

**SOME WEBSITES**

**iOS 13 Features: What's New | 100+ Features.** Yes, 100! Long, but very informative. [bit.ly/2PINNH9](https://bit.ly/2PINNH9).

**Apple's MacBook Pro Just Got Bigger and More Powerful.** And for those who need or want a more powerful laptop, here's another long, but very informative article. [bit.ly/2pITy7q](https://bit.ly/2pITy7q).

**macOS 10.15 Catalina: 13 Problems And Fixes.** Another useful article by a writer for CleanMyMac. [bit.ly/2XQc2zL](https://bit.ly/2XQc2zL).

**These Are the 10 Coolest Mobile Messaging Apps,** Messaging is really cool. Reviews with What We Like and What We Don't Like. [bit.ly/305MtKq](https://bit.ly/305MtKq).

**AirDrop: The Unsung Hero of Apple's Utilities.** More uses than you'd imagine. [bit.ly/33aGUf7](https://bit.ly/33aGUf7).

**Read All About It With These News Apps for iPhone.** For a review of many news aggregators. [bit.ly/2KOPWYX](https://bit.ly/2KOPWYX).



FOUNDED MAY 1989

MEETINGS - SECOND

SATURDAY OF THE MONTH

**NL FOCUS -PRIVACY & IPADOS**

**EAT, LEARN, & ELECT**

This Saturday MLMUG will hold its **16th Annual Holiday Brunch** with many of us bringing in all sorts of good food to share.

MLMUG will provide paper goods and hot beverages.

The library opens at 9:00 AM. Come prepared to help arrange tables and have your goodies set up by 9:20. Come with your family and friends, prepared to celebrate the Holidays and eat great food.

As usual, we do not schedule a guest speaker for our December meeting, but we will have three or four of our members share their favorite tips during the meeting.

In addition, we will hold our elections for Board officers for 2020.

**DECEMBER LOCATION**

**WE WILL MEET AT LUDINGTON LIBRARY IN BRYN MAWR. IT'S AT THE CORNER OF LANCASTER AND BRYN MAWR AVENUES, NEAR THE BRYN MAWR TRAIN STATION.**

**GO TO [MLMUG.ORG](https://bit.ly/MLMUG.ORG) FOR MAPS.**

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**Apple  
User Group**

**Membership Information**

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](http://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

### 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](mailto:MLMUG@groups.io) and your message will be sent to everyone on the mailing list. Contact Bob Barton ([barton@bee.net](mailto: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](https://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.mlmutg.org/nusfl.html](http://www.mlmutg.org/nusfl.html) for details.



## Bookmarks

By Mark Bazrod

## iPadOS

iPadOS is Apple's recently released operating system for the iPad. It is based on iOS 13, but it has features specifically designed for the iPad's larger display. It is fantastic. It is immense. It will greatly extend your use of your iPad so it will take a great deal of time to learn to use its many new features.


The MacRumors' staff posted an extended and comprehensive analysis of iPadOS which is printed on pages 27 through 35 of this Newsletter. That's a lot of reading - and learning. In addition, the article has at least seven links to detailed articles about the features, including an analysis of iOS 13, which also has quite a number of new features which are included in iPadOS. Also, see Apple's long list of iPadOS features. [apple.co/2CO9UOW](https://apple.co/2CO9UOW).

But before setting forth my comments about some of the features of iPadOS, let me tell you about a problem with iPadOS I ran into.

I installed iOS 13.2.2 without a problem and in a week or so installed iPadOS 13.2.2 (same numbering system). There didn't seem to be any problem until I started to try to use some of the features listed in the MacRumors' article. They weren't there.

I think I first went to iTunes on my iPad Pro to see if I could reinstall iPadOS. All I got was a message that I had the latest version. I then connected my iPad by cable to my iMac which is running Mohave. I tried using Finder and iTunes. The Finder did not show my iPad in Locations in the Sidebar and I also could not connect to the iPad in iTunes. After doing some searching on

the Internet, I changed cables and ports and rebooted the iMac and the iPad. That had no effect.

I next tapped  > *About This Mac* > *System Report* and scrolled down to USB. There was an iPad listed there, but its MAC address did not match that of my or my wife's iPads. The address was a similar, but the last two digits were different. I had 2 calls with Apple Support which confirmed what I did, but both told me I had to install Catalina on my Mac to have a connection between the two devices. That didn't make sense to me and I had more conversations.

Without going into too much detail, I turned off the iPad and rebooted it, holding down the on/off/sleep button and the Home button until an Apple Support message and graphic of a computer and the lightning cable appeared. That indicated I was connected to iTunes. Then on the iMac in iTunes, I selected Restore. This wiped the iPad back to its factory settings and reinstalled iPadOS 13.2.2. A little scary. I then had the choice of setting up the iPad as a new iPad (duh) or restoring all my apps and data from the backup I made before starting this process. It worked! My iPad looks like it did this morning. The entire process probably took about 3 hours! I'm finally starting to learn the new features.

If you have a problem with iPadOS, [appletoolbox.com](https://appletoolbox.com) published a long guide on how to deal with many problems. It's worthwhile saving. [bit.ly/2p5JMfg](https://bit.ly/2p5JMfg).

There's no way I could cover everything in iPadOS so I'll just focus on several features which were of interest to me.

**App Expose** - It lets you see all of the windows that are open for a particular app. The easiest method is to do a **long press** on an app icon until a menu appears upward from the icon. Tap *Show All Windows* to open App Exposé for that app. (Note: If the option isn't listed in the pop-up menu, there aren't multiple instances of the app open.) All the instances of the selected app

will be displayed on a scrollable screen, including any that are active in Split Screen and Slide Over.

**Sidecar** - It is designed, like the app Duet Display, to let you use your iPad as a second display for your Mac. Sidecar can either mirror content on your Mac or turn the iPad into a second display. Sidecar requires a Mac running macOS Catalina and an iPad running iOS 13.

There is a Sidecar section in System Preferences. I didn't have one. I discovered that you need a 2015 or later iMac to run Sidecar. I have a 2014 iMac, so I can't use Sidecar. There are 2 workarounds using Terminal. The first one didn't work. Now I have to find the second. I can use Duet Display to attach the iPad. With Handoff, you can copy and paste between devices so I get most of the benefits of Sidecar.

The easiest way to get to Sidecar is to use the AirPlay (missing as of the time of this editorial).. Tap the AirPlay icon at the top of the Menu bar (it's the one that looks like a screen with an arrow pointing into the bottom). If your iPad is compatible with Sidecar, it will show up in the AirPlay list.

From there, simply choose the iPad that you want to connect to and it will automatically turn on and be activated as a second Mac display. You can also get to Sidecar by clicking and holding the green window expansion button on any Mac app, and you can access Sidecar in the Sidecar section of System Preferences.

When using Sidecar, the Apple Pencil (first or second generation depending on your iPad) serves as a mouse alternative for clicking, selecting, and other on-screen control tasks. Think of the Apple Pencil as a mouse or trackpad when using it with Sidecar.

**Files** - The Files app was introduced in iOS 11 as an iCloud repository for all of the files in your Mac's Documents and Desktop folders, which can then be viewed on your iPhone and

iPad. It's somewhat similar to Google Drive, Dropbox, etc. The new Files app in iPadOS supports external drives, cards, etc. so you can access all your files from the Files app.

The new File app also has a new Column View somewhat similar to Finder so you can now view files and folders similar to Finder. This makes Files a lot more useful.

How do you extend the width of the columns? Apple says tap a folder to expand its contents. That didn't work for me. Apple says tap a file to see a preview. That worked.

I still find it confusing with multiple Location Views in Files. Not only are files automatically organized by app (at least under iOS 12), but it seems that under iOS 13 you can set up folders with other names. You see different number of files in the same denominated folder. For example, there are 120 Pages files in the On My iPad location, but only 83 Pages files in the iCloud Drive location. I presume that in the On My iPad location, the files viewed are the ones stored locally on the iPad, but the files in iCloud Drive are stored in iCloud by any device. I note some files created on my iMac are stored in iCloud and some are stored on the iMac. It's confusing to me. See a web article by Apple Support at [apple.co/2O92kno](https://apple.co/2O92kno). Still a bit confusing. When you store Desktop and Documents in iCloud Drive, the folder structure is the same as your Mac. I'm not sure it was that way before iPadOS. Files also supports Quick Actions like Markup, rotate, and create PDF, so you can do more on your iPad right within the Files app.

Apple has also added new keyboard shortcuts for accessing the Files app and an ability to zip and unzip files.

**Use External Hard Drives** - iOS 13 and iPadOS now support external hard drives and flash drives with iPhones and iPads. With a drive attached, you'll can move files between the drive and your iPhone or iPad.

It's pretty easy to connect an external drive to your iPad, either directly to its Lightning or USB-C port (for 2018 iPad Pros) or

through the use of an adapter. Open Files on your iPad and tap the name of your drive in the list of locations.

To move files from your external drive to your iPad, tap *the name of your external drive* from the sidebar, tap *Select* in the Files app and *tap all of the files you want to move*, tap *Move*, *tap on the location where you want to move the files*, such as iCloud Drive, Dropbox, or On My iPhone/iPad, tap on *the folder where you want to store the item*, and tap *Copy*.

You can move files to your external drive from your iPad in much the same way.

**Cut, Copy and Paste** - There are new gestures for cutting, copying and pasting in iPadOS. Apple says pinch inwards with three fingers until you see the copy icon, pinch outwards with three fingers to paste, and to cut, use the copy gesture two times in a row. However, every time I used the copy gesture, either nothing happened or I ended up with the “multiple apps page”.

**Multiple Windows** - You can now have 2 windows of the same app open side-by-side in multitasking mode, so you can have 2 Safari web pages open or work on 2 Pages documents at once.

**Reduce Windows Size** - A neat gesture is to reduce the size of a window by pushing 3 fingers upwards. It can make the desktop icons disappear. Sounds logical, but why?

**Block senders in the Mail** - Mail finally has a feature to help in the battle against spam. You can now block a sender and put their emails directly in the Trash. You right-click on the email sender in the From field or on the ~ symbol to the right of the sender's name and a pop-up menu appears with one of the options being to Block Contact. You can also easily unsubscribe from a commercial mailing list by tapping unsubscribe which appears in blue text at the top of the email.

## 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 - Create a FileMaker Database On The Fly
October 12	Fran Rabuck - Internet of Things
November 16	Bob “Dr. Mac” LeVitus - Catalina, Etc.
December 8	Pot Luck Brunch, Members' Show & Tell, & Election of Officers

## November 16 , 2019 Meeting Minutes

### By Mark Bazrod, Secretary

Maria Arguello, our President, opened the MLMUG meeting at about 9:15 AM at the Ludington Library in Bryn Mawr. There were 31 attendees, including one new person. Maria reminded us that dues, for the first time in 30 years, have increased by \$5. You can prepay dues for 2020 before January 1, 2020. Outside speaker expenses will be limited.

**Q & A Panel - Bob LeVitus** (who has been coming to MLMUG since 2001).

Bob said that there is a little problem with the Reminders app in Catalina. You get a message during the upgrade process that the Reminders database has been changed and will no longer be compatible with Mojave and iOS 12 and earlier. You can deny that upgrade until later.

**Q.** How do I prevent my MacBook from going to sleep and showing my screen saver when I am making a presentation?

**A.** Go to the App Store and download Amphetamine, Caffeine or a similar app which enables you to indicate how long you don't want your Mac to go to sleep during a presentation. After that time it will go back to your normal setting. You can also set your screen saver to be off for a longer time limit.

Bob sets his screen saver to show screens from Apple. You may need Apple TV. You can download the screens to your Mac, but the files are large.

If APFS, there is no need to partition. You can do it on the fly with Disk Utility.

**Q.** Is there an alternative to the Mac's voice recognition since Dragon Dictate no longer works for Mac. There is no alternative. A headset or a microphone will improve efficiency. Speak directly into the microphone. Dragon Dictate has screwed Apple users 3 times. You might try using an older OS with Dragon. You could

also use the feedback mechanism to tell Apple to improve voice recognition software.

**Q.** I am running High Sierra. My Mac just died and the power supply board and motherboard had to be replaced. The Mac no longer starts up immediately.

**A.** Try going to *System Preferences > Energy Saver* and disable *Power Nap*.

**Q.** I have a problem sending out mail.

**A.** Go to the Comcast site to set setting for mail. It might be easier to delete the account and recreate it. Mail messages will not be lost . They are still on the server. You should use IMAP if you have more than one device.

**Q. and A.** A new security update may slow start up. Try safe boot (with the shift key). Then reboot; it wipes out old caches. Onyx also helps with slowness. Don't change Onyx defaults. Maria says restart doesn't always work. She sometimes totally shuts off the Mac.

**Q,** I have external drives scheduled for back up so I leave them attached. Don't I run the risk of a security breach?

**A.** Carbon Copy Cloner will unmount drives, but will remount when time for a back up occurs. Editor - It doesn't appear that SuperDuper does this.

Carbon Copy Cloner can notify you if there is a backup problem. It's better to get an email when each backup is completed. Time Machine doesn't.

**Q.** A message only deletes from the device I'm using, not my other devices.

**A.** First, go to *Setting > Messages* and turn on *Text Message Forwarding*. Next go to *Setting > Apple ID > iCloud* and enable syncing by selecting Messages in dropdown list.



**CATALINA.** More than half of the new Catalina users have not had a problem, but most users should wait for a while. The question is how much time do you have for troubleshooting. And ask yourself if you need Catalina features now.

Bob found that Finder kept locking and he had many spinning pinwheels. He had to reboot several times. He finally reinstalled Catalina and things got much better. All 32 bit apps don't work in Catalina and some 64 bit apps which have 32-bit sections will not. Run Go64 which show everything that is 32 bit or has 32 bit sections. You can go to websites for the apps to see if there are any updates.

It pays to search the Web for Catalina problems before you install it. Bob suggests you upgrade on the weekend or when you will have time to fix problems.

Why wait? Catalina has more problems than any other OS. Fixer is still fragile. The Final Cut Pro menu bar is garbled. And it also corrupted the menu bar for other apps. Bob had to reboot several times. What cured it? Bob went to *System Preferences > Accessibility > Display* and unchecked *Reduce transparency*.

What Bob likes about Catalina: iTunes is dead. It has been split into three apps in Catalina - Music, Podcast, and TV. Much easier to use. Syncing is done in Finder. Files works better. Sidecar allows you to use an iPad as second screen. That's great when you're away from home and you can wirelessly connect to a MacBook (from 2016 forward). You can also do it with older Macs with Luna Display or Duet Display.

**iPhone 11 Experience.** Bob went to buy an iPhone Pro Max, but he needed an appointment to buy it! His Apple Card (which is metal and has no text no except for his name) did not work.. Giving his security number from his Wallet app made no difference nor did discussions with several tech support people. Then the store manager suggested using another credit card, but would not give him the 3% off he would've gotten if the Apple

Card had worked. Bob then got the manager's iPad and typed in the security information. It worked. Bob suspects it probably was a Goldman Sachs bug.

The camera is awesome In all respects. It's even great in lowlight. Video is even better.The phone is doing a lot of post processing. Bob thinks it's better and more realistic than Google's new Pixel 4 phone.

The phone has the best iPhone battery ever. The battery life is 5 hours more than iPhone 10. The iPad Pro Max has a superb OLED screen.

But the cost is \$1,249!

**Catastrophic disk failure.** Bob's MacBook Air was frozen. Rebooting didn't work so he rebooted into recovery mode. (hold down r key). He then tried safe boot, Disk Utility, and Malwarebytes. None worked. The SSD was dead.

Bob bought an \$89 500GB SSD from Fry's, formatted it for Mac, and installed Catalina. There were no files on the machine. Otherwise, he would have had to use a clone. You should get a SSD for a boot drive because the new systems work better with SSDs.

**Affinity Photo.** \$59. This is a replacement for Photoshop and is very similar in use. It is updated regularly and is much faster since it is written in Metal. The iPad version with same interface is only \$19. It might be on sale for Black Friday.

**Apple AirPods.** \$159. They don't fall out of your ears and are comfortable. They automatically switch to another device. As expected, the sound is good, but not great.They're good for talking on the phone and have noise cancellation. The \$249 version has a charger case.

**Apple Music.** \$10 per month. 50 million songs. Not great on classics or jazz since so many. You can ask for artists, albums,

songs, etc. The Beatles new White Album has 107 songs, rehearsals, etc. The original had 27 songs.

**Brydge iPad Keyboard** \$99 or \$139. Real keyboard feel. You don't need a case to protect the screen. It can be held at any angle.

**Luna Display** \$79. The iPad can work as a second or third screen. Dongle. Wireless. Also, Duet Display and Astropad.

**Logitech MX Master 3.** \$99. A mouse with many buttons and wheels. Comfortable for your hands. Only for right hands. 60+ days to charge. Bob would like trackpads to do more.

**Apple Watch.** From \$249. Bob loves it. You can raise it and get Siri to talk.

**Cricut Maker.** This cutting tool hooks up to your iPad.

**Why you need offsite backup.** An informative, entertaining video. [bit.ly/2NYjRA4](http://bit.ly/2NYjRA4).



### 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 16 - Bob "Dr. Mac" LeVitus** - a leading expert 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 will allow members 5, 10, or 15 minutes to present a topic.

Geoffrey A. Fowler posted the following article to [washingtonpost.com](https://www.washingtonpost.com) on October 31, 2019. [wapo.st/2NbnsKu](https://www.washingtonpost.com/technology/2019/10/31/online-tracking-fingerprinting/). © The Washington Post. He is a technology consultant

## Think You're Anonymous Online? A Third of Popular Websites Are 'Fingerprinting' You.

Our latest privacy experiment tested sites for an invisible form of online tracking that you can't easily avoid.

[Video - On the Internet, they definitely know you're a dog.](#)

The Washington Post's Geoffrey Fowler and Pepper the dog explain the frightening next frontier in data tracking: fingerprinting.

### By Geoffrey A. Fowler

Just when you thought we had hit rock bottom on all the ways the Internet could snoop on us — no. We've sunk even lower.

There's a tactic spreading across the Web named after treatment usually reserved for criminals: fingerprinting. At least a third of the 500 sites Americans visit most often use hidden code to run an identity check on your computer or phone.

Websites from CNN and Best Buy to porn site Xvideos and WebMD are dusting your digital fingerprints by collecting details about your device you can't easily hide. It doesn't matter whether you turn on "private browsing" mode, clear [tracker cookies](#) or use a virtual private network. Some even use the fact you've flagged "do not track" in your browser as a way to fingerprint you.

They're doing it, I suspect, because more of us are taking steps to protect our data. Privacy is an arms race — and we are falling behind.

Fingerprinting happens when sites force your browser to hand over innocent-looking but largely unchanging technical information about your computer, such as the resolution of your

screen, your operating system or the fonts you have installed. Combined, those details create a picture of your device as unique as the skin on your thumb.

Sites can use your digital fingerprint to know if you've visited before, create profiles of your behavior or make ads follow you around. They can also use it to stop you from sharing a password, identify fraudsters and block harmful bots.



*Wherever you go on the Web, your digital "fingerprint" lets snoops follow.*

Fingerprinting has been around for more than a decade but considered mostly a theoretical threat for you and me. Not anymore. I asked Patrick Jackson, chief technology officer of [privacy software company Disconnect](#), to test for signs of fingerprinting on the 500 most popular websites used by Americans. He revealed what these sites hide in their code and do on our computers that we don't get to see on our screens.

I'm naming names. Of the 183 likely fingerprinters Jackson identified between Sept. 30 and Oct. 8, I asked 30 of the most well-known to explain their behavior. (See below for a list.) Some claimed it was industry-standard to fingerprint. Many said they didn't realize it was happening or never collected our data

themselves, because they had let ad and data partners operate parts of their websites. After hearing from me, six sites said they would remove fingerprinting code, including four run by the U.S. government.

It's happening on sites you wouldn't think would be so intrusive, including Thesaurus.com and AllRecipes.com — even security and privacy software maker Norton.com. Two porn sites didn't answer my questions, but Jackson suspects they're using it to track and tailor content to the people who view them in private-browsing modes that turn out to be not so private.

The Washington Post website fingerprints visitors when they've blocked cookies, which ought to be a signal visitors don't want to be tracked. In different ways, the Fox News and New York Times websites do it, too.

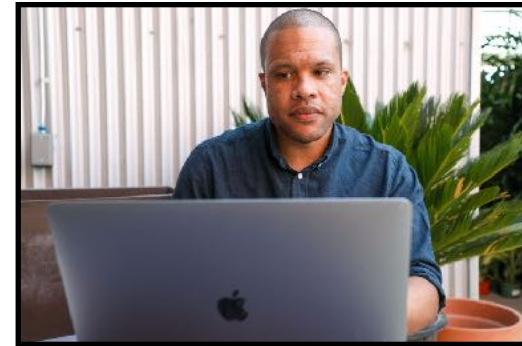
Fingerprinting isn't yet as widespread as cookies, those tiny files websites drop in your browser to track you. But it's concerning because it's much, much more aggressive.

“Fingerprinting is designed to be user-hostile,” said Jackson. “It even takes the fact that you don't want to be tracked as a parameter to make your fingerprint more unique.”

Google, Apple and Mozilla, which make the world's most-used browsers, rarely agree on much, but they've all identified fingerprinting as a growing threat. “Because fingerprinting is neither transparent nor under the user's control, it results in tracking that doesn't respect user choice,” [wrote Google's Chrome browser engineers](#) in May.

What's at stake is a pretty fundamental attribute of the Web: anonymity. One of the original benefits of the Internet is that anyone can express themselves and access information without fear. But to update an [adage](#): Now on the Internet, they [definitely know you're a dog](#).

Why are some of the most well-known websites doing this? And what can we do to stop it? It's another tale of the tech industry putting its own concerns ahead of your privacy.



*Patrick Jackson of privacy software maker Disconnect tested for signs of fingerprinting on 500 of the most-popular websites in the United States.*

### **How they fingerprint you**

Fingerprinting sites don't necessarily know you by name. But they're connecting the dots on information that could be just as valuable.

When you load a site, fingerprinting code starts asking your computer for things that aren't part of the usual process of drawing a page. Knowing what operating system you're running, what fonts you have installed or what your address is on your internal network makes you look different from other people visiting the site.

Some sites use as a signal whether people have turned on the “Do not track” flag in their browser. (That's not ironic; it's malicious.)

Many times, fingerprinting code will run the digital equivalent of a sonar test, sending out a signal just to see what comes back. Website code instructs your browser how to draw out text. The coding in it for fingerprinting can include words or icons that never show up on your screen, letting websites track minute differences in how each device responds. The Best Buy website used this invisible ink to write “F1n63r,Pr1n71n6!” — stand back and you might see it spells out “fingerprinting!”

Every site draws on different data points to build your fingerprint, which is part of what makes it so hard to stop. In his tests, which weren't definitive, Jackson just flagged the most suspicious behavior.

Apps can fingerprint, too, using even more attributes available on phones and tablets.

[Can your medical records become marketing? We investigate a reader's suspicious 'patient portal.'](#)

Engineer Valentin Vasilyev helped take fingerprinting beyond academic research with free software called Fingerprint2.js. We found traces of it used on many websites. A [demonstration on his site](#), which claims it has “99.5 percent identification accuracy,” correctly spotted my browser a half-dozen times over a week.

Vasilyev told me fingerprinting just connects the dots on information browsers already make public — and he can't be held responsible for how people use it. “By creating this product, I just showed everyone including browser vendors and researchers how it can be done,” he said.



*Jackson tested websites for technical signs of fingerprinting, such as executing code to access unusual device properties.*

A “pro” version he sells “is mostly companies trying to protect themselves” from issues such as fraud, he said.

### **A digital strip search**

It's true that not all fingerprinting is used for devious purposes. But it is the digital equivalent of airport security conducting strip searches of everyone. More effective? Perhaps. Good? No.

Chase, Wells Fargo, Airbnb, Best Buy, eBay and Marriott told me fingerprinting lets them bolster security, such as fighting attempts to use stolen credit cards or passwords. (A device looks suspicious if it attempts to try many different card numbers or logins.) Textbook firm Cengage said it was stopping piracy and tailoring content. The New York Times and Fox News said fingerprinting was helping identify automated bots that might interfere with site operation.

“We don't use fingerprinting to track our readers and have internal rules forbidding it,” said Times spokeswoman Danielle Rhoades Ha. “The simple act of producing a fingerprint is not aggressive; using it to target a user would be.”

We discovered four federal agencies — the Internal Revenue Service, State Department, Citizenship and Immigration Services, and National Weather Service — had fingerprinting code as part of a customer satisfaction survey, to keep from repeatedly asking people to fill out the questionnaire. After I reached out, they all said they would update their software to remove it. (The vendor that provides that software, Verint, said the code was added as part of a test and was “unused.”)

Marketing appeared to be the largest use for fingerprinting among the sites Jackson identified. Sites including Reddit and Thesaurus.com said it helps protect advertisers against fraud and sensitive content — all the while allowing a firm called DoubleVerify to probe details about the computers of millions of people. (The company didn't answer my questions about how it uses data, how long it holds onto it or how it protects it.)

Payroll firm ADP uses fingerprinting scripts from at least two ad-tech firms to support its marketing. “The data collected during this standard practice is anonymous, non-identifiable and aggregated,” said spokeswoman Allyce Hackmann. Some claim the tech is anonymous because it identifies computers and phones rather than people’s names.

Washington Post spokeswoman Molly Gannon said, “The Post is using industry-standard advertising systems to support our ad business and serve our users relevant ads.”

[Student tracking, secret scores: How college admissions offices rank prospects before they apply](#)

Just because fingerprinting is becoming common doesn’t make it right. Most sites don’t expressly state they’re fingerprinting in privacy policies, much less make it clear how they and their partners might use and share the data.

What’s the big worry? It’s hard to know how this snooping might be used to harm or exploit us. “Data collected today can be used against us today, tomorrow or even 10 years from now,” says Jackson, who used to work for the National Security Agency. “Your browsing history, the apps you use and the data you give companies can lead to voter manipulation, targeted behavior modification, and further aids the mass surveillance of our activities on and offline.”

At least a few sites understood fingerprinting was an ethical issue. After I contacted it, AccuWeather told its ad firms to cut it out.

So did Comcast, one of the country’s largest media companies. When I reported we found its Xfinity.com site fingerprinting users, Comcast removed the code — and made the ad firm that had been collecting the data confirm it didn’t store or share any of it.

“We don’t use fingerprinting trackers on our website, and we don’t permit our business partners and service providers to do so,” said Comcast spokeswoman Jennifer Khoury. “We’ll be

performing regular site scans to prevent this from happening and are putting in place additional review systems for our partners.”

### How to fight back

Fingerprinting isn’t like other online snooping. We can’t entirely stop it by blocking cookies or making other simple changes to our browsers. The tactics keep evolving.

The good news is that there are gradations of certainty in fingerprinting — not all devices and browsers are equally easy to detect.

Vasilyev, who created fingerprinting software, said it is still possible to make yourself hard to fingerprint by using software such as [Tor](#). It’s a privacy-first browser that goes to great lengths to make each user’s device look the same — but only useful for highly technical people because it breaks common websites.

You can also get some protection from more consumer-friendly software.

[Everyone’s AirPods will die. We’ve got the trick to replacing them.](#)

Apple iPhones, iPads and Macs running the company’s Safari browser are among the hardest to fingerprint. That is, in part, because Apple has a relatively limited product line and those devices tend to be standardized — so they look more similar to fingerprinting software (compared to the zillions of variations in Android phones and Windows laptops out there). It’s a kind of online herd immunity.

Apple’s Safari also has been tackling fingerprinting directly by reducing the amount of information it shares, such as a list of built-in fonts (instead of custom ones). Safari also asks you for permission before handing over information about your device orientation and motion, two more potential data points for fingerprinters. You don’t have to adjust any settings to turn these protections on — they’re the default.

However, most people in the world do not own Apple devices. Everyone else should consider the Firefox browser, which I've [recommended before](#) because of its aggressive default protection from tracker cookies. It's in the final stages of adding some default fingerprinting protections, too, based around blocking traffic from known fingerprinting addresses — which, it acknowledges, fixes only part of the problem. You can turn on an early version of these protections now by going to the “Custom” tab under privacy and security settings.

Google's Chrome browser currently doesn't do much to stop fingerprinting by default. You can add browser privacy extensions such as [uBlock Origin](#), the Electronic Frontier Foundation's [Privacy Badger](#) or Jackson's [Disconnect](#) to help stop some fingerprinting. But beware this software might break some of the sites you want to visit.

In May, Google promised it was going to join the fingerprinting fight — an important move because Chrome is by far the most-used browser. It says its plans include reducing the way browsers can be “passively” fingerprinted, so that it can detect and intervene against “active” fingerprinting efforts as they happen.

When these changes arrive on Chrome in the first half of 2020, they should make a difference. That is, until it's time for the next round of battle against the snoops.

Accuweather.com\*

Adobe.com

Adp.com

Airbnb.com

Allrecipes.com

Bestbuy.com

Cengage.com

Chase.com

Cnn.com

Costco.com

Ebay.com

Foxnews.com

Hotels.com

Imdb.com

Irs.gov\*

Livejasmin.com

Marriott.com

Norton.com

Nytimes.com

Reddit.com

State.gov\*

Thesaurus.com

Uscis.gov\*

Washingtonpost.com

Weather.gov\*

Webmd.com

Wellsfargo.com

Xfinity.com\*

Xvideos.com

Yahoo.com

\* = said it would stop

Gabriel Weinberg posted the following article to [spreadprivacy.com](http://spreadprivacy.com) on September 12, 2018. [bit.ly/346Sv0a](https://bit.ly/346Sv0a). He is CEO & Founder at DuckDuckGo.com

## What Does Google Know About Me?

By Gabriel Weinberg



Did you know that unlike searching on DuckDuckGo, when you search on Google, they [keep your search history forever](#)? That means they know *every* search you've ever done on Google. That alone is pretty scary, but it's just the shallow end of the [very deep pool of data](#) that they try to collect on people.

What most people don't realize is that even if you don't use any Google products directly, they're still trying to track as much as they can about you. Google trackers have been found on [75% of the top million websites](#). This means they're also trying to track most everywhere you go on the internet, trying to slurp up your browsing history!

Most people also don't know that Google runs most of the ads you see across the internet and in apps – you know those ones that follow you around everywhere? Yup, that's Google, too. They aren't really a search company anymore – they're a tracking company. They are tracking as much as they can for these

annoying and intrusive ads, including recording every time you see them, where you saw them, if you clicked on them, etc.

But even that's not all...

### If You Use Google Products

If you do use Google products, they try to track even more. In addition to tracking everything you've ever searched for on Google (e.g. "weird rash"), Google also tracks every video you've ever watched on YouTube. Many people actually don't know that [Google owns YouTube](#); now you know.

And if you use Android (yeah, Google owns that too), then Google is also usually tracking:

- Every place you've been via Google Location Services.
- How often you use your apps, when you use them, where you use them, and whom you use them to interact with. (This is just excessive by any measure.)
- All of your text messages, which unlike on iOS, [are not encrypted by default](#).
- Your photos ([even in some cases the ones you've deleted](#)).

If you use Gmail, they of course also have all your e-mail messages. If you use Google Calendar, they know all your schedule. There's a pattern here: For all Google products (Hangouts, Music, Drive, etc.), you can expect the same level of tracking: that is, pretty much anything they can track, they will.

Oh, and if you use Google Home, they also store a live recording of every command you've (or anyone else) has ever said to your device! Yes, you heard that right (err... they heard it) – you can check out all the recordings [on your Google activity page](#).

Essentially, if you allow them to, they'll track pretty close to, well, *everything you do on the Internet*. In fact, even if you tell them to stop tracking you, Google has been known to not really listen, for example with [location history](#).



## You Become the Product

Why does Google want all of your information anyway? Simple: as stated, Google isn't a search company anymore, they're a tracking company. All of these data points allow Google to build a pretty robust profile about you. In some ways, by keeping such close tabs on everything you do, they, at least in some ways, may know you better than you know yourself.

And Google uses your personal profile to sell ads, not only on their search engine, but also on over three million other websites and apps. Every time you visit one of these sites or apps, Google is following you around with hyper-targeted ads.

It's exploitative. By allowing Google to collect all this info, you are allowing hundreds of thousands of advertisers to bid on serving you ads based on your sensitive personal data. Everyone involved is profiting from your information, except you. You are the product.

It doesn't have to be this way. It is entirely possible for a web-based business to be profitable without making you the product – since 2014, [DuckDuckGo](#) has been profitable without storing or sharing any personal information on people at all. You can read more about our business model [here](#).

## The Myth of “Nothing to Hide”

Some may argue that they have “nothing to hide,” so they are not concerned with the amount of information Google has collected and stored on them, but that argument is fundamentally flawed [for many reasons](#).

Everyone has information they want to keep private: Do you close the door when you go to the bathroom? Privacy is about control over your personal information. You don't want it in the hands of everyone, and certainly don't want people profiting on it without your consent or participation.

In addition, privacy is essential to democratic institutions like voting and everyday situations such as getting medical care and

performing financial transactions. Without it, there can be significant harms.

On an individual level, lack of privacy leads to putting you into a [filter bubble](#), getting manipulated by ads, [discrimination](#), fraud, and identity theft. On a societal level, it can lead to deepened polarization and societal manipulation like we've unfortunately been seeing multiply in recent years.

## You Can Live Google Free

Basically, Google tries to track too much. It's creepy and simply just more information than one company should have on anyone.

Thankfully, there are many good ways to reduce your Google footprint, even close to zero! If you are ready to live without Google, [we have recommendations](#) for services to replace their suite of products, as well as instructions for [clearing your Google search history](#). It might feel like you are trapped in the Google-verse, but it is possible to break free.

For starters, just switching the search engine for all your searches goes a long way. After all, you share your most intimate questions with your search engine; at the very least, shouldn't those be kept private? If you switch to the [DuckDuckGo app and extension](#) you will not only make your searches anonymous, but also block Google's most widespread and invasive trackers as you navigate the web.

If you're unfamiliar with DuckDuckGo, we are an Internet privacy company that empowers you to seamlessly take control of your personal information online, without any tradeoffs. We operate a search engine alternative to Google at <http://duckduckgo.com>, and offer a [mobile app and desktop browser extension](#) to protect you from Google, Facebook and other trackers, no matter where you go on the Internet.

We're also trying to educate users through our [blog](#), [social media](#), and a [privacy “crash course” newsletter](#).

The following article was posted to wikipedia.com under a Creative Commons License. [bit.ly/2Ndmo8W](http://bit.ly/2Ndmo8W).

## Wikipedia Criticism of Gmail

Main article: [Criticism of Google](#)

### Privacy

Google has one privacy policy that covers all of its services.

Google claims that Gmail refrains from displaying ads next to potentially sensitive messages, such as those that mention race, religion, sexual orientation, health, or financial statements.

### Automated scanning of email content

Google's mail servers automatically scan emails for multiple purposes, including to add context-sensitive advertisements next to emails, and to filter spam and malware.

Privacy advocates raised concerns about this practice; concerns included that allowing email content to be read by a machine (as opposed to a person) can allow Google to keep unlimited amounts of information forever; the automated background scanning of data raises the risk that the [expectation of privacy](#) in email usage will be reduced or eroded; information collected from emails could be retained by Google for years after its current relevancy to build complete profiles on users; emails sent by users from other email providers get scanned despite never having agreed to Google's privacy policy or terms of service; Google can change its privacy policy unilaterally, and for minor changes to the policy it can do so without informing users; in court cases, governments and organizations can potentially find it easier to legally monitor email communications; at any time, Google can change its current company policies to allow combining information from emails with data gathered from use of its other services; and any internal security problem on

Google's systems can potentially expose many – or all – of its users.

In 2004, thirty-one privacy and civil liberties organizations wrote a letter calling upon Google to suspend its Gmail service until the privacy issues were adequately addressed. The letter also called upon Google to clarify its written information policies regarding data retention and data sharing among its business units. The organizations also voiced their concerns about Google's plan to scan the text of all incoming messages for the purposes of ad placement, noting that the scanning of confidential email for inserting third-party ad content violates the implicit trust of an email service provider.

On June 23, 2017, Google announced that, later in 2017, it will phase out the scanning of email content to generate contextual advertising, relying on personal data collected through other Google services instead. The company stated that this change was meant to clarify its practices and quell concerns among enterprise [G Suite](#) customers who felt an ambiguous distinction between the free consumer and paid professional variants, the latter being advertising-free.

### Lawsuits

In March 2011, a former Gmail user in Texas sued Google, claiming that its Gmail service violates users' privacy by scanning e-mail messages to serve relevant ads.

In July 2012, some California residents filed two class action lawsuits against Google and [Yahoo!](#), claiming that they illegally intercept emails sent by individual non-Gmail or non-Yahoo! email users to Gmail and Yahoo! recipients without the senders' knowledge, consent or permission. A motion filed by Google's attorneys in the case concedes that Gmail users have "no expectation of privacy".

A court filing uncovered by advocacy group Consumer Watchdog in August 2013 revealed that Google stated in a court filing that

no "reasonable expectation" exists among Gmail users in regard to the assured confidentiality of their emails. In response to a lawsuit filed in May 2013, Google explained:

"... all users of email must necessarily expect that their emails will be subject to automated processing ... Just as a sender of a letter to a business colleague cannot be surprised that the recipient's assistant opens the letter, people who use web-based email today cannot be surprised if their communications are processed by the recipient's ECS [electronic communications service] provider in the course of delivery.

A Google spokesperson stated to the media on August 15, 2013 that the corporation takes the privacy and security concerns of Gmail users "very seriously."

#### **April 2014 Terms of service update**

Google updated its terms of service for Gmail in April 2014 to create full transparency for its users in regard to the scanning of email content. The relevant revision states: "Our automated systems analyse your content (including emails) to provide you personally relevant product features, such as customised search results, tailored advertising, and spam and malware detection. This analysis occurs as the content is sent, received, and when it is stored." A Google spokesperson explained that the corporation wishes for its policies "to be simple and easy for users to understand."

In response to the update, Jim Killock, executive director of the Open Rights Group, stated: "The really dangerous things that Google is doing are things like the information held in Analytics, cookies in advertising and the profiling that it is able to do on individual accounts".

#### **Microsoft ad campaign against Google**

In 2013, Microsoft launched an advertising campaign to attack Google for scanning email messages, arguing that most

consumers are not aware that Google monitors their personal messages to deliver targeted ads. Microsoft claims that its email service Outlook does not scan the contents of messages and a Microsoft spokesperson called the issue of privacy "Google's kryptonite." In response, Google stated; "We work hard to make sure that ads are safe, unobtrusive and relevant ... No humans read your e-mail or Google Account information in order to show you advertisements or related information. An automated algorithm — similar to that used for features like Priority Inbox or spam filtering — determines which ads are shown." [The New York Times](#) cites "Google supporters", who say that "Microsoft's ads are distasteful, the last resort of a company that has been unsuccessful at competing against Google on the more noble battleground of products".

#### **Other privacy issues**

##### **2010 attack from China**

In January 2010, Google detected a "highly sophisticated" cyber-attack on its infrastructure that originated from China. The targets of the attack were Chinese human rights activists, but Google discovered that accounts belonging to European, American and Chinese activists for [human rights in China](#) had been "routinely accessed by third parties". Additionally, Google stated that their investigation revealed that "at least" 20 other large companies from a "wide range of businesses" - including the Internet, finance, technology, media and chemical sectors – had been similarly targeted. Google was in the process of notifying those companies and it was also working with relevant US authorities. In light of the attacks, Google enhanced the security and architecture of its infrastructure, and advised individual users to install anti-virus and anti-spyware on their computers, update their operating systems and web browsers, and be cautious when clicking on Internet links or when sharing personal information in instant messages and emails.

### Social network integration

The February 2010 launch of [Google Buzz](#), a former social network that was linked to Gmail, immediately drew criticism for publicly sharing details of users' contacts unless the default settings were changed. A new Gmail feature was launched in January 2014, whereby users can email people with Google+ accounts even though they do not know the email address of the recipient. Marc Rotenberg, President of the [Electronic Privacy Information Center](#), called the feature "troubling", and compared it to the Google Buzz initial launch privacy flaw.

### Update to DoubleClick privacy policy

In June 2016, [Julia Angwin](#) of [ProPublica](#) wrote about Google's updated privacy policy, which deleted a clause that had stated Google would not combine DoubleClick web browsing cookie information with [personally identifiable information](#) from its other services. This change has allowed Google to merge users' personally identifiable information from different Google services to create one unified ad profile for each user. After publication of the article, Google reached out to ProPublica to say that the merge would not include Gmail keywords in ad targeting.<sup>[145]</sup>

### Outages

Gmail suffered at least seven outages in 2009 alone, causing doubts about the reliability of its service. It suffered a new outage on February 28, 2011, in which a bug caused Gmail accounts to be empty. Google stated in a blog post that "email was never lost" and restoration was in progress. Another outage occurred on April 17, 2012, September 24, 2013, January 24, 2014, and January 29, 2019.

Google has stated that "Gmail remains more than 99.9% available to all users, and we're committed to keeping events like today's notable for their rarity."

### "On behalf of" tag

In May 2009, [Farhad Manjoo](#) wrote on [The New York Times](#) blog about Gmail's "on behalf of" tag. Manjoo explained: "The problems is, when you try to send outbound mail from your Gmail universal inbox, Gmail adds a tag telling your recipients that you're actually using Gmail and not your office e-mail. If your recipient is using [Microsoft Outlook](#), he'll see a message like, 'From youroffice@domain.com on behalf of yourgmail@gmail.com.'" Manjoo further wrote that "Google explains that it adds the tag in order to prevent your e-mail from being considered spam by your recipient; the theory is that if the e-mail is honest about its origins, it shouldn't arouse suspicion by spam checking software". The following July, Google announced a new option that would remove the "On behalf of" tag, by sending the email from the server of the other email address instead of using Gmail's servers.

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The following article was posted to [spreadprivacy.com](http://spreadprivacy.com) on September 14, 2017. [bit.ly/33aVy71](http://bit.ly/33aVy71). © DuckDuckGo Blog.

## How To Live Without Google



*Remove Google from your life? Yes, it can be done!*

Google trackers have been found on [75% of the top million websites](#). This means they are not only tracking what you search for, they're also tracking which websites you visit, and using all your data for ads that follow you around the Internet. Your personal data can also be subpoenaed by lawyers, including for civil cases like divorce. Google answered [over 100,000 such data requests](#) in 2016 alone!

More and more people are also realizing the risk of relying on one company for so many personal services. If you're joining the ranks of people who've decided Google's data collection has become too invasive, here are some suggestions for replacements with minimal switching cost. Most are free, though even those that are paid are worth it — the cost of not switching is a cost to your personal privacy, and the good news is we have a choice!



### Google Search -> [DuckDuckGo](#) (free)

Let's start off with the easiest one! Switching to DuckDuckGo not only keeps your searches private but also gives you extra advantages such as our [bang shortcuts](#), handy [Instant Answers](#), and knowing you're not trapped in a [filter bubble](#).

### Gmail, Calendar & Contacts -> [FastMail](#) (paid)

We host [@duckduckgo.com](#) addresses on FastMail, an independent, paid service that also includes calendar and contacts support across all devices. There are also several ways to get encrypted email between trusted parties by [integrating PGP encryption tools](#). Even more private email alternatives are [ProtonMail](#) and [Tutanota](#), both of which offer end-to-end encryption by default.

### YouTube -> [Vimeo](#) (free with paid options)

For videos that are only on YouTube (unfortunately, a lot), you can search for and watch them on DuckDuckGo for better privacy protection via YouTube's "youtube-nocookie" domain. If you're creating and hosting video yourself, however, Vimeo is the best-known alternative which focuses on creators.

**Google Maps** -> [Apple Maps](#) (free), [OpenStreetMap](#) (free)

For iOS users, Apple gives you an alternative built in via Apple Maps, so no installation is necessary. For wider device support, check out OpenStreetMap (OSM) which is more open, though may not have the same ease-of-use or coverage quality as Apple Maps.

**Google Drive** -> [Resilio Sync](#) (free with paid options), [Tresorit \(paid\)](#)

Another service we use internally, Resilio Sync, provides peer-to-peer file synchronization which can be used for private file storage, backup, and file sharing. This also means your files are never stored on a single server in the cloud! The software is available for a wide variety of platforms and devices, including servers. An alternative cloud storage and backup service with end-to-end encryption is [Tresorit](#).

**Android** -> [iOS](#) (paid)

The most popular alternative to Android is of course iOS, which offers easy device encryption and encrypted messaging via iMessage by default. We also have [tips to increase privacy protection on your iPhone or iPad](#).

**Google Chrome** -> [Safari](#) (free), [Firefox](#) (free), [Brave](#) (free)

Safari was the first major browser to include DuckDuckGo as a built-in private search option. A more cross-device compatible browser is Mozilla's Firefox, an open source browser with a built-in tracker blocker in private mode. Brave goes one step further with tracker blocking switched on by default. There are also [many more browsers](#) that come with DuckDuckGo as a built-in option, such as [Vivaldi](#), which is well suited for power-users.

**Blogger** -> [Ghost](#) (paid), [WordPress.com](#) (free with paid options)

Ghost is both a hosted (paid) and self-installable blogging platform, tracker-free by default and run by a non-profit foundation. We like it so much we use it for [our own blog](#)! A free alternative is WordPress, powering an estimated 33% of the world's websites. It's also available both for self-installation and

as a hosted service with no third-party trackers by default. The community is huge with extensive multilingual documentation and many themes to choose from.

**Google Hangouts** -> [Zoom](#) (free with paid options), [appear.in](#) (free with paid option)

Zoom is a robust video chat alternative we use internally that works well even for large numbers of participants, though requires software to be installed. A web-only alternative is appear.in which doesn't require an account — just go to the website to open a chat room and you're ready.

**Google Duo and Android Messages** -> [Signal](#) (free)

There are several services offering private messaging but, as we've mentioned before, Signal gets our recommendation. It offers free, end-to-end encryption for both messages and private calls. It's also recommended by Edward Snowden and renowned security expert Bruce Schneier, among others.

**Google Groups** -> [MeWe](#) (free with a paid version), [Discourse](#) (paid, or free if self-installed)

MeWe is a social network based around groups that can be made private or public. Their privacy policy makes clear that they don't collect or share personal data. Alternatively there's Discourse, which is an open source discussion platform, offering public and private conversations with a trust system and spam protection. Paid hosting is offered but the software is also freely available for administrators to host on their own servers.

As you can see, moving away from Google needn't be hard. In fact, you might find you prefer the alternatives while also getting better privacy!

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David Pogue posted the following article to [nytimes.com](https://www.nytimes.com/2019/10/27/technology/ios-13-features.html) on October 27, 2019. [nyti.ms/2pE5tU7..](https://www.nytimes.com/2019/10/27/technology/ios-13-features.html) © The New York Times Company. He is a-tech columnist for The Times and author of over 100 books.

## 16 Useful Gems in Apple's New iOS 13

iOS 13, Apple's new operating system for the iPhone, comes with tons of new tools under the hood. Here are some of the most helpful.



### By David Pogue

Every September, Apple offers the world a new update of its iOS software for iPhones. This year's version, iOS 13, didn't exactly have a graceful landing; since its release in September, Apple has produced no fewer than five follow-up versions intended to fill feature holes and fix bugs. A sixth version, 13.2, is in beta testing now.

But never mind all that. Apple has said plenty about what it considers the most important new features: Dark Mode, which gives all your apps a slick, white-on-dark, inverted-colors look; QuickPath, which lets you type by swiping sloppily across the relevant keys instead of tapping them, as you can on Android phones; and a rewritten Maps app.

But when you give thousands of software engineers a whole year to improve your phone software, you wind up with dozens of features that don't get a lot of press. Here, then, is a treasure map to the hidden gems of iOS 13.

### Voice Control

You can now do *everything* on the phone by voice alone: tap and drag, operate buttons and sliders, edit text, even "push" the buttons on the edges of the phone. The feature is intended for disabled iPhone fans. But it's so complete, easy, and fast, it might appeal to other kinds of people, too: those whose hands are wet or grubby, for example, or those who are reclining and tired.

To turn on Voice Control, tap Settings >Accessibility >Voice Control.

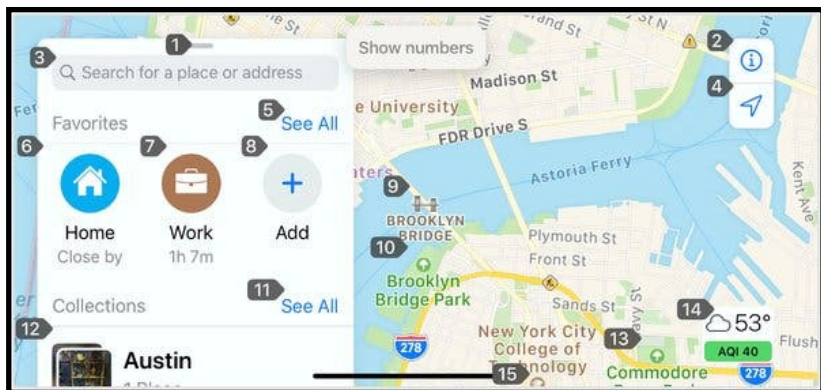
#### [Pogue tries iOS 13 voice control.](#)

At this point, you can navigate by saying, for example, "Go Home," "Open Maps," "Go back," "Open app switcher," and "Open Control Center."

You can "use your fingers" by saying, "Tap Reply," "long-press Mail," "swipe up," "scroll down," "zoom in," "pan up," "swipe left three," and so on. Instead of pressing the hardware buttons on the phone, say, "Turn volume up," "Mute sound," "Rotate to portrait," and "Take screenshot."

The real miracle is text editing. You can say "Delete that" to backspace over the last utterance (or, say, "Delete previous two lines"). Best of all, you can speak corrections, which is heaven-sent when you have to fix the errors (either yours or Siri's) in a dictated message. Just say, "Replace 'Never call me again' with 'Best of luck.'"

If there's something you want to tap, like a spot on the map, that has no identifying labels, say, "Show numbers," "Show grid," or "Show labels." You get tiny numbers, words, or grid squares overlaid on the screen. Speak what you want to tap.

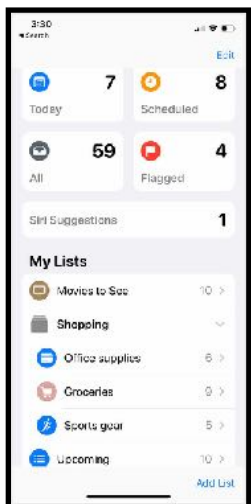


When you say “Show numbers,” Voice Control shows everything you can tap.

And don’t worry about triggering accidental functions. The phone ignores everything you say (“Hey, can I borrow your charger?”) that isn’t a command (“open Messages”).

### A Reminders Overhaul

The Reminders app is a far more competent To Do manager in iOS 13. One welcome touch: you can now create “subtasks” for a reminder. For example, for a reminder called “Tonight’s hot date,” the indented subtasks might be “Shower,” “Pick up dry cleaning,” and “Get braces removed.”



*The new Reminders app lets you create nested To-Do items, as shown here by the Shopping reminder.*

To create a subtask, long-press the subordinate item’s name and then drag it beneath the primary one. It indents itself.

To make Reminders more useful, iOS 13 lets you create them right from within Messages, Mail, Photos, Maps, and other apps. Select some text (or a photo, or a location, or whatever), tap the Share button, and then tap Reminders. You’ll see the new To Do the next time you open Reminders.

Finally, this one’s worth its weight in gold: When you’re creating a Reminder, you can turn on “Remind me when messaging” and then tap Choose Person to pluck somebody’s name from Contacts. When you next begin messaging this person, the reminder will pop up.

It’s ideal for those moments when you’re preparing for bed and remember: “Oh shoot — I forgot to ask Robin to return my Tesla.”

### Text-Editing Gestures

There’s no more Loupe — the magnifying glass that has made placing the text-insertion point easier for the last 12 years. Instead, you’re supposed to drag the blinking insertion point with your finger. It gets larger as you drag it into position.

Alternatively, use the iPhone’s invisible trackpad. When you long-press the Space bar, all the keys go blank; you’ve just turned the entire keyboard area into a trackpad. Keep your finger down; slide it around to move your cursor.

Once you’ve highlighted some text, you can tap anywhere with three fingers to summon a new toolbar, bearing icons for Cut, Copy, and Paste.

But toolbar, schmoolbar — it’s even faster to use the new three-finger gestures.

For Copy, pinch on the screen with three fingers. For Cut, do that twice. For Paste, tap where you want to paste, and then *unpinch* with three fingers (spread them).



You, no doubt, never make mistakes — but for the record, you can now do Undo by swiping left with three fingers. (Swipe right for Redo.)

### Offline Finding

In the beginning, there was Find My iPhone: a feature that let you locate a lost phone from iCloud.com.

In iOS 13, incredibly, that works even if the phone has no internet connection — if, for example, you left it in some Montana bus stop that has no signal.

Apple has turned the world's 1.4 billion *other* iPhones, iPads, and Macs into remote detectors for your phone. Any passing iOS 13 iPhone will, unbeknown to its owner, pick up your phone's silent Bluetooth beacon signal and relay its location back to you.

To make all of this happen so securely that neither Apple nor anybody else can locate your phone, Apple designed a solution that requires you to own a second Apple device; it's the only machine capable of decrypting your phone's location.

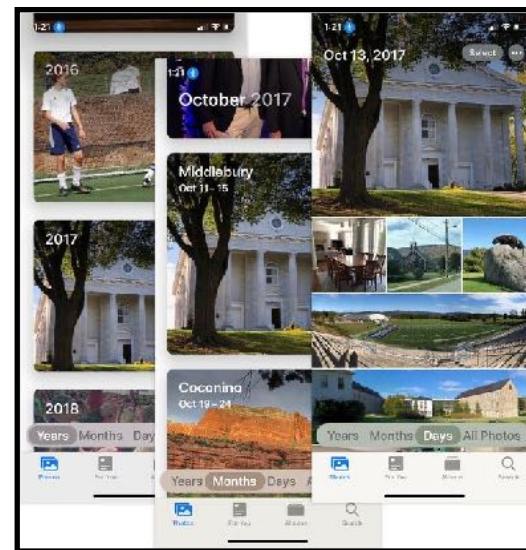
(You can turn the feature off in Settings >[your name] > Find My > Find My iPhone.)

### The New Photo Viewer

The Photos tab of the Photos app presents your entire photos collection in a delightful and efficient way: As grids of photos labeled Years, Months, and Days. (Videos play silently in place as you browse.)

Each presents representative photos; the software omits duplicates, duds, and screenshots. You can time-zoom in or out — from Years to Months to Days, or the other way — by pinching or spreading two fingers.

Handily enough, you remain on the same photo as you zoom. For example, if a photo of a bleary-eyed you is the sample photo for 2019, you'll land on the same photo when you zoom into Months (as the October photo), and again into Days (for this week).



*As you zoom from Years to Months to Days, the Photos app keeps your place, making it easier to recognize the context of the original key photo.*

The Edit screen has some new options: Vibrance, Sharpness, Definition; vertical and horizontal perspective correction; and Vignette, which darkens or brightens the four corners of the photo. For the first time in iPhone history, you can zoom in on a photo while editing.

Perhaps most valuable of all: You can perform any editing maneuver on *videos* just as easily as on photos. That includes all the color-correction tools, perspective-fixing tools, cropping tools, and even rotating tools. At last, you can fix videos that the phone mistakenly captured sideways.

### Miscellaneous

You'd need a hundred articles like this one to document all of the minor improvements, but here's a teaser list:

**No more fiddling at the subway turnstile.** In cities whose transit systems accept Apple Pay, like New York City's, you can

breeze through the gates without the button-pressing and ID-authenticating steps that used to be required every time. To set this up, visit Settings -> Wallet & Apple Pay -> Express Transit Card, and choose the credit card you want to pay your fare. Now just hold the phone near the turnstile sensor and blow on through.

**In the Calendar**, you can attach files, photos, Word or PDF documents to appointments. That's handy for itineraries or business documents for a meeting.

**In the iCloud Drive** (Apple's version of Dropbox), you can now create or open .zip files, compressing or decompressing a file on the fly. Just long-press the file to view the commands.

**In Maps**, iOS 13 displays addresses that it finds in your Calendar appointments, to save typing when getting directions.

**Silence Unknown Callers** (in Settings-> Phone) offers a small weapon against obnoxious robocallers. Every incoming call will go straight to voice mail without making your phone ring, buzz, or display a notification — except calls from people in your Contacts and people you've called yourself.

**Your battery's life span** will be much longer if you turn on Optimized Battery Charging in Settings->Battery. This option makes the iPhone stop charging at 80 percent except when it thinks you'll need the extra oomph, which it learns by studying your daily charging patterns. (Lithium-ion batteries last longest if you avoid charging them fully every day.)

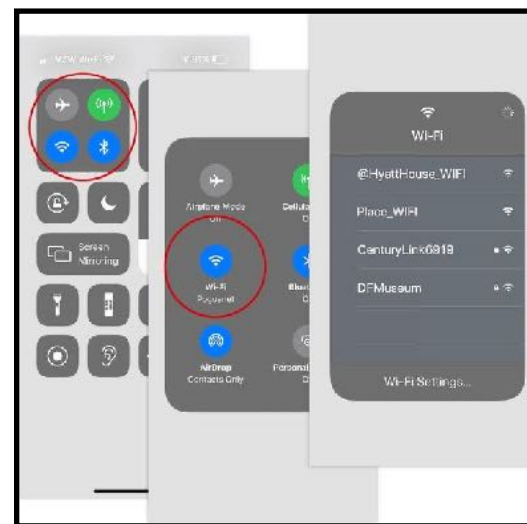
**In Mail**, when you've started addressing a message, you can tap the "i" beside someone's name to see a choice of their email addresses.

**Email formatting** has had a huge upgrade. Now you can decorate your outgoing messages with typefaces, styles, formatting, attachments, and photos. It's all waiting in the new formatting bar, which appears when you tap the < at the right end of the typing suggestions bar.

**In Messages**, you can shoot canned responses right from the conversation list. Long-press a conversation's row to view the available short replies. They're usually along the lines of "Thanks," "Yes," "No," and "Talk later?"

**Siri can play the radio.** It instantly begins to play any of 100,000 radio stations; just ask. "Hey Siri: Play WCBS." "Play BBC Radio 1." "Play 98.1 The Breeze."

**To choose a Wi-Fi network**, you no longer have to burrow into Settings. Just open the Control Center (swipe up from the bottom of the screen, or, on recent models, down from the top right "ear"); long-press the Wi-Fi cluster; and then long-press the Wi-Fi icon. There's your list of available hot spots.



*By long-pressing, you can get to the list of available Wi-Fi networks right at the Control Center.*

All of this, of course, is a lot to get used to — and change, as we all know, is hard. But look at the bright side: You have a whole year to get used to the new software before Apple changes it again next fall.

The MacRumors staff posted the following article to [macrumors.com](http://macrumors.com) on November 7, 2019. [bit.ly/2Q72BtQ](https://bit.ly/2Q72BtQ). © MacRumors.com,LLC.

## iPadOS

iPadOS is a version of iOS 13 that runs on the iPad, with extra features designed specifically for the iPad's larger display.



### AT A GLANCE

iPadOS is Apple's version of iOS designed for the iPad. It features an updated Home screen, improved multitasking functionality, new Apple Pencil features, support for external drives, folder sharing in Files, and all of the other new changes in iOS 13.

### FEATURES

- Systemwide Dark Mode
- Reduced Apple Pencil latency
- Expanded Markup availability
- External drive support
- Safari download manager
- Improved multitasking
- New Keyboard shortcuts
- Text editing improvements

### What's New in iPadOS

iPadOS, introduced at the 2019 Worldwide Developers Conference, is a version of iOS 13 that's designed to run on Apple's iPads. According to Apple, iPadOS is built on the same foundation as iOS, but with powerful new capabilities included specifically for the larger display of the iPad.

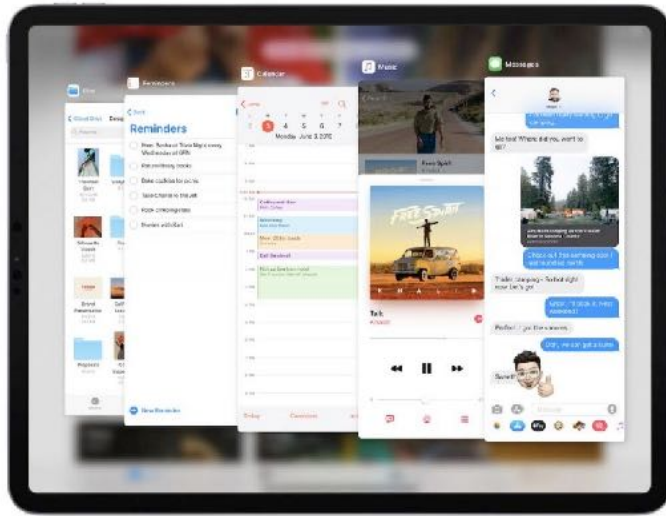
First and foremost, **iPadOS includes almost all of the features available in iOS 13**, including performance optimizations, a new systemwide Dark Mode, a revamped Photos app, a Find My app, Sign In with Apple, updated Maps, and tons more, so for an overview of the new iOS 13 features, [make sure to check out our iOS 13 roundup](#).

The iPadOS roundup below covers the iPad-specific features that are part of iPadOS, rather than the iOS 13 features available on both platforms.

iPadOS features **a new Home screen** for the iPad, which shrinks down the app icon size so you can fit more apps on each page. You can also now add Today Widgets from the left side of the screen onto the Home screen itself for **easier access to your widgets** and at-a-glance info like news headlines, weather, events, and more when your iPad is in landscape mode.

The Split View and Slide Over multitasking options **now support multiple windows from the same app**, so you can do things like open two Safari windows side by side. When in Slide Over view, there's a new option to view and switch between multiple apps with a new **Slide Over card interface**.

**App Exposé**, available when holding down an app's icon, lets you view all of the open windows from a particular app, and there's an option to swap between them with a tap, making it much easier to switch between your open windows on iPad.



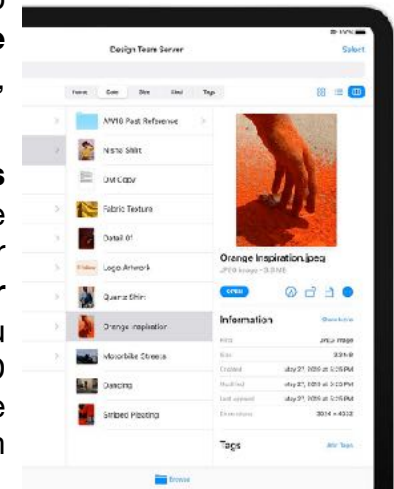
Tapping on the corner of the iPad's display with an Apple Pencil **opens up Markup**, which can now **be used for anything** from webpages and documents to screenshots and emails. Apple has introduced a **redesigned tool palette** for quick access to tools, color palettes, shapes, a ruler, an object eraser, and a new pixel



eraser. The new tool palette is available in Markup and is also available to third-party developers as an API.

In addition to the new Markup features, Apple has **reduced the latency of the Apple Pencil**, dropping it **from 20ms to 9ms**.

The **iPadOS Files app** supports **folder sharing**, so you can share whole folders of files with other people, and there's also **support for external drives** for the first time. You can plug in a USB drive or an SD card and pull data from it right in the Files app, a feature also available on the iPhone.



A new **Column View in the Files app** when the iPad is in landscape mode lets you see high-resolution previews of your files, and **support for Quick Actions** lets you do things like mark up and rotate images and create PDFs. iPadOS also brings **support for local storage, zip and unzip, and 30 new keyboard shortcuts**.

When you use Safari on the iPad, you're always going to **get the desktop version of a website** instead of the mobile version. Websites are scaled appropriately for the iPad's display and optimized for touch, so you can use your favorite web apps like WordPress, Squarespace, Google Docs, and Slack.

For the first time, **Safari has a download manager**, which is a game changer when it comes to managing files that you've downloaded on an iPad from the web, plus Apple has made improvements to tab management.



As with the iPhone, editing text on iPad is better than ever thanks to a **new swipe gesture that lets you select text** and **new gestures for cut, copy, paste, and undo**. A floating keyboard that supports the **new QuickPath swipe feature** allows you to type one handed, and there's support for **installing fonts** across the system.



Thanks to the inclusion of Haptic Touch on the iPhone XR, iPhone 11, and iPhone 11 Pro models, a long press now replicates much of the functionality that was previously limited to 3D Touch devices. There's no haptic feedback, but long press gestures are available on the iPad across iOS 13 for doing things like Quick Actions, link previews, and more.

New to iPadOS, iOS 13, and tvOS 13 is controller support for the PlayStation DualShock 4 and Xbox One S controllers, which means you no longer need a Made for iPhone controller to play games on these devices. Connecting one of the new controllers is done using Bluetooth.

As mentioned above, take a look at our [iOS 13 roundup](#) for a list of features that are available on both the iPad *and* the iPhone, in addition to the iPad-specific features included in iPadOS. We've also got a roundup of the most important features in [our iPad Tips and Tricks guide](#) and in the video below. [youtu.be/pvRcrF-0TeM](https://youtu.be/pvRcrF-0TeM)

### Current Version - iPadOS 13.2.2

The current version of iPadOS 13 is [iPadOS 13.2.2](#), released to the public on November 7. iPadOS 13.2.2 is a bug fix update that addresses an issue that could cause apps to quit unexpectedly when running in the background.

This bug caused apps like Safari and YouTube to refresh more frequently than normal, causing problems in instances where someone might open a YouTube video, swap over to do something else for a second, and then go back to the video only to have it start over from the beginning.

As outlined in the [release notes](#), the update also fixes a few other bugs.

iPadOS 13.2.2 follows iPadOS 13.2, a major update [released to the public](#) on October 28.

iPadOS 13.2 added support for dozens of new emoji characters, like yawning face, waffle, falafel, ice cube, sloth, otter, orangutan,

garlic, onion, skunk, pinching hand, person kneeling, and tons of accessibility options and other miscellaneous emojis.



Image via Emojipedia

The update brought a promised privacy option that allows users to opt out of sharing their Siri and dictation audio recording with Apple, and it adds an option to delete Siri and dictation history. These settings provide users with more control over how their Siri recordings are used.

The update also included Announce Messages with Siri for having Siri read incoming text messages, new privacy settings for Apple's upcoming Research app, a new "Transfer to HomePod" handoff toggle, changes to HomeKit grouping options, and an option to delete apps right from the Home screen. Full details on the update can be [found in our release article](#).

### IPADOS 13.3

Apple has also seeded the first beta of an upcoming iOS and iPadOS 13.3 update to developers for beta testing purposes.

iPadOS 13.3 brings [Communication Limits](#) for Screen Time, a feature that Apple promised would be coming in an iOS 13

update. Communication Limits allow parents to control who their children are able to contact both during downtime and during Screen Time.

The iPadOS 13.3 update also [addresses a multitasking issue](#) where iOS and iPadOS 13.2 users were seeing poor RAM management that caused apps like YouTube and Safari to reload more frequently than normal.

After installing the 13.3 update, affected users are now seeing fewer refreshes when accessing these apps, doing another task, and then opening them again.

In the Keyboards section of the Settings app (under General), there's a new toggle that prevents Animoji and Memoji stickers from being displayed as an option on the Emoji Keyboard. Apple has also tweaked the Apple Watch app icon, changing the color of the Digital Crown from black to gray.

### New Home Screen

By splitting up iOS 13 and iPadOS, Apple is free to make changes designed just for the larger display of the iPad. One of these changes includes an iPad-specific Home screen redesign, created specifically for bigger displays.

Icons on the iPad's Home screen now take up less space so you can fit more of them on each page of the Home screen, and there's a handy new widget feature.





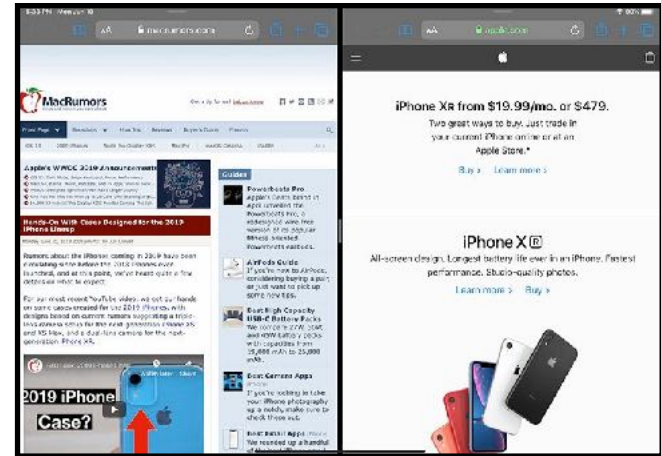
You can move the Today View widgets right onto the Home screen so you can see your most important information right on the display. All of your standard widgets appear, but only in landscape mode.

In portrait mode, your widgets are where they always are -- accessible with a swipe to the right on the Home screen. Customize your widgets by accessing them on the Home screen and tapping the "Edit" button at the bottom. Favorited widgets are the ones that show up on the Home screen, but you can swipe to see all of your other widgets.

### Multitasking Updates

Having multiple windows open on an iOS device has always been a feature specific to the iPad, and in iPadOS, Apple has introduced some improvements to make multitasking more powerful and functional.

Both the Split View and Slide Over multitasking interfaces support multiple windows from the same app, so you can do things like open two Safari windows side by side or open two Pages documents at once.

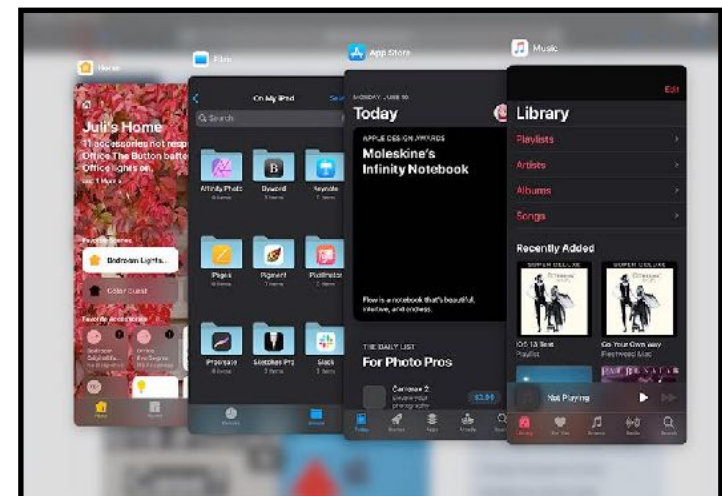


You can have multiple instances of the same app in multiple spaces so you can have several windows open at once, swapping between the various spaces through the App Switcher.

Creating windows can be done by dragging content from one window into its own space. You can, for example, drag a link to open Safari, a location to open Maps, or an email address to open Mail.

### SLIDE OVER

When using the Slide Over interface, there's an option to view and switch between multiple apps more quickly, which lets you



open up several apps and then flip between them as needed, similar to having several open windows on a Mac.

Using Slide Over this way makes it easy to do something like access Messages or Calendar quickly while working on a document or browsing the web with the Split View interface.

You can keep all of the apps you need to access occasionally stored in Slide Over, swapping between them with just a few taps. Swipe up to see all of your apps in Slide Over, and make a Slide Over app full screen by dragging it upwards.

You can close Slide Over app windows by accessing the App Switcher and then flicking upwards on a window in Slide Over.

## APP EXPOSÉ

App Exposé is a new feature that's available when holding down on an app's icon. It lets you view all of the open windows from a particular app, and there's an option to swap between them with a tap, making it easy to see everything that you've got open and swap between tasks.



## Apple Pencil Improvements

With iPadOS, the Apple Pencil is more deeply integrated into the iPad, mainly through new Markup tools available throughout the operating system.

## MARKUP

Entire webpages, documents, or emails can be edited and annotated using the Markup feature by swiping the Apple Pencil from the corner of the screen. Dragging the Apple Pencil from the bottom corner of the iPad also lets you take a screenshot.



Markup has a new tool palette with quicker access to the tools that you use most along with color palettes, shapes, an object eraser, and a new pixel eraser that removes any part of a stroke. There's also a new ruler tool designed to help you draw straight lines.

The tool palette can be dragged anywhere on the screen so you can customize how you work, and Apple is making the API available to developers so the same familiar toolbar is available across apps.

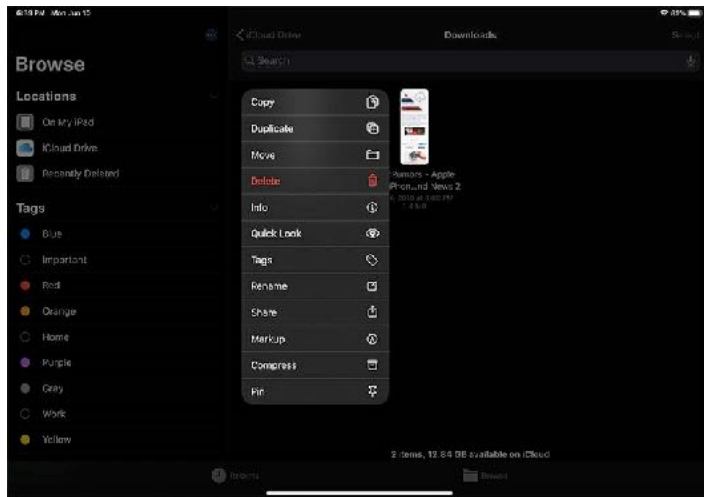


## LATENCY

Thanks to optimization improvements, the Apple Pencil's latency is as low as 9 milliseconds now, down from 20 milliseconds.

## Files App

Revamped in both iPadOS and iOS 13, the new Files app supports USB drives, SSDs, SD cards, SMB file servers, and more, allowing you to access the files you need right within the Files app.



There's a new Column View available in the Files app that lets you preview your files, just like you can do with Finder on Mac. It even supports Quick Actions like Markup, rotate, and create PDF, so you can do even more on your iPad right within the Files app.

iCloud Drive now supports folder sharing so you can share entire folders with people, and there's local storage now, so you can store files right on your iPad. This feature is coming in an update to iOS 13 in the fall.

Apple has also added new keyboard shortcuts for accessing the Files app and an ability to zip and unzip files.

## Safari

Safari on iPad now automatically loads desktop versions of websites, scaled appropriately to the iPad's display and optimized for touch. This means iPad users are no longer forced to load mobile versions of websites in some cases, for a consistent computer-like Safari usage experience.

The new Safari experience works with web apps like Google Docs, Squarespace, and WordPress, so you can do everything you can normally do on a Mac on your iPad.

Safari also features 30 new keyboard shortcuts, improvements to tab management, and a new download manager so you can see just what you've downloaded. When using Safari in Split View, you'll now see the full Safari toolbar.

## More on Safari

For more on all of the new features in Safari in iOS 13 and iPadOS, [make sure to check out our Safari guide](#).

## Text Editing

To scroll through long documents and web pages, you can now grab the scroll bar and drag it downwards or upwards, which is quicker than simple swiping. Selecting text can now be done by dragging your finger over it.

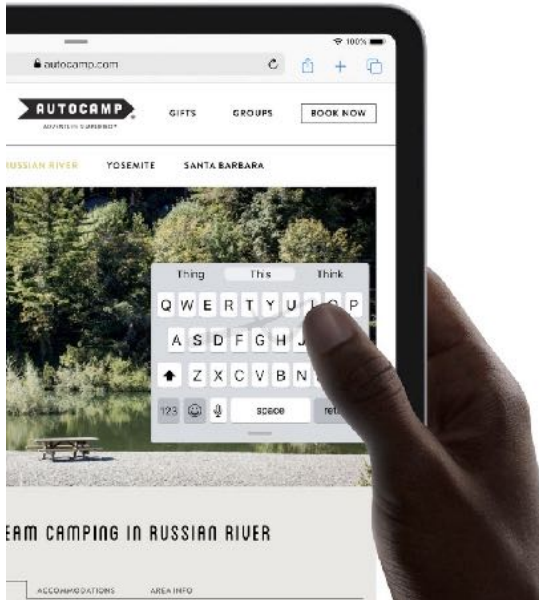
You can select a word with a double tap, an entire sentence with a triple tap, or a whole paragraph with a quadruple tap.

Double tapping quickly selects elements like phone numbers, email addresses, and addresses, and you can now pick up the cursor and move it to where you need it with a simple drag, a gesture that's quicker than the prior iOS 12 cursor movement.

Apple added new gestures for cut, copy, and paste. Pinch up with three fingers to copy, pinch up with fingers two times to cut, and pinch down with three fingers to paste. To undo and redo, you can now use three finger swipes to the left and right.

If you want to select multiple email messages, files, or folders, you can tap with two fingers and then use a drag gesture.

To make typing even simpler on the iPad, Apple has added a new floating keyboard that enables one-handed typing. It supports Apple's new QuickPath swipe-based typing feature.



Enabling the new floating keyboard can be done by pinching in on the keyboard and dragging it anywhere on the iPad's screen.

## Long Press Gestures

In iOS 13, long press gestures on the iPad mimic some of the functionality that was previously limited to devices with 3D Touch. This is because Apple has been introducing support for Haptic Touch, a 3D Touch replacement first introduced on the iPhone XR and then expanded to the new 2019 iPhone models.

You can long press on an app to bring up Quick Actions, for example, or peek into a link to see a little preview. You won't get a haptic feedback response like you do on the iPhone, but the functionality is there all the same.

[How to Use iOS 13's Text Editing Gestures on iPhone and iPad](#)

## Sidecar

With macOS Catalina, your iPad can be used as a secondary display for your Mac, either by extending your Mac's display or mirroring it. With this feature, you can use apps like Photoshop or Illustrator right on your iPad, and they even work with Apple Pencil.

When not being used for drawing, the Apple Pencil works for pointing and clicking like you might do with a mouse. You can write and sketch on PDFs for documents and see the updates live on your Mac, or create a sketch on iPad and then insert it into any document on Mac.

[Apple's Sidecar - Turn an iPad Into a Secondary Mac Display!](#)

Sidecar works with a cable or wirelessly from within 10 meters and it needs to be initiated from a Mac to work. Sidecar on iPad is limited to iPads that work with the Apple Pencil. For more on Sidecar, make sure to [check out our Sidecar guide](#).

## Mouse Support

iPadOS introduces mouse support for the first time, allowing a USB mouse to be connected to an iPad. Mouse support is not a standard feature, but is instead available as an AssistiveTouch option within the Accessibility settings on your iOS device.

## iPadOS How Tos

[How to Use the QuickPath Swipe Keyboard on iPhone and iPad](#)

[How to Use the Onscreen Floating Keyboard in iPadOS](#)

[How to Create a New Window From a Link in Safari on iPadOS](#)

[How to Use App Exposé in iPadOS](#)

[How to Delete Your Siri Audio History and Opt Out of Siri Audio Sharing](#)

## iOS 13

The iPad and the iPhone share many features, and there are a lot of other new changes in iOS 13 that are also available in iPadOS. In fact, all of the new features in iOS 13, including Dark Mode, Find My, app updates, and more, are in iPadOS.

For details on these features, make sure to [check out our iOS 13 roundup](#).

## Compatibility

iPadOS is also compatible with a wide range of iPads, both old and new.

- All iPad Pros
- iPad (5th, 6th & 7th generation)
- iPad mini 4 & 5
- iPad Air (3rd generation)
- iPad Air 2

## Release Date

Apple released iPadOS to the public on Tuesday, September 24, alongside iOS 13.1 and following the September 19 launch of iOS 13 for iPhones. The first available version of iPadOS was iPadOS 13.1.

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*The following article was posted to [techsviewer.com](http://techsviewer.com) around June, 2019. [bit.ly/2XARg6S](http://bit.ly/2XARg6S). © techsviewer.com.*

## macOS Catalina Slow? How Am I Able To Fix It

Written by John



Today we are going to be taking a closer look at the newest version of the Mac Operating System which is the 10.15 installment called Catalina. This latest version will come packed with lots of exciting new features for the end user to try. Some of the most demanded and anticipated updates include upgrades towards the areas of security and performance. Due to the vast abundance of exciting features, there's no guessing as to why everyone is excited to see what is in store. However, despite all of these positives, there is one issue, many people who have already installed mac OS Catalina have discovered that the updated Catalina OS has actually started to slow their screen down so today we're going to look at why it might be slowing your system down.

Before anything else, one thing to suspect is that your physical Mac laptop or desktop doesn't actually support this latest edition of macOS. This could certainly be the case if your Mac was made before the year of 2012 as it won't be compatible with macOS 10.15 Catalina. If you find yourself finding that this was the reason why the only solution you've got really is to disable some of the new features that came along with Catalina to see if that starts to speed up the computer. However if this reason doesn't apply to you and your Mac does indeed support Catalina, all is not lost. There are plenty more things we're going to be able to try and speed up your Mac OS system. Throughout this tutorial, we're going to be looking at first and foremost the

reasons why your macOS Catalina slow, and secondly what you can do to fix these issues.

## How to speed up macOS Catalina

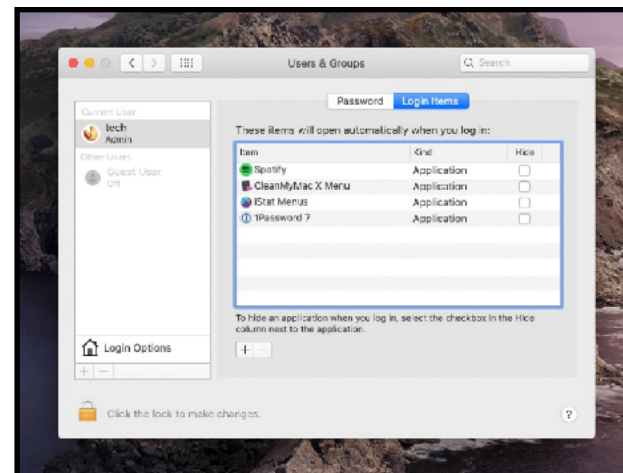
It is actually to be expected for your Mac to be running slow should you have just gone through the process of installing macOS 10.15 Catalina. This might be expected; however, there isn't one single reason why this should be expected. Instead, there are many reasons and solutions that you can try to try and speed your slow macOS Catalina and get it running back to speeds you expect an updated Mac OS Catalina too.

### 1. Disabling Your Start-up items

When you're switching your Mac on from it being turned off if you find that it takes forever and a day to boot up this can sometimes cause frustration and stress that you could really have done without. However, all is not lost, there is a solution to speed up the boot process of your Mac OS. Before finding what solution will fix the problem first, you'll need to find the reason why macOS Catalina slow login. For your benefit, we are going to look at every problem and solution individually so that you know which will work for you.

#### Try disabling programs that automatically run:

When you first boot up your Mac, there are a series of programs that will just start up themselves automatically without you even noticing. These 'start-up' items will always start themselves upon the Mac being switched on unless you tell them to otherwise. The reason that this could be the culprit is that they're all starting up at the same time upon the machine being switched on and this congestion causing the system to slow down. If you want to stop these programs automatically starting up to follow these steps:



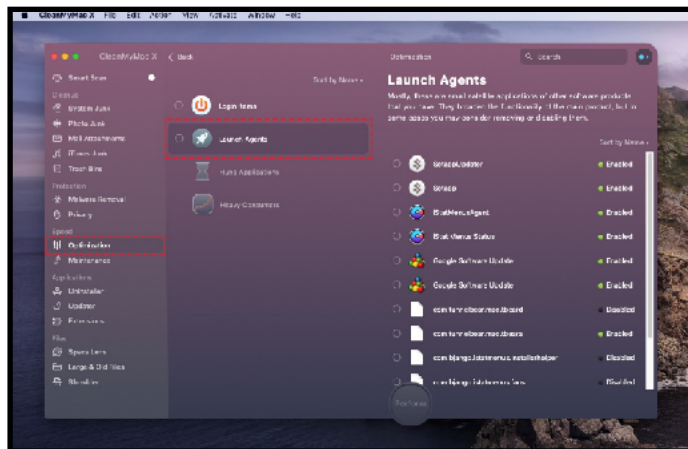
*Disable Startup Items on Catalina*

1. Click on the Apple Menu in the top left of your screen.
2. Navigate to 'System Preferences'.
3. From here select 'Users and Groups'.
4. Now you're going to want to click your username that should show up on the right-hand side of the screen. After you've clicked that, go to the left and click 'login items'. Now once you've done this, it will show you the list of programs that automatically start up when you switch your machine on.
5. Tick the boxes of the programs that you don't want to automatically, once you've made all of your selections click the minus (-) that should be located at the bottom of your window.

#### Try disabling start-up items that are hidden

Not all of the programs that start up automatically upon boot are visible. Some of these start-up programs are what we call "hidden", and for this reason, you might not have already disabled them, and thus they will still be having an impact on the speed of your Macs boot. To resolve this issue, we need to use the Optimization feature that is located in the program called

Clean My Mac. Navigate to the program and then follow these steps:



*Disabling Hidden Startup items*

1. Navigate to the speed tab and select this.
2. Next, find optimization, select it and then click "Launch Agents". From here you will now see a list of service applications that run automatically when your Mac boots up. What you're going to want to do now is disable every single one of these applications or alternatively remove them.

Now that you have taken care of both the visible and hidden start-up items you might now notice an improvement in the speed that your Mac boots up should you have just upgraded to Catalina.

## 2. Resetting Both Your SMC and NVRAM/PRAM

If either your SMC or PRAM finds themselves in a state of corruption, this can have a devastating effect on the speed of your Mac boot up process. However, there is a way around this corruption, and that is to reset both of them.

Firstly let's explain what SMC is. The System Management Controller is responsible for the smooth running of hardware such as fans inside your Mac computer. So you need to be

careful to follow these steps carefully to reset this. And which set of steps you follow depends on what type of Mac you're using:

### To Reset your SMC on either a MacBook Air, MacBook Pro or a Macbook:

1. Firstly switch your Mac off altogether and remove the power cable.
2. Wait roughly around 15 seconds before plugging your power cable back in.
3. Without first switching on the Mac, hold the Left Shift, Option, Control and Power buttons all together at the same time for a minimum of 10 seconds.
4. Release all the keys and power on your Mac as usual.

### If you need to reset the SMC on your iMac, Mac Pro, Xserve or Mac Mini:

1. First, you're going to want to, in the same way as the previous, switch your Mac off and then unplug the power cable.
2. Leave the power cable out for 15 seconds before plugging it back in.
3. Wait a further 5 seconds and switch the Mac back on.

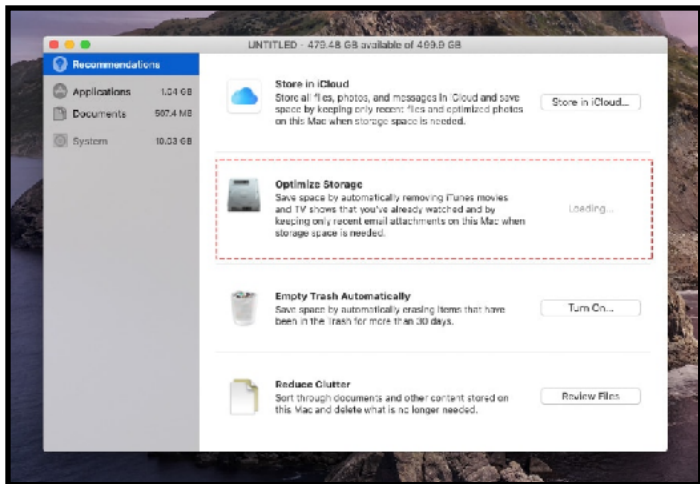
### Reset your NVRAM or PRAM

You should only be needed to reset your NVRAM or PRAM if there is either an issue with the resolution of your Mac if it is reporting the battery as being at the wrong level or finally if you're going to boot the Mac up and it's going from the wrong disk. To reset follow these steps:

1. Switch your Mac off and leave it off for a few seconds roughly.
2. Switch your Mac back on and press the Option, Command, P & R Keys on your keyboard at the same time.
3. Keep these keys held down until you see your Mac restarting while making a beeping sound at the same time.

Don't worry, resetting your NVRAM/PRAM will not cause you to lose any data at all.

### 3. Try Optimizing your Storage



*Optimize Storage with Catalina*

This is an essential feature on a Mac that organizes all of your files and ensures that your storage usage at all times is optimized and nothing is being wasted. It also helps free up and storage space so that you have more disk space is available for you to use. If you haven't activated this feature you can do so by:

1. Go to the Apple Menu in the top left of your screen.
2. Click on 'About This Mac' and then to 'Storage' and finally 'Manage'.
3. You should now see a pop-up message that gives you various options, select the option that says 'optimise storage'.

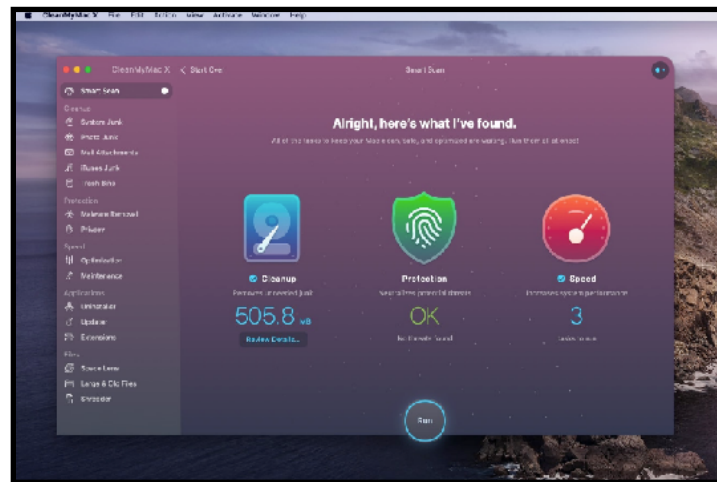
Once this is now activated, the feature will by itself start organising your files efficiently into various categories and will remove any unused files from the system, therefore, clearing up space on your Mac. The reason that this will speed up your Mac is that the Catalina OS now has more space to work with and rely

on for its operations so you should see a considerable improvement.

### 4. Clean up both Your System and App Junk

Another of the main reasons as to why your Catalina Slow could be that you have an abundance of junk files from your system in your current OS before updating to macOS 10.15 Catalina. This will have a domino effect and will start to slow your Mac down after you have updated your Mac.

It could also be that if you have recently installed a new app on your macOS 10.15 Catalina, this could be slowing down your OS. If there is a problem with your App Junk on your macOS and you don't remove this app junk completely, this will then cause a conflict between both the old app junk and the new app junk.



*Clean up both your System and App Junk*

If you find yourself needing to delete this app junk, you will have to use the services of a 3rd Party Application. An excellent app to use is called Clean My Mac, which will comprehensively remove all of the app junk from every area of your disk. However, you can choose between deleting everything or only selected areas of the disk. The best feature of this app is that it is intelligent in how it goes about the cleaning process, i.e. it will only clean up what is

unnecessary and won't compromise your data or your Macs performance. Once you have removed these files, you should see an improvement in terms of the speed of your Mac.

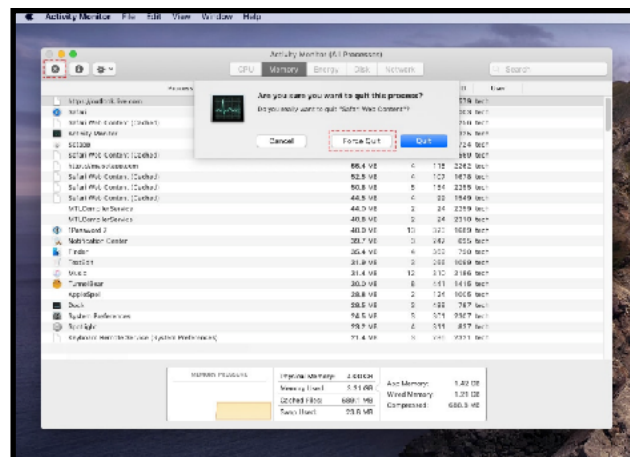
### 5. Disable Apps that are Power Hungry using the Activity Monitor

If you've got to this stage and still not found the reason as to why your Mac is running slow after the Catalina update whilst at the same time noticing that the fans are spinning a lot faster than usual, then don't worry there is a reason for this, and that is that applications are running in the background that requires a lot of power. As well as using up a lot of physical power these applications can also be greedy when it comes to RAM and CPU usage which then leaves less space for Catalina to operate on, meaning that the OS will start to run slower.

If you want to stop these applications from using up so much power, you're going to have to make use of the Activity Monitor. To find this program navigate to 'Applications' and then 'Utilities'. Here you will see 'Activity Monitor', double click on it to open up the application.

You will see a range of columns at the top, click on the '%RAM' column to see all of the programs that are taking up a lot of RAM usage. If you find that you're not using this application, then you will be able to click an 'X' in the top left corner of the screen and clicking this will stop the app. Likewise, if you want to see all of the apps that are taking up too much CPU, then click on the CPU tab and repeat the same process again to stop these memory hungry applications.

When you select the Quit Options this will, in turn, save any changes you've made during the time of the window is open, and don't worry if the window takes a while to close this is totally normal, however if you select the option 'Force Quit' the window will shut down a lot faster but you will have lost all of the changes you've just made.



*Disable Apps that are Power Hungry*

### 6. Double check that your Mac is fully compatible with macOS Catalina

As we have touched on before some Macs are not compatible with specific versions of the macOS. With every release of a new OS comes a whole new set of hardware requirements. Some of your macs out there might fulfill all of these requirements however some of you may not, and even if you try you will struggle to even use the Operating System it will be running at that slow of a speed, here is a list of all the Mac devices that are supported by macOS 10.15 Catalina:

- Mac Pro (Late 2013 or newer)
- iMac Pro (2017 or newer)
- iMac (2012 or newer)
- Mac Mini (Late 2012 or newer)
- MacBook Pro (Mid 2012 or newer)
- MacBook Air (Mid 2012 or newer)
- MacBook (Early 2015 and newer)

If your Mac was made before any of the dates specified above unfortunately you don't have the hardware requirements

necessary to run macOS 10.15 Catalina and your only option is to upgrade your device with a SSD.

## 7. Slow Wi-Fi Connection Speeds on macOS 10.15 Catalina

As you will probably already know there dozens of different reasons as to why your Wi-Fi speed could be delayed. It can be down to your choice of browser, where your router might be located in your house or your distance away from the said router or maybe issues with how many programs you have open that are simultaneously using the internet. Here is some troubleshooting you can carry out.

The first port of call in this instance is to restart your router. Find out where your router is located in your office or home and simply switch it off using the reset button, leave it off for around 10 seconds before switching it back on. It will take approximately 5 minutes for the connection to come back up and look for any improvement.

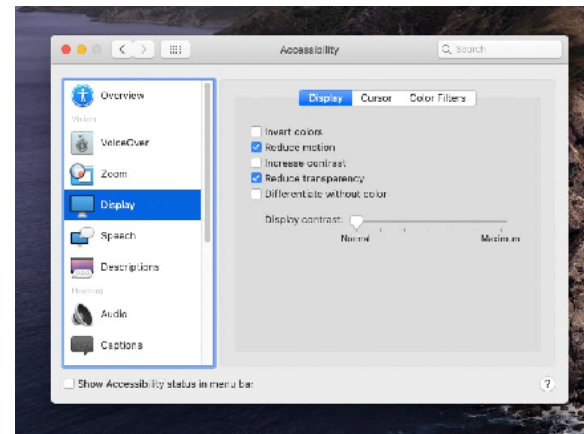
Next, you'll want to check your DNS Settings. To do this:

1. Go to the Apple Menu in the top left of your screen.
2. Select "System Preferences" and Select "Network" and then to "Wi-Fi".
3. Click "Advanced" button, in the next window select the DNS option.
4. Click the [+] button to add a new DNS network.
5. Type in the IP addresses of 8.8.8.8 and 8.8.4.4, respectively. This means that it will first look for googles servers, which will speed up your browsing experience as it is statistically the fastest DNS server.

## 8. Moderate the User Interface Experience

One of the significant changes you might have noticed should you have already have upgraded to Mac OS Catalina is that the UI or User Interface looks massively difference, however with these changes comes some slowness in terms of speed. What

we're going to do now is the turn of QE/CI in Mac OS Catalina as features such as transparency will take up more of the resources of the computer, this, in turn, will leave less memory for Catalina to use resulting in a slower OS. To do this follow these steps:



*Moderate the User Interface Experience*

1. Go to "System Preferences" and then on "Accessibility".
2. Next, go to "Display" and check the box next to "Reduce Transparency" and "Reduce Motion".

## 9. Clean Install macOS 10.15 Catalina

If you have got this far and find your macOS Catalina still running slow, this might be the option for you. What this does essentially is wipes off all the data on your hard drive and installs the macOS from a USB Installer. This means that you have no old app junk, no third party applications or users accounts and all the settings are set to default.

## Bottom Line

Hopefully, this guide will have given you all the answers you could have wanted should you have found yourself feeling frustrated at your system running slow after updating to the latest macOS 10.15, namely Catalina. This guide has also run you through all the possible reasons and solutions should you be having these issues and once resolved, you should be able to use the OS at an optimal speed.



Jason Snell posted the following article to [macworld.com](http://macworld.com) on May 16, 2019. [bit.ly/37CDWDM](http://bit.ly/37CDWDM). © Mac Publishing, LLC. Jason was lead editor at Macworld for more than a decade and now writes about Apple at Six Colors, and has been a technology writer for more than 20 years.

## 6 Powerful Utilities That Make the Mac Feel Like Home

*The Mac is good without all of these software utilities. But with them, it's great*

By Jason Snell



I love using my Mac. And yet when I am confronted with a fresh new device running macOS, I am taken aback by the barren expanse that is the default Mac experience. That's not on the Mac, that's on me—I have become incredibly reliant on some fantastic utilities that enhance the Mac experience in countless ways.

Every now and then I mention these utilities to friends who are Mac users, or they see me using them, and they are often completely baffled. This reminds me that, quite shockingly, there are lots of Mac users who never take advantage of utilities to make the Mac far more powerful than it comes out of the box.

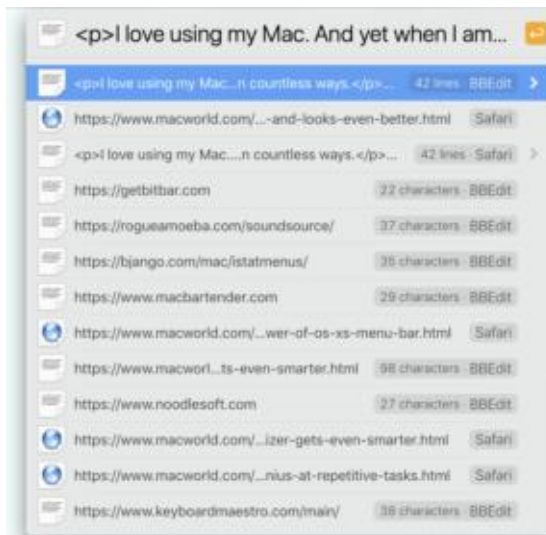
Here, then, are some of the utilities that make the Mac feel like home for me.

[ Further reading: [Learn more about macOS Catalina](#) ]

### Go beyond launching apps

A few years ago, there was a surge of utilities that provided quick access to your Mac apps by typing a few keystrokes. [LaunchBar](#), [Alfred](#), and [Quicksilver](#) were the most prominent examples. Then Apple came and (quite rightly) added quick app launching to Spotlight, eliminating the original reason all those other utilities existed.

No worries. The quick-launcher apps have managed to stay relevant by adding all sorts of other features. I know a lot of people who rely on Alfred, but I've been a user of Objective Development's \$29 [LaunchBar](#) for years and my Mac feels empty without it.



*Among LaunchBar's many features is a clipboard history.*

Yes, I use LaunchBar to launch apps and open files—its algorithm for guessing what you're looking for as you type is still superior to Spotlight's—but I'd have probably dumped it if I hadn't come to rely on so many other features. I use LaunchBar to find the right emoji to insert into an iMessage, make quick math calculations on the

fly, launch automation routines, and open specific Google Docs.

*Among LaunchBar's many features is a clipboard history.*

Perhaps most commonly, I use LaunchBar as a clipboard manager. There are lots of apps out there that will convert the Mac's traditional single-use clipboard into a large, accessible stack of clipboard items. Since it's a feature LaunchBar includes, I haven't needed anything else.

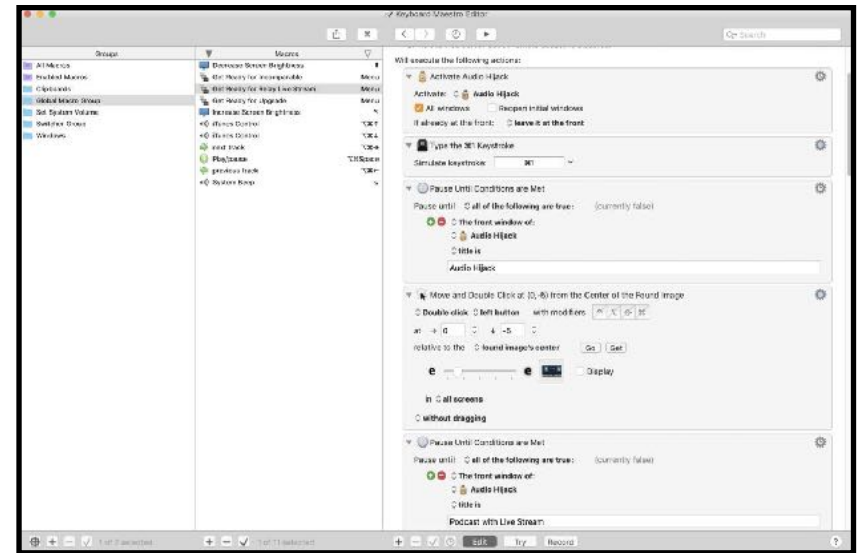
Regardless of whether you use LaunchBar or something else, I *highly* recommend [using one of the Mac's many great clipboard managers](#). Being confident that everything you copy to the clipboard remains accessible can be a huge productivity boost. Tasks that used to require toggling back and forth between different apps can be done in a more linear fashion—you copy all the stuff you need, one by one, and then switch to the other app and paste it all in, one by one.

## Automate your tasks

I'm a huge fan of user automation, because if there's anything that computers are good at, it's doing repetitive tasks that are utterly boring to human beings. If you're stuck doing a boring, repetitive task on your computer, you are ripe for the time savings that automation can bring.

The problem is, a lot of user automation solutions are extremely hard for most people to understand. Once you're asked to write code, the jig is up. Fortunately, there are some easy to use Mac automation tools out there that provide amazing amounts of power without requiring you to write code (although you can if you want).

I'm constantly amazed at what Starways Software's \$36 [Keyboard Maestro](#) can do. You can automate opening apps, issuing menu commands or keyboard shortcuts, clicking on buttons, and pretty much anything else you can think of. It's not reliant on the built-in automation features of individual apps, either—if you need to automate something by clicking on a specific item on the screen somewhere, Keyboard Maestro can be told specifically what to look for and where to click. It's a bit like magic.

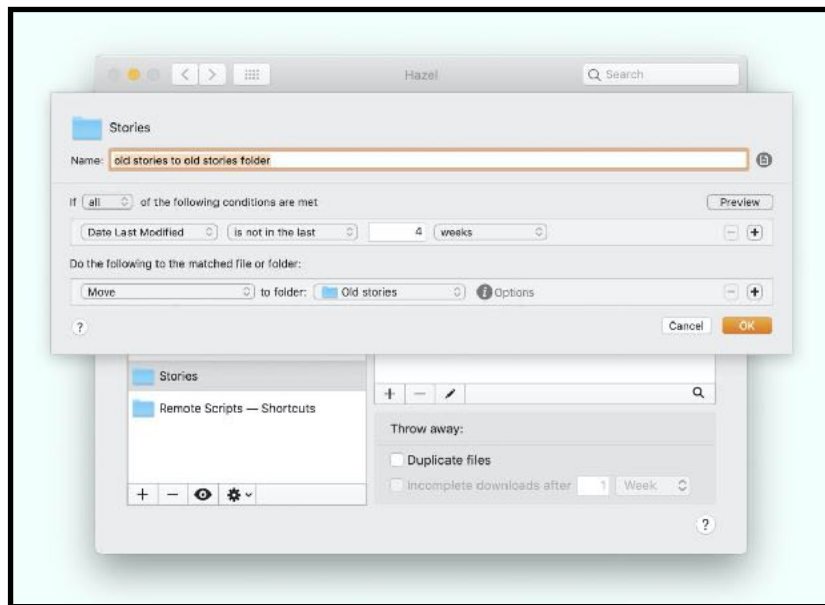


*Keyboard Maestro lets you build automations that interact with any Mac app, even if it's not scriptable.*

I've used [Keyboard Maestro](#) to automate repetitious actions I do on my Mac in order to start or end specific types of work. For instance, when I am about to record a podcast, I need to launch several apps, open specific pages in Safari, and configure several features of an app by clicking on various interface elements and typing related keyboard shortcuts. It's something like a 30-step process that I have to do more or less the same every week. With Keyboard Maestro, that process can be reduced to a single click or keyboard shortcut.

I consider time spent moving files around in the Finder to be time wasted. But my files still need to be managed! So I rely on Noodlesoft's \$32 [Hazel](#) to manage my files for me. Hazel works by watching folders on your Mac and making changes to files based on a series of rules. For instance, I've got a rule that looks at the folder where I save all my tech writing, and after a few weeks, moves unmodified stories to an archive folder. Another rule takes old podcast files and compresses them so they take up less space. And yet another looks at a shared Dropbox folder

used to pass audio files back and forth and deletes any of them older than a couple of weeks.



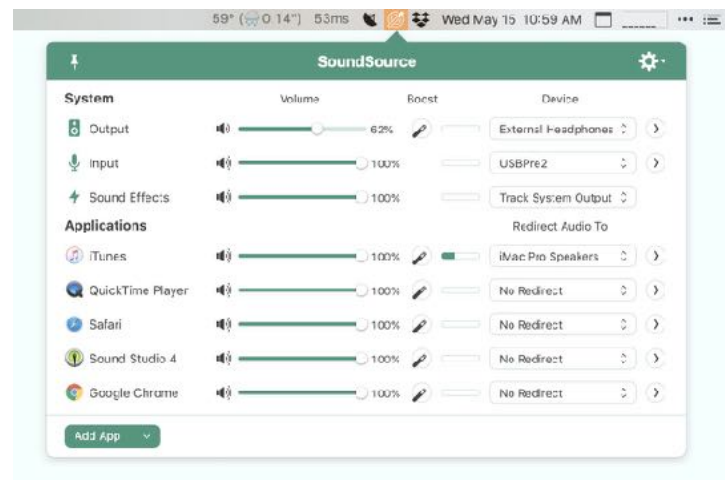
*Hazel lets you set rules to move files around your Mac.*

I used to do all of that file maintenance by hand, but with [Hazel](#) I don't have to anymore. If you find yourself going through the mental gymnastics of deciding which files need to go into which places, you might be able to reduce those thoughts into a basic set of Hazel rules and let the computer do the work automatically.

### Power in the Menu Bar

I've [extolled the virtue of the Mac's menu bar](#) in this space before, but my menu bar is made a lot better by the addition of a few clever utilities.

SoundSource lets you route audio from different apps to different outputs, all from the menu bar. (Also pictured: Other useful menu bar items.)



The \$15 utility [Bartender](#) lets me clean up my menu bar, hiding icons I don't use as often beneath a single item. That leaves room for more items that I actually want to see, like the graphs from [Bjango's \\$12 iStat Menus](#). iStat Menus provides you with glanceable information about your Mac's current status, from processor temperatures to the work being done by individual processor cores.

Rogue Amoeba's \$29 [SoundSource](#) gives me complete control over where the audio on my Mac is going. I can quickly reroute iTunes from my external speakers to my headphones, and adjust the output volume, right from its drop-down control panel.

And the free utility [BitBar](#) lets me put more or less anything I want into my menu bar, via an extensible plug-in system. I've got the current weather status at my home weather station, the speed of my local network, and even the number of live listeners to my podcasts, all displayed in the menu bar via small BitBar extensions.

Sure, the Mac is good without all of these utilities. But with them, it's great—and it feels like home to me.

Lance Whitney posted the following article to [pcmag.com](http://pcmag.com) on September 14, 2019. <http://bit.ly/2OyKKcD>. © Ziff Davis, LLC. He writes news stories, columns, and reviews for CNET and other technology sites and publications.

## 20 Tips Every Apple Watch Owner Should Know

Whether you just ordered the Series 5 or have owned an Apple smartwatch for years, you can use these handy tips.

By Lance Whitney



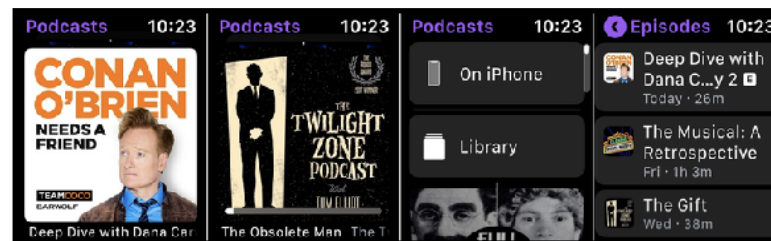
Though not as powerful as an iPhone or iPad, the Apple Watch is quite a versatile gadget for something packed into such a small package.

Depending on which model or type of Apple Watch you own and where and how you'd like to use it, you can listen to music, track your workouts, monitor your heart rate, and view your photos. And like the iPhone and iPad, the Apple Watch includes an array of settings and options you can tweak to coax it to work and act the way you want.

With an Apple Watch running watchOS 4.1 or higher, you can [listen to albums and playlists created on your iPhone](#), to stations on Apple Radio, and to any music from [Apple Music](#) (if you're a subscriber). You can also listen to audio apps such as Spotify, Pandora, and iHeartRadio.

First, set up your earbuds, headphones, or speaker via Bluetooth. Open Apple's Music app to swipe through your library of albums and playlists. From the player, you can pause, resume, skip ahead, go back, and control the volume. Apple Radio comes as its own separate app, where you can tune up Beats 1 and certain news and music stations.

To listen to [music-streaming services](#) such as Spotify, Pandora, and iHeartRadio, you'll have to download their apps on your iPhone through the App Store on the Watch app. Each app is slightly different, but the process is similar — just fire up the app to access your stations or library. With a paid subscription to a service like [Pandora](#), you can typically do even more through your watch, such as listen to music offline.

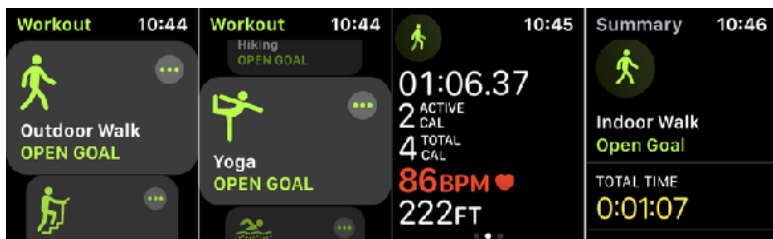


### Listen to Podcasts

Apple has its own [Podcasts app](#) that will allow you to download podcasts on the iPhone and [listen to them on Apple Watch](#). You just need watchOS 5 or higher. And if you have an LTE-enabled Apple Watch, you can listen to podcasts without hopping onto a nearby Wi-Fi network.

Open the Podcasts app on your watch to swipe through the latest available [podcasts](#). You can also access your library of subscribed podcasts or individual episodes. From the Podcast player, you can pause, resume, jump ahead 30 seconds, go back 15 seconds, alter the speed, and change the volume.

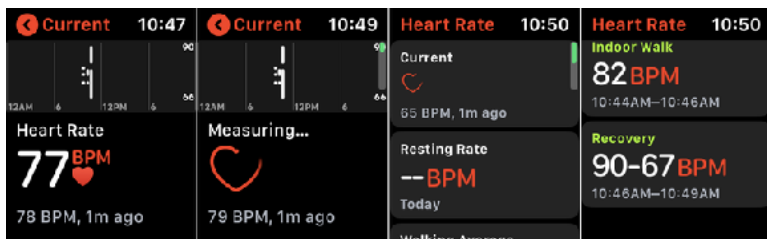
You can also play podcasts from your phone using your watch as the controller. And if you're not crazy about Apple's Podcasts app, try out some [third-party apps](#), such as Downcast, Overcast, and Pocket Casts.



### Track Your Workouts

The Apple Watch shines for its health and fitness abilities, so one of its handiest features is the ability to track your workouts. [Using the built-in Workouts app](#), you can track your progress at a variety of activities in and out of the gym, including biking, walking, hiking, jogging, rowing, elliptical, stair stepper, swimming, and even yoga.

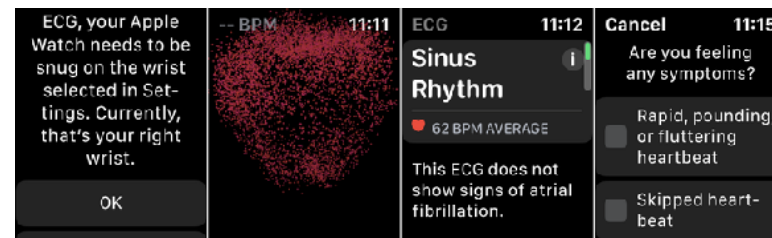
The app will let you shoot for a specific time, distance, or number of calories or just record a free-flowing workout. As you perform your activity, the app shows you your time, calories burned, distance traveled, and your heart rate. When you're done, the results are sent to the Activity app where you can view the latest stats on your watch and track a history of your workouts on your iPhone.



### Monitor Your Heart Rate

Using the [built-in Heart Rate app](#), you can monitor your heart rate at any time. Open the app, and it will measure and display your current heart rate. As long as your watch is in display mode, or you glance at the face, measurements are periodically taken to record your rate.

Tap the arrow in the upper left, and the app displays your current rate, your resting rate, your average rate, and specific rates based on your activities. You'll also discover [third-party apps that monitor your heart rate](#) with more bells and whistles than you'll find in the built-in app.



### Take an ECG

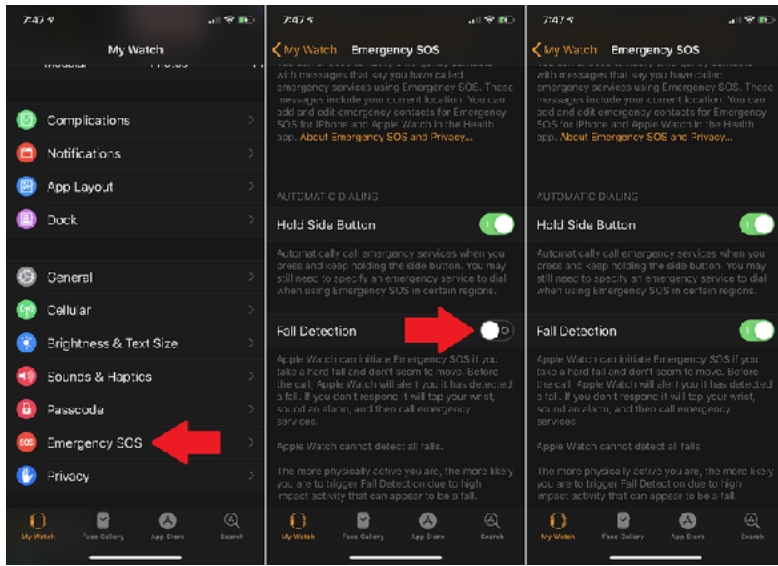
With an Apple Watch Series 4 or 5, you can take an electrocardiogram, which checks your heart rhythm and alerts you if it finds any irregularities in that rhythm, such as atrial fibrillation. This is not something you'd necessarily want or need to do on a regular basis, unless you have a heart condition or are experiencing some type of symptom.

Needless to say, if you are feeling chest pains or similar issues, don't waste time with the app; call emergency services. But in certain circumstances, the app can flag possible issues that you certainly should convey to your doctor.

Before you can use the ECG app, you must first set it up on your iPhone. Open the Health app, tap the Health Data icon, and then tap Heart. Swipe down the Heart screen and tap the entry for electrocardiogram. Tap Set Up ECG and go through the setup process.

To perform an electrocardiogram with your Apple Watch, open the ECG app. Make sure your watch is on the wrist you've already established in Settings, then tap OK. Hold your finger on the Digital Crown. The app will count down as it takes the ECG. After 30 seconds, the results pop up to display your sinus rhythm and heart rate.

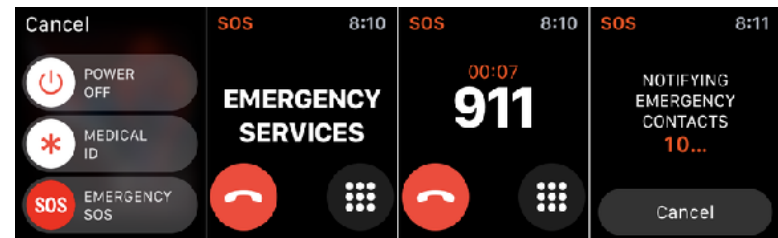
If all is well, tap Done. If not, you can add any symptoms you're experiencing, or contact your doctor or emergency services if you suspect something serious is going on.



### Detect a Fall

The Apple Watch Series 4 and 5 come with another safety feature — fall detection. Should you take a hard fall that potentially renders you unconscious or unable to move, your watch can automatically call emergency services.

To set this up on your iPhone, open the Watch app, tap the My Watch tab, swipe down, and tap the entry for Emergency SOS. Look for the option for Fall Detection and turn on the switch. If you fall, the watch will alert you. If you fail to respond, the watch will tap your wrist, sound an alarm, and then notify emergency services.



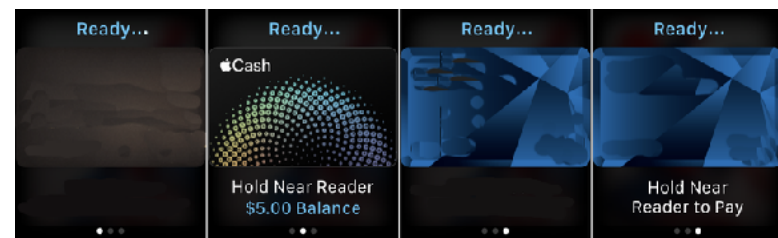
### Call Emergency Services

You can also call emergency services directly from your watch if you're in any kind of pain or trouble. Press down on the side button for a few seconds until you see the screen for Power Off, Medical ID, and Emergency SOS.

You can either slide the button for Emergency SOS to the right or continue holding down the side button. After a short countdown, your watch calls emergency services. If you start the countdown by accident, release the side button. If you start an emergency call by accident, press down on the screen and then tap End Call.

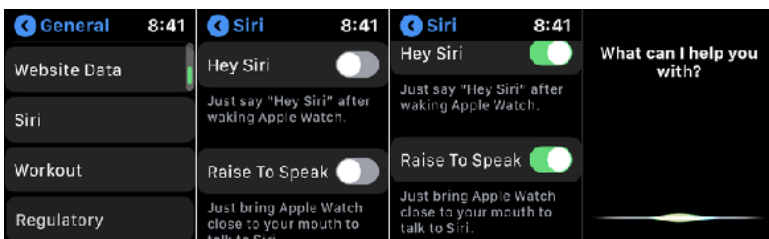
As an added feature, you can add an emergency contact through the Medical ID screen in the Health app on your iPhone. That person then receives a text with your location after the emergency calls ends.

The cellular version of the Series 5 supports international calls to emergency services, regardless of your carrier or where you live, so if you're an American visiting London, for example, and need help, the watch will call 999 in an emergency, not 911. This also applies to fall detection.



### Use Apple Pay

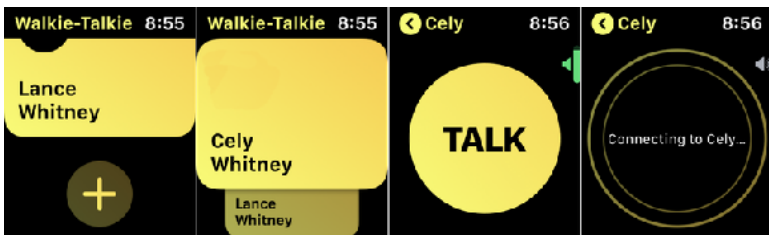
Want to pay for something using Apple Pay but don't have your iPhone? You can [settle the bill using your Apple Watch](#). Assuming Apple Pay is already set up on your phone, it automatically works on your watch as well. To activate it, double-tap the side button. Swipe the screen to choose the card you want to use. Hold your watch near the reader, follow the prompts, and the transaction should go through. You can also use your [Apple Card with Apple Watch](#), though this must be set up first.



### Talk to Siri

Yes, [you can talk to Siri on your watch](#). And with a Series 3 or higher, Siri will even talk back to you. Long-press on the Digital Crown, and Siri will appear, awaiting your command or question. However, you can also get Siri's attention by voice.

To set this up on your watch, go to **Settings > General > Siri**. The first option for Hey Siri lets you say "Hey Siri" after you've tapped on or raised your watch to take it up out of sleep mode. The second option lets you raise your watch to your mouth where you can then say "Hey Siri" to chat with the voice assistant.

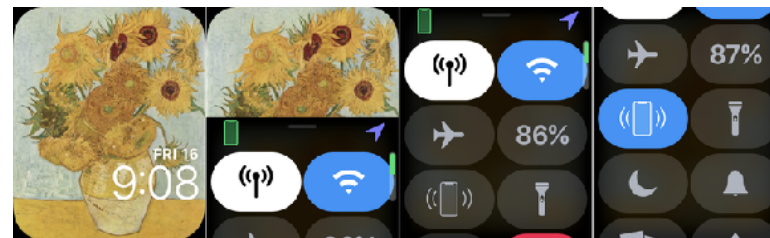


### Talk to Someone With Walkie-Talkie

With watchOS 5 or higher, you can talk with another Apple Watch wearer [via the Walkie-Talkie app](#). Open the app from the Home screen (the one with a black walkie-talkie encircled in yellow).

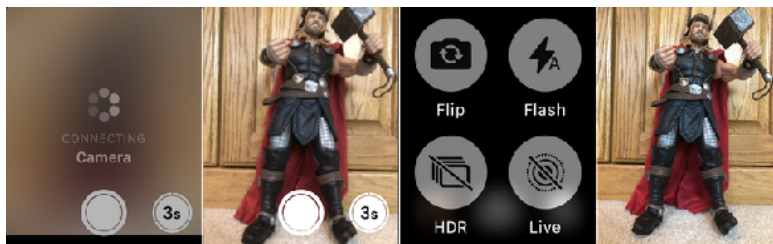
Swipe down the list of contacts and tap the name of a person to invite them to talk. Wait for that person to accept your invitation. On the flip side, you can accept an invitation from someone else.

To kick off a Walkie-Talkie call with a contact, tap the person's name in the app. Once the connection is established, hold down the Talk button to talk to the other person. Release the button to let the other person respond. Continue the conversation this way, holding down the Talk button when it's your turn to say something and then releasing the button to listen to the other person.



### Find Your iPhone

Lost your iPhone? You can probably find it by calling it from another device, but if another phone isn't handy, you can use your Apple Watch. Swipe up from the bottom of your watch face to access Control Center. Look for the icon that looks like a phone with audio waves emanating from it. Tap that icon, and as the icon turns blue, your phone will emit a pinging noise that you can follow to track it down.



### Remotely Snap a Photo on Your iPhone

You can take a photo with your iPhone using your watch as a remote control. To do this, position your iPhone for the shot, then open the camera app on your watch. The two devices will automatically be connected. Tap the timer in the lower-right corner to time the shot for three seconds, or tap the shutter button to take it immediately.

Press down on the screen to access other options, such as Flash and HDR. After you've taken the shot, tap the thumbnail in the lower left to see the picture.

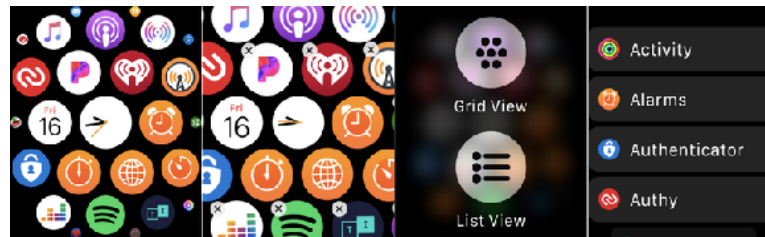


### Browse Photos

You can view certain photos from your iPhone on the watch. By default, your watch displays the photos you've tagged as favorites, but you can change the album. To do this, open the Watch app on your iPhone and go to the My Watch section. Tap the entry for Photos and change the Synced Album to one of your choosing.

On your watch, open the Photos app to see thumbnails of all your synced photos. Swipe left or right to browse through them,

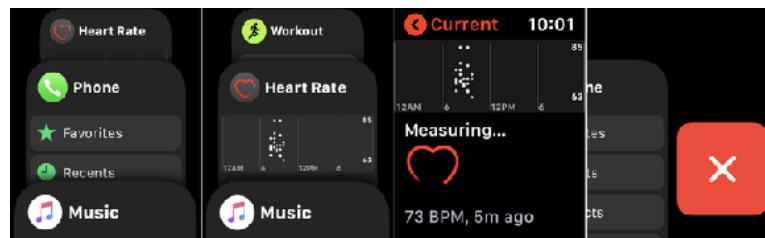
and tap a specific photo to see it up close. Zoom in by tapping or turning the Digital Crown.



### Organize Your Apps

Your home screen can quickly get cluttered with apps, but you can [rearrange those icons](#) in a layout that works best for you. On the iPhone, open the Watch app. In the My Watch section, go to App Layout and move your icons to different spots.

To do this from your watch, go to the home screen and press down on one of the icons until they all start jiggling. You can now move the icons to different areas. You can even press down on the home screen and choose List View instead of Grid View to see your apps in an alphabetical list.



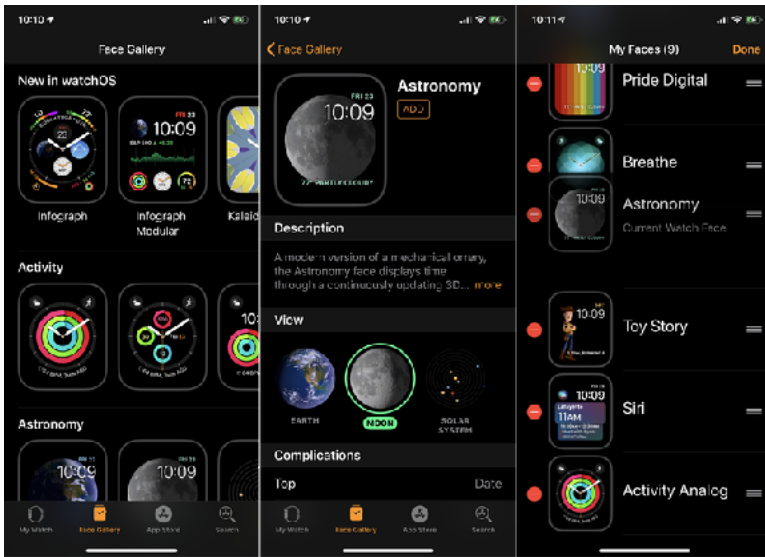
### Access Apps from the Dock

You can quickly [access your favorite or most-used apps](#) through the dock. Just press the side button and scroll through the list until you find the app you want. Apps can be added to the dock, and if you want to remove one, just swipe it to the left and tap the X.

To better manage your docked apps from your iPhone, open the Watch app. At the My Watch section, tap the entry for Dock, then

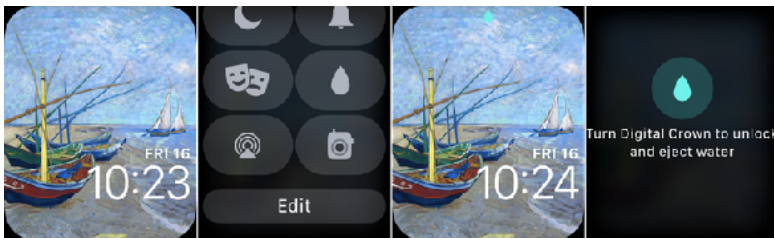


tap the Edit link. You can then remove an app from the dock by tapping the minus sign, or add an app by tapping the plus sign.



### Change and Customize Your Watch Face

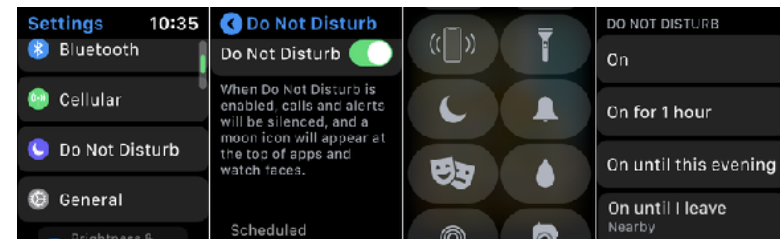
Tired of looking at the same old watch face every day? You can easily [change and customize the Apple Watch face](#). To see a different watch face, just swipe to the right or left of your watch screen. To set up new faces, open the Watch app on your iPhone, go to the Face Gallery section, tap a face, jazz it up with a specific color and style, and then tap Add to add it to your default watch faces. At the top of the My Watch screen, tap Edit next to My Faces. Here, you can remove faces you don't want and change the order in which the faces appear.



### Use Water Lock Mode

You can take a shower or a dip in the pool without having to take off your watch, though the [water resistance of your watch](#) depends on which series you own. If you dive in for a swim, your Apple Watch will automatically lock the screen with Water Lock mode. However, you can also manually put your watch into Water Lock.

Swipe from the bottom of the screen. Tap the icon that looks like a drop of water. That brings you back to your watch face, where you'll see a small water droplet icon at the top. Your screen is now locked. When you're ready to dry off, keep turning the Digital Crown to unlock the screen. Also, if you think your watch got wet accidentally, tap the Water Lock icon and turn the Digital Crown to dispel any water.



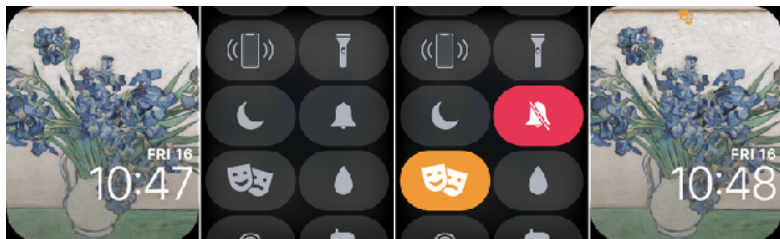
### Turn on Do Not Disturb

Just like your iPhone, the Apple Watch supports a Do Not Disturb mode so you're not bothered by phone calls, text messages, or any other notifications. By default, the Do Not Disturb setting on your watch mirrors the iPhone, though you can disable this under the General section in the Watch app on your phone.

On your watch, you can flip on Do Not Disturb a couple of ways. Go to **Settings > Do Not Disturb** and turn on the switch. The half-moon icon appears at the top of the screen to indicate Do Not Disturb mode.

Alternatively, swipe up from the bottom of the screen to Control Center and tap the half-moon icon. At the next screen, choose

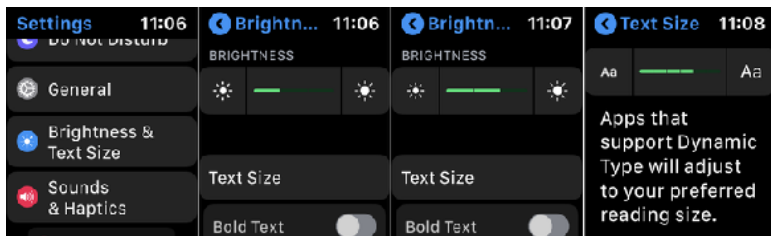
whether to leave Do Not Disturb on until you turn it off, for one hour, until this evening or until you leave your current location.



### Use Theater Mode

You're at the theater and you don't want your watch to distract you or anyone else. Turn on theater mode, which puts your watch into silent mode so you won't be bothered by any alerts or notifications. The screen itself also remains dark even if you raise your wrist.

To enable theater mode, swipe from the bottom of the screen to Control Center and tap the icon that shows the classic theater masks of comedy and tragedy. The theater icon will then appear at the top of your watch face as an indicator. To turn off this mode, tap your watch face, go back to Control Center, and tap the same icon.



### Change the Brightness and Text Size

Do you have trouble seeing the text and screens on your watch? You can play with the brightness and text size. On your watch, go to **Settings > Brightness & Text Size**. Tap the left or right icon on the brightness scale to lower or raise the brightness. You can also control this by turning the Digital Crown.

Tap the entry for Text Size. Tap either of the icons on the text size scale to change this, or turn the Digital Crown. If you need a bit more visibility, turn on the switch for Bold Text and then restart your watch.



## AI AND HUMANS

### Autosuggestion

By Kathy Garges

A few years ago, online search engines introduced autocomplete features to suggest better search terms to users. This “incremental search” function used artificial intelligence Natural Language Processing (NLP), which is probabilistic AI based on the naturally-occurring letter and word frequencies in language, as well as synonym dictionaries and other AI.

Users of various skill levels found the feature useful. The more skilled users typically turned to it only when they found their usual search methods were not yielding desired results in a specific search. Everyone benefitted, however, because suggestions offered corrections for misspelled words entered in the search box, whether the misspellings were typographical errors or attempts at searching for half-heard or misremembered words, like people and place names.

About a year ago, Google expanded this concept to Smart Compose, which automatically suggests message completion words as the user types in Gmail, Google's email program. This “predictive text,” or natural language generation (NLG) relies on machine learning (neural network) AI to crunch huge quantities of

data about what the specific user and other users of the same language are likely to say next. For example, the users might type “Hope you” and Smart Compose immediately suggests “are well” and other completion phrases that can be selected with a click.

Some users, this writer included, found the feature distracting and annoying, but, no problem. It’s easy to turn it off in the options function. Others, especially those learning a new language, found it very helpful. The program can adapt suggestions to an individual user’s writing style but can also help language learners with correct grammar and expression.

Google claims Smart Compose saves users over two billion keystrokes every week. Skilled writers likely think this is measuring the wrong data. A focus on keystroke savings ignores the time lost by needless writer distraction, and is unlikely to measure true productivity or quality.

Now Google is expanding the Smart Compose concept to Google Docs, its cloud-based document collaboration system geared to business users. This seems like a natural extension of the concept, but it’s a whole other ball of wax, and may prove to be as controversial as Google Glass, Google’s experiment with AI eyeglasses.

A competitor of Google, Lightkey Sources, an Israeli startup, has already rolled out a similar program for text documents other than email, which, unlike Smart Compose, is available offline and in many languages. User-generated Lightkey content is not saved in the cloud, so it’s billed as preserving user privacy, unlike Google’s program, but this claim could be misleading. It’s unclear how Lightkey will be able to keep up with language developments if it doesn’t upload and crunch user input to update its machine learning components.

One difference in using Smart Compose or Lightkey for document collaboration is that the decision to use it is going to be a group option, not an individual user option. Suggested

language will be based on compiled and prioritized group, not individual, data. Suddenly, office politics may be squeezed into a magnified microcosm of predictive text documents, throwing previously-effective career strategies out the window.

Even if the group manager allows individual workers to opt out when the group adopts the function, that’s unlikely to be a useful choice. Either way, you and your coworkers will all be vying to co-opt each other’s superior writing output, sound like the boss, descend into bureaucratic mediocrity, or stand out as the worker who thinks most creatively, or at least differently. Which will it be in your office? And what is a good strategy for changing one’s approach when the office dynamic changes?

These programs likely will also be a focus of issues about embedding human gender and racial stereotypes in subtle ways that cannot easily be counteracted. Google already tweaks Smart Compose to reduce assumptions about gender and race on an ongoing basis, because the machine learning method automatically adopts biases found in the huge quantities of natural language data it consumes regularly.

Google includes a warning about this issue in its Gmail Help screen about Smart Compose, and a statement that it is committed to “actively researching unintended bias and mitigation strategies.” On the other hand, perhaps text suggestions could be used proactively to nudge writers to delete stereotypes they inadvertently type.

NLG programs could also have an unintended effect on office morale. If a user starts to type “Quarterly profits are” and Smart Compose, based on last quarter’s documents, suggests “skyrocketing,” when in the current quarter they are plummeting, or “plummeting” when in the current quarter they are modestly rising, the reminder could be unwelcome and discouraging.

Smart Compose for Google Docs and Lightkey will also generate productivity data, such as the number of keystrokes saved by the program and individual users. But this kind of data totally ignores

