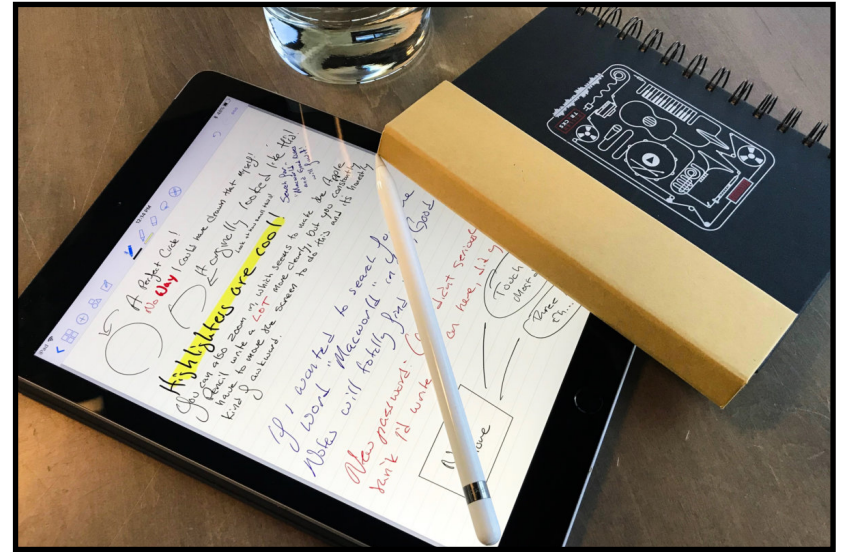
The new latency will benefit both artists and scribes.

Currently, writing with the Pencil feels like scribbling with a fine-tipped Sharpie at best, but better latency could help it approach the precision of a fountain pen. (Honestly, I doubt the Apple Pencil improvements are that good.) But here's the catch: Apple is mainly referring to the latency on the new iPad Pros, which already support Apple's ProMotion technology that boosts display refresh rates. The lower-end iPads should also see improvements, but they likely won't be as dramatic.

Improved Pencil support in third-party apps

Apple also introduced a new "PencilKit" framework that allows developers to take advantage of the Pencil's improved latency and optimized technology for laying down lines in their own

apps. In its PencilKit presentation, Apple claimed it only requires three lines of code.



PencilKit will make third-party apps more appealing than they already are.

This is a bigger deal than it may seem. The App Store has plenty of [better note-taking apps](#) than Apple's own Notes, and their features range from more variations in stroke width and page design to better handwriting-to-text technology. Unfortunately, the core writing experience varies widely between apps, as each developer essentially has to come up with its own way of implementing the Pencil's movements. Only a few apps—Notability, in particular—manage to recreate the feeling of writing with a real pen as well as Apple does.

We'll have to wait for updates of those apps to see how well Pencil Kit works in practice, but Apple's new API could end up having a real influence on our recommendations. In most cases, as Apple said in its PencilKit presentation, developers wouldn't even have to make many changes because they can use Apple's Pencil palette in their own apps with just three lines of code.

A portable palette

The palette (or "tool picker") for Apple's Notes app always struck me as too austere compared to its counterparts in other apps, but there was little question that it delivered the smoothest writing experience with the Apple Pencil. With Apple's new PencilKit, though, third-party developers can now include Apple's palette in their own apps.

And suddenly I find the palette a lot more appealing. No third-party app, for instance, mimics pencil lines as well as Apple Notes does, and now that's available for any app that wants to use it. The palette also has a handy ruler tool for use with the Pencil, but it also supports a new pixel eraser for greater precision when erasing Pencil strokes.



Always available, never in the way.

The minimalism is now a strength. After all, the palette can float over the interface now, and it's no longer anchored along the bottom of the Notes app (or whatever third-party app is using it). For that matter, you can now use the Pencil to drag the palette to the edge of the display, or you can minimize it if you find it's still getting in the way.

Third-party apps will likely still design their own palettes, of course, but this ensures Apple's own options and technology are always at hand if someone prefers them over an app's native counterparts. As a bonus, the new palette also changes to black if you're using dark mode.

Easier Markup for apps and webpages

Marking up screenshots is easily one of the best everyday uses for an Apple Pencil, but making the screenshots themselves used to require a clunky process. You had to press two buttons at once (which often required repositioning how you hold your iPad), while trying to continue holding the Pencil in your hand. Or else you had to put it down and pick it back up. And then you'd have to repeat the process several times if you were annotating a long document.



Apple's Toby Paterson demonstrates the new Markup features at WWDC.

It's so much better with iPadOS 13. Whenever you want to mark up a screenshot before sending it on the colleagues or friends, you simply swipe up from the left or right corner of the screen with the Pencil and the iPad will automatically take a screenshot and enter markup mode. Better yet, taking a screenshot while

using some apps will even allow you to capture all the content that's not visible on the current screen; in Safari, you can capture the entire length of a webpage as a PDF and mark it up. That's much more convenient than sending multiple screenshots as you might have had to do in iOS 12. Happily, third-party developers also get access to this "Markup anywhere" feature in their own apps with PencilKit.

And thanks to iOS's greater control over file management, you'll be able to drop the files into any folder you wish (rather than only to the Photos app). That will be especially helpful if your office or studio uses shared folders. As a bonus, this feature also works if you're using the more affordable [Logitech Crayon](#).

All of these improvements should make the Apple Pencil far more appealing than it already is. If you want a better idea of why you should buy an Apple Pencil even if you're not an artist, we've got [a guide for that](#).

Akshata Shanbhag posted the following article to makeuseof.com on June 14, 2019. bit.ly/2JJR5ki. © MakeUseOf. She is a senior writer focusing on technology, including writing about making the best of your Apple devices.

How To Remap Your Mac's Function Keys and Do Anything You Want

By Akshata Shanbhag

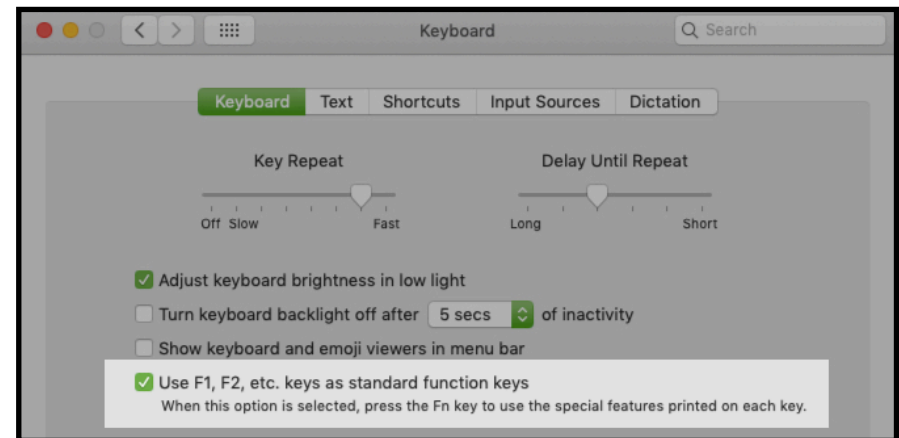
Are there any function keys on your Mac's keyboard that seem useless to you? You can reprogram them to be more useful!

For example, you can remap the Mission Control key to take a screenshot instead of revealing active apps. Or how about using

the Launchpad key to bring up the emoji viewer, or a menu bar calendar of your choice?

Such changes are easy to make, as we'll see below. But first, let's take a closer look at function key behavior itself.

The Dual Role of Function Keys

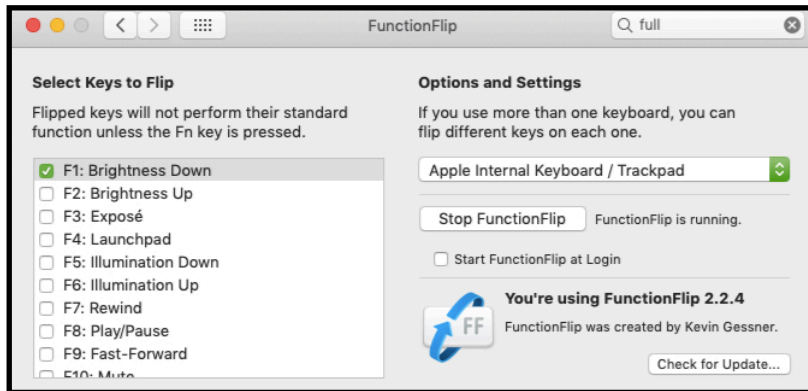


By default, the function keys on your Mac's keyboard trigger the actions indicated by the icons printed on them. Accordingly, the F1 and F2 keys adjust the screen brightness, the F3 key triggers Mission Control, the F4 key opens Launchpad, and so on. To use the old-fashioned F-keys, you have to hold down the Fn key as a modifier.

Want to "flip" this behavior? That's easy to do. Visit System Preferences > Keyboard > Keyboard and select the checkbox for Use all F1, F2 etc. keys as standard function keys. Now the F1, F2, and other keys work as regular function keys, and you'll have to use the Fn key modifier to access the printed symbol functions.

(Of course, after you make this tweak, none of the function keys except F11 and F12 trigger any action. That's because macOS doesn't have a default action linked to them. We'll see how to change this behavior later.)

If you want to retain a few function keys as special keys and convert the rest into regular F-keys, install a suitable third-party app for it. We recommend [FunctionFlip](#).



Once you install it, FunctionFlip shows up as a preference pane under System Preferences, and you can flip keys selectively from this pane. It's handy that you can do this for every keyboard connected to your Mac.

If FunctionFlip doesn't work well for you or if you want finer controls to [customize your Mac's keyboard behavior](#), try [Karabiner](#).

Remapping Function Keys

Now that you've set up the general function key behavior to your satisfaction, it's time to remap individual function keys to do your bidding. To do this, visit System Preferences > Keyboard > Shortcuts. That's the same location from where you can customize keyboard shortcuts on macOS.

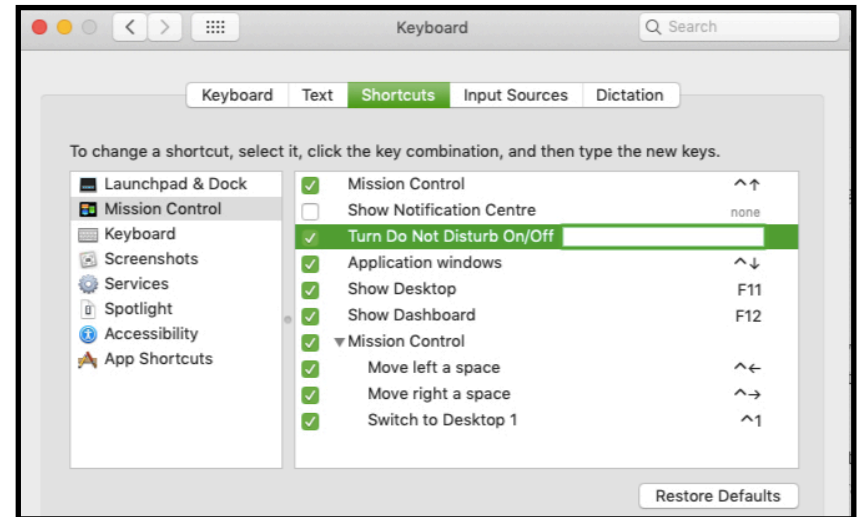
Example 1: Do Not Disturb

Let's say you want to toggle the Do Not Disturb mode using the F10 key because the mute symbol printed on the key serves as a nice reminder for the shortcut.

To configure this action, locate

the corresponding action via the sidebar menu in the settings pane we mentioned above. You'll find the action under Mission Control, listed as Turn Do Not Disturb On/Off.

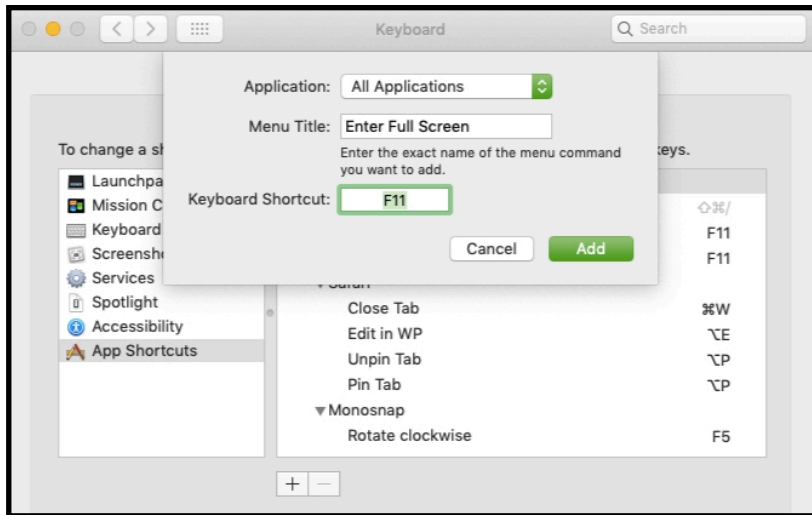
Next, select the checkbox for the action and hit the F10 key when the screen prompts you with a blank shortcut field. You might want to test the new shortcut to confirm that it toggles DnD properly.



Example 2: Full-Screen Mode

Now, let's say you want to use the **F11** key to toggle full-screen mode across all apps on macOS. This function isn't listed as an action in the system settings, but you can still program a new shortcut for it or override the existing one (**Control + Cmd + F**). To begin, select **App Shortcuts** from the **Shortcuts** sidebar we referred to above.

Then, click on the **plus** icon beneath the right-hand pane. In the dialog box that appears, you'll notice that the **Application** dropdown menu is set to **All Applications**. Leave it alone unless you want the new function key shortcut to work only in a specific



app. (If that's the case, select the relevant app from the dropdown menu.)

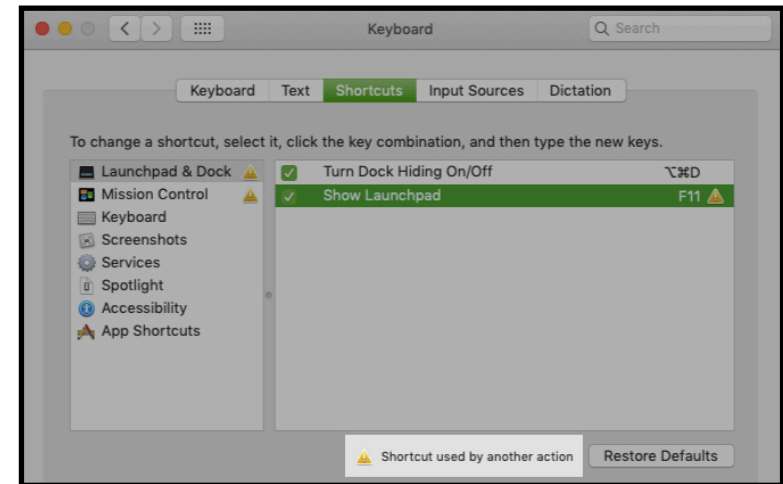
In the **Menu Title** field, type in the action exactly as it appears in the menu for the app.

For our full-screen mode example, use the text **Enter Full Screen**, because that's how it appears in the **View** menu in all apps. Next, move the focus to the **Keyboard Shortcut** field and hit the shortcut you want to use. In this case, that's the **F11** key. To wrap up, click on the **Add** button. The new shortcut is now in place.

Since the plan is to use **F11** to exit full-screen mode as well, you'll have to repeat the shortcut creation process to reverse it. Only this time, you have to use the text **Exit Full Screen** in the **Menu Title** field. (That's the text you see in the **View** menu when you're already in full-screen mode.)

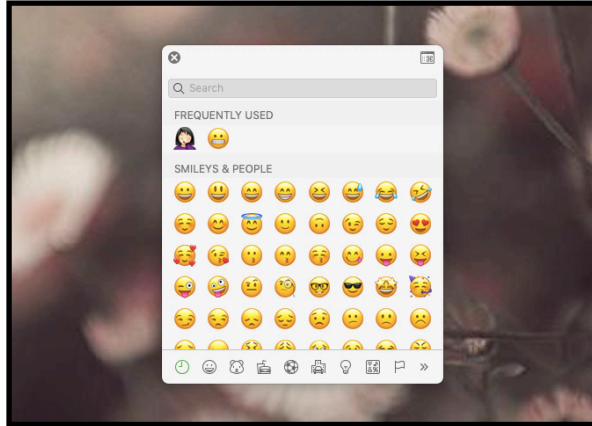
Troubleshooting Function Key Issues

You might run into a few problems while remapping function keys, but there are workarounds for them:



- **The key is already in use:** You can disable or remap the shortcut for the clashing action, then map that function key to the new action.
- **You want to launch an app with a function key, but you can't do so from System Preferences:** Visit the Preferences pane of the app you want to launch and program the shortcut from there.
- **You can't assign function keys to certain actions:** Install [BetterTouchTool](#) to get advanced keyboard mapping options for your Mac. This can solve the problem where, say, an app insists that you use a function key only with a modifier. You can also use BetterTouchTool to trigger other keyboard shortcuts. Of course, it offers a lot more utility than this, seeing as it's [the ultimate productivity app for Mac](#).

Actions You Could Create Keys For

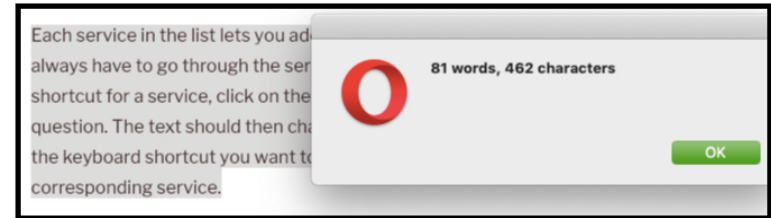


Now that you know how to remap keys on Mac, it's time to decide what you'll repurpose the function keys for. We have a few suggestions, but you're sure to come up with many more ideas yourself.

Replace the hard-to-remember default shortcut for the emoji viewer on macOS (**Control + Cmd + Space**) on macOS with an **emoji key**. Want to bring up your appointments quickly? Try a **calendar key** to launch your calendar app. Feel free to trade this for a **clipboard key** or an **email key**.

If you rely on Notification Center widgets a lot, create a **Notification Center key**. If you prefer Dashboard widgets instead, use the same shortcut to open the Dashboard.

A **word count key** to run a [macOS word counter script](#) when you select text is another useful idea.



A **“read aloud” key** can also come in handy when you want to trigger the text-to-speech function built into macOS. You can make it work with similar functions provided by a third-party app like [Dictater](#).

A **page reload key** to refresh webpages on macOS with the same shortcut used on Windows (F5) is useful if you switch between the two operating systems often.

macOS services also make great candidates for function key shortcuts, which you can assign from **System Preferences > Keyboard > Shortcuts > Services**. Our [guide to the Services menu](#) will tell you more about these special actions.

Make the Function Keys More Useful

The function keys on your Mac's keyboard are an underused resource. You can fix that by following the instructions and ideas we've shared above. If you run out of function keys to use, start using them with modifiers like Option and Cmd for more shortcuts.

And if you ever run into the problem of [broken or jammed keys on your Mac's keyboard](#), turn to our troubleshooting guide.

Bob LeVitus posted the following article to macobserver.com on July 12, 2019. bit.ly/2Gqk6PY. © The Mac Observer. Bob is the author of more than 80 books, a computer columnist, and Mac expert. He writes a weekly column for The Mac Observer and is one of my favorite authors and speakers.

How To Do Everything Faster on Your Mac

By Bob LeVitus

When people ask me how to make their Mac faster, I often watch how they work only to discover (to my horror) that they are two-finger typists.

You've got to be kidding! Your keyboard (and, of course, your mouse or trackpad) are the master controls for your computer. The more aptly you operate them, the more you'll accomplish. No matter what you use your computer for, typing faster without looking at the keys (touch-typing) let you complete almost any task faster.

The Secret: Type Faster!

I didn't learn to touch-type until I was 30 years old. In high-school only girls were allowed to take typing (boys had to take wood or auto shop instead). So for years I thought typing was "unmanly" and refused to learn how to do it. I plodded along at about 20 words per minute with my two fingers for many years before I got typing tutorial app and learned to touch-type.

That was so long ago that neither the program I used nor the company that made it are still around. The good news is that there are plenty of free and inexpensive typing instruction apps in the Mac App Store. Or, search the Internet for "learn to type" to find myriad typing games and tutorials.

I couldn't believe the difference. Typing with two fingers is like living in the Stone Age.

Once you're able to type 50 or more words per minute without looking at the keyboard, you'll marvel at how little time formerly

onerous tasks take. It's like getting a few more hours in every day.

Teach Your Children

Here's another thing: If you have kids, one of the greatest things you can do for them is help them develop good keyboarding skills. My kids (now adults) used to think Mario Teaches Typing was an arcade game. They played for fun but learned good keyboarding skills along the way.

Two more things:

First, Mario Teaches Typing hasn't been available for decades but I found a free emulation [here](#).



This emulation is cute but probably not the best way to learn to type faster.

It's cute and nostalgic, but you'll be better served by the free **Typist app (my favorite)** or any of the other free or inexpensive typing apps in the Mac App Store.

Finally, here's a tip on making your newfound typing skills even more useful: Memorize and use keyboard shortcuts. Most programs have them; most menus display them prominently. Keyboard shortcuts save you so much time—it's so MUCH faster to type Command-S than to take your hand off the keyboard,

move the mouse pointer to the File menu, click the menu, and then choose Save.

There's no question typing faster saves you time... and that memorizing keyboard shortcuts for actions you perform often will save you even more. Do yourself a favor and learn to type faster.

Glenn Fleishman posted the following article to techhive.com on May 3, 2019. bit.ly/2Gpdzol. © IDG Communications. He is a Senior Contributor to TechHive and has been a regular contributor to Macworld and others.

Best Surge Protector: Reviews and Buying Advice

Far better than ordinary power strips, these products will protect your expensive electronics from dangerous power spikes. We'll help you pick the right one for your home or small office.



By Glenn Fleishman

You only know for sure that you needed a surge protector after your equipment fries. Then it's too late. For a very reasonable amount of money, you could put an almost literal firewall

between your expensive (and cheap) electronics and the juice coming in from a wall socket. A surge protector throws itself into the line of fire, sacrificing its components again and again so that your devices stay functional.

These reviews are of surge protectors designed for a home office or cubicle, or a home-entertainment system. Such power mediators have a single function: keeping voltage from exceeding a certain rated level, beyond which equipment can blow a fuse, burn out its power supply, or completely fry its circuitry beyond repair. The surge protector takes a hit instead of your hardware or A/V system, and it could potentially save you hundreds to many thousands of dollars, depending on what you have connected.

You want to make the modest investment in a surge protector for the same reason you want to have a backup of your data: because there's no going back after an adverse event. Getting ahead of a problem that may be unlikely but not improbable saves you from the enormous consequences if it occurs. (You do have multiple backups of your data, right?)

The ultimate smart surge protector

TP-Link Kasa Smart Wi-Fi Power Strip (model HS300)

[Read TechHive's review](#) \$74.55



TP-Link's Kasa Smart Wi-Fi Power Strip makes all the right choices, from a sleek design that fits in with home decor to a set of advanced scheduling options for every kind of routine and travel need—and surge protection.

Yeah, not everyone will want to drop 79 bucks on a surge protector, but TP-Link really has produced the ultimate surge protector. All six of its outlets can be controlled and scheduled individually—and with a polished mobile app, no less—and you

can also control any of them with voice commands. There are three USB charging ports here, too. Yes, it's worth \$79.

Best all-purpose surge protector



Belkin 12-outlet PivotPlug (model BP112230-08)

[Read TechHive's review](#)

\$36.10

Pivoting outlets, a low clamping threshold, high durability, and a cable organizer combine to make

this a great surge protector at a reasonable price.

Belkin's 12-Outlet PivotPlug Surge Protector (BP112230-08) won't cut off power when it can no longer protect your devices, but it does offer low clamping voltage (330V on all legs). This is a very flexible and adaptable surge protector, with an eight-foot cord and both protection and ground-vault indicators.

Best at powering-off when it can no longer provide protection

APC (American Power Conversion) SurgeArrest Performance P12U2 surge protector



[Read TechHive's review](#)

\$32.29

With well-placed outlets and fast USB charging ports, APC's P12U2 surge protector offers a great set of features at a solid price.

APC's SurgeArrest Performance P12U2 is our new favorite surge protector that automatically cuts power when protection ends. It's a 12-outlet model—two more than our previous pick had—and it has two super-convenient fast-charging USB ports. If you don't need those two extra

outlets and the USB charging ports, the Tripp Lite TLP1008TEL remains a good pick for about \$14 less.

Runner-up



APC (American Power Conversion) SurgeArrest (model P11VNT3)

[Read TechHive's review](#)

\$34.00

A solid entry that falls short in a couple of choices about continuous power and

clamping voltage.

APC's SurgeArrest is only slightly less flexible than Belkin's offering, and it won't cut off power to your devices unless its main line-neutral protection fails. It has one fewer outlet than the PivotPlug, and it doesn't have those fancy rotating outlets, but it is well made and its receptacles are widely spaced to accommodate lots of wall warts.

Factors we considered

We considered several common factors for three scenarios: a home-entertainment system, such as a TV, disc player, streaming media box, and receiver system; a home office or cubicle with a desktop computer and peripherals, including monitors and hard drives; and an on-the-go option, if you want to travel with a multi-outlet strip that also gives you piece of mind, especially in hotels and conference rooms, where you don't know what kind of power will be provided.

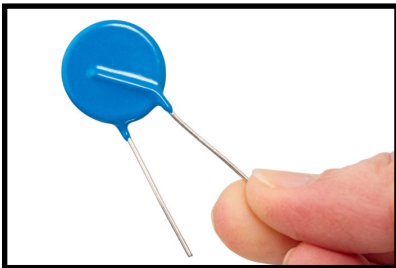
We evaluated these features:

- Does the surge protector continue to provide power when its clamping capability has burned out? (See the next section for an explanation of precisely what that means.)
- How easy is it to plug in both regular 2-prong and 3-prong cables intermingled with various kinds of USB adapters and wall warts?

- What's the ratio of cost to features and outlets?
- Advanced features, such as USB charging
- For travel models, how many outlets does it have while remaining compact and versatile, in addition to everything above?

Features you typically won't find in surge suppressors such as these are alarms or networked intelligence to alert a computer (and manage a controlled shutdown), or act as an Internet of Things device, to warn about electrical anomalies or provide a status report. For that, you'll need to step up to an uninterruptible power supply (UPS), which combines a continuously charged battery backup, power conditioning, and surge protection. Those cost from a little to much more.

How a surge protector works



The electrical grid wasn't designed for electronics, and surges and spikes used to be more regular and higher, as they didn't affect electric motors. That's changed dramatically over several decades, as utilities have cleaned up what's delivered to homes and buildings. Depending on

the age of a utility's systems and how frequently lightning strikes occur, however, surges and huge spikes might be regular occurrences.

The class of surge protectors reviewed here rely on MOVs (metal oxide varistors) to absorb excess voltage.

A surge protector should more accurately be called "a thing that blocks excessive voltage when it exceeds a certain extreme point." This cutoff, called clamping, is typically 330 volts (V), 400V, or 500V. While 330V or above might seem high compared to the 120V nominally delivered in the U.S., it's not really that out of whack. Alternating current (AC) voltage centers around 120V,

but it cycles or alternates from -170V through 0V to +170V and back again; 120V is the rough average.

Electronics and all other electrically powered anything for a home or office can accept brief amounts of much higher maximum voltages, which you can logically determine must be true as modest surges are routine and electronic equipment in homes isn't constantly failing without a surge protector; it's the big surges that need to be blocked.

Surge protectors of the category we tested use metal oxide varistors (MOVs), a kind of circuitry that absorbs voltages above the clamping level and effectively burn away over time. In an area with erratic voltage, your surge protector might wear out in months or a few years; on other electrical systems, it might last indefinitely. (There's a much more expensive type of surge protector designed for high-end audio and very expensive electronics. It costs about ten times as much and it effectively never burns out.)

You don't get full protection from an electrical strike with a surge protector: a strike near your home can exceed any consumer's device's ability to block the expended energy, though a circuit breaker on some models might trigger first. If you're concerned about electrical strikes, you need to upgrade how the electrical feed comes into your house (or convince a landlord to do the same). But electrical strikes miles away can induce smaller surges that protectors will absorb.

Phone jacks and coax connectors on a surge protector don't add much to its value.

Some surge protectors include telephone and coaxial pass-through connections for protecting DSL and cable-/satellite-TV connections. Industry reports and testing indicates these protections are effectively pointless, so we didn't consider their presence or absence in our testing and reviews.

You can compare surge protectors' durability, or the period over which the MOVs will remain effective, by looking at the number of

joules advertised for the product. Joules measure how much energy is expended; the more joules, the more energy. So in an exactly equal situation in the same house with routine surges, a unit rated for 1000 joules should last half as long as one rated at 2000 joules.

In practice, this is very, very hard to determine. MOVs don't degrade in a perfect linear fashion, and not all MOVs are of the same quality. Joules provide a rough basis of comparison that's nearly impossible to test in lab conditions, as you'd have to simulate a variety of surges over long periods of time with multiple identical units of each model. That's what manufacturers do in designing and testing their products. Certification from Underwriters Laboratories (UL) provides assurance that the product has been independently tested.

We'll use joules as a rough rule of thumb, as it tends to parallel differences in price and other features, too. But when the MOVs burn out, what happens next?

Rather burn out than fade away

I'm about to blow your mind—or at least the minds of most people. If you have a surge protector already in place somewhere in your house or office, go take a quick glance at it and come back. Now, without looking again, is the “protection” light still lit? Can't tell me? That's a problem.

Older surge protectors were typically designed around the concern that computers had spinning hard disk drives (HDDs) inside, and that it was better to lose surge protection and keep providing power than to drop AC power when protection had failed. On surge protectors like that, the only indication of whether protection remains active is a protection light.

If the light isn't lit, the MOVs have burned out, and there's no protection left!

Now go back and look at those protectors again: which ones are burned out? Those are the ones you want to replace post haste. I

confess that I only learned this in 2016; I checked mine, and had to replace one a few months later when that light suddenly disappeared.

That's the biggest choice you'll face, and we considered it in the six surge protectors we brought in for testing. But there are three variants when protection fails:

- All power stops flowing, which will immediately remove electricity to all connected devices. With SSDs or streaming audio/video equipment or a Blu-Ray or other disc player, that's not a big deal. Better to lose power than to let a surge through.
- Some power stops flowing. There are three different paths for electricity with AC power, and one is more important to protect against surges than the other two. (See below for more detail.) Some protectors thus only stop power passing through if that critical juncture's MOVs die. You have to look at the protection light to know the state of protection.
- Power always flows, but the light turns off. In this scenario, you must stay alert, particularly during a storm and right afterwards, or whenever your lights flicker .

AC power has three “legs” over which power passes. With a three-wire outlet, which is required for surge protectors, those are line, neutral, and ground. Power comes in over line and passes through neutral, and cycles through negative and positive voltage; that's one leg (known as L-N).



A long cord is essential, since your equipment might be far from the nearest outlet. Consider 8 feet to be a minimum.

There's also a leg each from live to ground (L-G) and neutral to ground (N-G), which prevent a short circuit in the wiring from causing a fire or an explosion. A proper ground wire in an outlet connects back to a grounding rod for an entire home or building that drains voltage literally to the earth.

Many surge protector manufacturers offer limited warranties for damage to things plugged into the protector if said damage stems from voltage passing through to the device. These warranties (we've seen them offer anywhere from \$20,000 to \$300,000 in coverage), however, have so many provisos and exclusions—including having to apply for coverage within 15 or 30 days of damage with some, proving the right electrical setup, and providing receipts for all damaged goods—that the odds of meeting all the terms and collecting seem low. We've provided a sentence about warranties in each review, just so you're informed, but don't count on collecting unless you're a good record keeper.

One last detail: a long power cord—at least 8 feet—is a must with a surge protector. That's because for safety and power load, you must plug your surge protector directly into a wall socket, not into another surge protector, power strip, or uninterruptible power supply. Because you can plug so much power into a

multi-outlet device, it's very easy to overload the thing into which you're "daisy chaining" the surge protector, which can cause product failure or even an electrical fire.

You also must plug a surge protector into a properly grounded 3-prong outlet. You can use one of those clever 3-to-2 adapters that I know too well as the owner of an old house, in which only about half the outlets were ever upgraded to modern standards. Don't know if your outlet is properly grounded? Some of the surge protectors have an LED that lights up if it's not, or you can purchase a cheap plug-in detector from a hardware store. If you find your house isn't grounded, call an electrician immediately; it's a hazard. Fortunately, it can be cheap to fix unless the house was badly wired.

If you don't follow the guidelines spelled out for plugging your surge protector into the wall, you can damage it, void the product warranty and any damaged-items protection that comes with it.

Not included by Editor - - 12 surge protectors highlighted and links to latest reviews.

Roman Loyola posted the following article to macworld.com on June 27, 2019. tinyurl.com/gwl5fb9. © IDG Consumer & SMB. A Senior Editor, Macworld, he has covered technology since the early 1990s.

Thunderbolt 3 Adapter Guide: How To Connect an iPhone, Display, Hard Drive, and More to a MacBook Pro or MacBook Air

Make room in your laptop bag.

By Roman Loyola



The new MacBook Pro has ports that are only of one type: Thunderbolt 3, which is compatible with USB-C. That means you'll need adapters. Here's a guide.

The new MacBook Pro comes with two or four external ports, depending on the model you pick. And the new MacBook Air has a pair of ports. But those ports are only of one type: Thunderbolt 3, which is compatible with USB-C.

But you probably have devices that use USB-A, Thunderbolt 1, Thunderbolt 2, DisplayPort, HDMI, or something else. How do you connect these devices? With an adapter.

If you're planning to buy a new MacBook Pro or MacBook Air, make sure you set aside a considerable amount of cash for the adapters you need. Apple doesn't include any in the box, except for a power adapter.

Your best bet is to get a combination dock, like the Satechi Slim Aluminum Type-C Multi-Port Adapter (\$60 on [Amazon](https://www.amazon.com)). It connects via USB-C, and includes a USB-C pass-through port, two USB 3.0 ports, and an HDMI port with 4K (30Hz) support. With this, you don't have to carry around multiple adapters.

If you don't want a dock, or you can't find a dock with the mix of connections you need, Apple or another company probably has an adapter for you. We've come up with this guide to help you sort out what you need, and we link to the appropriate adapter in the online Apple Store or on Amazon. You can also use the quick link list below to jump to the info you need.

How to connect:

- [USB-C devices](#)
- [USB-A devices](#)
- [Micro B SuperSpeed USB](#)
- [iPhone or iPad](#)
- [Lightning Earpods](#)
- [Headphones with a 3.5mm headphone plug](#)
- [Thunderbolt 1 or Thunderbolt 2 devices](#)
- [DisplayPort and mini DisplayPort](#)
- [HDMI](#)
- [DVI](#)
- [VGA](#)
- [ethernet](#)
- [SD cards](#)

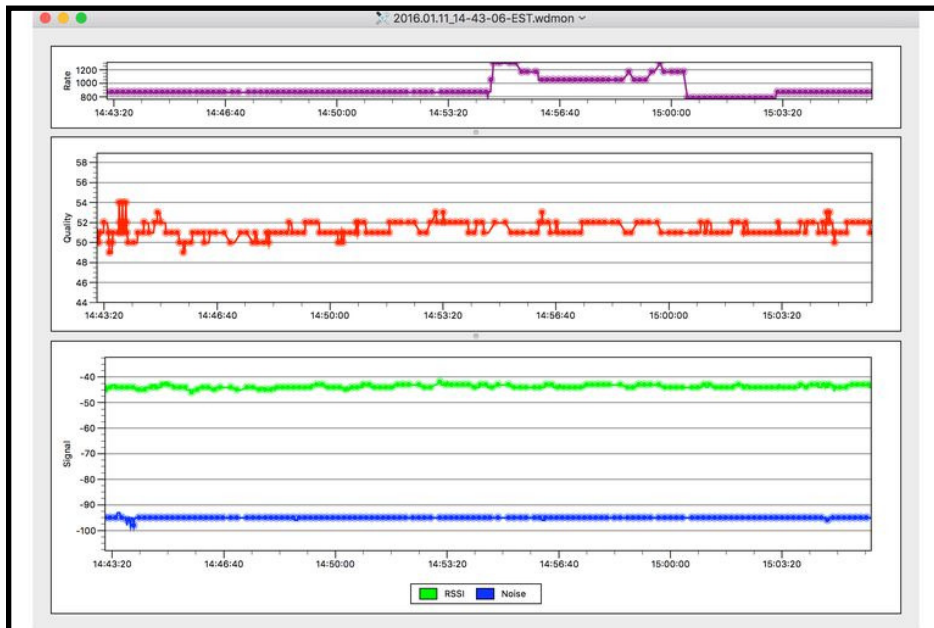
- FireWire devices
- Printer with USB-B
- MagSafe

Be sure to check the return policies; sometimes adapters from third-parties don't work. Read user reviews whenever possible, and read the specifications to make sure the adapter can do what you need it to do.

Tom Nelson posted the following article to lifewire.com on July 13, 2019. tinyurl.com/hxtpfdg. © About, Inc. He is a consultant and writer providing Macintosh training, advice, and support.

Fix Mac Wi-Fi Issues With the Wireless Diagnostic App

Wireless Diagnostics App includes utilities for getting Wi-Fi working



By Tom Nelson

Your Mac includes a built-in Wi-Fi Diagnostics application that you can use to troubleshoot your wireless network connection. You can also use it to tweak your Wi-Fi connection for best performance, capture log files, and much more.

What Can the Wi-Fi Diagnostics App Do?

The Wi-Fi Diagnostics app is designed primarily to help users resolve Wi-Fi issues. To assist you, the app can perform some or all of the following functions, depending on the version of OS X you're using.

The Wi-Fi Diagnostics app's main functions are:

- **Monitor Performance:** Provides a near real-time graph of signal strength and signal noise. Also, generates a log of signal performance over time. (OS X Lion and later)
- **Record Events:** Can log specific events, such as users connecting to or disconnecting from the Wi-Fi network. (OS X Lion and later)
- **Capture Raw Frames:** Allows you to capture data sent over the wireless network, data sent or received by your computer over the wireless network and data from any nearby network to which you have access rights. (OS X Lion and later)
- **Turn on Debug Logs:** Allows you to capture debug-level events occurring on your wireless network. (OS X Lion and later)
- **Scan for Wi-Fi Networks:** The scan function will look for all Wi-Fi networks in your general area and show key information about each one, including strength, noise level, and channels being used. In addition, the Scan function will also suggest the best channels for you to use for your own Wi-Fi network, a very helpful feature if you're in a crowded Wi-Fi environment. (OS X Mavericks and later)

- **Info:** Provides text-based details about the Wi-Fi network you're currently connected to, including transmit rate, security protocol in use, channel, and band.

You can use any one of the functions individually. Not all of the functions can be used concurrently with some versions of the Wi-Fi Diagnostics app. For example, in OS X Lion, you can't monitor signal strength while you capture raw frames.

The most useful of the functions for most Mac users is the one that monitors signal strength and noise. With this near real-time graph, you can discover what's causing your wireless connection to drop from time to time. You may find that whenever your wireless phone rings, the noise floor jumps up to squash the signal received, or maybe it happens when you're microwaving pizza for lunch.

You may also see that the signal strength is marginal and that moving your wireless router may improve the Wi-Fi connection's performance.

The other useful tool is for recording events. If you've been wondering whether [anyone is attempting to connect to your wireless network](#) (and perhaps succeeding), the Record Events function can provide the answer. Whenever someone attempts to connect or does connect, to your network, the connection will be logged, along with the time and date. If you didn't make a connection at that time, you may want to find out who did.

If you need a bit more detail than Record Events can provide, you can try the Turn on Debug Logs option, which will log details of every wireless connection made or dropped

And for those who really want to get down to the nitty-gritty of debugging a network, Capture Raw Frames will do just that; it captures all traffic on a wireless network for later analysis.

Using Wi-Fi Diagnostics With OS X Lion and OS X Mountain Lion

1. Launch the Wi-Fi Diagnostics application, located at /System/Library/CoreServices/.

2. The Wi-Fi Diagnostics application will open and present you with the option to select one of the four available functions:

- **Monitor Performance**
- **Record Events**
- **Capture Raw Frames**
- **Turn on Debug Logs**

3. You can make your selection by clicking the radio button next to the desired function. For this example, we're going to select the Monitor Performance function. Click Continue.

4. The Wi-Fi Diagnostics application will display a near real-time graph showing you the signal and noise level over time. If you're trying to discover what's causing noise problems, you can try turning off or on various appliances, services, or other noise-generating items you may have in your home or office, and see how it affects the noise level.

5. If you're trying to gain a better signal, move either the antenna or the entire wireless router or adapter to another location to see how it affects the signal level. I discovered that just rotating one of the antennas on my wireless router improved the signal level.

6. The signal and noise level display shows just the last two minutes of your wireless connection's performance, however, all of the data is maintained in a performance log.

Accessing the Monitor Performance Log

1. With the Monitor Performance graph still displayed, click the Continue button.
2. You can choose to save the log to the Finder or send it as an email. I haven't been able to successfully use the Send as

Email option, so I suggest selecting the Show in Finder option. Click the Report button.

3. The report is saved to your desktop in a compressed format. You'll find details about viewing the reports at the end of this article.

Using Wi-Fi Diagnostics With OS X Mavericks and Later

1. Launch the Wireless Diagnostics app, located at /System/Library/CoreServices/Applications/. You can also launch the app by holding down the option key and clicking the Wi-Fi network icon in the menu bar. Select Open Wireless Diagnostics from the menu that appears.
2. The Wireless Diagnostics app will open and provide a brief description of what the app will do. Click the Continue button.
3. The app needs to make some changes to your system during the diagnostic phase. Enter your admin username and password, and click OK.
4. The Wireless Diagnostics app will check how well your wireless connection is working. If it finds any issues, follow the onscreen advice for fixing the problem(s); otherwise, continue to the next step.
5. At this point, you can select one of two options: Monitor My Wi-Fi Connection, which will start the logging process and keep a history of events that you can review later, or Continue to Summary, which will dump the current Wi-Fi logs to your desktop, where you can view them at your leisure. You don't actually have to select either of the listed options; instead, you can make use of the additional Wireless Diagnostics utilities, available from the Window menu of the app.

OS X Mavericks Wireless Diagnostics Utilities

If you're using OS X Mavericks, accessing the Wireless Diagnostics utilities is slightly different than in later versions of the

OS. If you open the Window menu of the app, you'll see Utilities as a menu option. Selecting the Utilities item will open a Utilities window with a group of tabs across the top.

The tabs correspond to the various utilities that are listed in the OS X Yosemite and later versions of the Wireless Diagnostics app's Window menu. For the rest of the article, when you see a reference to the Window menu and a utility name, you'll find the corresponding utility in the tabs of the Mavericks version of the Wireless Diagnostics app.

OS X Yosemite and Later Wireless Diagnostics Utilities

In OS X Yosemite and later, the Wireless Diagnostics utilities are listed as individual items in the app's Window menu. Here you will find the following:

Info: Provides details of the current Wi-Fi connection, including the IP address, signal strength, noise level, signal quality, the channel being used, channel width, and quite a bit more. It's a quick way to see an overview of your current Wi-Fi connection.

Logs (called Logging in the Mavericks version): Allows you to enable or disable collecting logs for specific events associated with your Wi-Fi network. This includes:

- Wi-Fi: a general log of Wi-Fi events
- 802.1X: logs network authentication events that use the 802.1X protocol
- DHCP: logs devices requesting IP address assignments
- DNS: logs access to DNS (Domain Name System) hosts resident on your network
- Open Directory: keeps track of any directory services requests
- Sharing: logs file-sharing events on your Wi-Fi network

To collect logs, select the type of **logs you wish to gather data on**, and then click the **Collect Logs** button. Selected events will then be logged until you turn the logging feature off by returning to the Wireless Diagnostics Assistant in the Window menu.

- Scan (called Wi-Fi Scan in Mavericks): Performs a one-time scan of the Wi-Fi environment, displaying any local Wi-Fi networks, the type of security being used, signal strength, noise, the channel used, channel width, and more. The scan also shows which are the best channels for you to use in your area.
- Performance: Produces a real-time graph showing signal quality, signal strength, and noise. Depending on the version of OS X, the real-time graph may also include transmission rate.
- Sniffer (called Frame Capture in Mavericks): Allows you to use your Mac to capture Wi-Fi packets to analyze.
- Monitor (OS X Yosemite and later only): This is similar to the Performance utility, except with a smaller display that you can leave running in the corner of your Mac's monitor.

When you're through with the Wireless Diagnostics utilities, you can return to the **Assistant** by selecting **Assistant** from the Window menu, or by closing any utilities windows you may have open.

Monitoring Wi-Fi Connection

If you're having intermittent problems with your Wi-Fi connection, you can select the option to **Monitor My Wi-Fi Connection**, and then click **Continue**. This will cause the Wireless Diagnostics to watch your Wi-Fi connection. If the connection is lost for any reason, the app will notify you of the failure and offer reasons for why the signal was dropped.

Quitting Wireless Diagnostics

1. When you're ready to **quit the Wireless Diagnostics app**, including stopping any logging you may have started, select

the **Continue to Summary** option, and then click the **Continue** button.

2. You'll be asked to provide any information you think is appropriate, such as where the Wi-Fi access point is located. Click the Continue button.
3. You can add information about the access point you're using, such as brand and model number. Click **Continue** when done.
4. A diagnostic report will be created and placed on the desktop. Once the report is completed, click the **Done** button to quit the Wireless Diagnostics app.

The Wireless Diagnostics Report

1. The report is saved to your desktop in a compressed format.
2. Double-click the **diagnostic file** to decompress the report.

The report files are saved in various formats, depending on which function you were using. Most reports are saved in Apple's plist format, which can be read by most XML editors. The other format you will see is the pcap format, which is used by most network packet capture applications, such as WireShark.

Additionally, many of the diagnostics files can be opened by the Console app included with OS X. You should be able to simply double-click the diagnostics files to view them in the Console log viewer, or in one of the dedicated viewing apps included in OS X.

For the most part, the reports that the Wi-Fi Diagnostics app creates aren't that helpful for casual users just trying to get their wireless network up and running. Instead, the various Wireless Diagnostic utility apps we mentioned above may provide a better way for you to run down any Wi-Fi issues you may be having.

Ron Goldberg posted the following article to lifewire.com on May 6, 2019. bit.ly/2Gt9Num. © About.Inc. He has been writing professionally about home video since 1989 and is a former syndicated home theater columnist for New York Newsday.

Change Your Router's Wi-Fi Channel for Better Streaming

An effective upgrade that's both easy and free



By Ron Goldberg

Video streaming is here to stay,

but unfortunately, sometimes it's still much better in theory than in practice. Many, if not most of us, who choose to watch streamed movies on a TV rather than PC end up living with some pretty unpredictable experiences, to put it charitably. If you're one of those people that prefer to watch movies on your PC and have a good connection to good broadband, the streaming experience is usually pretty satisfying.

For the rest of us, who would like to enjoy streaming movies on a TV connected via Wi-Fi to our home network, there are problems that can really kill the mood. In most real-world living rooms, those mean lost sync between picture and sound is common, as

well as long pauses while the video stream re-buffers and picture quality that varies dramatically as you watch. Movie nights that you have to abort halfway through because you can't take any more interruptions are not uncommon.

In many cases, the culprit behind all these problems isn't so much the internet as your Wi-Fi connection. And while most people don't know it, it's possible and even easy to improve your home's Wi-Fi performance, often dramatically. Better yet, you can do it for free.

The Problem and Thy Neighbor's House

Wi-Fi works like a tiny radio station in your home. As you do when you listen to the radio, you want to receive the clearest possible broadcast of your wanted station, while experiencing the least interference from other stations. Unlike radio, however, Wi-Fi works in a very narrow frequency range, and depending on how many people around you are also using Wi-Fi, interference is inevitable. Bad Wi-Fi in your home can occur for any number of reasons.

While most Wi-Fi routers can cover an average or bigger home with wireless signals, they're also subject to interference from other devices that work in Wi-Fi's narrow (and typical) 2.4 GHz frequency range. That includes cordless telephones, baby monitors, garage door openers and microwave ovens. It also includes, of course, all the different Wi-Fi devices you have in your house.

Ironically, the worst interference could easily be coming from your neighbors and their Wi-Fi networks. This is especially true in multi-unit dwellings like condos, townhouses, and apartments, where perhaps dozens of other Wi-Fi networks are constantly operating nearby. You and your neighbor's Wi-Fi networks are separated by a password (and tiny differences in frequencies), but their Wi-Fi radio waves are on the same frequencies yours are. That's a Wi-Fi traffic jam.

Most people think lousy Wi-Fi at home is something they just have to live with, like bad cell phone reception. Some of them go out and buy a "better" Wi-Fi router, which is never a bad thing, but for many homes, it's an unnecessary expense.

The Cheap and Easy Wi-Fi Fix

Again, Wi-Fi works like a little radio station. It transmits signals on 11 usable "channels," appropriately named one through eleven. The most universally compatible Wi-Fi channel is channel 6, and the vast majority of Wi-Fi routers that you take home from the store (or get installed for you) come from the factory set to channel 6 as a default. That's already a problem. If everyone's Wi-Fi router is sending/receiving on channel 6, that channel is going to get pretty crowded pretty quickly.

Some manufacturers actually pre-set their routers elsewhere at the factory, to channels 1 or 11 instead of 6, both of which are usually less crowded. Other routers try to automatically search for and connect to the least crowded channel. That's fine in theory, but your neighbor's Wi-Fi router is likely doing the exact same thing.

It's easy to see which Wi-Fi channels are the most crowded near your home, and on most Wi-Fi routers, it's easy to manually change the channel for better Wi-Fi reception and video streaming. The results of better-streamed video can be well beyond what you were experiencing before. And soup to nuts, this can all be done in just a few minutes.

First, See What You're Dealing With

Step one of your free Wi-Fi upgrade is to find out which nearby networks might be causing interference. To do this, you download a free bit of software called a Wi-Fi "sniffer" that uses your own Wi-Fi router to detect where the nearby traffic jam is occurring. There are many such tools available for free downloads. On a Mac we've had very good results with the built-in Wireless Diagnostics app; Microsoft has one for Windows 7

that you can also download free. Most sniffers will look a bit different on your screen, but all will tell you the same things:

How many nearby Wi-Fi networks your own Wi-Fi system is "touching."

How strong their signals are, compared to yours.

What channels they're using (this is the important one).

Once the Wi-Fi sniffer shows you which channels are crowded — count on #6, 1 and 11 being the most jammed — you can look for a relatively unused channel and switch your router to broadcast on it.

Making the Change

If you bought your Wi-Fi router from a store and connected it yourself, you undoubtedly also received setup software for that router. It's what you used to create your Wi-Fi network's username and password. Obviously, each router company's products are different and use their own software, but it doesn't matter which brand you own, the concept remains the same.

Go into the setup page for your Wi-Fi router. In most up to date models, you'll see a tab or menu item for Advanced Settings or some such label. Don't be intimidated going into this section even if the software may give you dire warnings not to (they don't like service calls if you mess up). While you'll see lots of scary numbers and acronyms on these pages, what you'll be looking for is actually pretty simple — the channel.

If there's a drop-down menu such as shown in the picture, select the new channel you want to change to. If the current channel number is something you have to enter into a field, just type it to change it to your new channel. Save the changes and quit the setup software.

Now you've set your Wi-Fi broadcaster (the router) to transmit at a clear new station that nobody else is using. So now you want to make sure that your Wi-Fi devices are now receiving on this

new channel. Go around the house with your phone, laptop — anything that depends on Wi-Fi — and make sure you've got reception.

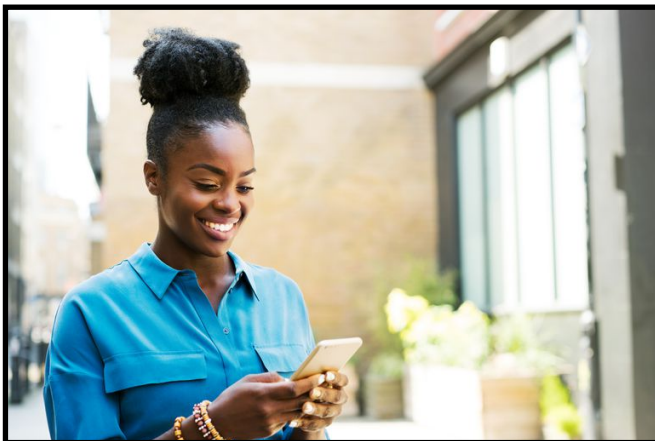
In all likelihood, you won't just be getting reception, you'll be getting much better reception. Most Wi-Fi devices (phones, media servers, TVs, etc.) will automatically detect your new Wi-Fi channel, though some devices might ask you again for your password again, just for security's sake. And now that you're on a less-crowded channel, your performance will improve appreciably.

With better Wi-Fi, your streaming video not only becomes watchable, but it also becomes enjoyable. And isn't that the point of all this?

Sam Costello posted the following article to lifewire.com in June 23, 2019. tinyurl.com/ohj5gol. © About.com. He is a consultant and writer providing Macintosh training, advice, and support since the Mac Plus. He has written hundreds of articles, tutorials, and product reviews.

How To Make Wi-Fi Calls on Your iPhone

How to use iPhone Wi-Fi calling and fix problems with it



By Sam Costello

The Wi-Fi Calling feature of the iPhone solves the problem of being in a place where the cellular phone signal is so weak that phone calls either drop all the time or don't work at all. When you use Wi-Fi Calling, it doesn't matter how many bars you have. As long as there's a Wi-Fi network nearby, you can use it to make your calls.

Note: Wi-Fi Calling requires iOS 8 or higher. This article was written using iOS 12, but the steps are pretty similar for iOS 11.

What Is Wi-Fi Calling?

Wi-Fi Calling is a feature of iOS 8 and up that allows phone calls to be made using Wi-Fi networks instead of through your service provider's cellular towers. Wi-Fi Calling allows the calls to work like Voice over IP technology, which treats a voice call like any other data sent over a computer network.

Wi-Fi Calling is most useful for people in rural locations or buildings made of certain materials who don't get good 3G/4G reception at their homes or businesses. In these places, getting better reception is impossible until phone companies install new cell towers nearby. Without those towers, customers' only choices are to either switch phone companies or go without cell phone service in those important locations.

Wi-Fi Calling Requirements

To use Wi-Fi Calling on the iPhone, you must have:

- AT&T, Sprint, or T-Mobile phone service in the U.S. Verizon customers with HD Voice calling can also use the feature. If you're in another country, check this list from Apple of what carriers support which features.
- iPhone 5C or newer model
- iOS 9 or higher installed on your iPhone (iOS 8.0 offers support for T-Mobile, iOS 8.3 adds Sprint, and iOS 9 adds AT&T)

- Access to a Wi-Fi network

How to Enable Wi-Fi Calling

Wi-Fi Calling is disabled by default on iPhones, so you'll need to turn it on to use it. Here's how:

1. Tap the Settings app.
2. Tap Cellular (on older versions of the iOS, tap Phone).
3. Tap Wi-Fi Calling.
4. Move the Wi-Fi Calling on This iPhone slider to On/green.
5. Follow the onscreen prompts to add your physical location. This information is used so that emergency services can locate you if you call 911.

Warning: The E911 information screen identifies your home location. It does not automatically send your current location if you dial 911 away from your home.

6. Wi-Fi Calling is enabled and ready to use.

How to Use iPhone Wi-Fi Calling

When the feature is turned on, using it is easy:

1. Connect to a Wi-Fi network.
2. Look in the top right corner of your iPhone's screen. If you're connected to Wi-Fi and the feature is enabled, it will read AT&T Wi-Fi, Sprint Wi-Fi, T-Mobile Wi-Fi, etc. On newer iPhones with a notch, you'll see a Wi-Fi symbol next to your cellular bars, instead.
3. Place a call as you normally would.

How to Fix Problems with Wi-Fi Calling

Wi-Fi Calling technology isn't perfect. Here's how to solve some of the most common problems people experience:

- **Can't connect to Wi-Fi:** Review problem-solving steps to fix a grayed out Wi-Fi connection or troubleshoot when an iPhone won't connect to Wi-Fi.
- **Wi-Fi Calling setting disabled:** In the Settings app, the Wi-Fi Calling slider may be grayed out. If it is, reset your network settings (**Settings > General > Reset > Reset Network Settings**), turn on Airplane Mode, and then turn on Wi-Fi.
- **Wi-Fi calls drop:** If you're in an area that has both a Wi-Fi network and a weak cellular signal, sometimes your Wi-Fi calls will fail. This behavior results from the phone trying to connect to the cellular network instead of sticking with Wi-Fi. Try turning on Airplane Mode to prevent the phone from trying to connect to cellular. Then turn Wi-Fi back on.
- **Error message:** If an error message tells you to contact your phone carrier, wait two minutes and try turning on the feature again. If that doesn't work, restart your iPhone. If that doesn't work, contact your phone company.



Andy O'Donnell posted the following article to about.com on February 10, 2019. bit.ly/2ZhzSEs. © about.com. He is a senior security engineer & analyst who has focused the last 13 years developing, managing, auditing, and securing systems.

How To Test a Suspicious Link Without Clicking It

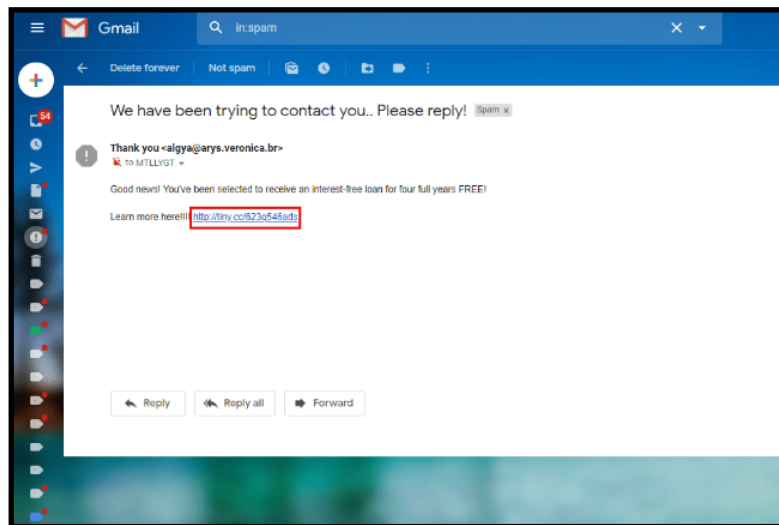
Does that link look a little strange? Here's how to tell

By Andy O'Donnell

Do you have click anxiety? It's that feeling you get right before you click a link that looks a little fishy. You ask yourself, *Am I going to get a virus by clicking this?* Sometimes you click it, sometimes you don't.

Cut through the indecision by thinking critically about the links you encounter.

The Link is a Shortened Link

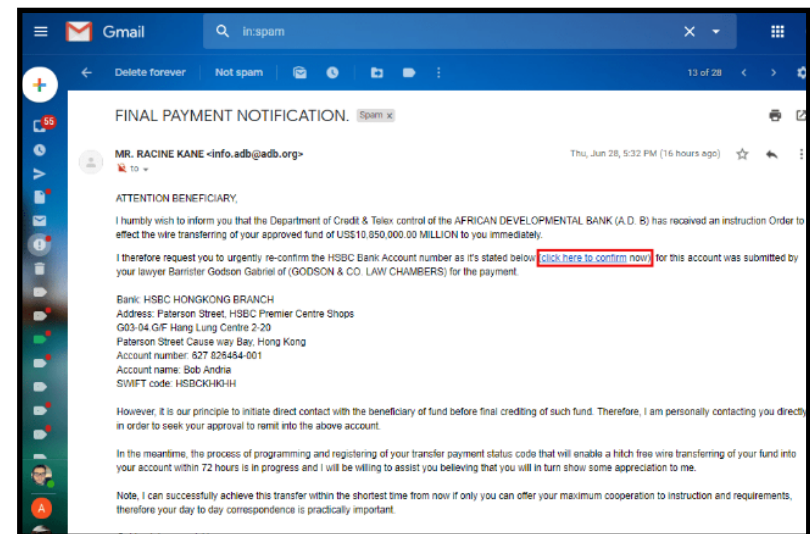


Link shortening services such as bit.ly and others are popular choices for fitting a link into the confines of a Twitter post.

However, link shortening is also a method used by malware distributors and phishers to conceal the true destinations of their links.

Obviously, if a link is shortened, you can't tell whether it's bad or good just by looking at it, so use a tool designed to inspect short links. They'll reveal the true destination of a short link without actually following it. Explore the Dangers of Short Links for details on how to view a short link's destination.

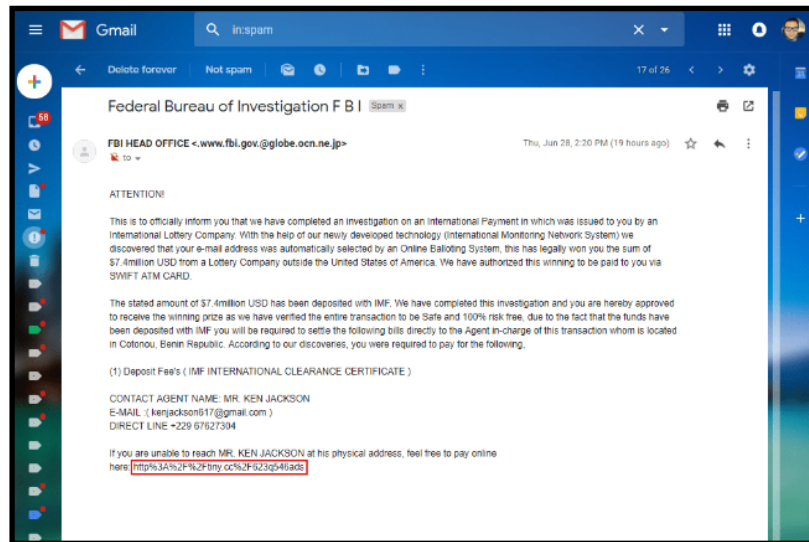
The Link Came to You in an Unsolicited Email



If you received an unsolicited email that is supposedly from your bank asking you to "verify your information" then you are probably the target of a phishing attack.

Even if the link to your bank in the email looks legitimate, you shouldn't click it as it could be a phishing link in disguise. Always visit your bank's website by entering its address directly into your browser or through a bookmark you made yourself. Never trust links in e-mails, text messages, pop-ups, etc.

The Link has a Bunch of Strange Characters in It



Oftentimes, hackers and malware distributors will try to conceal the destination of malware or phishing sites by using what is known as URL encoding. For example, the letter A that has been URL-encoded translates to %41.

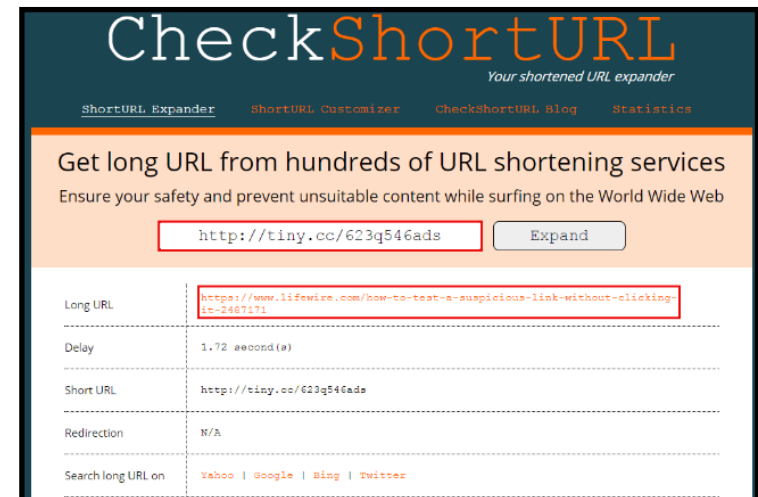
Using encoding, hackers and malware distributors can mask destinations, commands, and other nasty stuff within a link so that you can't read it unless you have a URL decoding tool or translation table handy.

Warning: If you see a bunch of % symbols in the URL, beware.

How to Check a Suspicious Link Without Clicking It

Several tools help you inspect links without clicking through to activate them.

EXPAND SHORTENED LINKS

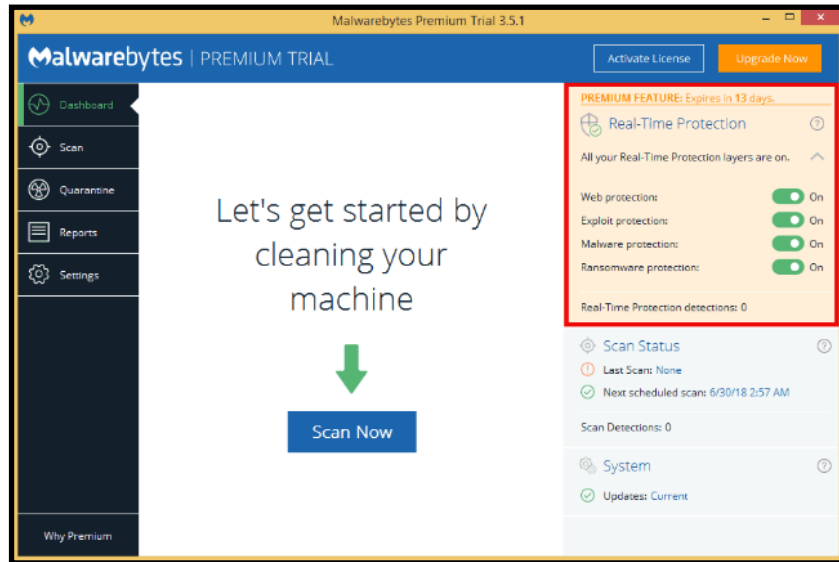


You can expand a short link by using a service such as CheckShortURL or by loading a browser plug-in that will show you a short link's destination by right-clicking the short link. Some link expander sites will go the extra mile and will let you know if the link is on a list of known "bad sites."

SCAN THE LINK WITH A LINK SCANNER

Norton SafeWeb, URLVoid, ScanURL, and others offer varying degrees of link safety checking. These services often index the remote destination, then present a report or a summary of what it finds, without you having to load the site on your own computer.

ENABLE THE REAL-TIME OR ACTIVE SCANNING OPTION IN YOUR ANTIMALWARE SOFTWARE



Take advantage of any active or real-time scanning options provided by your antimalware software. It may use more system resources to enable this option, but it's better to catch malware while it's trying to enter your system rather than after your computer has already been infected.

Keep Your Antimalware/Antivirus Software Up to Date

If your antimalware or antivirus software doesn't access the latest virus definitions, it's not going to be able to catch the latest threats in the wild that might infect your machine. Make sure your software is set to auto update on a regular basis and check the date of its last update to ensure that updates are actually taking place.

Consider Adding a Second Opinion Malware Scanner

A second opinion malware scanner can offer a second line of defense should your primary antivirus fail to detect a threat (this happens more often than you would think). There are some excellent second opinion scanners available such as MalwareBytes and Hitman Pro. Check out our article on Second Opinion Malware Scanners for more information.



Jason Snell posted the following article to macworld.com on June 12, 2019. bit.ly/2GsiOnC © Mac Publishing, LLC. Jason is editor in chief of Six Colors, has been a technology writer for more than 20 years and was Macworld Editorial Director.

SwiftUI and Catalyst: Apple Executes its Invisible Transition Strategy

Apple's playing a long game, and it's so slow you might not even notice.

By Jason Snell



Last week in San Jose I found myself considering something John Gruber wrote for Macworld at the beginning of this decade—about how Apple's product design doesn't happen in short bursts, contrary to popular belief. It is a marathon, not a sprint. And no other company in the tech industry has the track record at it that Apple has.

"It's a slow and steady process of continuous iterative improvement—so slow, in fact, that the process is easy to overlook if you're observing it in real time," Gruber wrote. "Only in hindsight is it obvious just how remarkable Apple's platform development process is."

This is still true nine years later. And we're right in the middle of it. It's happening all around us—Apple continues playing its long game, dragging change-averse people through periods of transition so slowly that they often don't even notice what's happening until it's all said and done.

The privilege of repeating it

Apple's had more than its share of product transitions over the years. Macs have transitioned from Motorola 680x0 processors to PowerPC chips to Intel chips, and are rumored to be on the precipice of moving to Apple-designed ARM chips. On the software side, Apple moved from classic Mac OS to Mac OS X, then built an additional operating system—iOS—on the foundations of OS X.

For users, those transitions were relatively smooth. Apple engineered emulation technology into Mac OS during both chip transitions, so old software would run transparently on new hardware. (And in both cases, the new chips were so much faster than the old ones that most of the slowness of emulation or code translation came out in the wash.)

The Classic Mac OS to Mac OS X transition was bumpier, but even there, Apple gave everyone an awful lot of time—OS 9 didn't get officially declared dead until Mac OS X 10.2 Jaguar was about to arrive. And even then, Jaguar ran Classic Mac OS apps in a special compatibility environment. It wasn't seamless, but it worked—and by that point most apps had updated to OS X.

The App of Theseus

The ride was bumpier for software developers, of course. The switch from the classic Mac OS to OS X was enabled by Apple creating something called Carbon, which was a set of tools that let apps written for the old Mac OS run natively on the new one. But Carbon was a transitional framework, a bridge to OS X for Mac developers. OS X's native system (brought over from NextStep) was called Cocoa.

Classic Mac developers brought their apps over to OS X using Carbon, but it became clear over time that Cocoa was the future—and at one decisive moment, Apple went back on a previous promise and announced that there would never be 64-bit Carbon apps. The writing was on the wall: the future was Cocoa. And in fact, with the release of Mac OS Catalina this fall, the last surviving bits of Carbon will be swept away.

And yet Mac apps from the classic era survive. Like the Ship of Theseus, they have been updated so many times that little if anything of the original remains. This is one way Apple manages its magic trick of the slow, invisible transition—developers adapt their apps gradually over time, the users keep on using the apps, and the wheels turn.

I use BBEdit by Bare Bones Software every day on my Mac. It was originally written for the classic Mac OS, survived the PowerPC transition (presumably with a bunch of behind-the-scenes changes to its development environment), then moved to Mac OS X with Carbon and began cycling on through into Cocoa in order to take advantage of new OS features and be 64-bit capable. There is little if anything left of BBEdit 1.0, but BBEdit endures as a Mac app.

Slow, but relentless

This brings us to today, when Apple is making multiple transitions at once. Catalyst, which arrives this fall, will allow developers who are well-versed in the vagaries of writing iOS apps to use those skills to write Mac apps. This will most commonly take the form of bringing iPad apps to the Mac, with additions to make them feel more like native Mac apps, but it's more than that—it provides iOS developers with a familiar set of tools and access to an entirely new platform, and it makes the target for professional apps across Apple's platforms broader by including both the iPad and the Mac.

iOS apps are currently built to run on devices running Apple-designed ARM processors, and if the rumors are true, that's

another transition waiting to happen. But given that all Mac and iOS developers are already using Apple's Xcode tools to develop their apps, I suspect that the pieces have been put in place for a fairly simple transition to a new processor architecture.

And then there's SwiftUI, which may be a harder concept for regular users to grasp, but it's a huge step on Apple's part. This is Apple's ultimate long game—an entirely new way to design and build apps across all of Apple's platforms, based on the Swift language (introduced five years ago as yet another part of Apple's long game).

In the shorter term, iOS app developers will be able to reach to the Mac via Catalyst. But in the longer term, Apple is creating a new, unified development approach to all of Apple's devices, based in Swift and SwiftUI. Viewed from this perspective, Catalyst feels more like a transitional technology than the future of Apple's platforms.

But we're talking about the long game here. Transitional technologies are all a part of the long game. Catalyst will bring those apps to the Mac. iOS and Mac developers will pick up Swift and SwiftUI. Mac apps can integrate iOS stuff via Catalyst. iOS apps can integrate Mac stuff for use on the Mac. And all developers can begin experimenting with SwiftUI, building new interfaces and replacing old ones in a gradual process.

And then we'll turn around sometime in the 2020s and realize that all of this talk of UIKit and AppKit and Catalyst is behind us, and that our apps are written in Swift with interfaces created using SwiftUI. It will have all changed due to Apple's slow and steady pace of iterative, continuous improvement. The long game never stops, and it can be hard to see that you're even in it.



AI and Humans The New Shaman

By Kathy Garges

What if there were no need for hospitals, where procedural errors and virulent germs seem to flourish? What if the medical profession could reduce doctor burnout and reduce costs at the same time? What if medical patients and practitioners efficiently collaborated on a factually-correct medical record at each care visit that was fully integrated with the patient's lifetime medical history? What if the patient's medical history was protected as private but readily accessible to the patient and future caregivers?

These are just some of the futuristic scenarios possible with the application of artificial intelligence in medicine, discussed in a recent book, *Deep Medicine*, by Eric Topol, a cardiologist and research scientist. Some of these scenarios are more futuristic but some are possible in the near term.

Early in the book, Topol provides some sobering information. (Be forewarned that it could shake your faith in allopathic (Western) medical care.) Topol explains why medical diagnosis is inaccurate and procedurally flawed. In addition, the success of drug treatments for the top ten prescribed drugs (by gross sales) in the U.S. averages only twenty-five percent. This low efficacy rate is due in part to some overlap with inaccurate diagnosis and to the complex individuality of each human's biology.

Diagnosis and treatment prescription are also negatively affected to a significant degree by innate human cognitive biases. Examples are confirmation bias (the tendency to rely on information that supports an existing belief and ignore

contradictory information), availability bias (doctors cannot know all possible diseases and conditions and so diagnose according to their memory list of possibilities), and rule-based thinking (using a sharp age or geographic cut-off for probable diagnosis when the actual occurrence of the condition blurs across such boundaries).

If you already distrust Western medicine and follow an alternative medical system such as Ayurveda, homeopathy, or Traditional Chinese Medicine, it follows that the same, or similar, human procedural flaws and cognitive biases apply to them too (although Topol doesn't address this). Be your own doctor? You are subject to the same hidden biases, plus more. Topol mentions a new malady, cyberchondria, the irrational belief or fear that you have a disease or condition based on your internet search for medical information.

AI has already produced some notable medical successes. Facial recognition AI is used to diagnose a rare disease by the subtle but distinctive facial characteristics it produces. Doctors have developed crowdsourcing systems to query a large base of colleagues to get rapid advice on diagnosis.

There are some substantial problems, however, with applying AI to medicine. One is the gap between science and technology. Studies that prove the helpfulness of AI in medicine are usually based on crunching past data (retrospective), whereas scientific medicine requires the careful design and rigorous conduct of new clinical trials (prospective).

Another problem, familiar in other areas of AI application, is the opaque operation of machine learning (also known as artificial neural networks or deep learning). Pattern recognition is important in many medical areas, such as x-ray and diagnostic scan interpretation. Machine learning is proving to be excellent at these medical tasks. But we don't know what the AI is doing, how it is reaching these results. Doctors (and patients) are naturally concerned about trusting AI in these situations.

Jonathan L. Zittrain, a law and computer science professor, and co-founder and director of Harvard's Berkman Klein Center for Internet & Society, has put the opacity of deep learning AI into perspective, classifying it as creating "intellectual debt." If a technology works well and is important to us, but we don't understand its mechanism, we will use it, but always with the lurking uncertainty about how or why it works.

Zittrain notes that intellectual debt is common outside of AI in another area of human activity. Guess which one? Medicine. He gives as an example the discovery of the benefits of aspirin in 1897. After widespread use, the mechanisms of aspirin were only convincingly explained in 1995, nearly 100 years later.

A shaman "uses magic for the purpose of curing the sick, divining the hidden, and controlling events." A medical practitioner who uses pattern recognition and other AI can be seen as a new kind of shaman, using a technology that cannot always be explained or understood.

As Zittrain discusses, intellectual debt worries us. Adding the intellectual debt of deep learning AI to the intellectual debt often present in medical care only makes us more concerned. Fortunately, we may not have to wait 100 years to understand how deep learning applications work.

A team of scientists at the University of Tübingen in Germany suspected that an AI image recognition program was using textures to identify images. Humans typically use edges and shapes, called figure-ground segregation. The team devised a clever experiment to test humans and AI on images such as a cat with elephant skin and an airplane composed of clock faces. The results? Humans almost always labelled the images by shape. Four different AI programs identified the same images by texture, elephant and clock.

With this insight, we can now start to design AI training that will eliminate a program's reliance on texture and focus it on shape.

A side benefit: the research can help explain how human visual systems developed.

Topol's Deep Medicine discusses many more issues and examples of the application of AI in medicine. We need more of this new kind of shamanism, the critical analysis and exploration by experts in non-AI fields of how AI intersects with their paradigms, practices, and needs. This depth of exploration uncovers areas in which AI needs to improve and also generates visionary ideas for new AI applications.

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