

YOUR EASY GUIDE TO GETTING MORE FROM YOUR DEVICES

Future
BOOKAZINE

macOS & iOS

Support Manual

Unlock the true potential of your
Apple devices and discover the
hidden features

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MacLife



Future

2017

Fix common errors • Master iOS 10 secrets • All the latest tricks

Welcome to macOS & iOS Support Manual

Apple devices are some of the most intuitive and user-friendly pieces of technology on the market. But we all run into problems every now and again. The macOS & iOS Support Handbook is here to help you with those every-day problems, and those that might not be so common. We take your thought how to become your very own Apple Genius (move over Apple Store employees!), give you 104 hidden gems from iOS 10, tell you everything you need to know about macOS Sierra, and then some more. Whether you're looking to get your devices more organised, solve problems or just get to know more about the basic workings, this book can help you. We even put your questions to the test in our extensive Ask section, so there is something for everybody within these pages.



macOS & iOS Support Manual

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Contents

Unlock the true potential of your Apple devices and discover the hidden features





- 08 Become an Apple Genius**
Use our complete handbook to get more from your Apple devices

macOS SUPPORT

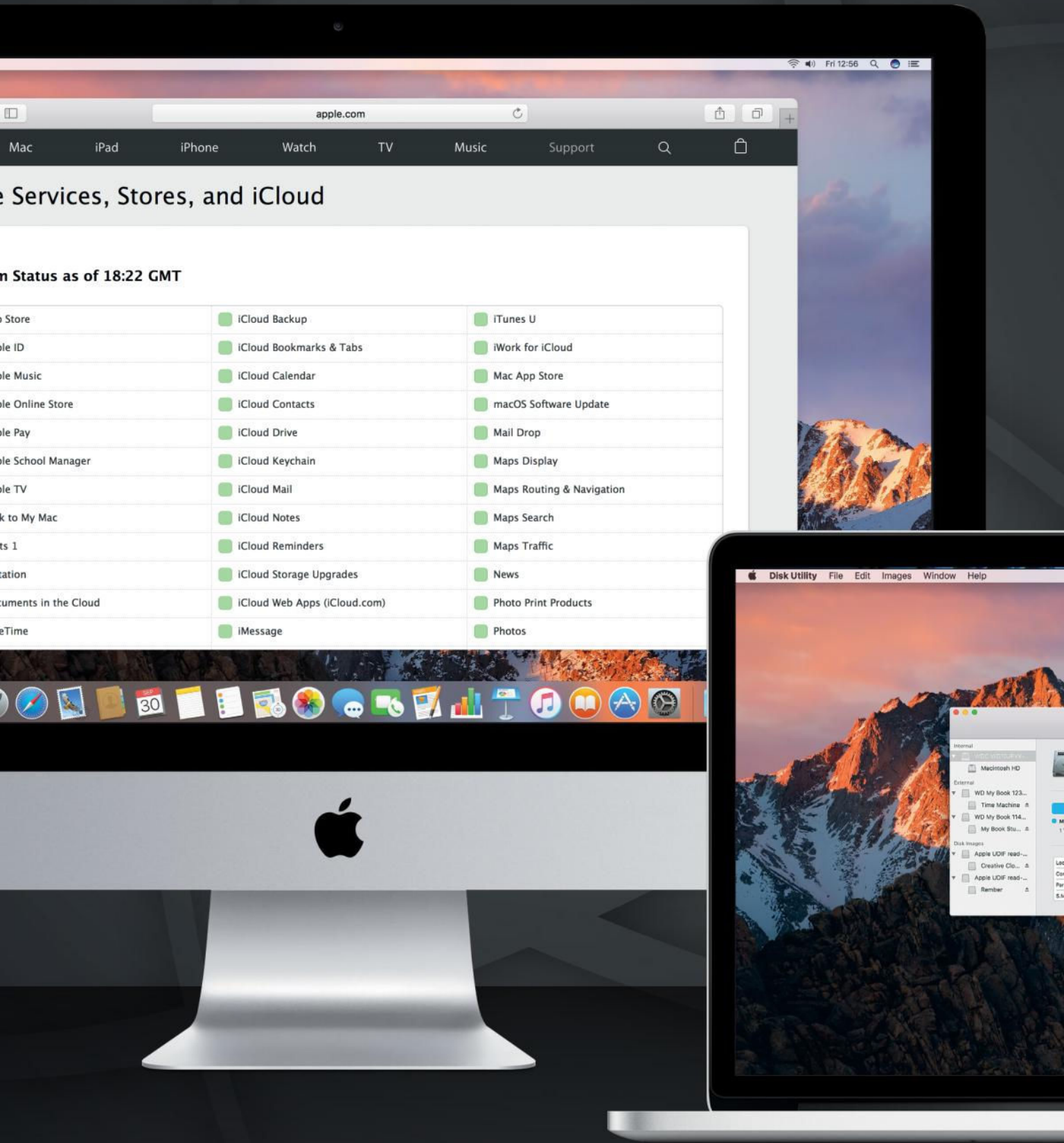
- 22 Get started with macOS Sierra**
Discover the latest features of Sierra
- 36 The ultimate Mac survival guide**
Keep your data safe and back up your Mac now!
- 44 Essential macOS timesavers**
Make your computer usage more time efficient

iOS SUPPORT

- 58 104 iOS 10 tips, tricks and secrets**
Get more out of your iOS device with our in-depth tips
- 72 The essential iOS troubleshooting guide**
The simple fixes to some common Apple problems
- 80 Do more with iOS 10**
Discover the hidden additions to the latest iOS incarnation

ASK

- 88 Tech support and techplanations**
Your questions answered



BECOME AN APPLE GENIUS

From the basic fixes to the more fiddly personalisations, we teach you everything you need to know to become an Apple genius




What do you do when your Mac goes wrong? Over the following pages, we will unveil the answers. In our *MacLife* handbook, you'll learn how to diagnose problems with unresponsive Macs, misbehaving network connections, uncooperative backups, and macOS mishaps. A word of advice before you begin: don't let on to friends and family about your newfound skills, or you'll be forever plagued by requests for help and advice...

OH NO, MY MAC'S BROKEN!

Don't panic - many common problems are simple to fix

I CAN'T EMPTY THE TRASH

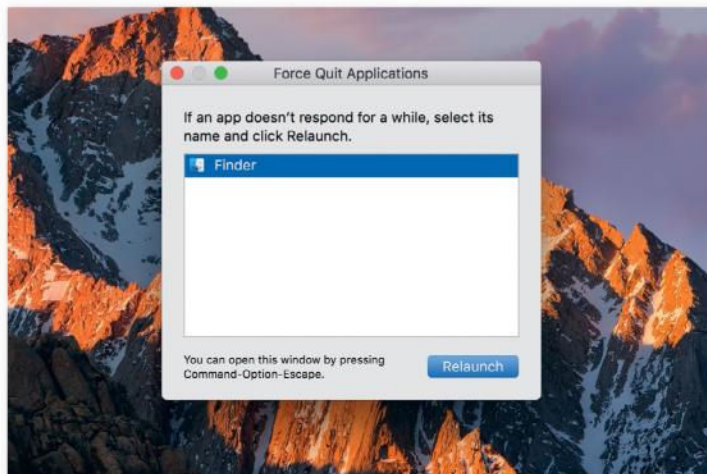
The operating system locks files that it's using or previewing, so if you can't empty the Trash entirely there's a good chance one of its contents is still required by macOS or an app. Quit your apps and try again. If that doesn't work, it could be that one of its contents is locked. Click Finder in the menu bar, hold Alt and click the Empty Trash option (note that the ellipsis after it disappears when Alt is held, meaning you won't be asked to provide additional instruction in a dialog). Still no luck? Open Terminal, enter **sudo rm ~/.Trash.*** and provide an admin account's name and password as confirmation, then press . Back up first!

THERE'S AN OPTICAL DISC STUCK IN MY DRIVE

If the eject icon next to the disc in Finder doesn't work, and neither does dragging the disc's desktop icon to the Trash, open Terminal and enter **drutil eject**; if that also fails, shut down your Mac, then power it on again, holding down the primary mouse button or trackpad while the Mac starts up.

I'M SEEING FREQUENT KERNEL PANICS

An unexpected black screen overlaid by a multilingual error message is about as serious a problem as Macs ever get. If it's caused by a software glitch, it's usually fixed with a simple restart. However, if it happens often, check your Mac's memory is properly seated (assuming it has removable modules) and other components you've added recently are securely connected.



FINDER IS UNRESPONSIVE

You can't Force Quit Finder like other apps, but you can force it to restart from that menu.

Or, place the pointer over Finder's icon in the Dock, hold down Alt then press and hold down the

trackpad or mouse button; from the menu, choose Relaunch. Beware that doing this will terminate any file operations that are in progress.

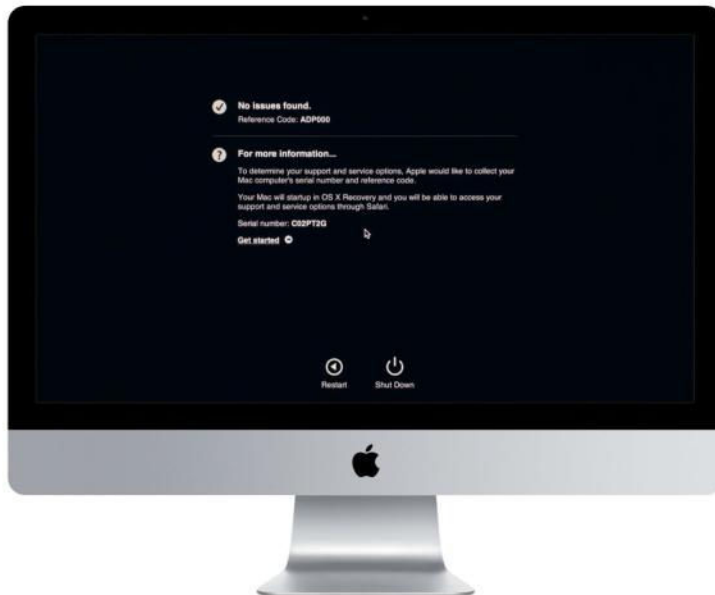


I'M GETTING A LOT OF SPINNING BEACH BALLS

Seeing the beach ball now and then is to be expected - it often appears when

an app is waiting for storage to catch up with its requests, say - but if it's

happening frequently, check in Activity Monitor (located in /Applications/Utilities) for apps that are excessively consuming resources, or which have become unresponsive. If the same culprits show up again and again, either reinstall them, see if there's an update or, failing those approaches, try to find an alternative app.



DIAGNOSING OTHER HARDWARE PROBLEMS

Hold **D** while starting up your Mac to open Apple Diagnostics, or **Alt+D** to open it over the Internet if it can't be found on your Mac's storage. (If your Mac is from prior to June 2013, you'll need to use

the Apple Hardware Test instead; see apple.co/2je4tN4 for more details on this process).

All being well, you should see the code ADP000, which means no problems have been found. Anything

else suggests an error, which will either give you a starting point for your own investigation, or guidance when talking to a professional engineer. Apple documents the meanings of diagnostic codes at apple.co/2j4AGey.



MY MAC IS DEAD

If your Mac won't turn on, check the power supply. Exercise caution while trying both a different power outlet and a different lead if you have one, then check the fuse in the plug. The problem may be



internal, such as a transformer or the power switch itself. The latter two are risky fixes - we'd

recommend a trip to a Genius Bar or Authorized Service Provider - turn to page 18 for details.



MY MAC IS BECOMING FORGETFUL

If your Mac forgets volume, screen resolution, startup disk or other system settings, try resetting its NVRAM (non-volatile random-access memory). Shut down, then power on again and hold **⌘+Alt+P+R** till you've heard the startup sound twice (or for at least 20 seconds on a late 2016 MacBook Pro), then let go and allow startup to complete.



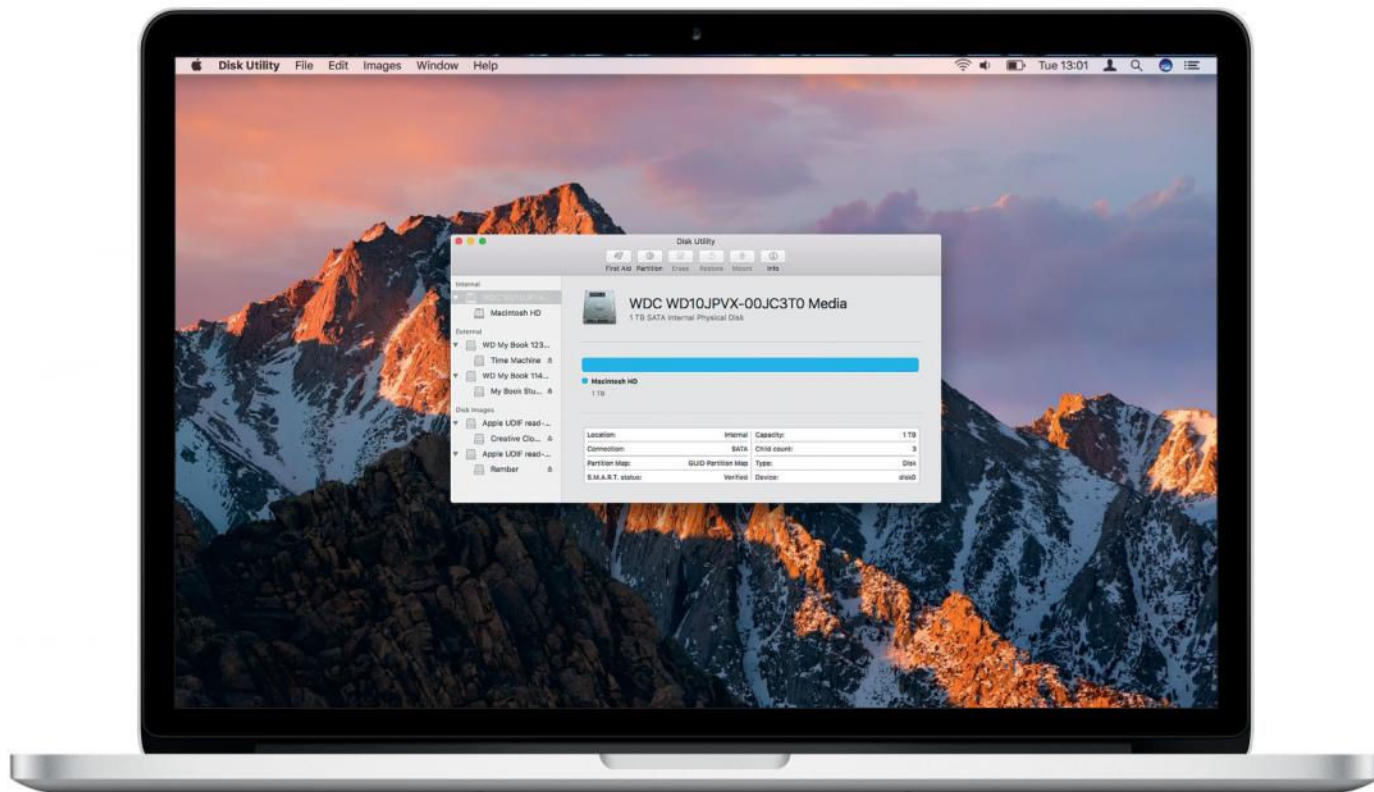
IS IT TIME TO GIVE UP AND START OVER?

Back up all of your data, just in case you change your mind, then hold **⌘+R** immediately after powering on or restarting your Mac to enter the Recovery system. When you see a window that lists four options, choose Disk Utility from it, use it to erase your startup disk, then quit Disk Utility and choose the option to reinstall macOS; this will confirm over the Internet that your hardware's eligible to run macOS, so ensure it has a reliable Wi-Fi or Ethernet connection to the outside world.



HELP! I HAVE PROBLEMS WITH MY FILES

From damaged drives to broken Bluetooth, file errors can be fixed



RANDOM FILES ARE UNUSABLE

If your files are corrupting or becoming inaccessible, check your Mac's storage isn't failing. Internal drives incorporate SMART (Self-Monitoring, Analysis and Reporting Technology), which will alert you to developing problems so you can salvage your data before the drive becomes unusable. In Disk Utility, select the drive in the sidebar (not a volume on it) and check its SMART status at the bottom of the window. If it says anything other than 'Verified' back up your data and replace the drive as a matter of urgency.



SPOTLIGHT RESULTS HAVE BECOME UNMANAGEABLE

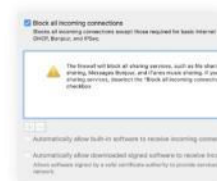
Strip down what Spotlight includes in its search results by unchecking what you don't need through its pane in System Preferences. Use the same pane's Privacy tab to exclude files and folders entirely - perhaps even a drive that contains only old archived project files you rarely need.



AIRDROP PROBLEMS

Check both devices against 'What you need' at [apple.co/2eA1e1c](#), and that Bluetooth and Wi-Fi are on. If receiving on a 2012 or older Mac, click 'Don't see who you're looking for?' then 'Search for an older Mac' on the sender; iOS devices can't send to them. If the receiver's an iOS device and the sender can't see it,

try the Everyone option. Personal Hotspot (Settings>Mobile Data) mustn't be active. 'Block all incoming connections' in a Mac's firewall (p19) prevents AirDrop receipt. Toggling Wi-Fi can fix devices' inability to see each other.



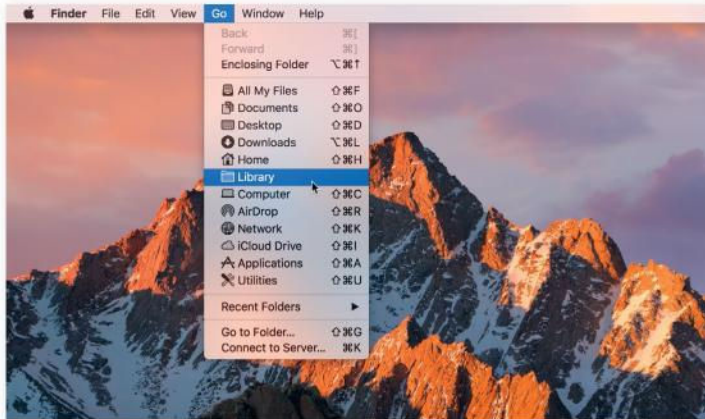


I CAN'T ACCESS THE LIBRARY FOLDER

There are two Library folders on your Mac: one at the top of your startup disk for assets shared by all

user accounts, and one in your account's folder. The latter holds your preferences and other personal

items, and is usually hidden. To open this Library folder, switch to Finder, hold Alt and pick Go>Library, or press **⌘+⇧+G** and enter **~/Library** in the dialog.



I'VE ACCIDENTALLY DELETED A FILE I NEED

If you don't have a Time Machine or other backup, and the file has been removed from the Trash, step away from your Mac so you don't risk overwriting the

file's data; there's a good chance it's still on the drive, and reference to it has simply been removed from the file system. Apps like Data Rescue (\$99,

prosofteng.com) can often recover 'lost' files by interrogating a drive directly, rather than through its index, and are a lot less expensive as a first course of action than a professional recovery service.



I CAN'T ACCESS MY FILES FROM ANOTHER COMPUTER

The Mac you want to access must be awake and connected to the same network. If you still can't see the remote Mac under Shared in

Finder's sidebar, return to it, check File Sharing is enabled in System Prefs' Sharing. If that Mac still doesn't appear in the other's Finder

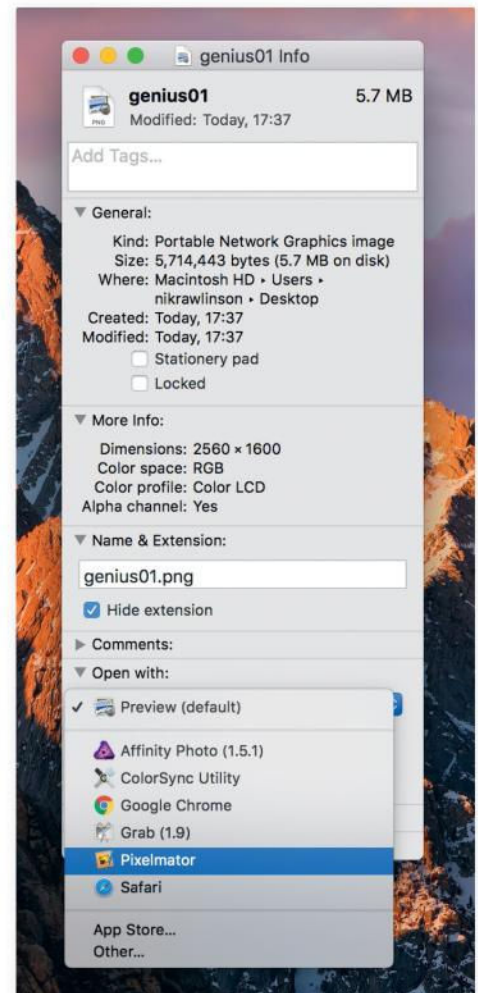
sidebar, try connecting directly: in Finder, press **⌘+K** and enter **smb://[machine name].local**, replacing [machine name] with the name shown at the top of the other Mac's Sharing pane.



DOUBLE-CLICKING A FILE DOESN'T OPEN THE ASSOCIATED APP

Check that files of that type are still associated with the expected app: select one, press **⌘+I** and ensure the app is listed in the 'Open with' section. If the wrong app is listed there, pick the correct one from the pop-up menu, then click the Change All button to set that as the new default app for this file type.

If the app is already running, it may have hung. Press **⌘+Alt+esc** to bring up the Force Quit Applications dialog and check whether it says 'Not Responding' alongside the app's name. If it does, select the app and click the Force Quit button, and then try double-clicking the file again. If not, try dragging the file onto the app's Dock icon, or using the app's File>Open command.



I'VE GOT TROUBLE WITH BACKUPS

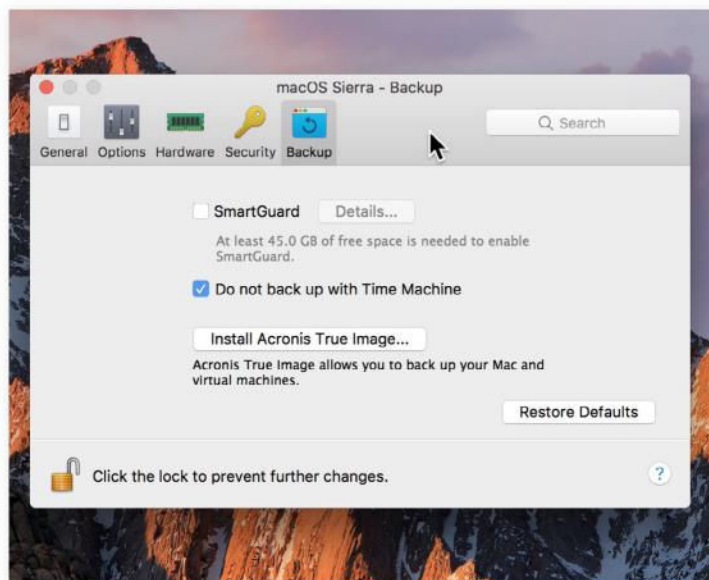
Don't ignore stalled, incomplete, or missing backups

THE FILES I NEED AREN'T IN TIME MACHINE

Check the drive or folder in which they're stored isn't excluded from the backup set. Open the Time Machine pane in System Preferences and click Options. If the

drive or folder is listed here, it's excluded from Time Machine's backups; select it and click the - (minus) button. If your backups are on a network drive

- a Time Capsule or a NAS with Time Machine support - check their health: hold Alt and click Time Machine's menu bar icon, and choose Verify Backups; macOS will detail any problems it finds.



TIME MACHINE IS TAKING TOO LONG TO BACK UP

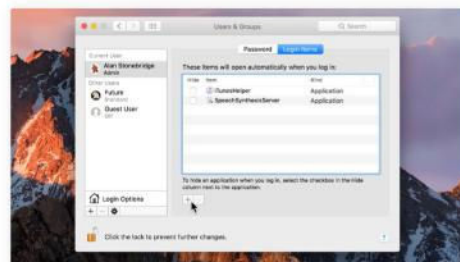
The first backup creates a complete copy of your Mac's contents. Later ones should be quicker as Time Machine then only saves incremental changes to files. If

using a NAS drive or Time Capsule, check both get a strong signal from your network and, if you can, connect both to the same access point. If you run another OS in a

virtual machine (VM) within macOS, follow the advice from your virtualization tool's developer on how to back up your VMs: refer to bit.ly/2JUPJVA for VMware Fusion and bit.ly/2k3Ygrd for Parallels Desktop.

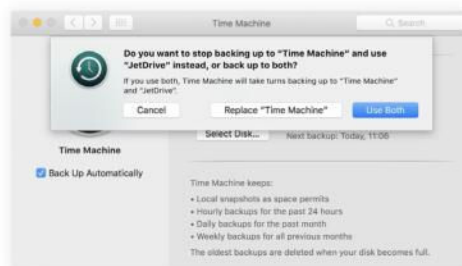
TIME MACHINE ISN'T BACKING UP AT ALL

Check the drive is connected and shows in Finder. If backing up to a local drive, use a Mac port rather than an external hub. Don't use a USB port in a display that's set to sleep; that will disconnect the drive. If Time Machine backs up to a NAS drive, ensure your Mac connects to it at login: in Users & Groups preferences, click your account, Login Items, then +, select the drive and click OK.



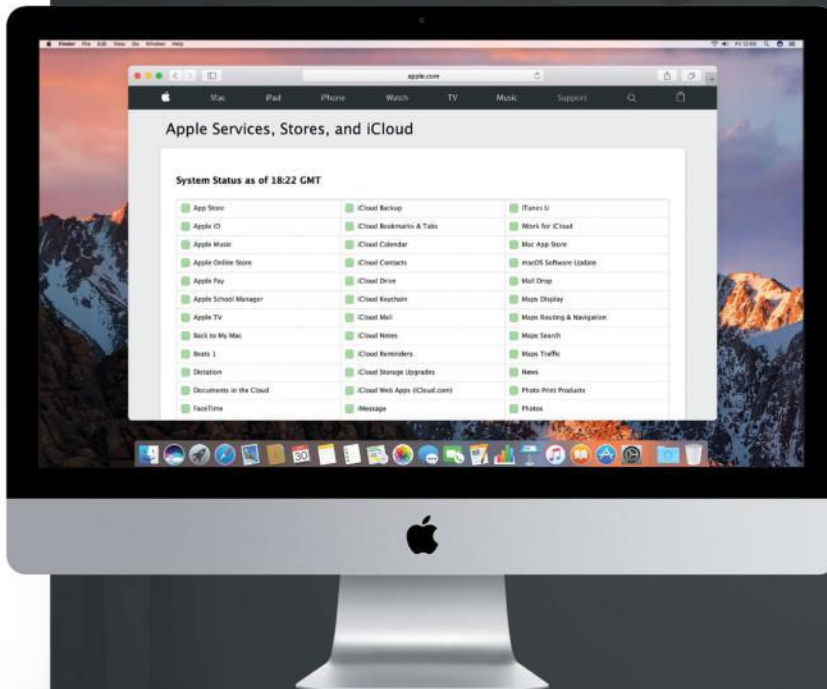
MY TIME MACHINE DRIVE IS GETTING FULL

Time Machine is designed to automatically remove very old incremental files when it runs out of space. It does so automatically; to be informed when it happens, in Time Machine's preferences click Options and turn on 'Notify after old backups are deleted.' Or, connect a new drive and switch to using it ahead of time. It's worth having a second routine to archive files in a way that won't see them disappear over time.



I'M HAVING PROBLEMS WITH iCloud

Solutions for Apple's online storage and personal data service



HOW DO I KNOW WHETHER A PROBLEM IS MINE OR APPLE'S?

iCloud tends to be very stable and its various services exhibit excellent uptime. However, like all online

services it can suffer outages from time to time. It's a good idea to check the service status at

apple.com/support/systemstatus before tinkering with anything to see whether a problem is at Apple's end or yours.



MY ACCOUNT IS UNEXPECTEDLY FULL

Sierra can make use of iCloud to store your Documents and Desktop folders in iCloud Drive so they are available on all your devices.

You may have enabled this when you installed Sierra. While useful, this can eat up your iCloud space. To switch it off, go to System

Preferences' iCloud pane, click Options next to iCloud Drive; uncheck Desktop & Documents Folders. Empty versions appear on your Mac; drag items back from those in iCloud Drive.



I WANT TO CONTROL SYNCED PHOTOS

If you don't use iCloud Photo Library to store and sync photos between devices, go to iCloud's prefs, click Options next to Photos, turn on My Photo Stream. On iOS, enable My Photo Stream in Settings>iCloud>Photos; pics upload when that device is on Wi-Fi. Photos for Mac adds items from the stream if Copy Items to the Photos Library is on.



PERSISTENT ERROR MESSAGES

If you can't access iCloud services, there may be an iCloud authentication issue. Sign out and in again in System Prefs' iCloud pane. You'll see the option to remove synced data; though it ought to reappear when you sign in again, the safer approach is to decline so you retain a copy on your Mac throughout.

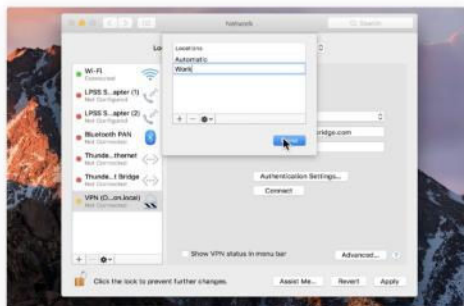


IS ONLY YOUR USER ACCOUNT AFFECTED?

If an app misbehaves, create a new user account (Users & Groups), log in, and check if it's affected. If not, the preferences file for that app (~/.Library/Preferences) may be damaged; restore from a backup or trash it so the app can recreate it.

HELP! I'VE GOT NETWORKING ISSUES

Many networking problems can now be fixed with easy tweaks



I OFTEN NEED TO CHANGE NETWORK SETTINGS

As long as Location in System Preferences' Network pane is set to Automatic, all network interfaces will be active and macOS will check which can provide an Internet connection and use it. If you can't get online or use network services, choose Edit Locations, click + and give the location a name, click Done. Click the cog under the list and pick Set Service Order to what's appropriate. In turn, select each interface, click the cog; for any interface you need active, select it and click Advanced, set it up however the administrator has advised - for Wi-Fi, don't remove networks you need from the Preferred Networks list as that'll remove them from all locations. Click OK>Apply. To switch between location settings, use the > Location menu.

MY BROWSER CAN'T CONNECT TO SOME SITES

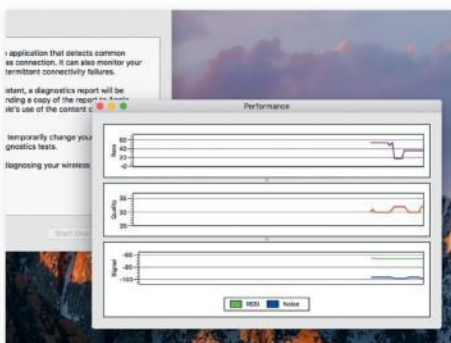
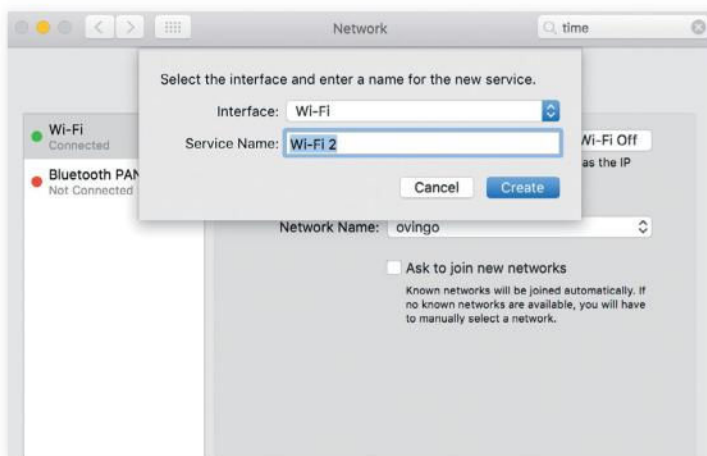
Your DNS (Domain Name System) server might be having problems or set to block access. In System Preferences' Network pane, select your active connection then click Advanced. Switch to the DNS tab, make a note of existing settings in case you need to reinstate them, then delete them. Add these two entries: 8.8.8.8 and 8.8.4.4, which will set your Mac to use Google's DNS servers.

WI-FI JUST WON'T WORK

Still not working? Try temporarily removing your Mac's Wi-Fi connection. In

System Preferences' Network pane, select Wi-Fi in the left pane, then click the '-' (minus)

button. Then immediately add it back by clicking the '+' to create a new Wi-Fi connection with default settings. That should solve it!

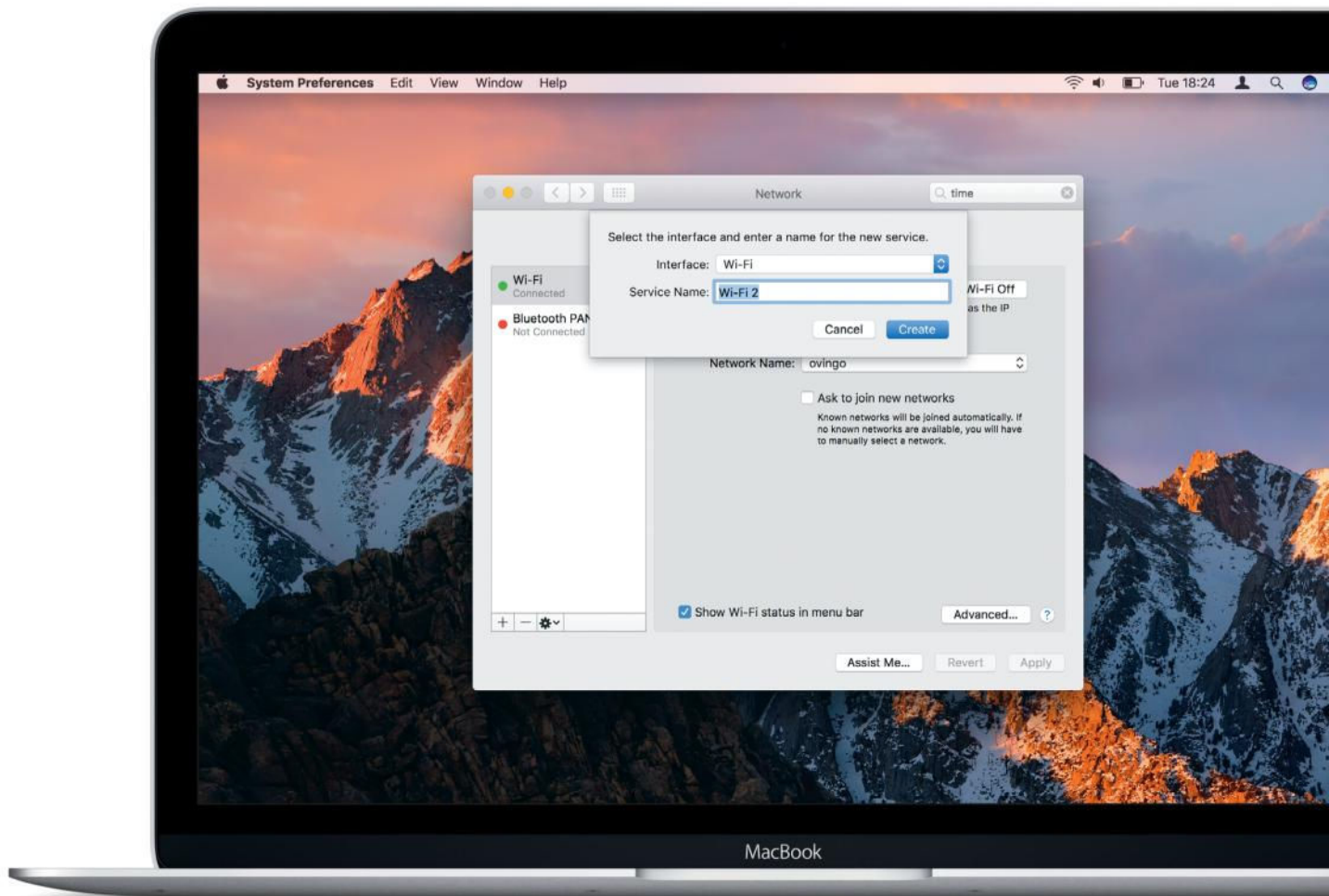


I'M HAVING LONGER-TERM ISSUES WITH WI-FI

Use Wireless Diagnostics (enter its name in Spotlight, or hold Alt and click the

Wi-Fi icon in the menu bar) to inspect your connection and compile a

diagnostics report that you can read through yourself or send to Apple or another support agent - say, your ISP if you're trying to get it to send a replacement router. If these tests don't reveal immediate issues, opt to monitor your connection over time and watch for problems. Check out the options in the tool's Window menu for other useful tools.



I CAN'T CONNECT USING BACK TO MY MAC

Ensure both Macs are signed in to the same iCloud account and that Back to My Mac is enabled in their iCloud panes. In the remote Mac's Energy Saver pane, set it to wake for network access. Your router must support UPnP or NAT-PMP; use its

admin tool to enable it - usually that tool's accessed by going to the router's address in a browser. To

find out its address, Alt-click the Wi-Fi icon and look under your network's name. Still can't connect? Go to apple.co/2jVvWVK.



HOW DO I RESET MY PREFERENCES?


Make a full backup of your system. Turn off Wi-Fi. You need to copy five files related to network preferences to a removable drive, so you can restore them if necessary. In Finder, browse to the top of your Mac's startup disk and then dig into /Library/Preferences/SystemConfiguration. Move (as opposed to copy) the following files to your removable drive, then eject that drive:

```
com.apple.airport.preferences.plist
com.apple.network.eapolclient.configuration.plist
com.apple.wifi.message-tracer.plist
NetworkInterfaces.plist
preferences.plist
```

Restart your Mac and turn on Wi-Fi again; macOS will recreate those files, which should no longer include any problems that existed in the versions you removed.

REPAIR OPTIONS

If you haven't found a solution, here's how to get professional help

 **IF ALL** else fails, taking your gear to Apple may be the answer. That said, Apple isn't always the cheapest option. Before booking in at a Genius Bar, compare Apple's prices with those charged by your local Authorized Service Provider ([apple.co/2fBpTU0](#)), and third party repair stores. If you use a local repair shop, go to [getsupport.apple.com](#), click 'See your products' and sign in with your Apple ID to see the warranty status of devices, and whether consumer law might still apply. From here, you can book an appointment for a repair, not only with Apple but also members of its authorized support network.

DATA RECOVERY

Broken and corrupted hard drives are a frequent cause of lost data, which is why we recommend running both Time Machine and a second backup service at the same time - the latter ideally offsite - to protect your files. If you lose your data, consider its worth, as the cost of recovery can run to thousands of pounds, depending on the time the job takes. Specialists like Kroll Ontrack ([krollontrack.com](#)), which has several decades' experience in this field, can turn around your data in as little as 12 hours.

IPHONE SCREEN REPLACEMENT

Outside of warranty, Apple asks \$129 for a regular-size iPhone, and \$149 for the larger Plus variants. If going to a main street store, take care choosing who to use; a fat-fingered engineer might invoke the dreaded Error 53 on a Touch ID-enabled device (see [apple.co/2kxBNzA](#)) and cause more problems.



MACBOOK BATTERY REPAIR

Replacement batteries cost between \$129 (for

MacBook Air) and \$199 (for 12-inch MacBook and the

MacBook Pro with Retina display) when supplied and installed by Apple. In recent models, they aren't user serviceable parts, but with older portable Macs, DIY replacements are possible. You should be able to source, say, Duracell batteries for older MacBooks from [amazon.com](#).



HARD DRIVE REPLACEMENT

Checking in for a faulty hard drive replacement will often involve two separate costs: one covering labor, which should include initial investigation to

diagnose the problem (Genius Bars don't charge for diagnosis) and one for the new part. Expect to pay around \$99 for labor on a Mac mini, say. This service

won't necessarily include the transfer of data, so ensure you have a backup before handing over your Mac. For security reasons, also ask for the faulty drive back so you can ensure it's safely destroyed prior to disposal.

THE ESSENTIAL macOS SOLUTIONS CHECKLIST

DO



Keep apps up to date. If updates delivered through Mac App Store aren't set to install automatically, regularly check the store's Updates tab, and use a Check for Updates command or check websites of apps obtained elsewhere.



Where a utility or feature of your Mac has a menu bar icon, such as Bluetooth, holding Alt and clicking that icon often reveals useful diagnostic information or menu items that are otherwise hidden.



If your Mac won't start up properly, enter safe mode by holding as you power on. If that works, disable login items one at a time (Users & Groups preferences), and start up normally. Repeat until you find the culprit.



Learn helpful startup key combinations to diagnose problems, like resetting the memory that holds system settings, and more. Apple maintains a list of startup shortcuts at bit.ly/2jeOILg.



Use the Utilities folder, located in the Applications folder. There's a wealth of apps that can help diagnose and fix problems with networking, displays, passwords, and more.



Send crash reports to developers. If you use El Capitan or earlier, try Console: check lines in system.log from before a crash and copy to your app's developer. Sierra's Console can be less useful; consider opting in to auto-sharing reports - see bit.ly/SieCo.



Enable macOS's firewall to boost your Mac's defences against any unwanted connections from other computers. Turn it on in System Preferences' Security & Privacy pane and then configure it by clicking Advanced.

DON'T



Disable Gatekeeper in Security & Privacy in System Preferences (options listed under 'Allow apps downloaded from'). Though it may be annoying when it stops you installing apps from unknown sources, it's easy enough to circumvent for one-off installs.



Use simple passwords: they make it easy for others to gain access to your Mac. Use Keychain Access's Password Assistant (click the key button when adding a new entry) to enter passwords and get feedback on their strength.



Share user accounts. Give each person who'll use your computer their own. This applies to iCloud accounts; to share calendars, music, and more, click Set Up Family in Users & Groups.



Make every account an administrator. Create a standard user account to reduce the possibility of harmful changes. Additionally, use System Preferences' Parental Controls pane to further monitor your kids' actions.



Risk losing your data. With Time Machine built in to the OS, there's no excuse for not backing up. Particularly when external hard drives are now so affordable; a 1TB portable model can be bought for about \$50.



Leave windows open when quitting apps if your startup disk is a hard drive. In System Prefs' General pane, turn on 'Close windows when quitting...' so documents don't reopen with their app.



Run unnecessary services. If your Mac is the only computer on your network, go to System Preferences' Sharing pane and turn off screen and file sharing at the very least.

mac OS support

The ultimate guide to getting more out of your Mac

- 22 Get started with macOS Sierra**
Discover the latest features of Sierra
- 36 The ultimate Mac survival guide**
Keep your data safe and back up your Mac now!
- 44 Essential macOS timesavers**
Make your computer usage more time efficient





GET STARTED WITH

macOS Sierra



The latest update to your Mac's operating system is here! Here are the first things to try out in Sierra

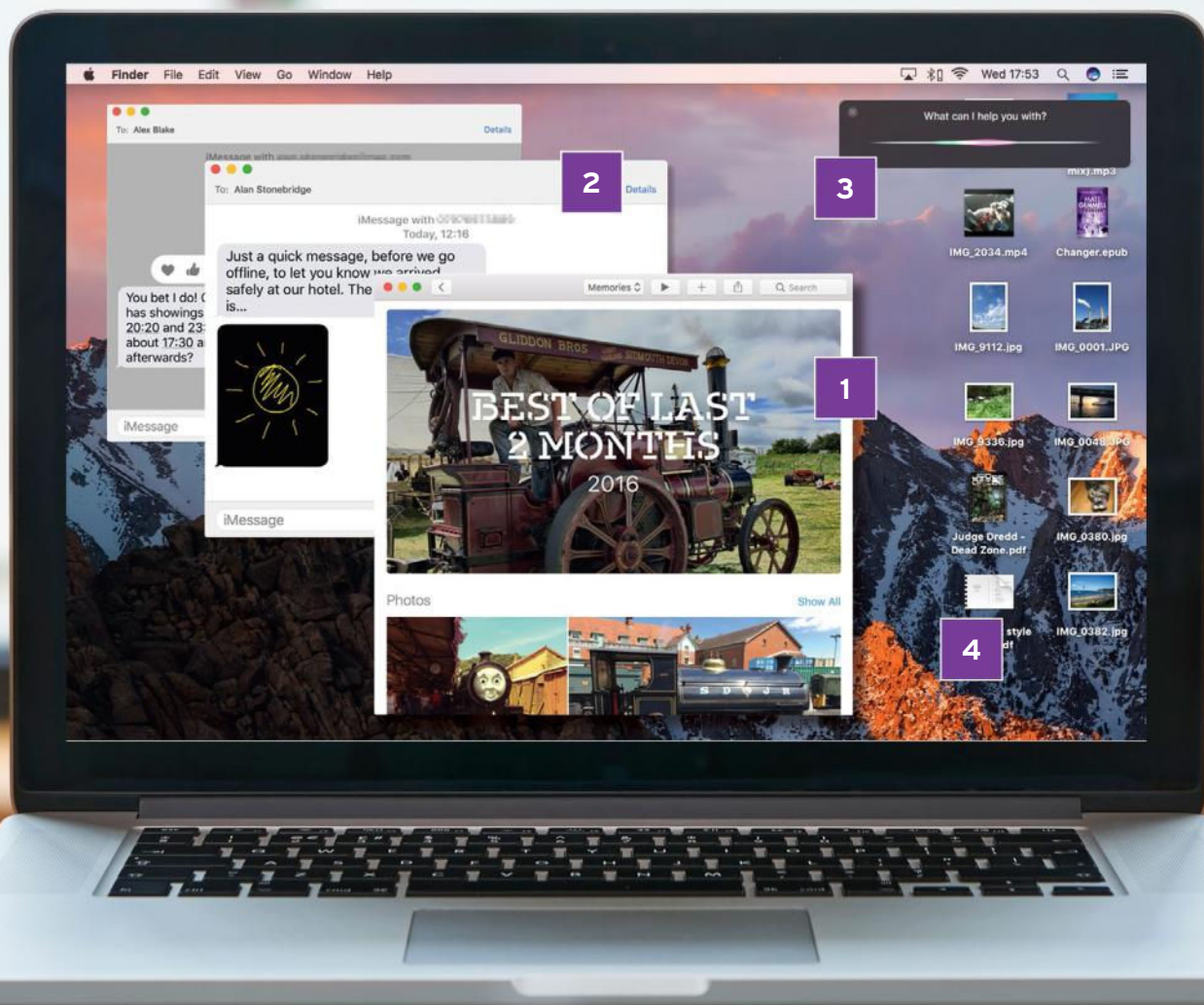
APPLE'S LATEST AND greatest operating system has landed, bringing not just a change of name from OS X to macOS, but also some fantastic new features to make your Mac more useful than ever. macOS Sierra is here.

In this feature we're taking you into exactly how those features work and what you can do with them.

We'll start with the new Auto-Unlock feature that enables Apple Watch owners to log into their Macs without needing to enter a password – and look at a third-party option to help those without a Watch do the same. Then we'll look at what Siri can do on the Mac, how Apple has made the Photos app more powerful and smart, iCloud's fantastic new features, the brilliant Universal Clipboard (and some App Store alternatives that expand on this functionality), the new options in Messages, how tabs work in more apps, Optimized Storage, and Picture in Picture mode!

We think Sierra is a really strong upgrade for our Macs, and we hope you'll enjoy making the most of its impressive new features!





Your Mac's new look

The beautiful new vista and powerful features of macOS Sierra

1 DO MORE WITH YOUR PHOTOS

Photos arrived in Yosemite, but it's taken until now to become really intelligent. The brand new Memories feature collects groups of related images to create a movie, while improved search makes large libraries more manageable.

2 SPRUCE UP MESSAGES

Messages on the desktop reflects many of the changes in Messages on iOS 10. You can now interact with messages (similar to a 'Like'/'Love' on Facebook), see stickers and bigger emoji, and see Digital Touch drawings.

3 ASK SIRI TO FIND THINGS

Siri is getting more powerful with every iOS and tvOS release, and now it's the turn of the Mac. It's capable of searching for files, playing music, finding information from the web, adding calendar appointments, and more.

4 MAKE MORE OF THE DESKTOP

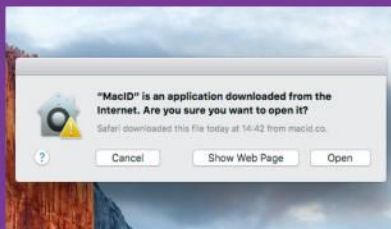
macOS Sierra is transforming the concept of the desktop workspace. Essentially, your desktop will become available in iCloud Drive so you can get to its contents from another device. 'Never lose another file' just became a reality!

Using Sierra's Auto Unlock

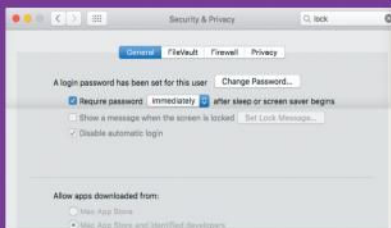
>>> **YOU CAN** unlock a Mac when your Apple Watch running watchOS 3 is nearby. Assuming your Watch has a passcode set and two-factor authentication is enabled for your Apple ID, you can turn on Auto Unlock in System Preferences' Security & Privacy pane. Try to unlock your Mac; it'll say it's doing so with your Watch. If the Watch is absent, you'll get the standard password screen. Sadly, there's no automatic locking based on proximity, but MacID can do that (see below).



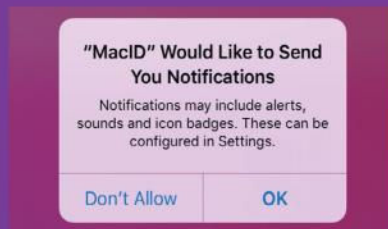
How to Unlock your Mac using your iPhone and MacID



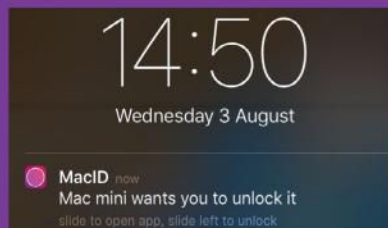
- 1 INSTALL THE MAC APP**
Download, install and then open the Mac component of MacID from macid.co. It requires OS X 10.10 and a Mac that supports Bluetooth 4.



- 4 SECURE YOUR MAC**
In Security & Privacy>General in System Preferences, set your Mac to require a password to wake from sleep or after its screen saver starts.



- 2 GET MACID FOR iOS**
Install MacID (\$4.99) on an iOS device with Bluetooth active. If you also have an Apple Watch, you can use MacID as a Watch app too.



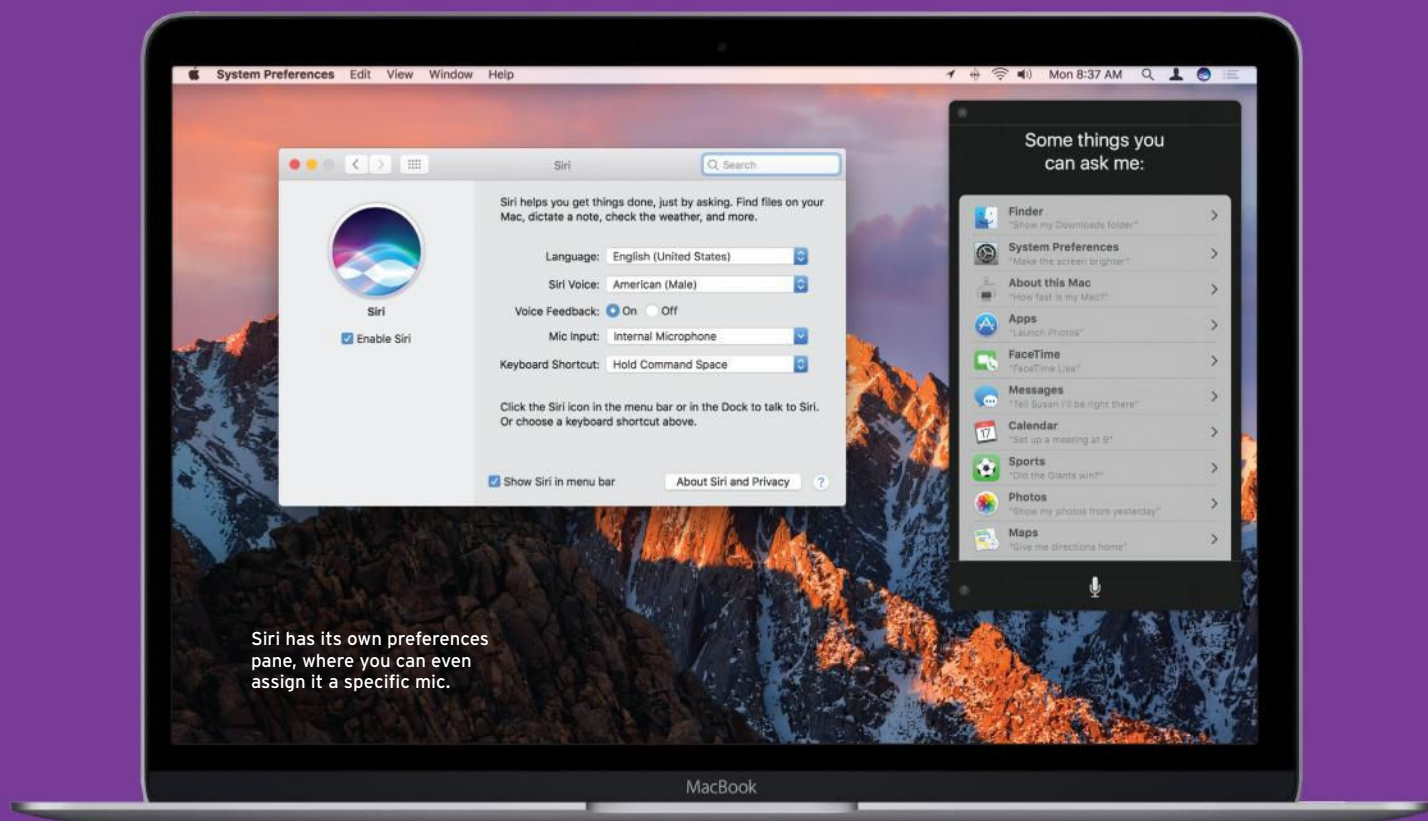
- 5 UNLOCK YOUR MAC**
Try to unlock your Mac; MacID sends notifications to your devices. Unlock it with a tap (Watch), or a swipe or using Touch ID (iPhone).



- 3 PAIR YOUR iOS DEVICE**
On your Mac, MacID should list your iOS device. Select it and click Continue, type your user account's password, then click Continue again.



- 6 TAKE IT FURTHER**
On iOS, you can use MacID to lock your Mac from afar. On Mac, use the app's menu to set up Sierra-like proximity-based locking and waking.



‘Hey, Siri’

Siri comes to the Mac - now you're talking!

HAVING BEEN a cornerstone of the iOS experience for several years, Apple's virtual assistant Siri is now baked into macOS. As long as you have a way to talk to your Mac (using a built-in or external mic), you can give it commands, such as to display weather reports, locate documents, or add events to Calendar.

On macOS, Siri lives in the Dock and the menu bar, and is triggered with a click, or you can activate it by holding **⌘**+Spacebar for a moment. That's the same combo that opens Spotlight when pressed and released quickly, so Siri's System Preferences pane offers a couple of alternative shortcuts that you can press in order

to avoid confusion, or you can define your own shortcut. However, you'll need to make sure it doesn't clash with one you use elsewhere.

Saying "Hey, Siri!" to your Mac is absent, but there is a workaround. First, this requires you to be using a keyboard shortcut for Siri that you press for an instant response, rather than hold down, so make that change. Next, turn on Dictation

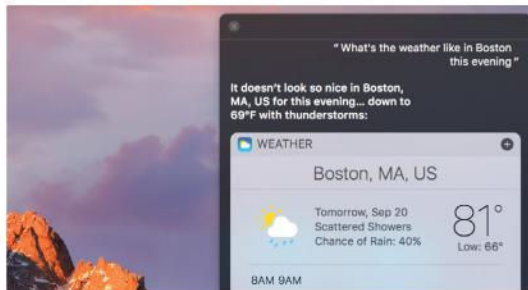
Saying "Hey, Siri!" to your Mac is absent, but there is a workaround

in Keyboard prefs, and Use Enhanced Dictation (which may require a download).

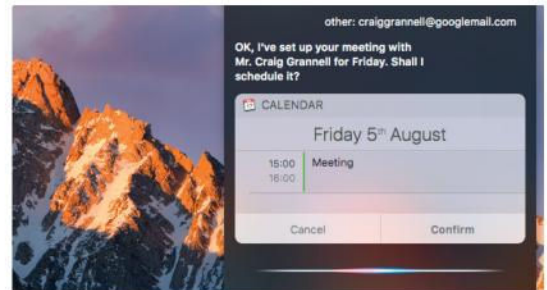
Open the Accessibility pane, select Dictation on the left, enable the use of a dictation keyword phrase, and use "Hey" for said phrase. Next, click Dictation Commands, turn on 'Enable advanced commands,' and click + to create a new one. In the top field, type Siri. In the Perform pop-up menu, choose Press Keyboard Shortcut, then press the Siri shortcut you set earlier, and finally click Done.

The Dictation icon will appear in the menu bar, and you can now say "Hey, Siri" to activate the feature, rather than having to press keys.

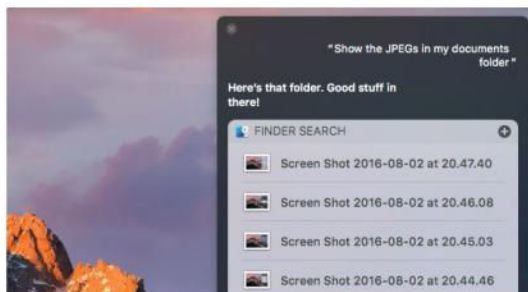
How to Use Siri in Sierra



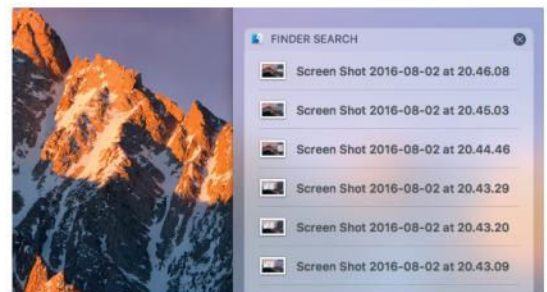
- 1 SEARCH THE WEB**
Ask Siri to search the web for a topic. It also knows about sports and weather; ask how a major team fared recently ('Did the Giants win?'), or for today's or tomorrow's forecast.



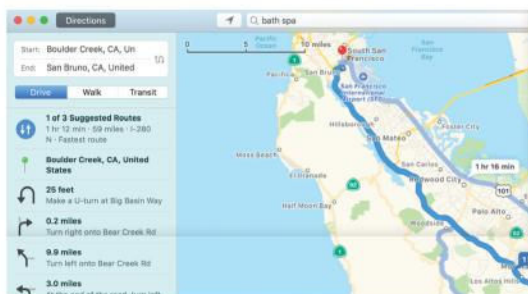
- 2 GET ORGANIZED**
Rather than laboriously typing out Calendar events, you can have Siri 'set a meeting with Craig on Friday at 9,' move existing events, or tell you what's scheduled for a given day.



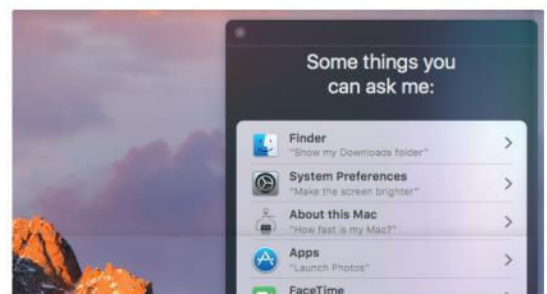
- 3 FIND AND OPEN STUFF**
Open apps, access preference panes, and change things like screen brightness. Have Siri open specific files in certain folders: 'Show all the JPEGs in my Downloads folder.'



- 4 STASH YOUR SEARCHES**
After finding some files using Siri, click the + to save the search in Notification Center as a Finder Search widget; it'll update as other relevant files are later added.



- 5 GET DIRECTIONS**
Have Siri give you 'directions from home to Las Vegas', or 'show a map of New York.' An evening out? Easy. 'Show me local restaurants,' or 'What movies are showing locally?'



- 6 GET MORE IDEAS**
Siri has many more capabilities. To discover some of them, ask it: 'What can you do?' - Siri will bring up a scrollable list. Click an item to see specific examples of how to use it.

Photos

Clever tech and artistic features are a click away

APPLE SAYS IT brought the new Memories feature to macOS's Photos app to turn your shots into unforgettable experiences. Well, it's kind of overdue: Photos on the Mac has been a little underwhelming to date. Most of us use it, but we hardly ever think it's the complete experience it should be. Photos in Sierra at least takes two steps forward to making us feel like it's close to being the app we expected to get in the first place.

Photos becomes more useful for the most common tasks of searching and displaying your pictures

Photos becomes more useful for the most common tasks of searching and displaying your pictures in creative ways. With its 'machine learning' tech, not only does Photos have better face recognition – remember how hit-and-miss it used to be? – but it can also identify places and pets! What that boils down to is a much improved way to search your ever-expanding library.

We take a lot of shots on iPhone, each containing lots of information. Photos in Sierra puts that data to much better use, to automatically group your shots from a particular location, or with particular subjects, in Albums. Then there's Memories, a way for the app to assemble related images as short movies. You pick a style, choose some music, and then let an algorithm make a slideshow with no effort from your side.

With so many of Sierra's compelling features using iCloud, you may need some more space! See p31

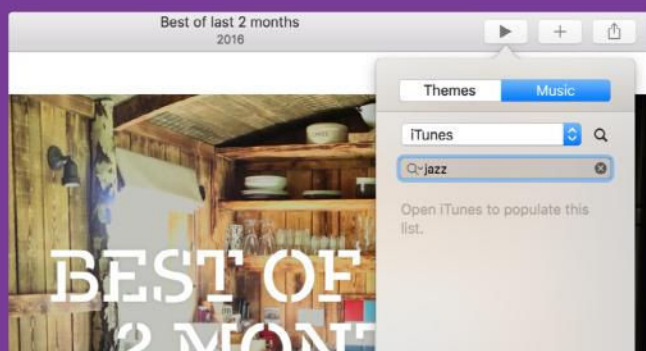
How to Relive your memories



1

MAGIC MOMENTS

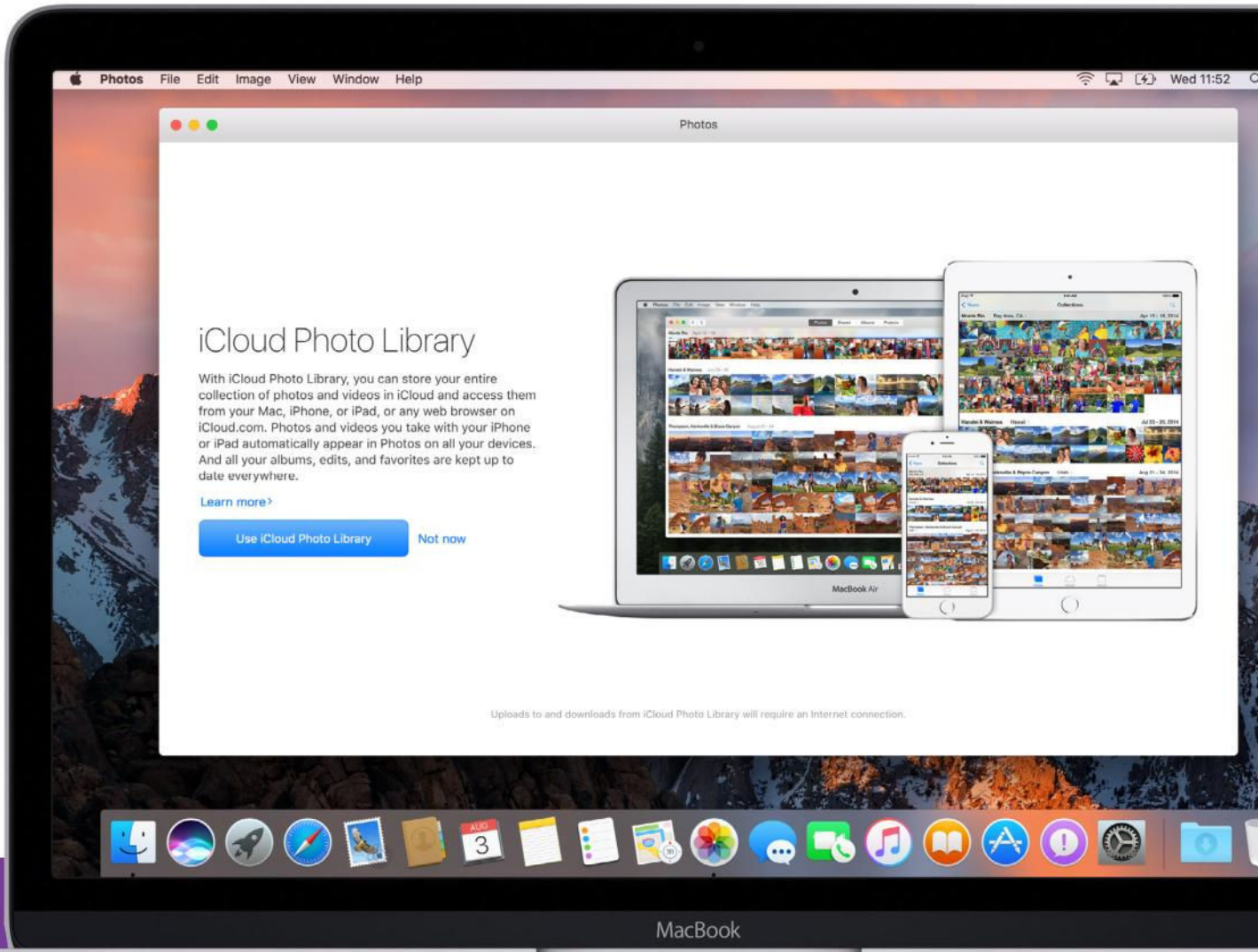
In your Photos library, click Memories and then Get Started. Photos will get to work gathering your images into groups it thinks belong together. It'll automatically name the memories using metadata and tags from the images it's aggregated.



2

STYLIZE YOUR MEMORIES

Everything is auto-generated by Photos, so you only have rudimentary choices over the visual theme and music. There are seven choices of theme, but on the Music tab you can pick anything from your iTunes library for a more personal feel.



3

EXPLORE YOUR MEMORIES

With a theme and music chosen, before you click on Play Slideshow, you can scroll down to see the photos that the app has chosen for the memory. Images are displayed in a grid, just like in the Activity view in the Shared tab.



4

ENJOY THE SHOW!

Scroll to the bottom to see Photo's new facial recognition at work. It finds all the faces from your photos - in this case it included Thomas the Tank Engine! Photos are also plotted on the Places map. Now go back and play the slideshow.

iCloud Drive

Apple's cloud service now syncs your Mac's Desktop and Documents folders to your iOS devices

FOR A LONG while, Apple pushed back against traditional file systems. On iOS, documents only live 'inside' apps. With iCloud, cross-device syncing worked well when using the same app on iPad, iPhone, and Mac. However, when using multiple apps, you had to copy documents between them; this often resulted in many part-finished files strewn across devices.

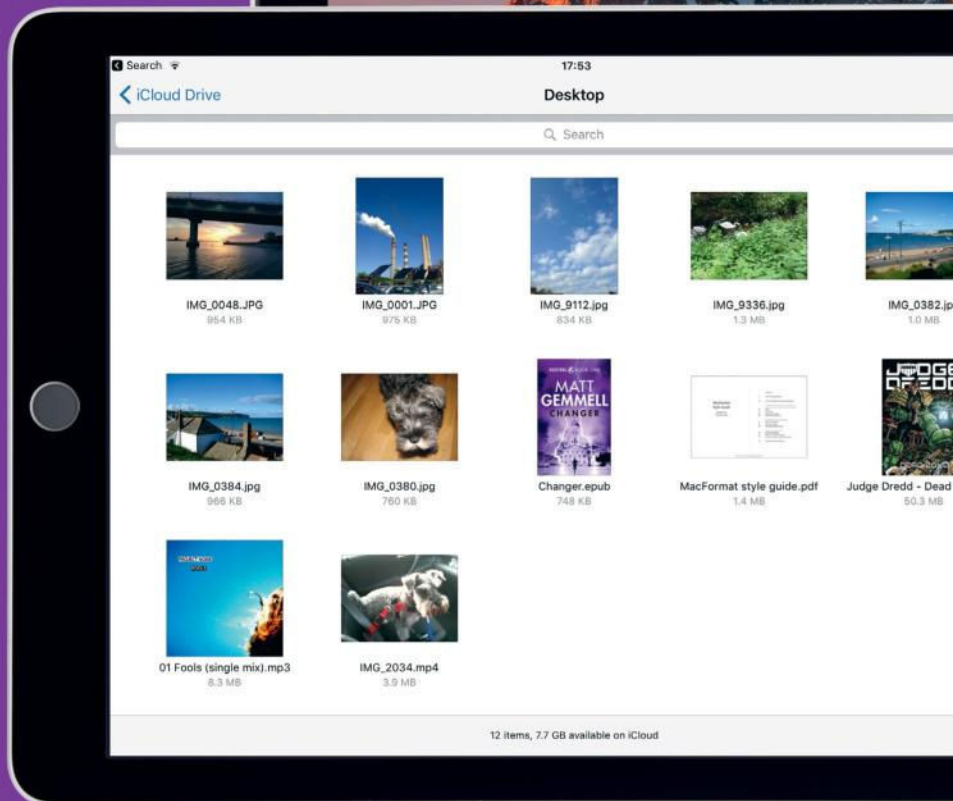
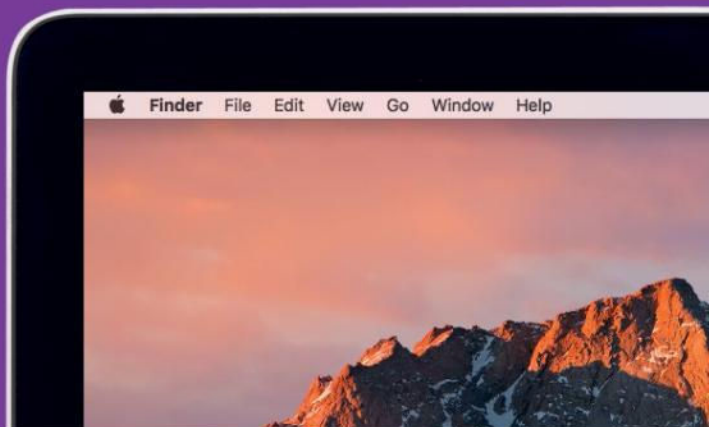
With iCloud Drive's introduction, Apple added a more typical file system to the core iOS experience, and made it accessible on Macs and iOS devices. You can delve into app-specific folders, but also add folders of your own, just like in Finder on a Mac. Now, with the release of macOS Sierra, Apple is making a particularly audacious move regarding iCloud Drive, enabling you to keep your Mac's Desktop and Documents folders on iCloud Drive.

The option to do this is provided when you first set up macOS Sierra, but you can turn it on later in System Preferences' iCloud pane: click on Options next to iCloud Drive, and in the Documents tab check 'Desktop & Documents Folders.' When this feature is active, Desktop and Documents appear in the iCloud section of Finder's sidebar (you can move them back to Favorites if you want), and the documents stored in those places will be available everywhere else.

And we mean everywhere. On an iOS device, you can open iCloud Drive (which in some versions may

require an app that includes its own Document Picker, or going to Settings>iCloud>iCloud Drive and switching on 'Show on Home Screen'). Among Macs using the same Apple ID and with the same settings, your documents will sync in the background. On a Mac running an older operating system, you'll find your files in the Desktop

It's an audacious move of Apple to put these crucial folders in iCloud



and Documents folders within iCloud Drive. When using a non-Apple device, access them in the iCloud Drive app at [iCloud.com](https://www.icloud.com).

WILL IT FIT YOU WELL?

Regarding the specific folders that sync, Apple reasons they're the most common places for saving files; also, images and other media are already catered for by existing iCloud services. There are, however, some snags to be mindful of before jumping in. First, there's no granularity whatsoever at this time. The feature is either on or off. If you like the idea of syncing your

Access your Mac anywhere

>>> **THERE ARE** other ways of getting at a Mac's desktop from another Mac, by making use of OS X's File Sharing and Screen Sharing features. These can be enabled in the Sharing pane in System Preferences. Macs that are configured to use them appear in Finder's sidebar, under the Shared heading. Select one there and click Connect As to access the Mac's files and folders. Click Share Screen and then enter login credentials for the remote Mac to view its desktop in a window. Drag files in Finder to copy them between the computers.

This only works with Macs on the same network, but you can also access a Mac over the internet. In System Preferences, choose which users should have access to Screen Sharing, then turn on Back to My Mac in the iCloud pane. In Finder's Sidebar preferences, ensure Back to My Mac is checked. You should then be able to see the remote Mac in the sidebar.



Desktop but not Documents: tough. Secondly, if you regularly work with massive media files (such as Photoshop documents, audio recordings, or video), be wary of slowing down your internet connection to a crawl as your devices try to sync huge documents with iCloud Drive.

Finally, whatever you store in iCloud Drive eats into your iCloud storage plan. By default, Apple gives you just 5GB for free, which disappears rapidly with a couple of iOS device backups, let alone when syncing all manner of documents from your Mac.

iCloud pricing

5GB FREE

50GB 99¢/month

200GB \$2.99/month

1TB \$9.99/month

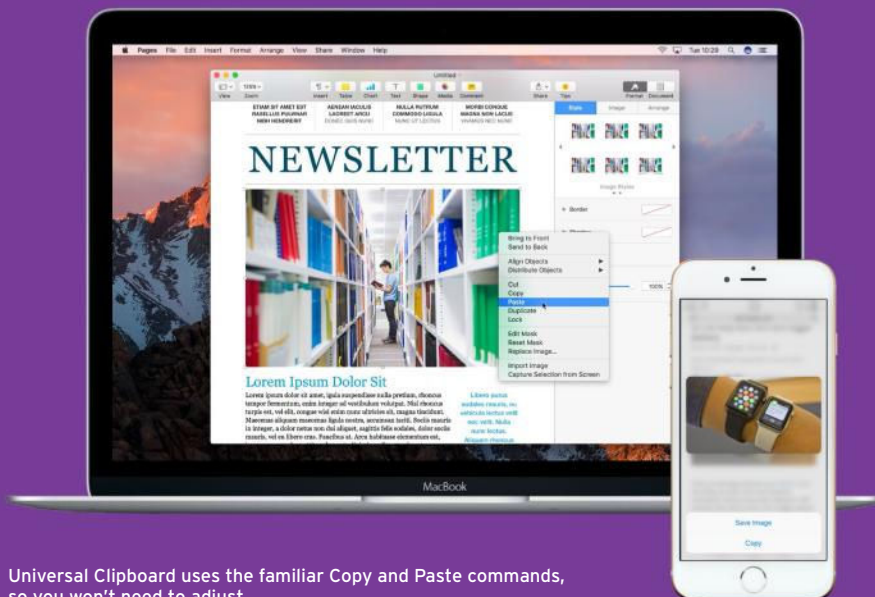
2TB \$19.99/month

Universal Clipboard

Copy and paste between your Mac, iPhone, and iPad

RATHER THAN create what Tim Cook once memorably called ‘toaster fridges,’ Apple offers distinct devices that communicate effectively as a single, coherent ecosystem. Its Continuity features enable you to make and receive phone calls on your Mac, or start an email on one device and continue it on another.

With the release of iOS 10 and macOS Sierra, Universal Clipboard is added to Continuity’s capabilities. With all your devices signed into the same Apple ID, you can copy text or an image, photo, or video on your iPad, for example, then switch to your Mac or iPhone and paste it in a there. What you copy is sent over a peer-to-peer connection, so nothing’s uploaded to iCloud.



Universal Clipboard uses the familiar Copy and Paste commands, so you won't need to adjust.

Useful third-party Clipboard apps

COPIED

\$7.99 copiedapp.com



The basics of Copied more or less mirror what you find in Universal Clipboard, albeit with support for older versions of Apple's operating systems (starting with iOS 8 and OS X 10.10 Yosemite).

Once you enable Copied's iCloud Sync feature, you can copy and paste things between your Macs and iOS devices. However, Copied goes beyond the capabilities of Apple's system by providing access to a much richer range of features, such as a Clipboard history.

PASTE

\$9.99 pasteapp.me



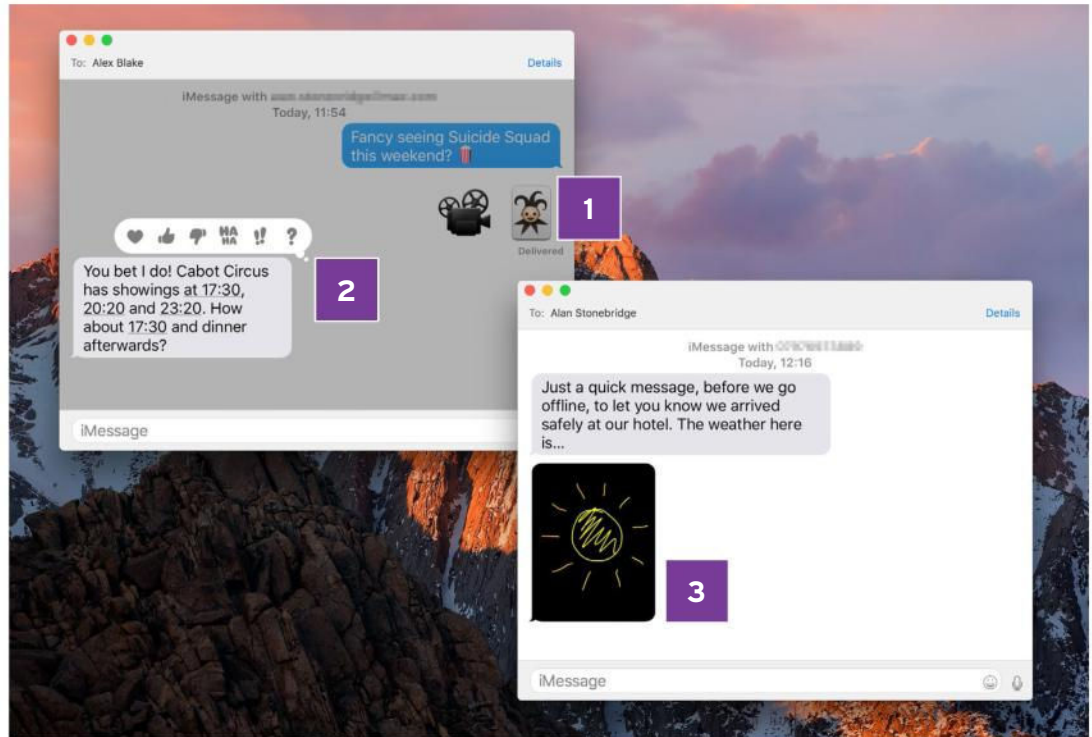
At its core, this app is a smart Clipboard history and clippings manager. It claims to store 'everything you've ever copied,' and enables you to later search for and retrieve important clippings so you can reuse them. Paste enables you to define rules that exclude specific apps, and create pinboards for regularly required clippings. At the time of writing, clipboards can be shared and sent over AirDrop; cross-device support is in the works, with Paste for iOS coming soon.

ALFRED + POWERPACK

£19 (around \$25) alfredapp.com



Although it isn't technically a Clipboard manager, this app, once its Powerpack add-on is installed and activated, has a Clipboard history feature. Alfred's settings are usefully granular: you can define how long it should keep various kinds of clipping, such as plain text, images, and file lists, from 24 hours to three months. You can scroll through clippings, or filter the contents by typing a word or phrase. More advanced features include the ability to append the currently selected item.



Messages

Conversations are about to get a whole lot more fun

>>> **APPLE'S INSTANT** messaging service is about to get a lot more interesting, with a mix of fun and practical features that make it more engaging. Messages in Sierra supports many of the same tools that are found in the iOS 10 version, enabling you to send a quick reaction to a message in two clicks and without any typing. Share a web page's address from Safari and Messages presents it more attractively than before, with the page's title and a picture to make it a little clearer where clicking will take the recipient. The app also deals with media better than before.

However, Sierra lacks some stuff from iOS 10; unsurprisingly, fullscreen effects such as balloon animations, but also the message bubble animations.

1 SUPERSIZE YOUR EMOJI

Messages already allows you to increase the overall font size for conversations, helping a little to distinguish emoji, but confronting you with large text. In Sierra, messages that contain emoji but no text are presented at a superlarge size. At last, no more struggling to identify an expression! Mix them with text, though, and they're shown at the normal size.

2 SEND A QUICK REACTION TO A MESSAGE

Position the pointer over a message bubble and then hold down the mouse or trackpad button. After a moment, Messages will display a thought bubble with a range of common reactions you might want to send back: a heart, a thumbs up or down, 'Ha ha,' a double exclamation point, or a question mark. Click one to send it and the other person will see it attached to the message you clicked.

3 SPRUCE IT UP WITH DIGITAL TOUCH

On macOS Sierra, Messages sadly doesn't allow you to use your Mac's trackpad to doodle quick sketches to send to people, as you can on the screen of an Apple Watch or iOS 10 device. However, it's able to show Digital Touch drawings sent to you from those devices, and you can copy and paste them into other apps just as you're able to with text, images, and website links in conversations.

Optimized Storage

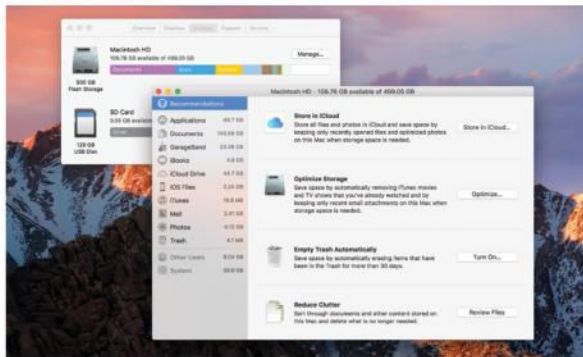
>>> **SIERRA'S OPTIMIZED** Storage feature provides guidance about operating system and app preferences you may want to change to help conserve storage space – an important consideration given that most MacBooks still ship with a fairly limited amount. The feature isn't in a particularly obvious place: go to **Apple>About This Mac**, click the Storage tab, then click the Manage button at the top right of your startup disk.

The window opens with a Recommendations category selected in its left pane. Some of these

actually cover multiple app preferences. For example, if you're not already using iCloud Photo Library, the top item (Store in iCloud) covers two changes: enabling that feature, but also turning on the ability to move your Desktop and Documents folders to iCloud Drive, which enables files in those folders that you haven't touched in a while to *appear* there, but actually to be stored in iCloud and only downloaded when you open them, saving on local space in the meantime.

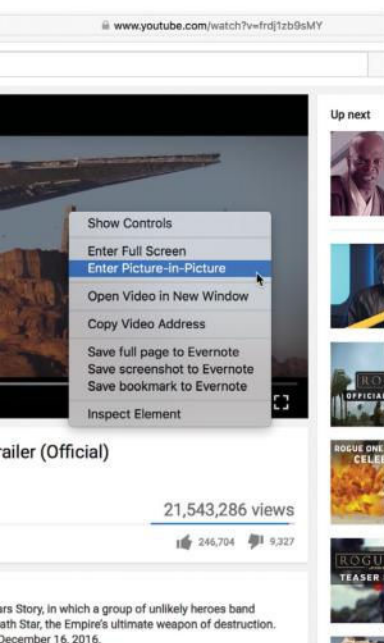
You can make these changes elsewhere in macOS and its apps, as long as you know where to look. The point of the Optimized Storage feature is to consolidate them so you only have to look in one place to make smart changes to how your Mac manages its storage.

Below Recommendations in the left pane, the feature highlights a few other areas you may want to check out. Among the most useful for quickly clearing out large amounts of space are: the Applications view, which you can sort by date last accessed to identify those you may no longer use; Documents, which offers granular options for document files wherever they're stored; and iOS Files, which lists firmware updates still on your Mac even after you've updated your devices.



Picture-in-Picture

Keep videos visible no matter what you're doing



>>> **SOME VIDEO** players, including iTunes, have long enabled you to keep their window on top of others and tuck it at the edge of the desktop, so you can carry on with another task. What's surprising, given how much video content we all consume over the web these days, is that it's taken Apple until Sierra's release to offer this capability for online video in Safari.

Now that Safari offers this, you'll no longer have to clumsily position its window at one edge of the screen and resize others to keep it in view. Instead, you can pop the

video out of its originating page and position and resize it at a corner of the desktop. It'll stay there even if you switch to a fullscreen app.

The Picture-in-Picture mode can be tricky to discover within video players, especially with sites like YouTube, whose HTML5 video player substitutes its own contextual menu when you right-click a playing video. The trick is to right-click a second time to reveal Safari's own contextual menu, and then choose Enter Picture-in-Picture from it.

A ground-up storage redesign

Upcoming technical changes with positive benefits for you

APPLE FILING System (APFS) is the new storage format which all four of Apple's operating systems will eventually use. While it isn't fully used in Sierra, Apple has provided an early version to developers to test in the new OS; APFS supports almost all the same features as HFS+, the Mac's file system since the late '90s, but Apple explicitly warns that disk utilities will need to be updated for APFS. So, if you depend on anything of that nature, start saving for an upgraded version.

The reason for APFS's development stems from

Duplicated files only use up additional space for the parts you actually change

technical attributes of HFS+ that are a clue to its age; HFS+ dates from a time when magnetic media was the dominant type, whereas APFS will be optimized for the flash storage that's used in most Apple devices today.

THE DETAILS

Apple says that security and privacy are fundamental in APFS's design. A disk can be formatted either without encryption, or using a single key for the whole of it, or with a different key for each file. APFS's cloning feature means duplicates

take up no extra space until you change one version, at which point only modified blocks are stored, rather than a copy of the whole file, which could save you a lot of space. Then there are snapshots, which are read-only copies of files that enable rolling back to an older version.

APFS itself doesn't implement RAID (a method of pooling physical disks for better performance or redundancy), but Apple says you can combine it with macOS's software RAID implementation. Also, where Disk Utility lost graphical RAID management in El Capitan, Sierra brings it back. But Apple has deprecated the AFP protocol used for network file sharing, so using APFS on your NAS will need the drive to support SMB or NFS.

Organize your Apps

>>> IN SIERRA, any app that can create multiple documents is automatically enhanced with the ability to gather them in one window. Sierra gives such apps a tab bar just like the one you're used to in Safari, without them needing to be updated to a newer version, and you can drag any tab off the bar to split it out into its own window. It also makes Mission Control look less cluttered, with each app's thumbnail being larger and easier to distinguish. By default, tabs are enabled only for fullscreen apps (so you will no longer end up with many desktops for one such app), but they can be disabled entirely or added to windowed apps too.

You can manually or automatically merge document windows, therefore decluttering Mission Control in the process.



The ultimate Mac survival guide

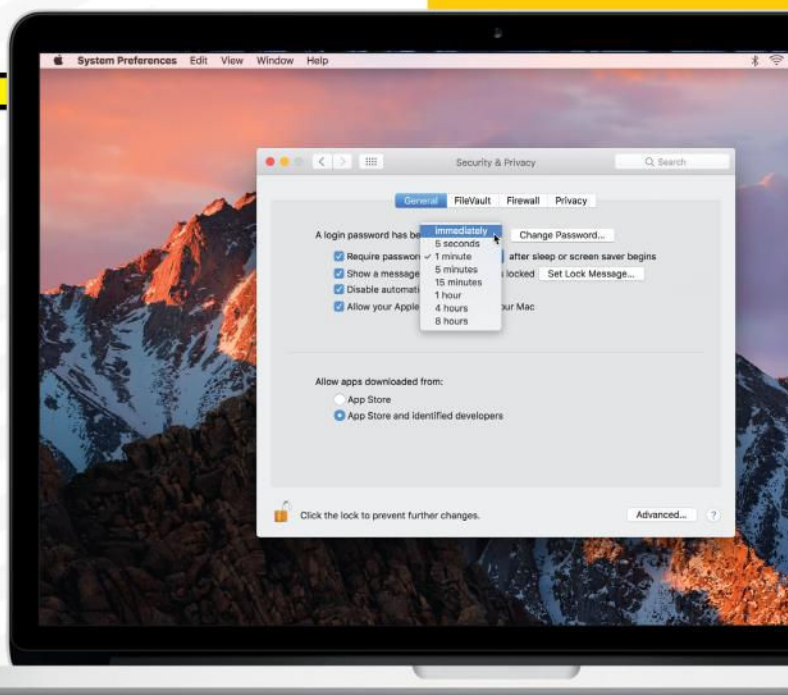
We equip you with the knowledge you need to keep your data safe and your Mac in great working order

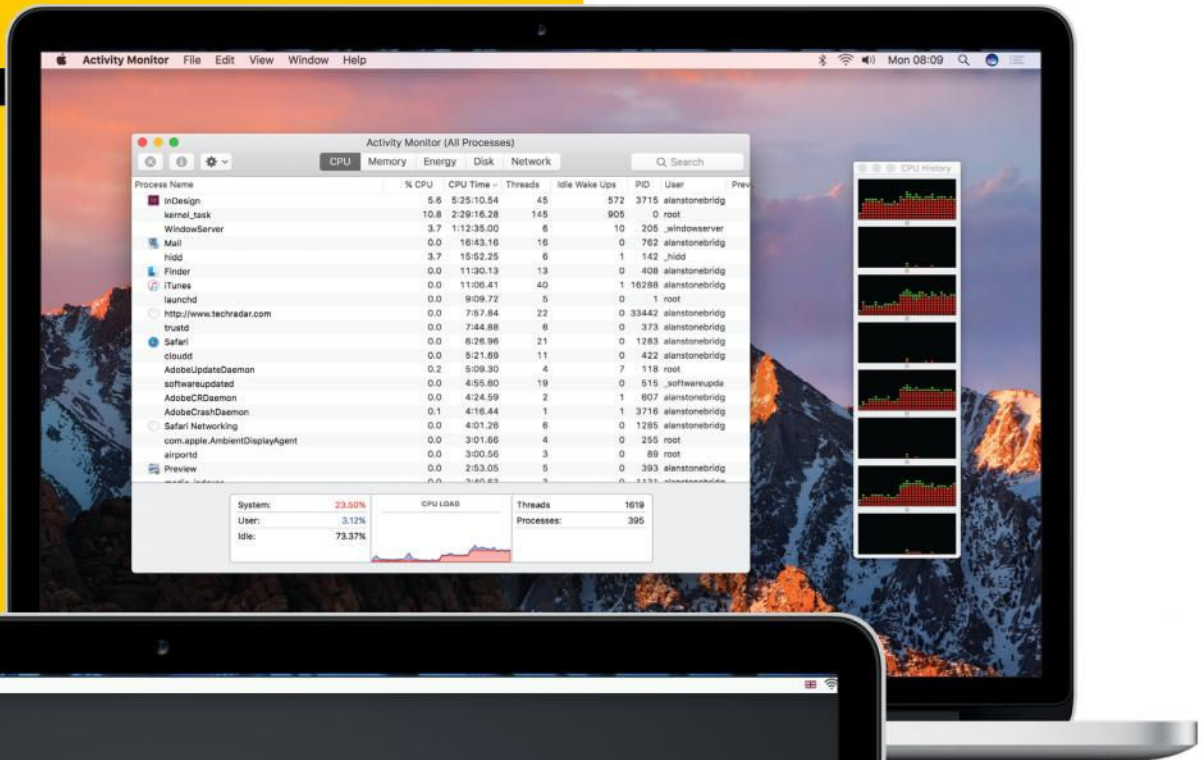
2 PREVENT

Prevention really is better than cure when the “cure” for a significant crash could be spending days trying to reclaim your data. Take practical steps to monitor your Mac when a problem crops up, or even ahead of time, and you can predict or forestall problems before disaster is even able to strike.

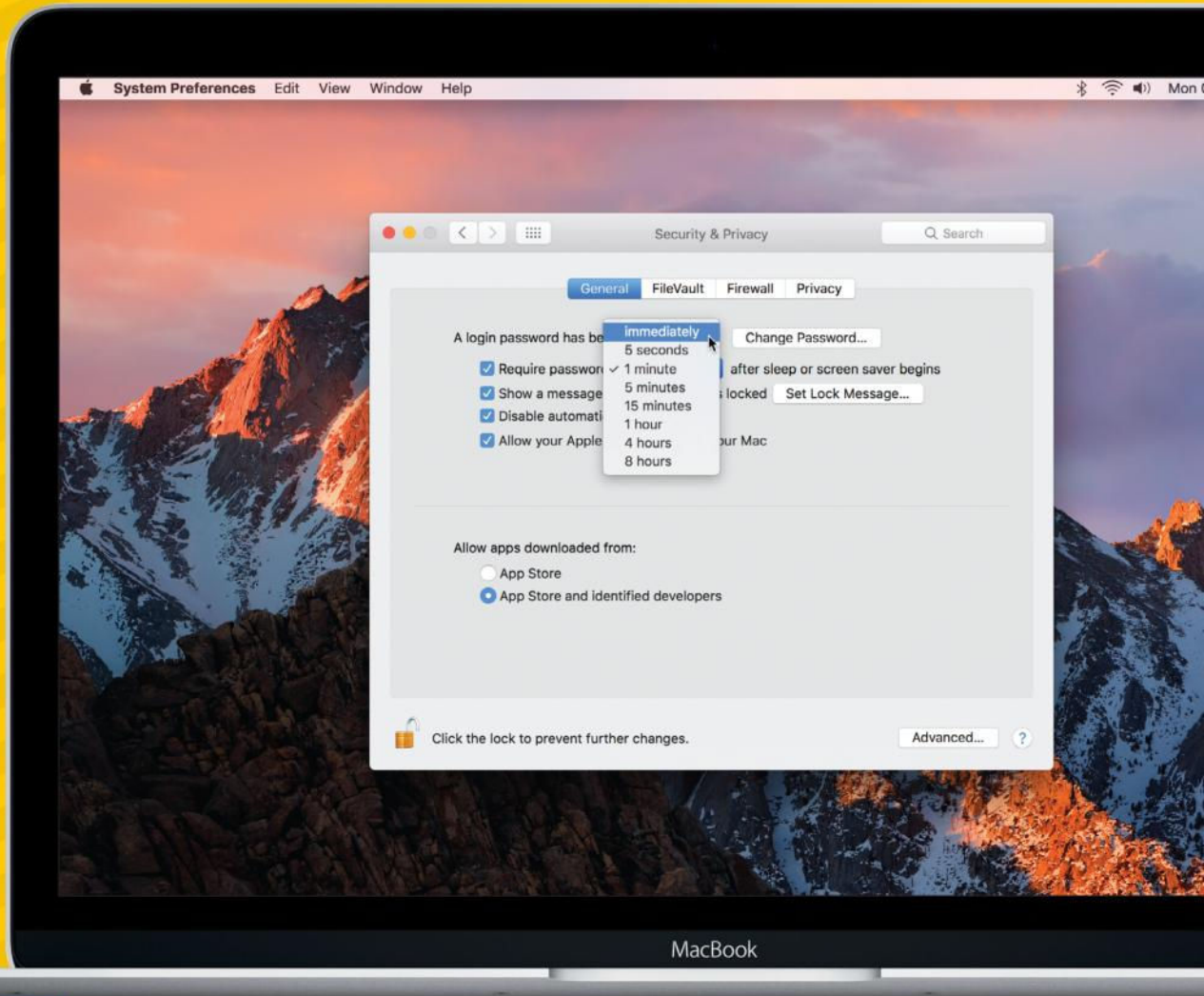
1 SECURE

A work computer, games console, family planner, photo album, and a music library... your Mac is an integral part of your life. To prevent that information falling into somebody else's hands, or your Mac being compromised by outside attack, we'll walk you through various options for tightening its security.

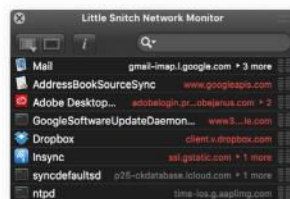




3 RECOVER Should the worst happen, don't panic - we'll show you how to fix common Mac problems without reaching for your backups. If you need to seek help, we'll also show you how to check for obvious hardware faults without first hauling your Mac to a Genius Bar, and how to gather evidence that could help resolve your problem.



HOW TO Go beyond the built-in firewall



1 INSTALL LITTLE SNITCH 3

This app (about \$35, [obdev.at](#)) tracks network traffic going in and out of your Mac. When it detects a new connection it'll ask whether to allow or block it.



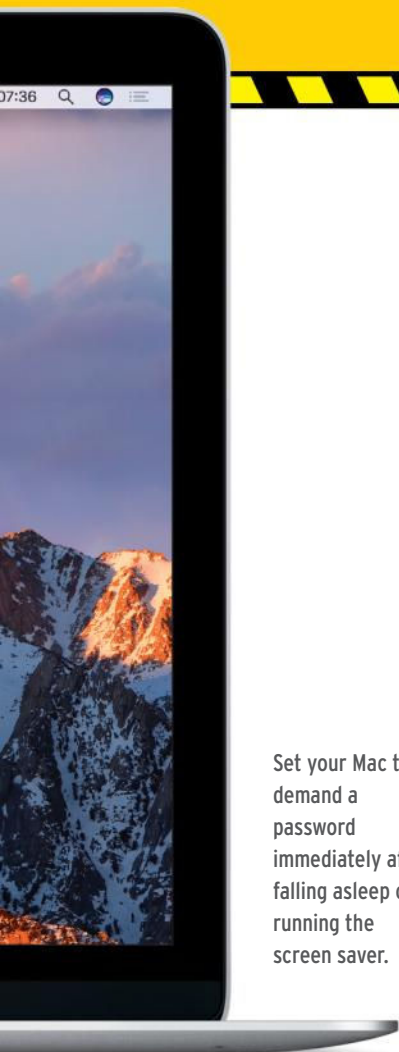
2 WHAT TO TRUST

If you're sure you trust the connection, you can authorize it forever or until you quit the associated app. You can deny those you don't trust on the same basis.

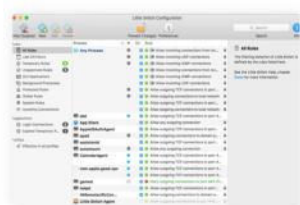


3 TIGHTER CONTROL

Pick an alternative duration from the menu (from 15 minutes to two hours), and specify whether to block specific ports and services or subdomains on an Internet server.



Set your Mac to demand a password immediately after falling asleep or running the screen saver.



4 MANAGE RULES

Over time, the number of alerts will reduce as you give instruction to the app. You can change previous choices by deleting or amending entries in its main window.

1 Mac security

Macs are generally considered more secure than PCs, but there are further steps you can take to protect your data

YOU'VE ALREADY taken a sensible step to keeping data secure: you've chosen a Mac. macOS is widely rated as one of the most secure operating systems, and Apple's continued focus on encryption and privacy is a valid reason to remain optimistic. However, it's best not to be complacent about security.

LOCAL SECURITY

Start boosting security by setting a strong password, and change it regularly. In the Users & Groups preferences pane, we recommend opting to use your iCloud password to log in if you're on OS X 10.11 El Capitan or earlier, so you can change it on all of your Macs at once to minimize the duration a cracked system remains vulnerable. This isn't possible in Sierra, though: it asks you to set a different user account password on first run.

Set macOS to demand a password upon waking from sleep or the screen saver in the Security & Privacy pane's General tab, and minimize the number of apps that have access to core data such as your contacts, calendar, and photos in that pane's Privacy tab.

NETWORK SECURITY

Go to the Firewall tab and make sure the firewall is switched on. It will run in addition to any firewall on your router to control what can (or

can't) use your network connection; unlike many firewalls, it enables you to manage communications on a per-app basis, rather than blocking specific ports – more brutal in its effect, but easier to manage. Click Firewall Options and consider unchecking the option to allow signed apps to receive incoming connections automatically. You can also enable stealth mode so that your Mac ignores attempts to probe it with small packets of data; hackers can do that to identify vulnerabilities. By not responding, your Mac won't give anything away.

Finally, boot in macOS Recovery (see p42) and choose Utilities > Firmware Password Utility to stop an intruder resetting account passwords – see apple.co/29LBI0I for instructions.



macOS's firewall makes it easy to manage which of your apps can reach the Internet.

2

Problem prevention

OS X will often alert you to upcoming problems, if you know where to look

MAC OLD-TIMERS will often advise keeping around 10% of your startup disk free for temporary storage. These days, that figure may seem a bit excessive now that drive capacities are far larger.


However, if you're using an older computer, or a Mac with a small amount of memory, either add more memory or free up some storage to improve performance. Use Activity Monitor to check memory usage; if the Memory Pressure graph regularly shows orange or red, more memory will mean macOS doesn't have to write the contents of memory used by idle apps out to disk in order to free up some for apps that need it.

On a Mac with a hard drive (not flash storage), keep at least the same amount of free storage as your Mac has memory, so the latter's contents can be saved to disk if the Mac enters Safe Sleep when its battery runs low or it's left idle for a long time.

You might want to think about upgrading to a faster hard drive, or even an SSD, for further

gains – you'll find visual guides for many Macs at ifixit.com.

OPTIMAL PERFORMANCE

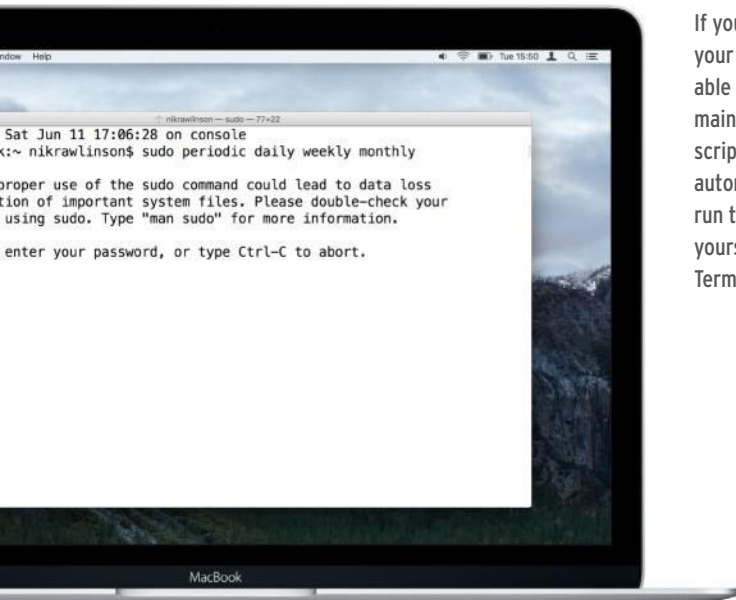
macOS runs optimization scripts overnight if your Mac's turned on or in sleep mode, but you can force them to run manually at any time by opening Terminal (in /Applications/Utilities) and typing: **sudo periodic daily weekly monthly** (or any combination of the last three words), then pressing .

Though macOS is good at keeping things in order, apps can interfere with its settings, causing problems. Permissions define who can access, execute, write to or delete a file on disk, and are used to limit the damage that unauthorized users or routines can cause. It's possible for an app to erroneously lock a file by changing its permissions, which could cause other apps to crash when they can't access a required resource, such as the place where iTunes records play counts for tracks.

Up to OS X 10.10, open Disk Utility, select the startup disk, click the First Aid tab, then Repair Permissions. As of OS X 10.11, System Integrity Protection protects the permissions of important system files and apps, which are now checked and repaired automatically when you install system updates.

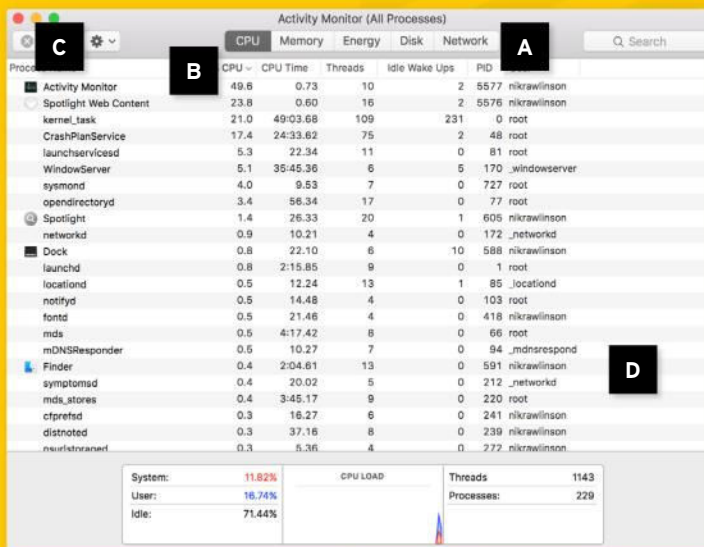
If your Mac's running slow, you should be able to diagnose the problem using Activity Monitor (again, in the Utilities folder). If your Mac is hot or its fans are running at high speed, click the CPU tab, then the "% CPU" column header to sort processes by usage. Similarly, use the Disk tab to diagnose which app is thrashing storage, and Memory and Network to check general slowness or a slow Internet connection. You can force an unresponsive app or a process hogging resource to quit, but do this with care: only quit those for which your own username appears in the User column, and save your work first, if possible, to minimize potential data loss.

If you suspect your Mac isn't able to run its maintenance scripts automatically, run them yourself in Terminal.



CHECK SMART STATUS OF DISKS

SMART (Self-Monitoring Analysis and Reporting Technology), is built in to many hard drives and some SSDs, allowing them to detect potential problems and predict their own demise. In Disk Utility, select a drive in the sidebar to view its SMART status (bottom of the window). This may help you to back up and install a new drive in time to avoid losing data. Disk Utility can't check the status of most external drives, though. See p42 for another great monitoring tool.



ACTIVITY MONITOR

Diagnose unresponsive apps

A RESOURCE MANAGEMENT

Switch between various resource monitors by clicking the tabs that run across the top of Activity Monitor.

C KILL STALLED PROCESSES

Click a sluggish or unresponsive process, then click the "X" (top left) to force it to quit. If possible, save your work first.

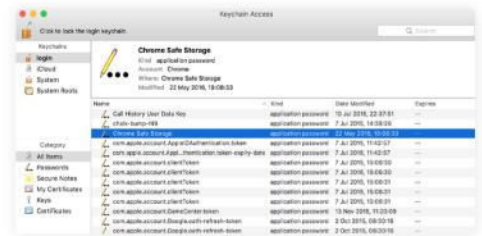
B IDENTIFY ANY RESOURCE HOGS

Click a heading to sort the list on that particular attribute and highlight those that are resource-hungry.

D IDENTIFY THINGS

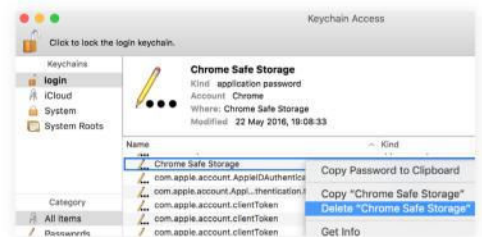
Many items are crucial elements of OS X. You can search online to learn more about them - don't quit them just for the sake of it.

HOW TO Maintain a keychain



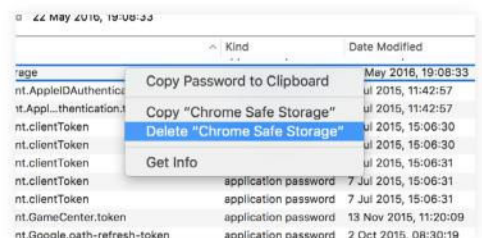
1 KEYCHAIN CONTENTS

Your keychain stores usernames and passwords for automatic insertion into web forms, authentication windows, and apps. It's a timesaver, but get into the habit of revoking access rights.



2 INVESTIGATE YOUR DATA

Open Keychain Access from the Utilities folder, select a keychain at the top left, then All items under Category. Scroll through the entries to find keys for apps that you no longer use.



3 EXCISE OLD INFORMATION

If you find an item you no longer use, such as an old email account's password or certificate for a site you no longer visit, right-click it, choose Delete, then enter your password to authorize its removal.

3

Recovery options

When quick fixes don't work, all is not lost...

IF YOUR MAC is unresponsive or exhibiting problems that can't be resolved using the tips in the previous section, use your Mac's diagnostics tools to check for physical problems before contacting Apple for support.

First, eject and detach all external devices, then shut down your Mac. Power on your Mac and hold **⌘** while it starts up until you see either Apple Diagnostics or Apple Hardware Test. (If you've completely erased your Mac's startup disk in the past, you can start Apple Diagnostics from the Internet by holding **Alt+⌘** instead.)

On Macs introduced in June 2013 or later, your Mac will run Apple Diagnostics. When finished, either return to macOS if no problems are found, or restart in macOS Recovery (hold **⌘+R**), a hidden partition that enables you to repair certain problems or reinstall macOS.

Macs introduced prior to June 2013 use Apple Hardware Test. If this utility finds any problems, it gives an error code for you to quote to Apple or an authorized service

provider when seeking their assistance. If your Mac shipped with OS X 10.7 (Lion) or an earlier version, you'll need to use the diagnostics tools supplied with it – on Applications Install Disc 2 or the MacBook Air Software Reinstall Drive. They're accessed by inserting the original optical disc or connecting the USB drive to your Mac and then following the same steps described to the left.

REPAIR IN THE RECOVERY SYSTEM

If you are running OS X 10.10 or an earlier version, have tried repairing permissions in Disk Utility as described in the previous section, and it hasn't solved your problems, repeat the operation after starting up in OS X Recovery, which you can enter by holding **⌘+R** at the startup sound. Select Disk Utility from Recovery's main menu and repeat the repair process. Recovery also lets you reinstall the operating system from scratch. This will give you the most recently installed version of OS X if you use the local Recovery partition, or the one that shipped with your Mac if you use Internet Recovery.

Recovery also provides an option to restore your Mac's contents from a Time Machine backup (provided you haven't excluded system files from your backups). Any of these methods is an effective means of solving most problems, but will lead to data loss if you don't have a recent backup.

If you're suffering from persistent kernel panics, in which the screen dims and is overlaid by multi-language messages, or your Mac is forgetting small but important details between sessions, such as preferred volume or startup disk, reset your Mac's NVRAM (non-volatile random-access memory), which stores key settings.

Power on your Mac and hold **⌘+Alt+P+R** as soon as you hear the startup sound until you hear the sound a second time, then release and allow startup to complete. The 2016 MacBook Pros don't have the startup chime – hold the



CHECKLIST

>>> Keep your backups up to date, and don't rely on just one. Pairing a local backup on an external drive with an online service such as Crashplan, Backblaze, or Carbonite is ideal.

>>> After an app or OS X crashes, save the details from your Mac's log files and submit them to the developer. Even if you don't understand the information, they will.

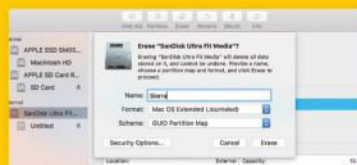
>>> If your Mac crashes on startup, restart in safe mode by holding \square after you hear the startup sound, then disable login items for your user account in System Preferences>Users & Groups.

keys for 20 seconds immediately after powering on the machine.

HELP THE HELPERS

Should all else fail and you need professional help, give as much info as you can by pulling crash reports from logs. macOS can send crash data to Apple and app developers if you allow it in Security & Privacy prefs, under Privacy>Diagnostics & Usage. You can review what's been sent by opening Console (Utilities folder) and choosing Diagnostic & Usage Data – best done from an admin user account. Automatic reporting is described at apple.co/2fr3oRN. If you opt out, your selection in Console can be exported (El Capitan or earlier) using File>Save Selection As, or copied and pasted into TextEdit in Sierra.

HOW TO Make an OS X install disk



1

USB DRIVE

Connect your drive (12-in MacBooks need a USB-C adapter or drive). Open Disk Utility, select the drive (in the sidebar), click Erase, enter a name, select OS X Extended (Journaled) as format and GUID as scheme. Click Erase.



3

COPY FILES

In Terminal, type **sudo** then a space; drag the installer onto the window to add the full path to the command line. Press \leftarrow to remove the space, then add **/Contents/Resources/createinstallmedia**, then add a space.



5

WAIT A WHILE

Press \square . After entering your password, Terminal will reach into the installer to use the media creation tool to copy installation files to your USB drive and make it bootable. Leave Terminal alone until you see "Done."



2

OS X INSTALLER

Download macOS from the Mac App Store but quit the installer when it opens – you don't want to reinstall the OS. Instead, you'll use a media creation tool hidden inside it to turn your USB drive into an install disk.



4

FINISH UP

Type **--volume** and a space. Press $\square + \square + \square$ in Finder and drag your USB drive onto Terminal. Leave the space, type **--applicationpath** and a space, drag in the installer, again leave the space, add **--nointeraction**.



6

INSTALL DISK

Your disk is ready to install macOS on other Macs. Connect it to one and reboot, hold Alt at the startup sound until you're asked to select a startup disk. Choose the disk you just prepped and the macOS installer will load.

Essential macOS

Timesavers

Sierra is the Mac's smartest, most powerful operating system ever. We show how its many new features can help you be even more efficient...

FOLLOWING A FEW years of tweaking OS X, Apple seems to have hit fast forward with the move to macOS Sierra. It's been heavily influenced by iOS, with Siri, Apple Pay, and a clipboard across macOS and iOS devices, all of which look set to make us more productive than ever. It's even got a new name, which adopts the conventions of Apple's other operating systems.

Many of the built-in tools, including Photos, Messages, and iTunes have been redesigned or blessed with

powerful new features, and there's a new file system on the horizon, too.

Back in issue 122 we looked at tips and tricks that help you get the most out of these new features – and plenty more besides – and this month we're going to zero in on the ways that Sierra can help you work even smarter than before. We'll be showing you how you can get more done in less time and with less effort, how to stay focused on your screen rather than your keyboard and mouse, and how you can benefit from all of the hard work that Apple has put into revamping what we believe is the world's best desktop OS.

The big changes

The key new improvements in macOS Sierra



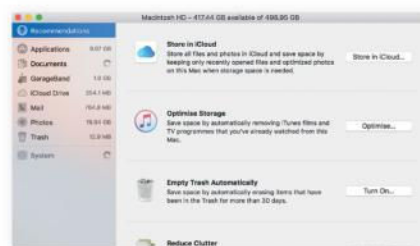
PHOTOS

Photos boasts clever facial recognition, plus object and scene detection and the ability to search by name. Memories revisits photos based on criteria such as event, location or people, and can play them as slideshows. There are new albums for special photo types taken on iOS devices, including depth-effect portraits from iPhone 7 Plus.



SIRI

Access Siri through the menu bar, its Dock icon, or by holding $\text{⌘} + \text{Spacebar}$. It doesn't work with the "Hey Siri" command like iOS because, as Phil Schiller commented, Macs go to sleep and don't feature the hardware they'd need to hear you while snoozing. It goes beyond answering simple weather queries, too, to find files, send messages, navigate your notifications, and more.



OPTIMIZED STORAGE

If you're running out of storage, this feature suggests settings you can change to free up space, such as automatically moving old files to iCloud until needed (they appear where you left them), duplicate file detection, and telling iTunes to delete watched movies. See p54 for more.



DESKTOP & DOCUMENTS

You can store Desktop & Documents folders in iCloud Drive, making them accessible in iOS's iCloud Drive app (in iOS 9, Settings>iCloud>iCloud Drive). It's then easy to share files, though you can only open them if there's a compatible iOS app.

> What if I can't run it?

Apple has a well-earned reputation for making computers that last a long time, largely because it doesn't often change the system requirements when moving from one operating system to the next. With Sierra, though, it has raised the minimum requirements for the first time since 2014's Yosemite.

To run Sierra, which is free from the Mac App Store, you need at least 2GB of memory and 8.8GB of available storage. You need a MacBook or iMac from late 2009 or later; a Mac Pro, Mac mini or MacBook Pro from mid-2010 or later; a MacBook Air from late 2010 or later; or a 12-inch MacBook.

If your Mac is too old, you won't be able to install Sierra – not officially, anyway; there are third-party tools to force the installer to run, but consider trustworthiness and that stability isn't guaranteed. Still, there'll be security updates for El Capitan for a while yet, so make sure you keep it up to date.

9 ways to better productivity

Top tips for getting your work done faster and for sharing it more easily

1 DICTATE RATHER THAN TYPE

We're great fans of Nuance Dragon (nuance.com), but don't forget macOS has dictation built in, which you can enable in the Keyboard preferences pane. Invoke it by pressing **fn** twice. By default, voice recordings are sent to Apple's server for transcription, which returns written words to your app; enable Enhanced Dictation if you prefer it to be done on your Mac.

2 FIND SPECIAL CHARACTERS

Holding down certain keys reveals variations on their character, but you need to know which offer this. Turn on "Show keyboard and emoji viewers in menu bar" in Keyboard preferences, click the new icon, pick "Show Emoji and Symbols" to reveal a grid of characters, then double-click one to type it in the app you're using. Choose "Show Keyboard Viewer" to reveal an on-screen keyboard; hold combos of **Alt**, **⌘**, **⇧** and **ctrl** and it'll show keys you can press for special characters; holding **Alt** alone turns some keys orange and labels them with diacritics; press one to reveal characters that can carry that mark.

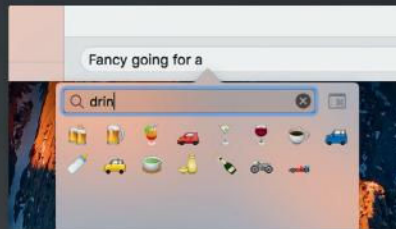
3 CROSS-DEVICE CLIPBOARD

In Sierra and iOS 10, you can copy something on one device and paste it on another; each must have Bluetooth and Wi-Fi on, be signed in to the same

iCloud account, and have Handoff enabled (in System Prefs>General and Settings>General>Handoff). This can take a few seconds to sync, so if your first attempt to paste fails, wait a moment and then repeat.

4 COLLABORATE IN iWORK

Pages, Numbers, and Keynote now support real-time collaboration across iOS, macOS and iCloud.com web apps. To invite people to work on a doc, click Collaborate on the toolbar and enter email addresses or phone numbers of people you want to work with.



5 FOCUS WITH DARK MODE

In the General prefs pane you can make the menu bar and Dock dimmer, helping you to focus better on editing images, say. (Spotlight's affected too, but not Notification Center). Use the item above that to set the highlight color for controls to graphite and dim the colored window controls.

6 TABS ALMOST EVERYWHERE

In Sierra, many apps that can create multiple windows

automatically gain the ability to organize them in tabs. Look in the Window menu for commands to merge all windows or switch the selected tab to a window.

7 RECLAIM SCREEN SPACE

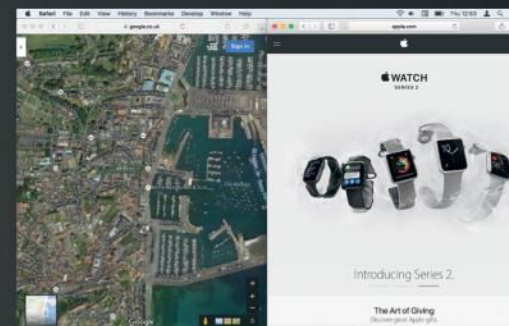
Right-click the Dock's dividing line and turn on hiding; the Dock will slide out of the way; bring the Dock back by moving the pointer to its screen edge. You can apply this behavior to the menu bar in General preferences.

8 SHARE USING AIRDROP

With Wi-Fi and Bluetooth enabled, you can share files with nearby Macs and iOS devices (as long as they're a model and running an operating system listed at apple.co/2eA1elc). In Finder, choose Go>AirDrop and drag files onto the icon for the device you want to send them to.

9 A TIDIER DESKTOP

Double-click an edge or corner of a window to resize the window to fill the space all the way to the matching desktop edge or corner. Hold **Alt** as well to expand in the opposite direction too; doing this on a corner expands the window to fill the desktop. (These do not work with iTunes.) Drag one window's edge into another's and it'll briefly stick to its neighbor to help you line them up; if you don't want them side by side, keep dragging.



Make the most of Sierra's built-in tools

New features and helpful advancements in familiar apps combine for great timesavers

THE LATEST operating system comes with an ever-evolving collection of apps that greatly add to your Mac's total value. Many of them have gained helpful enhancements in Sierra, and new features, such as Siri, offer you fresh ways to work.

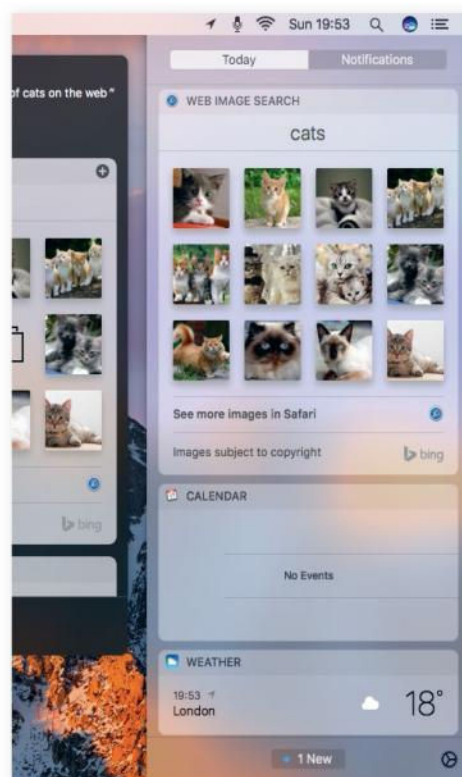
Though the bundled apps and built-in features can each be used in isolation, some interact to save you time. Sierra detects new people and events in more apps than just Mail, and adds them to Calendar and Contacts if that behavior is enabled in the latter two apps' General prefs. Let's look at other fun and practical things it offers.



TWEAK THE MENU BAR

Previously you could move only some of the icons at the right end of the menu bar. In Sierra, by holding **⌘** you can drag almost all of them into whatever order you want. This includes Spotlight, which used to be fixed in place. Notification Center remains the exception; it's pinned at the far right, though this makes sense given the feature slides in from the right.

To remove an item provided by Apple, hold **⌘**, drag it downwards and let go when a cross appears. For third-party items, look in their menu or their app's preferences.



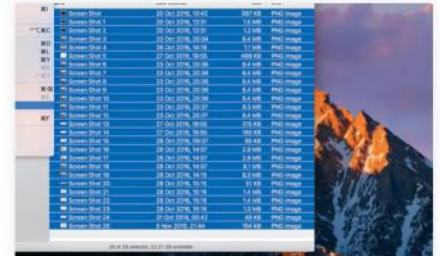
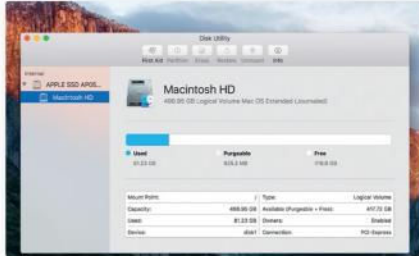
SIRI

Siri will likely prove to be the biggest productivity enhancement of all in Sierra. As well as forecasting the weather, giving you travel reports and telling you what's playing on the radio, it understands queries such as "Show me the Excel files I worked on this week," "Launch Word," and "Send a message to Bob." Your interactions with Siri are shown in a floating window, so you can continue working in another app while it walks you through each stage of a multistep operation - such as sending a message - entirely by voice.

If you need images to use in a document, say, you can ask Siri to "Search the web for Golden Gate Bridge" and then drag results from its window onto the page. Notice the results pane has a + in the corner; click this to add the results, or any other list such as recent Pages documents, to Notification Center for reuse.

In Siri's pane in System Preferences, you can choose another voice for it, change the mic it uses, and assign a different key combination to invoke it.

HOW TO Master Disk Utility



1 Disk Utility changes
Disk Utility's window is now fully resizable and the app has regained storage array management. If Optimize Mac Storage in iCloud Drive's prefs is on, "purgeable" storage's contents are also stored in iCloud and Sierra may remove the local copy if it needs space.

2 Use RAID Assistant
Choose File>RAID Assistant and pick the array type to create: RAID 0 spreads files across disks to boost speed; RAID 1 writes all data to all disks for safety; and JBOD treats discrete disks as one. On the next page, pick the disks/partitions to include in the array.

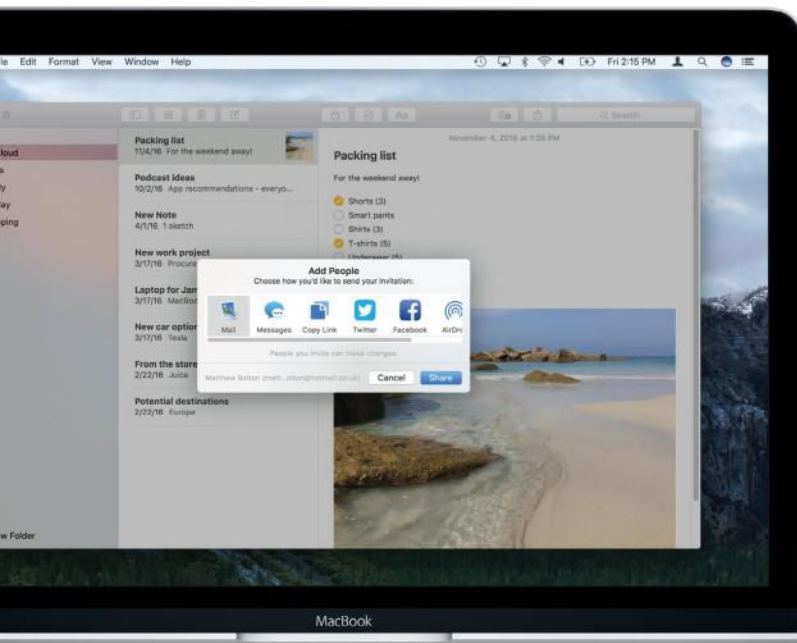
3 Write optical discs
Disk Utility can no longer burn DVDs and CDs. Instead, use Finder: insert a blank disc, select some files, then choose the Burn command in the File menu. If you select a disk image, the command changes to reflect that the image's contents will be written.



PHOTOS

There's a new Places album that reintroduces a feature that was lost in the transition from iPhoto. It pins your photos on a world map so you can quickly revisit them by where they were taken. There's also a useful new way to temporarily add short notes and annotations about edits you intend to make later. Double-click an image's thumbnail to view the picture more closely, then press to edit the photo, click Extensions in the sidebar and choose Markup. Use the tools near the top left corner to draw on the photo, add shapes and type words, all of which can later be removed.

When you're viewing a photo (but not editing it), click Details to reveal related pictures, which are determined on the basis of where or when the photo was taken, or content in it that the app has identified.



NOTES

After previously gaining the ability to make memos that contain more than just text, the version of Notes in Sierra (and iOS 10) enables you to collaborate with other people over iCloud. From the note you want to share, click the icon of a person on the toolbar, and enter email addresses or phone numbers of people you want to work with. Invitations can be sent using Mail, Messages, Twitter, Facebook, LinkedIn, or AirDrop, or by copying and pasting a link into another app or service.



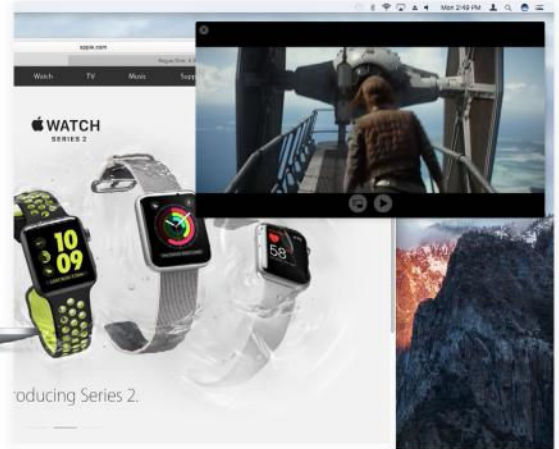
MAIL

There's a useful productivity addition in Mail that's easy to overlook. At the top right of the message list is a circle with three lines in it; click that to turn on filtering for the mailbox or search results you're viewing. Initially, the messages below are filtered to show only unread ones. To the left, click the filter's description to set its criteria, such as whether a message is flagged, sent directly or copied to you, has an attachment, or is from someone you've set as a VIP contact. Click the icon again to turn off the filter; the app remembers your criteria choices for individual mailboxes.



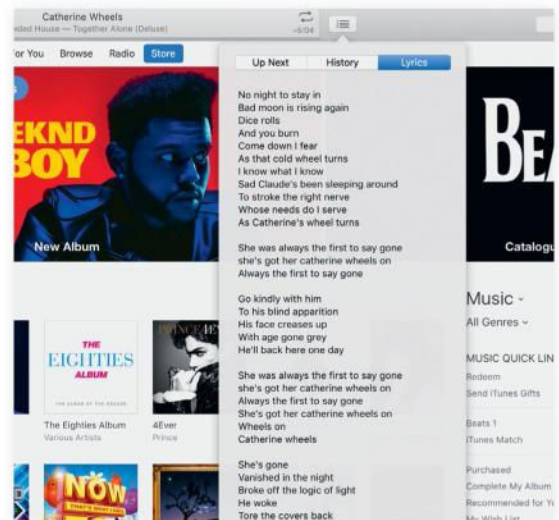
SAFARI

If you're transcribing an event or following a how-to on YouTube, say, you can pop the video out of Safari and play it in a screen corner. In YouTube, right-click a playing video and (without selecting anything) right-click on it again, then choose Enter Picture-in-Picture; the video moves into a screen corner and can be resized and repositioned – hold \square and drag it to place it anywhere, not just in a corner.



ITUNES

Like Safari, iTunes supports Picture in Picture, so you can place video in a screen corner and have it stick there even if you switch to a fullscreen app. Since PiP snaps to screen corners, you can quickly move video out of the way to reach something under it. iTunes can now show lyrics in its main window and the MiniPlayer, and you can control playback with your voice thanks to Siri.





Make more of gestures

Forget the menu bar - use swipes and gestures for easy control

ENABLE SECONDARY CLICK

Though there's only one discernible button on Apple's trackpads and mice, you can perform a right-click (known as a secondary click) to access contextual menus - enable it in System Preferences. You can turn it on for both kinds of device separately in the Mouse and Trackpad panes. Trackpads offer an alternative option of pressing either their bottom-left or bottom-right corner for a secondary click.

DESKTOP NAVIGATION

Swipe left or right between desktops and fullscreen apps using four fingers on a trackpad



Choose which gestures work on your trackpad or mouse; some useful ones are disabled by default.

or two fingers on a Magic Mouse. Double-tap (lightly) with two fingers on a Magic Mouse or swipe upwards with four fingers on a trackpad to open Mission Control and switch to another window. Turn on App Exposé in the Trackpad pane and you'll find that swiping down with four fingers shows windows only from the active app.

DIP OUT OF YOUR APPS

Spread your thumb and three fingers apart on the trackpad to move all your windows out of the way and access the desktop, enabling access to things you've saved there. If you need to drag one of those files into an app, press ⌘ and the Mission Control key (also labelled F3 on most Apple keyboards) after you start to do so and your windows will instantly slide back into view.

OPEN LAUNCHPAD

Performing the previous gesture in the reverse direction - pinching your thumb and three fingers together - opens Launchpad, where you can open apps with a single click on their icon, like the Home screen on iOS

devices, or you can type to filter the apps and then select one with the arrow keys and ⌘ .

SWIPE THROUGH SAFARI

With two fingers on a trackpad or two on a Magic Mouse, swipe left or right to go backwards or forwards through the pages you've visited in Safari. This also works in Chrome, as well as in some document-based apps, such as when viewing PDFs in Preview.

MAKE USE OF FORCE TOUCH

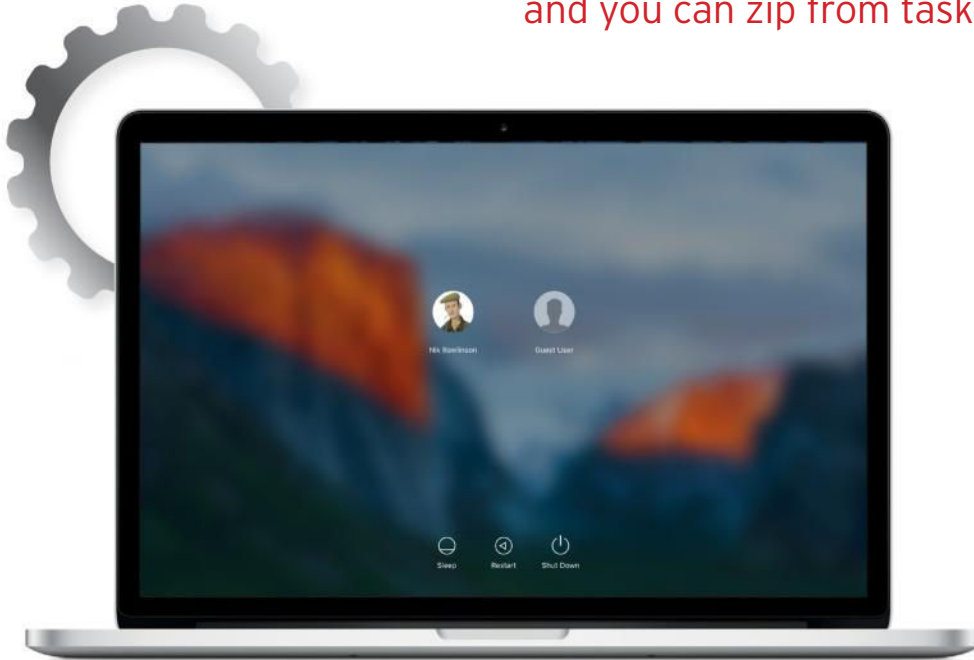
On a trackpad with Force Touch (Magic Trackpad 2 and many, though not all, in MacBooks since 2015), you can apply more pressure past the initial click to pull up extra info about certain items under the pointer. On a file icon it previews the file's contents in Quick Look; on an address it shows its location on a map; and on a word in a web page or Mail message it shows the definition and may also provide links to a matching Wikipedia page and other online sources. You can apply this to tracking codes and flight numbers to see their progress, too.



Unlike Spotlight, Launchpad only shows apps. Like Spotlight, though, you can type right away to find the one you want.

Super Sierra Shortcuts

Get to know your function key combos
and you can zip from task to task



Use a Hot Corner as a superfast way to lock your Mac without logging out.

Force Quit can quickly tell you which apps have crashed.

FORCE QUIT

The Force Quit key combo ($\text{⌘} + \text{Alt} + \text{esc}$) isn't a panacea for whatever ails your Mac, but it's the quickest way to see which apps are unresponsive; they're clearly marked in the list this shortcut reveals, and there's a button to force the selected apps to quit.



HIDE EVERYTHING

You may know that $\text{⌘} + \text{H}$ hides all of the active app's windows, and that you can click the app's Dock icon to bring them back. If you have a screen full of sensitive info in multiple apps, you might put the display to sleep using a method described at apple.co/2frGvfl, which differ between models.

SECURE YOUR MAC

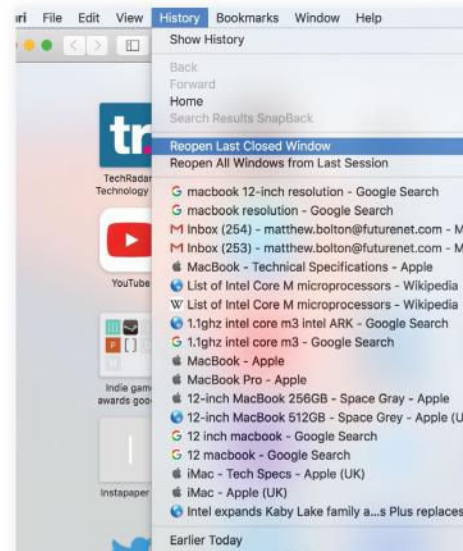
When leaving your Mac alone for a moment in a shared space, logging out is an extreme way to secure it, and it can take a while for your apps and docs to reopen if you do that. Instead, ensure a password is required to wake from sleep (in Security & Privacy prefs) and in Mission Control's prefs click Hot

Corners and set one of them to put the display to sleep when you move the pointer there (optionally only while holding a modifier key combo to avoid accidental activation). Triggering this behavior returns you to the login window, but your account is still logged in and no apps or docs are closed in the process.

CLOSING AND REOPENING

Hold Alt while clicking the "x" on a tab in Safari to close all tabs except that one. If you accidentally close a tab (or window), pressing $\text{⌘} + \text{⌘} + \text{T}$ will bring it back; as of Safari 10, you can repeat this command to reopen windows or tabs closed further back in time, and in History>Recently Closed you can reopen a specific page without having to step back through all those you closed later on.

CHECK YOUR SPELLING



Two useful shortcuts you should invoke before sending every email: either press **⌘ + ⌘ + ;** to open the Spelling and Grammar window and start a spellcheck or – our favored, quicker fix – **⌘ + ;**, which steps through misspellings. Some will be nouns and other words not in macOS's dictionary, so you can press the latter combo to skip them. Another handy shortcut if you frequently type things like “teh”: **⌘ + T** swaps the characters either side of the text cursor.

MOVE OR COPY FILES

Dragging a file between two folders on the same drive moves it from one to the other, but doing so between different drives copies it. Hold **⌘** when dragging between drives to move a file, saving you the task of deleting the original. Hold **Alt** when dragging between

folders on the same drive to create a duplicate. Holding **⌘ + Alt** when dragging creates a shortcut (alias) to the original file.

FIND OUT WHERE YOU ARE

Hold **⌘** and click the title of a Finder window to see a breadcrumb trail of folders back to the top of the drive and your Mac. Simply click an item in the list to open it. This works on document titles in many apps, too. (Microsoft Office apps use **⌘** instead of **⌘**).

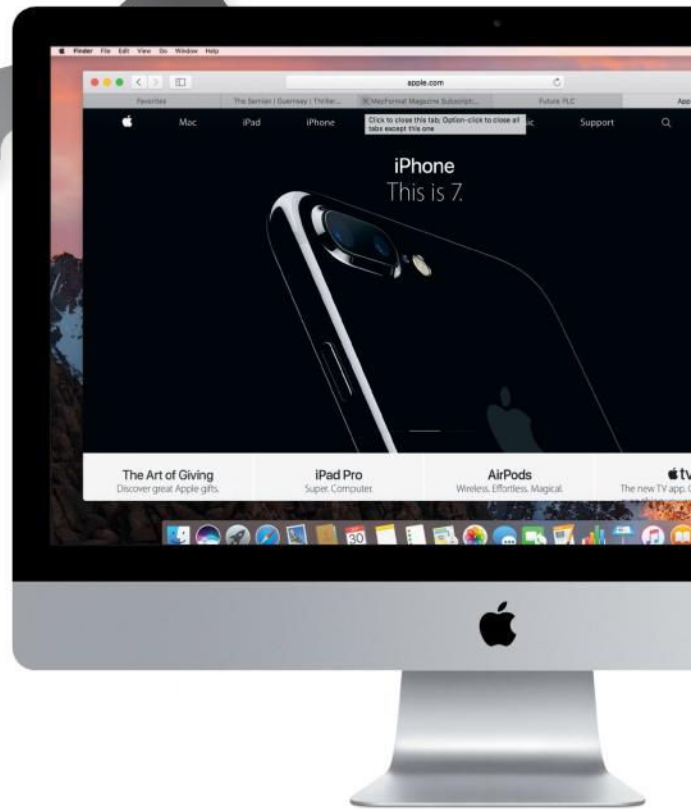
SEE ALL OPEN SAFARI TABS

Press **⌘ + ⌘ + ** (or pinch together two fingers on your trackpad) to see thumbnails of all open tabs to save clicking through them to find the one you want, or use **⌘ + →** or **⌘ + ⌘ + →** to advance right or left, respectively, along the tab bar with each press.

NAVIGATE WITHOUT A MOUSE

When your trackpad or mouse battery is flat, just press **⌘ + F2** (add **fn** if the **F2** key on your keyboard defaults to being a screen brightness control) to move the focus to the **⌘** menu, then use the

It's easy to reopen accidentally closed Safari tabs.

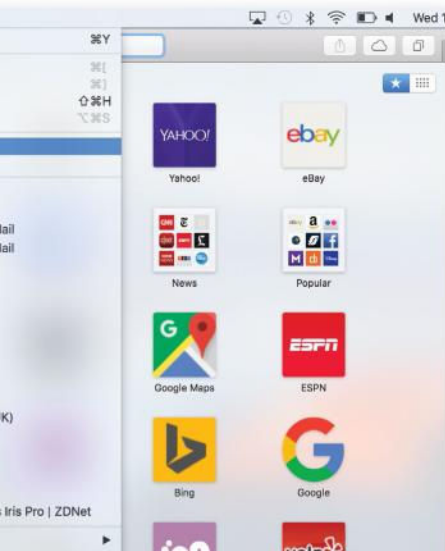


arrow keys to move left and right through the menu headings; **⌘** opens a menu, and **⌘** selects an item.

FOR WINDOWS SWITCHERS...

If you've come from a Windows PC, particularly one that has a full-size keyboard with numeric keypad, doing simple things like deleting characters to the right of the insertion point, moving to the top or bottom of a document, or invoking pretty much any menu command that involves holding **C** on Microsoft's operating system can cause much confusion initially. These docs will help you to adjust: apple.co/2fZ006f, bit.ly/2goaQMO, and apple.co/2gcHYb3.

Using a gesture to move through Safari tabs is easier than clicking a button.





Tailor the Touch Bar

The Touch Bar is not only contextual, but also customizable

THE NEW MacBook Pro's Touch Bar puts contextual shortcuts at your fingertips without you having to recall key combos that trigger menu items.

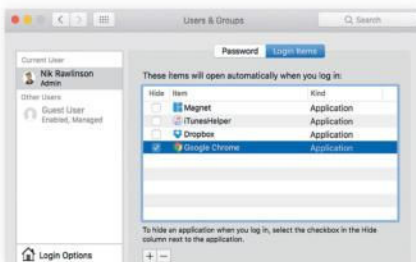
In the Keyboard prefs pane you can set the bar to display app-specific controls on the left and an initially collapsed Control Strip of system features on the right, or devote the bar to one or the other; based on that setting, the next one down sets the

bar to show app controls, the full Control Strip or numbered function keys when **fn** is held down.

Click Customize Control Strip to set the shortcuts the strip contains. Tap the arrow button on the strip to switch between editing its short and expanded states.

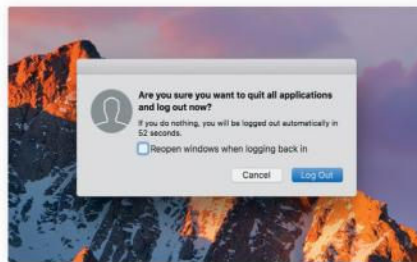
In the Keyboard pane's Text tab, you can stop typing suggestions appearing in the bar for all apps. While in an app, choose View>Customize Touch Bar to find an option to disable suggestions only for that one, and sometimes additional shortcuts you can add to the bar.

HOW TO Make startup speedier



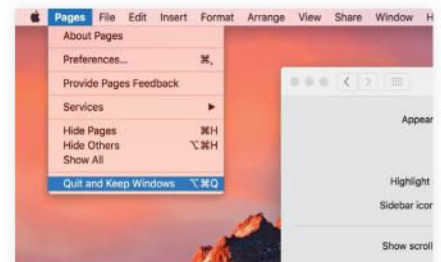
1 Login items

Reduce the apps, background processes, and server connections that open at login: in System Prefs' Users & Groups pane, click Login Items, select an item, and click the - (minus) button.



2 Reopen at login

Go to **Apple > Log Out...** and turn off the setting that reopens windows when you next log in. This can help a lot on Macs that use a hard disk. Your choice is saved however you close the dialog.



3 Apps' windows

Apps remember their windows when you quit them; an item in General prefs changes this, which can make them reopen faster. To then quit an app and keep its windows, press **⌘+Alt+Q**.

Customize Sierra with third-party apps

With third-party apps you can go further to create your perfect working environment

FOR ALL the changes Apple has made in Sierra, there are still plenty of ways you can enhance the system and its bundled apps.

A dedicated army of third-party app developers tirelessly works on utilities and tools that either plug the gaps in macOS's feature list, or improve upon

what it already offers.

Here's our pick of four essential utilities, as well as a walkthrough showing you how you can define your own keyboard shortcuts to invoke menu items; this technique also enables you to change key combos that an app's developer has picked if you find them difficult to remember.



Affinity Photo and similar apps can hugely boost Photos' editing capabilities.



HYPERDOCK
\$9.99 bahoom.com

This tool brings one of Windows 10's best features to macOS: window previews when you place the pointer over an app's Dock icon.

HyperDock shows a preview of each of an app's open windows, and you can pick the one you want rather than bringing the most recently used one to the front. You can minimize windows you don't need into the Dock by "scrolling" down over their preview; they're then overlaid with a gray no entry sign.




Hovering over iTunes' icon lets you skip and rate tracks, and you can adjust the volume by scrolling. HyperDock really is a bargain for its low price.



ALFRED
Free alfredapp.com

Alfred provided keyboard access to your apps even before Apple came up with Spotlight, but despite now facing built-in competition, it's holding its own due to its expanding feature set.

While some of its most compelling features, such as batch file processing, attaching files to emails and 1Password integration, require the \$23 Powerpack add-on, its flexible core features are free.

Among the most useful are shortcuts for looking up keywords using Google, Wikipedia and Amazon. Alfred also provides quick access to results:  or  + 2,  + 3 and so on to pick from the first nine.



AFFINITY PHOTO
\$49.99 affinity.serif.com

Serif's plucky Photoshop rival has already proved its worth as a standalone image editor. However, it's also a first-class add-on for Photos, greatly extending the built-in features.

Under Photos In System Preferences' Extensions pane you can click Photos, and pick which of six tools to make available: Develop, Liquify, Monochrome, Miniature, Haze Removal, and Retouch. Combining Affinity Photo's best image editing tools with Photos' organization tools does much to fill the gap left by Aperture's demise, making a capable and affordable workflow if you don't want Adobe's Lightroom.



FLUID
\$4.99 fluidapp.com

If you often use web apps such as Gmail or Basecamp, you can turn them into standalone Mac apps using this neat tool; they're still web apps at heart, but this means they don't take up a browser tab and they can be placed in the Dock for instant access.

You only have to give Fluid four details: the site address, the name for the app it churns out, where to save that app, and what to use as the app's icon. The last of those defaults to the site's favicon, but you can pick one of your own.

Fluid isn't only useful for web apps: you can also use it for news sites, sports and social networks.

iOS support

Discover all the hidden features of iOS and troubleshoot your problems

58 104 iOS 10 tips, tricks and secrets

Get more out of your iOS device with our in-depth tips

72 The essential iOS troubleshooting guide

The simple fixes to some common Apple problems

80 Do more with iOS 10

Discover the hidden additions to the latest iOS incarnation





An iPad and an iPhone are shown against a dark teal background. The iPad, on the left, displays the iOS 10 home screen with various app icons and a 'Favourite Accessories' section at the bottom. The iPhone, on the right, displays the iOS 10 lock screen with a date and time at the top, a search bar, and Siri app suggestions at the bottom.

ios 10

104 TIPS, TRICKS, AND SECRETS!

The newest version of iOS introduces some of the biggest changes in recent years – but far from being just a flashy redesign, there are many cool and exciting new hidden features to discover. Our in-depth guide explains all...

THE LOCK SCREEN

- 1 The Lock screen has been revised in iOS 10, and you don't even need to press a button to show it if you leave Settings>Display & Brightness>Raise to Wake on (this needs an iPhone 6s or 6s Plus). Unlocking your device now requires you to press the Home button, rather than swiping.
- 2 Raise to Wake is complemented by a setting that unlocks a device with Touch ID without even needing to press Home: Settings>General>Accessibility>Home Button>Rest Finger to Open. This is helpful on large iPhones. Note it only works on devices with Touch ID.
- 3 Notification Center and Control Center are still accessed with swipes inwards from the top and bottom screen edges, respectively, but Today view has been moved: swipe right on the Lock or Home screen.
- 4 The camera is accessed more easily at the Lock screen, too. Rather than swiping upwards from the bottom right, swipe left from anywhere.

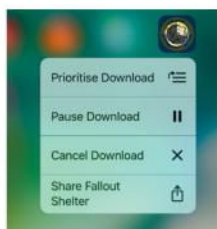
CONTROL CENTER

- 1 Swipe up from the screen's bottom edge to see the new-look Control Center. At first it seems to have fewer controls than in iOS 9, but it's clearer when features in the top row are active, thanks to stronger use of color. Swipe left to bring a second card of controls into view.
- 2 On 3D Touch devices, deep press the flashlight and app shortcuts in the first card's bottom row to: choose from one of three flashlight brightnesses; set a 1, 5, 20 or 60-minute timer; copy Calculator's last result; or jump straight into photo, video, slo-mo, or selfie camera mode.
- 3 Video and audio streaming controls are split between cards in Control Center. To send video to Apple TV, tap AirPlay Mirroring on the first card. To choose an audio output, which might use

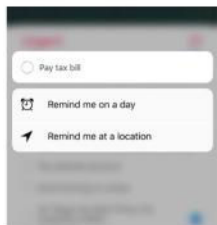




Using 3D Touch on a folder uncovers a way to rename that item in fewer interactions than with regular taps.



3D Touch enables you to manage app downloads. This is especially useful when restoring an iCloud backup.



You can now 3D Touch an existing entry in the Reminders app to quickly add a time or location for it.

MANY OF THE WIDGETS YOU CAN ADD TO THE TODAY VIEW OFFER INTERACTIVITY

AirPlay, Bluetooth or even a cabled connection, tap the bottom row on the second card (or choose one from the right column on iPad).

If you've set up accessories and scenes in the Home app, swiping left on Control Center a second time reveals shortcuts to Home options you've marked as favorites. Tap things like lights to toggle their status, or use 3D Touch for additional control, such as sliding a finger up or down to adjust a light's brightness. Tap the house icon to open the Home app.

3D TOUCH ENHANCEMENTS

1 A firm press on an iPhone's Home screen folder offers an option to rename it. When you tap that, the folder opens with its current name wholly selected so you can type over it.

2 When a folder displays a badge notification, you don't need to go inside it to find the app. Apply 3D Touch to the folder and its Quick Actions will list apps inside that have notifications.

3 Downloaded a cool app and want to tell someone about it? You don't need to find it on the App Store in order to share a link to it. Just 3D Touch its Home screen icon, choose the Share command, then pick a method from the Share sheet.

4 Concerned about your cellular data usage? Apply 3D Touch to the Settings app's icon in iOS 10 for a shortcut to the Mobile Data page, where you can monitor and manage it, including any Personal Hotspot set up.

5 Some apps show a summary and extra shortcuts when you 3D Touch their Home screen icon. For example, Reminders shows timed items, Calendar shows upcoming events and alarms. Tapping Add Widget (top right) adds this to Today view; but consider how many you want to add, in case Today becomes too crammed, and so less useful.

6 When an app is downloading, 3D Touch its icon on the Home screen to pause the download, cancel it or, if multiple apps are downloading, prioritize it by moving it to the top of the queue.

7 Save yourself a couple of taps when retrospectively adding a time or location to an item in Reminders by using 3D Touch on the item.

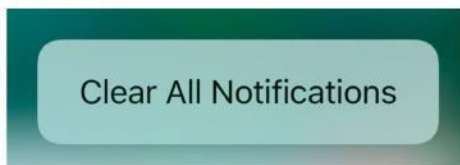
NOTIFICATIONS AND WIDGETS

1 Notifications can offer greater interactivity in iOS 10. When one appears, 3D Touch it (or swipe down from it on devices without 3D Touch) to see actions you can take. For example, Messages displays recent interactions to save you opening the app to refer back to them, and HomeKit-compatible doorbells can

QUICK TIP TODAY VIEW

Many of the widgets you can add to the Today view offer interactivity, which may take you to a particular place in the app, much like tapping a notification does. If you only want to open the app, though, just tap its tiny icon at the widget's top-left corner.





Notifications are chronological. Apply 3D Touch to a cross (to the right) for an option to clear all items.

show who's at the door, with options to use the intercom or unlock the door.

2 To quickly dismiss all items in Notification Center, apply 3D Touch to one of the crosses to the right of a heading (such as "Yesterday"), then tap Clear All Notifications. This really does clear everything, not just items under the heading you pressed.

3 There's no longer a sort option in Settings>Notifications, because iOS 10 always presents your notifications in reverse chronological order.



SPOTLIGHT

1 When you tap Spotlight's search bar, below the suggestions of apps you might want to use are some of your previous searches. Tap one to perform it again.

2 At the top right of some groups of results are the words "Search in App." If a group doesn't include an item you expect to see, tap these words to open the corresponding app and automatically perform the same search inside it.

3 When an app is among the results of a Spotlight search, apply 3D Touch to its icon to access its Quick Actions and widget, where applicable, just like on the Home screen. This also works for relevant apps in Spotlight's Siri Suggestions box but, strangely, not in Today view's Siri App Suggestions widget.

4 Spotlight can show results from Wikipedia, Apple's stores and other online sources. If you want to limit it to searching your own content, switch off Settings>General>Spotlight Search>Suggestions in Search.

5 Notification Center and Today view each have a Spotlight search bar at the top. This is even available when you open Notification Center while in an app, enabling you to look up things without returning to the Home screen.

6 While using an app, jump straight to Spotlight, with the keyboard ready for input, by slowly dragging downwards from the screen's top edge until you feel a vibration, then let go. Devices without 3D Touch lack the conformational buzz; let go when the search bar reaches its resting position.

7 Spotlight can now search for your files stored in iCloud Drive – their contents as well as filenames, as on the Mac. If you don't want this for any reason, turn off iCloud Drive's switch in Settings>General>Spotlight Search.



Pull slowly from the top of the screen to open Spotlight anywhere.

Apple has redesigned Music's navigation, with more obvious methods of browsing your library.

You can set how much music you want to keep on your device, so you always have something to listen to.

Music now supports Split View, so you can investigate what's in Apple Music's library as you read about an artist you've just discovered.

MUSIC AND MORE

1 In the new-look Music app, tap Library to browse your collection, including playlists. At the top of this page are ways to browse, such as by artist, album, or song title. Tap Edit to add videos, genres, compilations, and composers, or to turn off anything you don't need. Drag on the grips to the right to reorder these items, then tap Done.

2 Downloaded Music is now a view in its own right, rather than a switch you can toggle. When you select it from your library options, you can browse your music as normal, except you only see what's been downloaded. As in iOS 9, it adds a bar to the top of the screen as a reminder you're not seeing everything from the Apple Music library. No matter how deep you've gone into this view, tap Library to see all your music – not just what's downloaded to the device.

3 To see tracks coming up after the current one, tap the MiniPlayer's bar at the bottom of the screen, then swipe upwards on the expanded MiniPlayer.

4 You also need to swipe up on the expanded MiniPlayer to access shuffle and repeat controls. If the items in the queue are the contents of an album or playlist, enabling shuffle has an immediate visible effect on their order.

5 The queue no longer scrolls back in time; tap For You, where the top row of items shows albums from which you've played tracks, just not the exact ones. Tap See All for a longer history.

6 The Music app now works with Split View on supported iPads – handy if you want to check out an artist's output while reading about them, for example.



QUICK TIP
In Settings>Videos you'll find separate playback quality settings for Wi-Fi and cellular networks.

QUICK TIPS GAMING

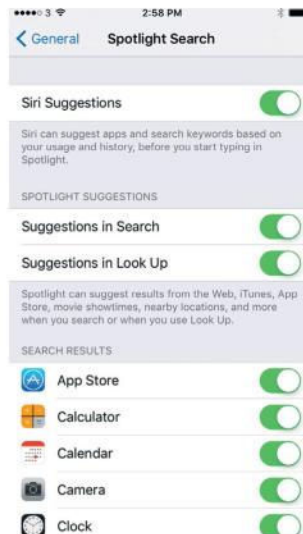


1 The Game Center app no longer exists in iOS 10. Its services remain available for games to use, though they must provide an interface for leaderboards and the like. Set your nickname and whether your profile is public in Settings>Game Center.

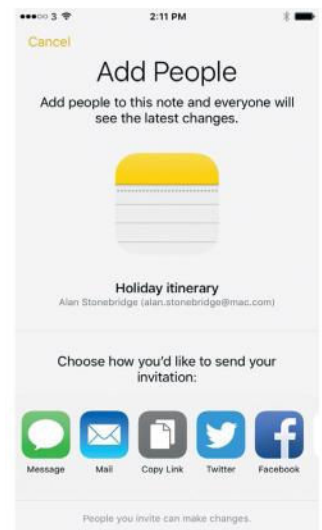
2 Developers can add a screen recording feature to their games, which saves to the Camera Roll. If your kids might not understand the consequences for storage, you can disable this feature in Settings>General>Restrictions>Screen Recording.

7 To prevent iOS removing music from your device's storage to make room for other stuff, go to Settings>Music>Downloads>Optimize Storage and pick the minimum amount to keep. This only appears if iCloud Music Library is enabled.

8 The adjacent Automatic Downloads switch differs from the one in Settings>iTunes & App Store; whereas the latter downloads iTunes Store tracks no matter the device you bought them on, this one downloads tracks added to your iCloud Music Library even if they were imported from a CD or another store on your Mac. Ensure iCloud Music Library is enabled on all relevant devices for this to work.



You can stop Look Up from finding information online.



You can invite Notes collaboration through popular apps and services.

LOOK UP

1 The new Look Up option (which replaces Define in the contextual menu when you select a word) displays results from online sources such as Wikipedia and the App Store. To restrict it to searching your personal data only, switch off Settings>General>Spotlight Search>Suggestions in Look Up.

2 Managing dictionaries has moved to Settings>General>Dictionary.

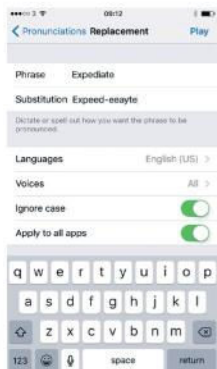
3 Even if you disable Look Up's online search capability, it'll still offer a Search the Web option to submit your terms to whichever search engine you use in Safari.

NOTES

1 Notes now lets you collaborate with others. Edit a note, then tap the person-like icon with a + on it, choose how to send an invitation, and then fill out the recipient's details.

2 Only the creator of a note can invite people. If collaborators don't have iOS 10, they're directed to iCloud.com to edit the note there. Changes are shown in real time, with a temporary, eye-catching highlight.

3 Notes (and Mail) are easier to work with on the 12.9-inch iPad Pro, sporting a Mac-like, three-pane interface that uses the larger screen to show more information. >>>



iOS 10 lets you fix its screen reader's mispronunciations, and set languages and apps use your corrections.

Tap and hold on the Send button in Messages to bring up the different animations.

SCREEN READER

1 iOS 10's screen reader now permits corrections to mispronunciations. In Settings>General>Accessibility>Speech>Pronunciations, tap + to add one. You can speak or type it out; tap Play (top right) to test how iOS will say it. You can set a language to which the pronunciation applies, which voices use it, whether it's case-sensitive, and which apps it works in.

2 iOS 10 can read out what you've just typed. In Settings>General>Accessibility>Typing Feedback, the options under Character Feedback tell it to read out individual characters or accented ones. Below that, you can instruct it to read out words after you type them. There's also an option to speak auto-corrections that are made to your text, and another to hold on a predicted row in the top row of the QuickType keyboard to have it spoken.

CONTACTS

1 Contacts' new look makes it clearer that icons are tappable. With a contact card selected, you can hold a finger on, or 3D Touch, the icons in the row under the person's name. This displays a list of that person's contact methods of that type.

2 Do Not Disturb is great for getting a bit of peace, but perhaps there are some people you never want to ignore. Edit a person's card in Contacts, tap the Ringtone or Text Tone row, then turn on Emergency Bypass. This can be set differently for calls and text messages.

3 As with Calendar events, iOS 10 enhances the ability to detect contact details, extending it from just Mail to other apps too. If you don't want this at all, though, switch off Settings>Contacts>Contacts Found in Apps. When this kind of contact shows up in Spotlight search results, it's clearly labeled as having been found in an app.

4 If you have multiple accounts (such as Google, iCloud, Exchange, and so on) set up on your device, you can choose which is the destination for new contacts in Settings>Contacts>Default Account.

iMESSAGE APPS AND NEW OPTIONS

1 Tap the A next to the Messages app's composition box, then swipe horizontally on the drawer that opens to browse your iMessage apps and stickers. Tap the four ovals to see all of them or get more from the App Store.

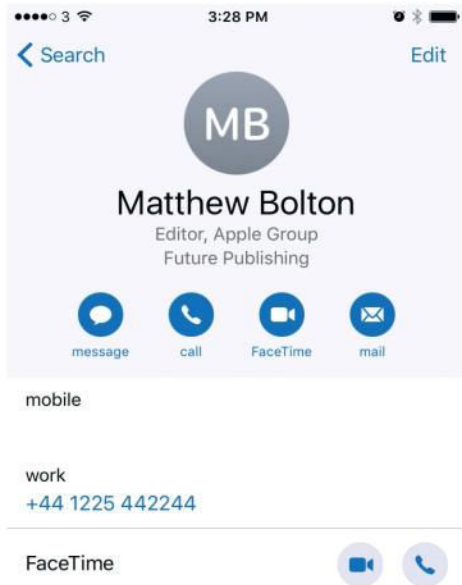
2 The #images app is a great start: it lets you search the web for animated GIFs so you can quickly send them to the person you're speaking to. Tap the upwards-pointing arrow to see more of what's available.





In Accessibility settings, tell iOS 10 which color vision problem you have and it'll adjust all of its output to suit.

VISUAL AIDS



Contacts has quick buttons for contacting people, which can link to third-party services.

3 Tap the camera icon in Messages for a live camera view (tap it to take a new photo) and to show recent pictures to the right. Swipe right to use full camera controls or to find an older image.

4 Tap the heart icon to draw Digital Touch messages. The recipient sees them build up in exactly the way you drew them. Tap the up arrow for a larger drawing area, or the cues on the right for special effect gestures.

5 Tap Digital Touch's camera icon to take a photo (the white button) or record a video (the red one) and draw on it. Sketches on videos also play back at your original timing.

6 To send a message with a special animation – on its bubble or fullscreen – hold on the Send button. Invisible Ink obscures your text or media until the recipient swipes over it. >>>

1 If you have color-blindness, you can view content more easily. In Settings>General>Accessibility>Display Accommodations>Color Filters, identify the kind that affects you and iOS will adjust its color output to compensate. The effect's intensity can be tweaked.

2 Magnifier helps you check out tiny things, such as small print on contracts or the text on the back of Apple devices, using a special camera mode. Switch it on in Settings>General>Accessibility, go back a level, scroll down, tap Accessibility Shortcut and set it to Magnifier.

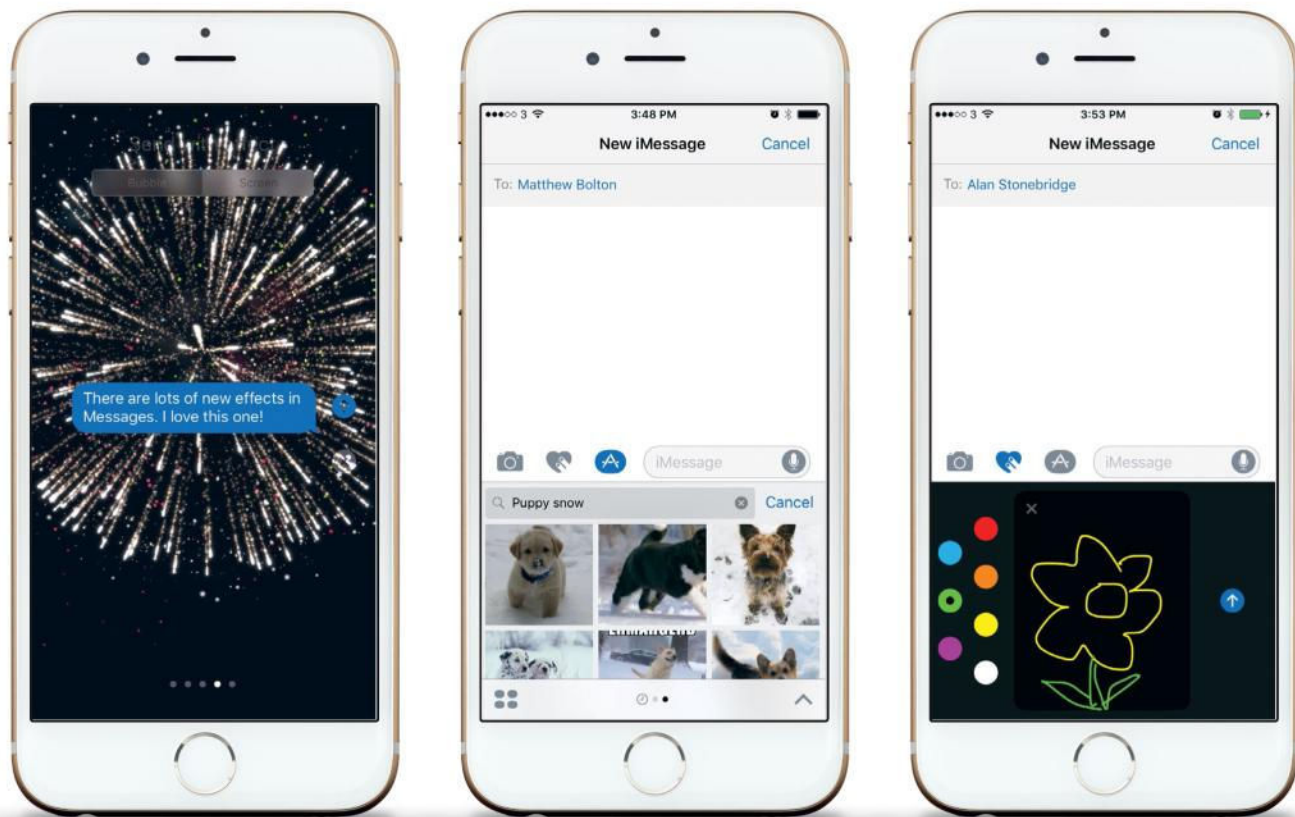
3 To use Magnifier, triple-click the Home button. Drag the slider or pinch the

view to zoom, and tap the lightning icon to illuminate the scene using your iPhone's flash. Tap the shutter release to freeze the view (this doesn't actually save a photo). You can zoom and pan in this state.

4 To compensate for poor contrast, tap the three circles, then: swipe horizontally on the view to apply a color filter; adjust the brightness and contrast sliders; or tap the icon at the bottom left to swap bright and dark colors. Tap the circles to be able to zoom and pan again.

5 If, say, you want to enter text you viewed in Magnifier, close Magnifier by pressing Home. When you open it again, it will have retained its frozen image.

MAGNIFIER HELPS YOU CHECK OUT TINY THINGS, SUCH AS SMALL PRINT



Messages is a whole lot more fun now that you can send special effects, animated GIFs, and even your own drawings.

Double-tap a message bubble to use Tapback, which offers six quick responses; your choice is affixed to the bubble.

7 You can enable read receipts for individual conversations. Tap Details (or the *i* in a circle) at the top of a message thread, then switch on Send Read Receipts.

8 Save time finding emoji: write some words, tap the emoji key to highlight suitable words which can be replaced, then tap a word to replace it.

9 The keyboard's suggestions bar suggests emoji you might want to

use. In addition, if you start using another language, its word suggestions follow suit without you needing to switch keyboard.

10 The suggestions bar will now offer up information that logically follows on from what you've typed, such as phone numbers ("You can reach me on..."), addresses ("My ZIP code is..."), and birthdays ("Josh's birthday is...").

11 To tweak or annotate an image in a message, tap it, then tap Edit. Changes made here don't affect the original image. You can also tap Markup to enable sketching tools.

12 Double-tap a message, then choose a quick response: a heart, a thumbs up or down, "ha ha," double exclamation points, or a question mark. Your response is attached that bubble.

13 Save data with Settings>Messages>Low-Quality Image Mode.





Clock's Bedtime feature gives you a nudge when it's time to rest, so that you get the sleep you need.

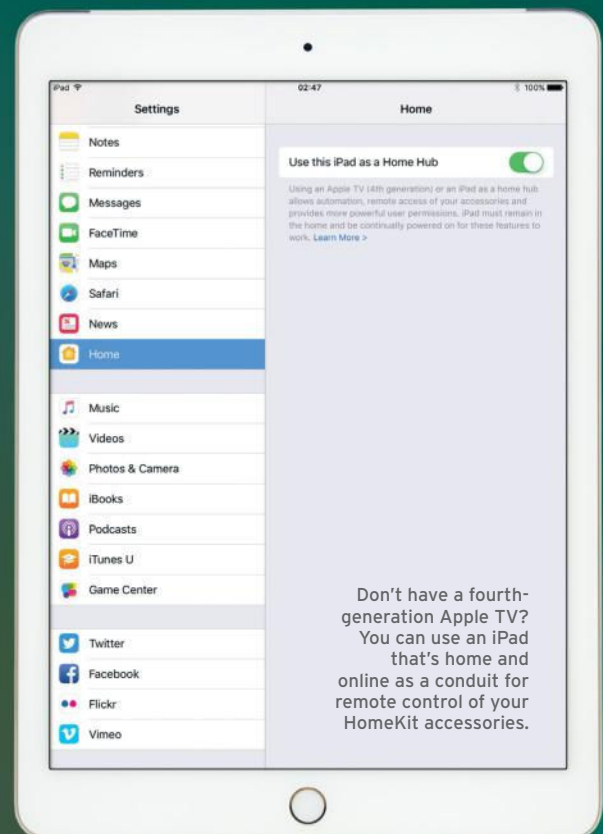
CLOCK

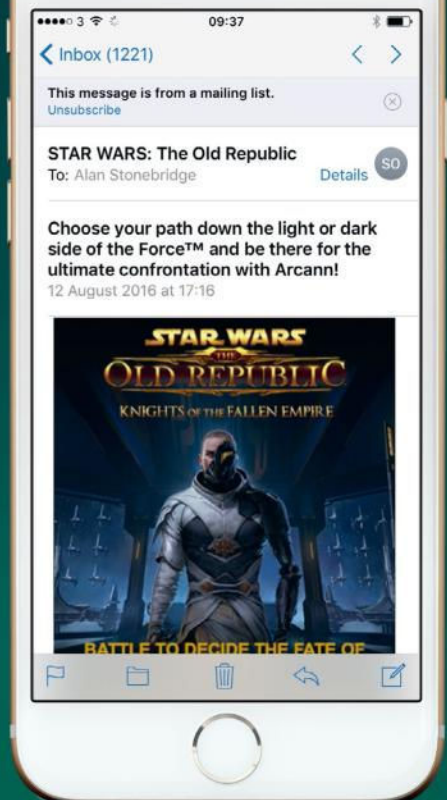
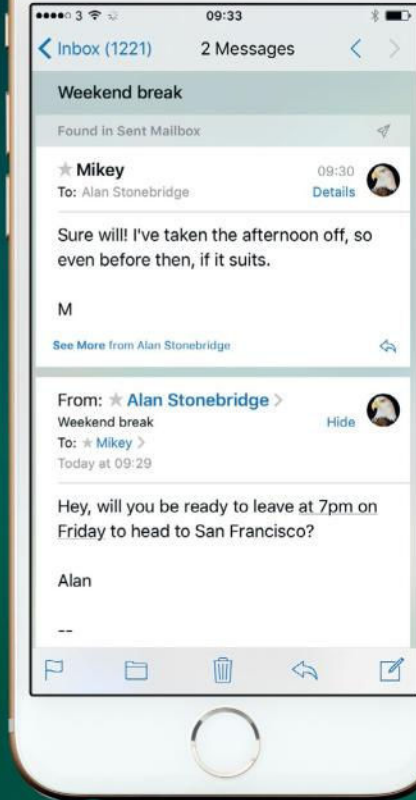
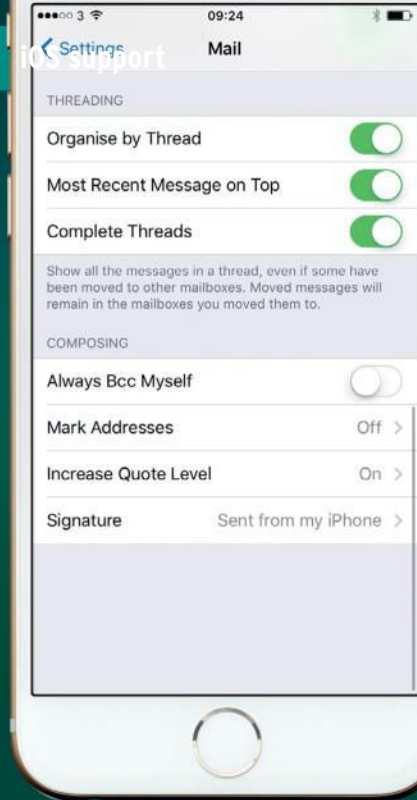
- 1 Clock's Bedtime feature enables you to dial in the time you need to wake up and sets a corresponding bedtime to ensure you get the necessary amount of sleep. Tap Bedtime and follow the steps to set up an alert that prompts you to go to bed. The feature feeds basic sleep analysis data into Health. This wake-up time alarm isn't affected by Siri's alarm commands.
- 2 Tap Options to choose: days of the week that you're prompted to get ready for bed; how far in advance of your target bedtime that happens; a sound that gently gets louder to wake you; whether to vibrate as well; and the overall volume.
- 3 Once you've set up Bedtime, you can make adjustments to it when needed. Drag on the colored arc between the icons on the clock's circumference to move both the bedtime and wake-up time.
- 4 Clock's Stopwatch feature on the iPhone now offers a chronograph view as well as the existing digital one. Swipe horizontally on the timer area to switch between them. >>>

MAPS AND HOMEKIT

- 1 You can tell Maps to never include bus, subway and light rail, suburban rail, or ferry journeys when plotting directions. Find this option in Settings>Maps>Public Transport.
- 2 Maps can work out where you parked and automatically drop a pin there for you, provided Settings>
- 3 Maps>Show Parked Location is switched on and your car has a Bluetooth or CarPlay stereo. If you don't have an Apple TV to use as a conduit for remote control of HomeKit accessories while you're away, use an iPad that's always online and plugged in. Turn on Settings>Home>Use this iPad as a Home Hub.

MAPS CAN WORK OUT WHERE YOU PARKED AND DROP A PIN THERE





Message threads now look more like they do in Mail for Mac. Also, it's easier to remove yourself from mailing lists.

MAIL

1 Apple has split settings for Mail, Contacts, and Calendars into three discrete pages. Mail has a couple of new items under Threading to complement Organize By Thread. "Most Recent Message on Top" toggles the order in which messages are shown.

2 Complete Threads ensures *all* messages in a conversation are shown, even if you've moved some to other mailboxes.

3 When you double-tap the arrows next to a thread in the messages list, the constituent messages expand downwards to show short summaries, which might immediately uncover the one you want.

4 Tap elsewhere on a thread's row to see the whole conversation in a long, scrolling view, with each message presented like a piece of paper. Swipe left or right on these, just like items in the messages list, to take quick action.

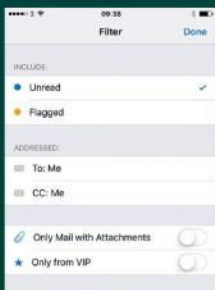
5 To pull one message forward and read with a slightly bigger font and longer line length, tap its header. To return to the whole conversation, tap Done.

6 When Mail sees an unsubscribe link in a message, it adds a shortcut to that link's target to the top of the message. Tap the cross on the right of this to dismiss it so Mail will no longer prompt you for that particular list.

7 Holding a finger on the trashcan icon now offers the Archive Message action as well as Delete Message.

8 Tapping Mail's search bar presents four shortcuts to common searches (which used to require you to type a few characters for Mail to suggest them): messages that are unread; flagged; from your designated VIPs; or with attachments. To apply two or more, you still must type part of the additional ones to get Mail to suggest it.

9 Tap the icon of a circle containing three lines of diminishing length to toggle the filter for the current mailbox. A description of the active filter appears to the right; tap it to choose from the same criteria the search bar suggests, plus use the ability to exclude messages not directly addressed or copied to you. Mail remembers filter settings individually for each mailbox.



Applying a filter enables you to narrow what's shown in a mailbox without having to type in the search bar.

THE PEOPLE ALBUM IN PHOTOS SHOWS FACES THAT THE APP HAS DETECTED FROM PICTURES

PHOTOS

- 1** The People album in Photos shows faces that the app has detected from your pictures. Drag favorites to the space at the album's top for quick access. Tap a face to see more photos and Memories featuring that person.
- 2** It may have recognized more faces but not be showing them – perhaps because you have few pictures of those people. Tap + (Add People), tap faces you want in the People album, then tap Add. Watch out for separate pictures of the same person; tap them, followed by Merge.

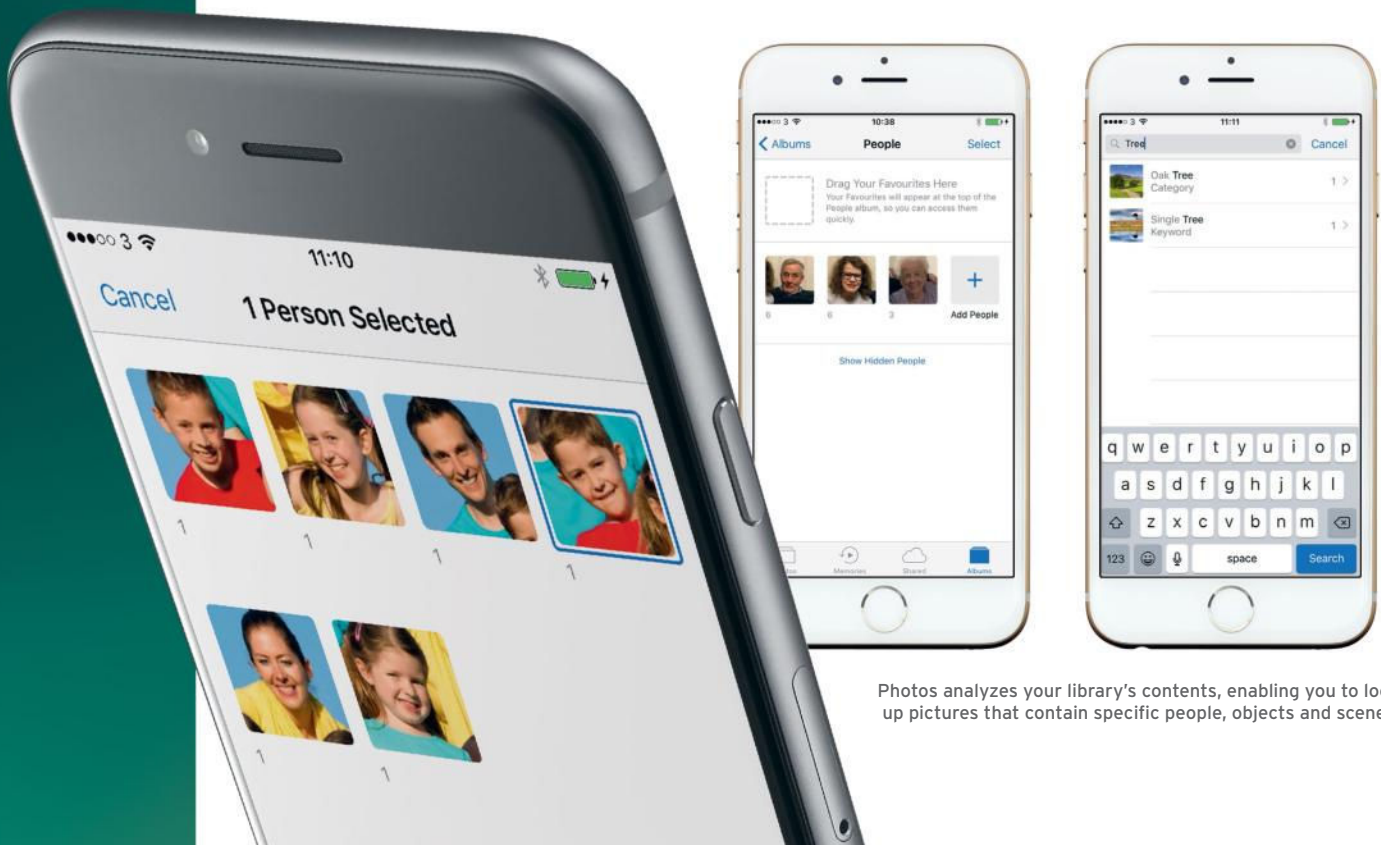
3 You can also merge faces at the top of the People album: first, tap Select, then some faces, then Merge. If you don't want to see a person here that the app has picked out, choose Hide.

4 Photo's new image analysis capabilities extends beyond faces to animals, objects, and scenery. The app scans your photos, and is able to pick out animals such as dogs (even down to certain breeds), places such as the beach or an apartment, or objects. It also detects facial expression, including smiling and surprise. You don't need to do anything to attach this information to photos – you

can just start searching for items by name!

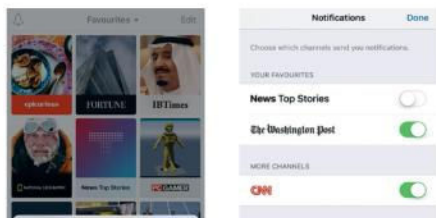
5 The Places album groups photos by where they were taken, and spreads them into smaller groups as you zoom in. Tap a photo on the map to see photos from that location, or tap Grid for a scrolling view of larger thumbnails of all pics taken in the area you're looking at.

6 You can use the Markup tools in Photos. Edit a picture, then tap the icon of three dots in a circle, then choose Markup. If you don't see it, scroll to the right, tap More, then turn on Markup's switch and tap Done. >>>



Photos analyzes your library's contents, enabling you to look up pictures that contain specific people, objects and scenes.

Safari on the iPad has speedy options for showing two sites at once and managing tabs.



Favorite channels in News can be sorted, and some can provide notifications about updates.

NEWS

1 The News app enables you to choose which of your subscribed channels are allowed to send you notifications (if capable). Tap the bell icon at the top of the Favorites page to alter these settings.

2 You can sort your favorite channels in News, too. Tap the Favorites heading at the top-center of the eponymous page to sort by name, most recent, or those read most often.

EXTRAS

1 Many of iOS 10's built-in apps can be removed, including Tips, Stocks and Weather. Tap and hold to make them jiggle, then tap the x, just like any other app. You can get them back from the App Store.

2 Universal Clipboard enables you to copy text, images and video between Macs and iOS devices signed in to the same iCloud account provided, provided they're Handoff compatible.

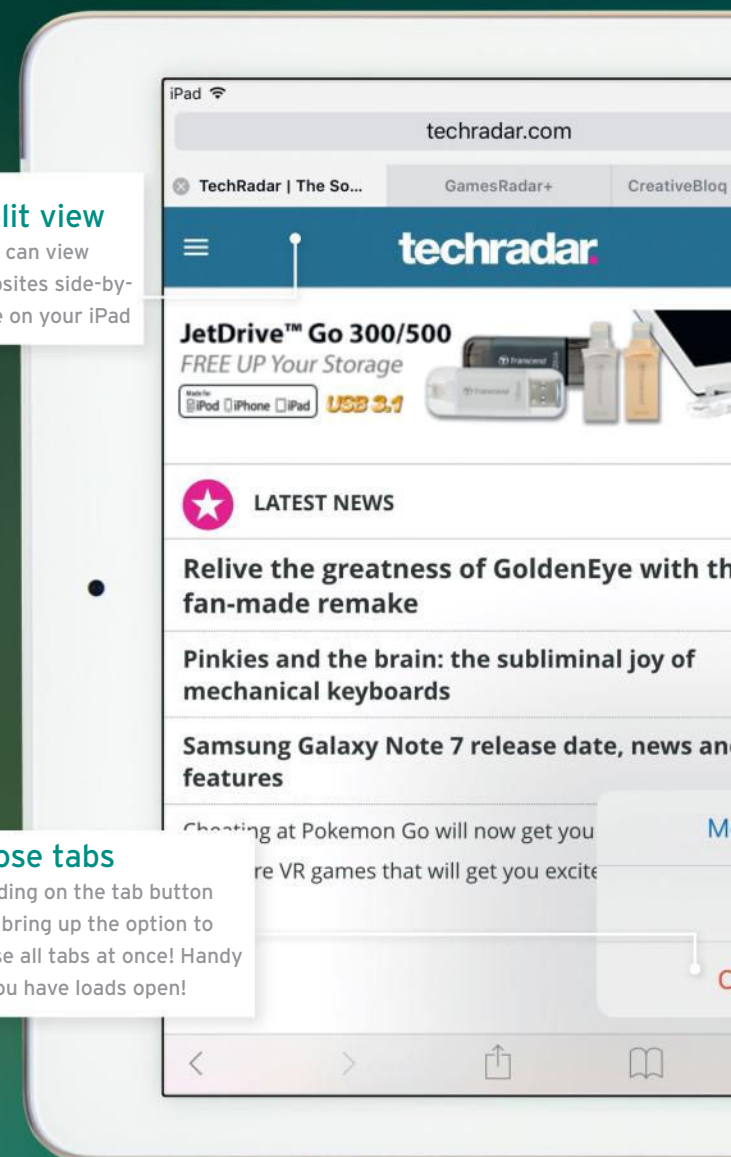
3 A new action in iOS's Share sheet now enables you to save things directly to iCloud Drive. In Photos, for example, tap the Share button and choose Add To iCloud Drive. In Mail, tap and hold on an attachment.

Split view

You can view websites side-by-side on your iPad

Close tabs

Holding on the tab button will bring up the option to close all tabs at once! Handy if you have loads open!



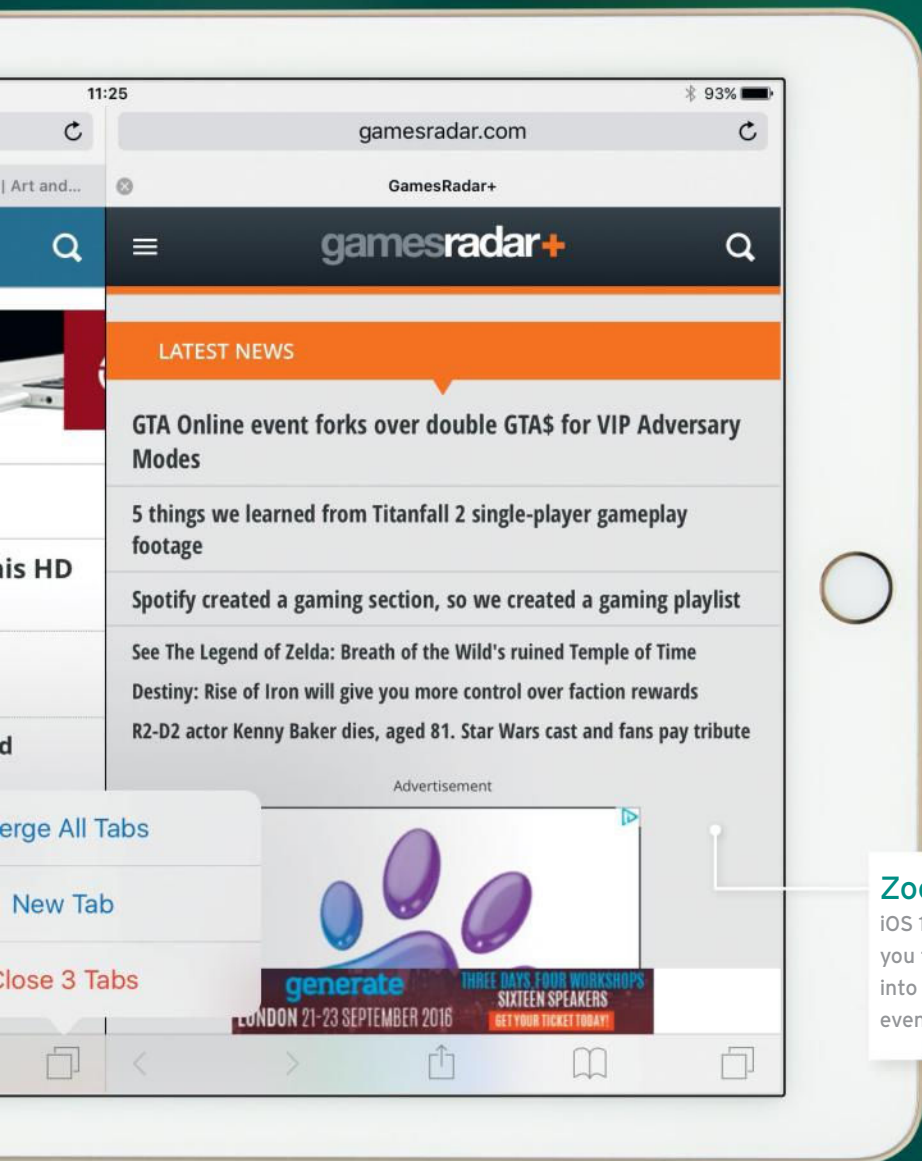
SAFARI

1 To view two sites at once in Safari (on iPads that support Split View), hold a finger on a link and choose Open in Split View. Each has its own set of controls.

2 Alternatively, drag a tab down from the tab bar, then to the left or right edge of the screen. The first view shrinks as a cue.

3 Alternatively, hold on Show All Tabs and choose Open Split View. This is handy if you want to open one of your favorites.

4 To revert to showing one fullscreen site: drag the last tab from one view to the other's tab bar to merge them, or tap that tab's cross if you no longer need it.



Zoom in

iOS 10 will allow you to pinch-zoom into a website even if you haven't



Tapping the share icon allows you to send webpages via several apps

5 Alternatively, you can hold down on the Show All Tabs icon, then choose Merge All Tabs, or even choose Close <number> Tabs to close all of that view's tabs at once.

6 That quick way to close all tabs is also available on iPhone – handy, since Safari will happily let you open hundreds of tabs!

7 Try pinch-to-zoom on a site that doesn't normally allow it. In Safari in iOS 10, you can take a closer look even if the website's designer doesn't want you to.

8 The Bookmarks and Reading List tabs in Safari's sidebar now each have a search bar; swipe downwards on either's contents to reveal it.

9 One of the actions when you hold on a link is Share, which saves a little time and cellular data if it's something you think a friend will like but don't care to read yourself.

10 If you don't want to be given the opportunity to use Apple Pay to buy from websites, turn off Settings>Safari>Check for Apple Pay.



iOS support

iOS

Troubleshooting

Guide

Locate a lost iPhone

Set up the free Find My iPhone service to keep tabs on your device

REQUIRES

> Photoshop Elements, some photos

LEVEL

> Taking things further

IT WILL TAKE

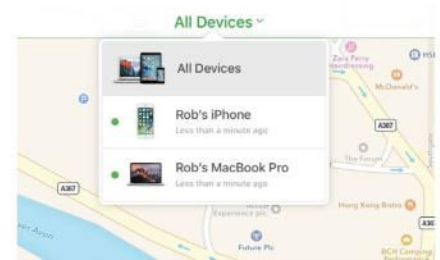
> 20 minutes

THAT MOMENT WHEN you realize you've lost your smartphone can be a nightmare. But, thanks to some clever technology and the Find My iPhone service, you can – in most cases – track down where it is. Using Wi-Fi networks, phone masts and its GPS sensor, your iPhone's location can be pinpointed worldwide with incredible accuracy.

So as long as your iPhone is connected to the internet in some way – either via Wi-Fi or over a mobile network – then you can easily look up its location using a web browser on a Mac or PC or by

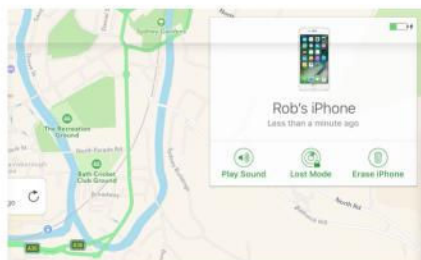
using the free Find My iPhone app on another iOS device such as another iPhone, or an iPad, or iPod touch.

If your device's location is available, it's then possible to make it play a sound (to help you find where in your house it's got to), display a message on the screen (so that an honest person who finds it can contact you) or even wipe its contents (if you decide it's gone for good) – this extreme option means it can't be reactivated without your passcode, so it's no use to thieves. Before you begin, set up a passcode lock in Settings>Touch ID



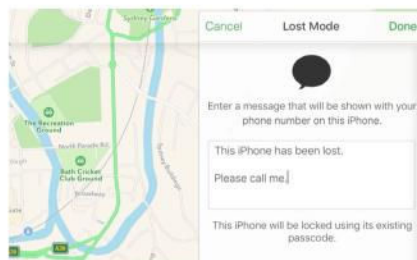
1 Enable the service

You need to sign in to iCloud and switch on the Find My iPhone service. Tap Settings>iCloud and turn on Find My iPhone. This will link the device to your iCloud account, and you'll be able to look up its location from another device.



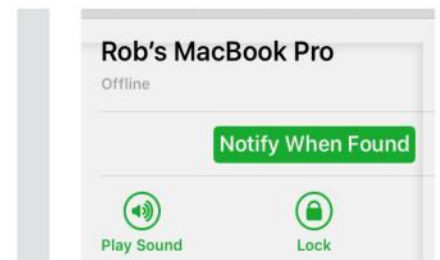
2 Find your lost iPhone

If you need to find your iPhone, open the Find My iPhone app on another iOS device and sign in with your iCloud account. Alternatively, sign into icloud.com on a computer, click Find My iPhone and it will try to track down its current location.



3 Device list

If you have more than one device linked to your iCloud account, click All Devices. Next to the row for your missing iPhone, look for a green dot, indicating that its current location is available. Select the device's name to see its location on a map.



4 Total wipeout?

Click the dot on the map or the name in the list and you'll get options to play a sound or erase the device – use the latter only as a last resort – once you erase it, you'll no longer be able to track its location. It's better to begin with Lost Mode.

5 Lost mode

Choose Lost Mode and enter a phone number. Tap Next, enter a message and tap Done. If your iPhone's offline, it'll be locked next time it connects, but will display your message. When returned, unlock it with your existing passcode.

NOTIFY WHEN FOUND

If your lost device isn't connected to the internet when you try to locate it, you needn't keep checking back manually. Just tap or click "Notify When Found." You'll then receive an email when the device is located, plus a pop-up alert on any linked devices.

Maximize battery life

Tips to help make your iPhone go that crucial extra mile – or minute!

REQUIRES

> iPhone, iOS 10

LEVEL

> Anyone can do it

IT WILL TAKE

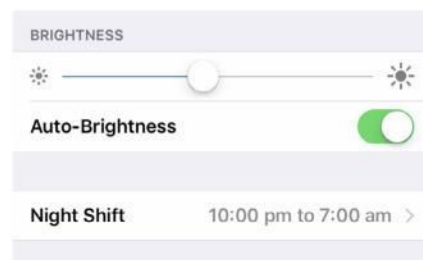
> 5-10 minutes

YOUR IPHONE CAN do so much for you, it will quickly become indispensable. But frequently checking your emails, making FaceTime calls and watching streaming video all inevitably sap the battery. This isn't a problem if you're somewhere you can plug in your iPhone for a recharge, but all too often you'll start seeing low battery alerts on your screen when you're far from a socket. But this doesn't mean there's nothing you can do!

iOS 10 has a low-power mode, which detects when the battery is at 20% of its power, and alerts you to the fact. If activated, it will halt Mail fetch,

background app refresh, automatic downloads and visual effects to help eke out the last bit of power. On top of that you should turn off power-hungry features such as 4G networking, Bluetooth, and Location Services, and stop using streaming services. Other background services that periodically check for new content, such as Facebook and Twitter, can also be switched off.

Finally, reduce the screen brightness as low as you can comfortably go, and set the screen to dim after a few minutes' inactivity – you'll be amazed at the difference this can make.



1 Low Power Mode

When your battery level falls to 20% iOS 10 prompts you to enter Low Power Mode, to pause Mail fetching, stop auto downloads and reduce visual effects. And it's a reminder to head for a power outlet or turn off other power-hungry features...



4 Switch off 3G/4G

It's far more power efficient (not to mention cost efficient) to use Wi-Fi to get online. To switch off Cellular Data, go to Settings>Cellular and toggle Cellular Data to off. Email and web browsing will now only take place using battery-friendly Wi-Fi.

2 Stop networking

Bluetooth is a big battery drain, so if you're not using a Bluetooth device, swipe up from the bottom of the screen to open Control Center and switch it off. Even if you're using Bluetooth, switch AirDrop off this costs power, so keep it off until needed.



5 More cellular control

If you want to use cellular data to browse the web, but want to make sure certain apps can't use it (such as video-heavy apps), scroll down in the same menu for per-app controls. Change a switch to stop an app using cellular data.

3 Dim the screen

The screen backlight is a major drain. Tap Settings>Display & Brightness and switch on Auto-Brightness; the screen will adjust itself on-the-fly. If juice is really low, open Control Center and drag the brightness slider down as low as you can.



6 Location Services

To save power, disable Location Services. Go to Settings>Privacy>Location Services. (Note that location-based apps such as Weather or Maps may have problems.) Find My Phone will override this if you need to locate a lost phone.

Solve crashing problems

Even an iPhone 7 or 7 Plus can hit problems. Here's what to do...

TAKE CONTROL

The fastest way to switch your Wi-Fi or Bluetooth connection off and then on again is to swipe upwards from the foot of the screen to access Control Center, and tap the top left control button to toggle Airplane Mode on and off again. If this doesn't re-establish your Wi-Fi connection, go to Settings>Wi-Fi, tap the right-facing arrow, select the network in question, and tap Renew Lease. No joy? Go to Settings>General>Reset>Reset Network Settings and re-enter the details in the Wi-Fi section. If even this won't do the trick, tap Forget This Network, reset your device, and then re-enter the network settings.

YOUR IPHONE IS normally such a reliable device, you can easily forget that it's basically a complex portable computer. Connectivity glitches seem to be the most common issues, whether Wi-Fi or (less commonly) Bluetooth, and these can often be cleared by switching the connection off and on again. If you're having syncing problems, be sure to check whether your iPhone 7 or 7 Plus is set to sync only over Wi-Fi rather than 3G/4G too, and whether iCloud or iTunes is selected for backing up – it will back up using one, but not both.

Apart from Wi-Fi, any other problems are most likely down to apps misbehaving. If your iPhone is acting up, try the following steps, in this order. Don't go past step 3 unless turning your iPhone off and on again doesn't resolve the problem.

1 Quit an app

If you run into problems with an app, try quitting it. Double-press the Home button to enter Multitasking View, then swipe sideways until you locate the app. Now swipe its thumbnail preview upwards to dismiss it. Press the Home button to return to the Home Screen. You can now open the app again if you wish.

2 Force-quit

On occasion, you may not be able to quit an app using the multitasking display, or even exit the app at all. In this case you'll have to force-quit. Hold the Sleep/Wake button for 3–5 seconds until the power-off slider appears, then press and hold the Home button for another 3–5 seconds. You'll be bounced back to the Home Screen and the app will have quit.

3 Turn it off and on again

If force-quitting an app doesn't fix things, turn your iPhone off and on again. Hold down the Sleep/Wake button again, until the power slider appears. This time, slide it across to power off. Wait a few seconds, then press the Sleep/Wake button again to turn the device back on again.

4 Hard reset

Still having problems? Try a hard reset. Press and hold the Sleep/Wake button and the

Home button at the same time until the Apple logo appears on your iPhone's screen. This forces the iPhone to restart and will clear almost any glitch. If even this fails, however, you may need the nuclear option...

5 Restore

The last resort is to restore your device from a backup (tap Settings>iCloud>Backup and make sure iCloud Backup is enabled, and then tap Back Up Now if the iPhone has never been backed up). If you need to restore, connect the device to your computer (using the cable will be more reliable than a Wi-Fi connection, especially if you're having problems), open iTunes and click the iPhone's name under Devices. In Summary, click Restore, and confirm. iTunes will restore the device's software and settings and ask if you want to restore from a backup – select the most recent.

6 Expert help

If restoring your iPhone 7 or 7 Plus doesn't help or you can't do so, you'll have to get help. The best place to go is the Genius Bar at an Apple Store. If you wish, you can book an appointment direct from your iPhone using a free app called Apple Store (not App Store) – search for it in the App Store and install it on your iPhone. Of course, if your iPhone is totally frozen, you won't be able to use this app, let alone search for it and install it if you haven't already got it. Instead, visit from any web browser to book an appointment.

Double-tap the Home button to view your running and recently used apps. If an app isn't working properly, swipe it upwards to quit it. You can then try opening it again.



Free up storage space

Make room on your iPhone for new apps and media

REQUIRES

> iPhone, iOS 10

LEVEL

> Anyone can do it

IT WILL TAKE

> 10 minutes

The Settings app identifies all of the space hogs eating into your valuable storage space.

NO MATTER WHAT capacity iPhone you have, there will come a time when you'll find there's not enough space for that big new game you want. The good news is that you can clear apps, photos, videos and other items off your device at any time.

DELETING AN APP



Go to Settings>General>Storage & iCloud Usage and tap Manage Storage (under Storage heading). Your installed apps are listed in descending order of size. Tap one to see how much space the app itself takes up and how much is being used to store its data and documents; tap Delete App if you wish to remove it. iOS 10 gives you the ability to "delete" built-in apps such as Stocks – you don't save much in the way of storage space because the apps are still a core part of iOS and are merely hidden, although associated data and documents are removed. You can also delete apps from your Home screen: tap and hold an icon until they all jiggle, then tap X on an icon to delete that app. Bear in mind that deleting an app will delete its saved documents and data. You can redownload any app purchased from the App Store, free of charge, but this won't restore its data – you'll need to connect it to iCloud (if it uses that) or use an iTunes backup for that.

DELETE VIDEOS

In the Videos app, tap Films or TV Programmes then tap Edit (top right), and tap the X. To delete individual episodes of a show, tap the artwork, then swipe left across an episode and tap Delete. If you delete a rented movie, it's gone for good. If you delete any other video file, it's removed from your iPhone but remains in iTunes on your computer (if you synced it from there in the first place), and will be added back to your iPhone next time you sync unless you tell iTunes not to.

DELETE PHOTOS

By default, every photo and video you take on your iPhone is saved into the Photos app, and uploaded to iCloud

ARTISTS		687 MB
	Aimee Mann Bachelor No. 2 and Lost In Space	167 MB >
	The Monkees and 2 more	183.3 MB > Delete
	Bat for Lashes Two Suns	7.6 MB >
	The Beach Boys Pet Sounds	7.4 MB >

In Settings, some apps reveal a detailed breakdown of all their content that's taking up storage space.

Photo Library, if enabled in Settings>iCloud>Photos. This library is an online copy of all photos and videos taken with your iOS devices or imported into Photos on your Mac – if you've enabled the feature on those devices as well. You can free up space by telling your iPhone to store photos at a reduced quality. In Settings>iCloud>Photos & Camera, select Optimize iPhone Storage. This doesn't affect full-quality originals stored in the online copy of your library; only copies on your device. If you have turned on iCloud Photo Library, be careful about deleting photos from your iPhone because they'll also be deleted from other iOS devices and Macs on which you have enabled the feature. You can manage photos and videos and free up space – both on your device and in online iCloud storage – in the knowledge that if you do delete some you want to keep, they can be recovered for the next few days.

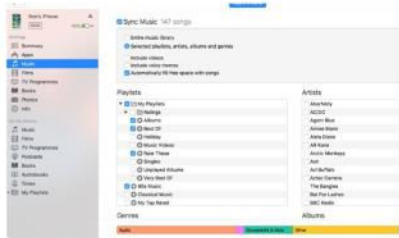
In the Photos app, tap Albums>Recently Deleted, then Select, then tap the items you want to keep followed by Recover. Or tap Recover All to get everything back. You can permanently delete individual photos or a whole range using the same method. Tap Delete or Delete All.

DELETE A SONG

The best place to see what music is stored on your iPhone, especially if you've enabled iCloud Music Library (see page 66), is Settings>General>Storage & iCloud Usage>Manage Storage (under Storage)>Music. This shows music stored locally that you've synced from iTunes on a computer or

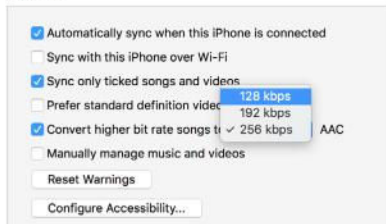


HOW TO | MANAGE SPACE ON YOUR IPHONE USING ITUNES



1 Control the music
If you manage your iPhone using iTunes on Mac and your music library is set to sync to your device in its entirety, consider changing it. Go to Music, under Sync Music, switch to “Selected playlists, artists, albums, and genres.”

Options



4 Make songs smaller
You can choose to sync music at a lower quality. In Summary, under Options, tick “Convert higher bit rate songs to...” and select an option. A lower bit rate means less space taken up, yet the sound quality should still be acceptable.



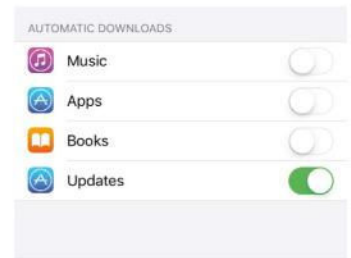
2 Manage other media
Also turn off “Automatically fill free space with songs.” Now tweak settings in other categories. In Movies and TV Shows, you can specify that only unwatched items to be synced to your iPhone, or limit shows to a few episodes.



5 Assess the results
As you make changes to what’s synced, the capacity bar on the iTunes window updates in real time to show how much space will be free. When happy, click Apply to commit the changes you’ve made to your device, then press Sync.



3 Clear unwanted apps
Click Apps in the sidebar and, in the pop-up menu (top left of list), select Sort by Size. Apps with a Remove button are already on your device. Press it for any large apps you can do without and the button will say “Will Remove.”



AUTO DOWNLOAD

If space is short on your iPhone, go to Settings>iTunes & App Store and disable automatic download of apps, music and books bought using other devices. Tap Purchased in the store apps to download only what you want on your iPhone.

downloaded from the iTunes Store. Occupied space is shown by artist name, which you can tap to see a more detailed breakdown by album and then track list. Swipe leftwards on any of these items, or All Songs at the top of the list, then tap Delete. If you’re subscribed to Apple Music or iTunes Match and the tracks you want to delete have been added to your iCloud Music Library, you can download them again in the Music app. iOS caches music that you stream rather than download for offline listening. Storage used by streamed tracks is managed by iOS if it’s needed for something else.

MAGAZINES AND BOOKS

To delete all issues of a magazine, tap and hold the app’s icon until it jiggles, tap X on the app’s icon to remove it, then press Home. Deleting individual issues differs between publications. Items in the iBooks app are deleted differently. Tap Select, then tap items to remove, then Delete.

RESTORE ITEMS

Remember you can always restore your previous app and media purchases by tapping Purchased in the bottom bar of the respective apps. (In iTunes, this is tucked away behind the More option.)



To delete a book in iBooks, tap Select, then the item, followed by Delete and Done.

Connect your headphones

Discover your options for personal listening and get to know Apple's intuitive headphone technology

REQUIRES

> iPhone, iOS 10, AirPods

LEVEL

> Anyone can do it

IT WILL TAKE

> 5-10 minutes

YOUR IPHONE COMES with a pair of Apple's EarPods, which have a Lightning connector at the end that restricts their use to iOS devices. If that isn't an issue for you, perhaps you dislike in-ear headphones or the EarPods' sound, so a Lightning to 3.5mm adaptor is also bundled, which enables you to plug in your preferred choice of headphones that are equipped with a traditional 3.5mm jack.

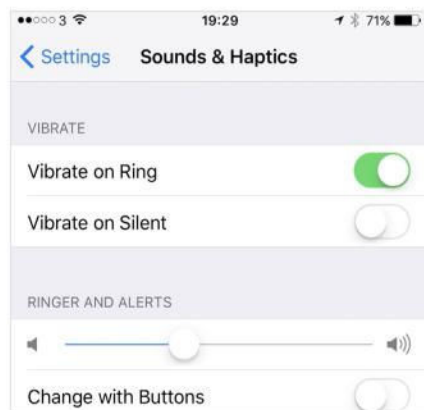
Whichever of those cabled options you choose, a problem arises if you want to listen to and charge your iPhone 7 at the same time: the phone's Lightning port is used for both purposes, but neither the AirPods nor the adaptor enables you to plug in a power cable. Other companies make replacement adaptors, such as Belkin's Lightning

Audio + Charge RockStar, or you may prefer to put your money towards Bluetooth headphones to avoid the messiness of cables.

Bluetooth headphones from other companies also work with your iPhone. Apple's own wireless headphones, called AirPods, work with your iPad, Apple Watch and Macs running Sierra too, right after you connect them to your iPhone for the first time. They're packed with sensors to enable control with a double-tap and then your voice.

Pairing AirPods with your iPhone instantly makes them usable with your other Apple kit

HOW TO | LISTEN USING HEADPHONES



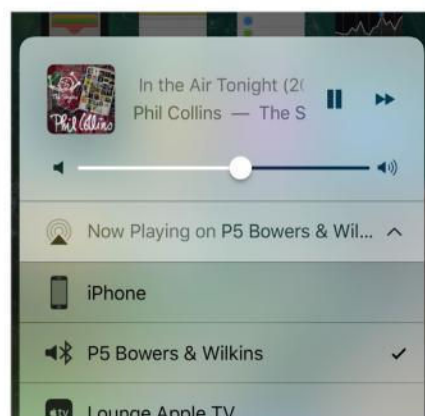
Separate ringer volume

1 Ringtones and alerts can be startling over headphones, so you can set their volume separately from the master one used for music, video and apps. With headphones connected, go to Settings > Sounds & Haptics and drag the Ringer and Alerts slider. As your ringtone plays, adjust the slider to your comfort. Turn off the switch below to lock alerts to that volume.



Bluetooth pairing

2 To pair Bluetooth headphones (if they aren't AirPods), go to Settings > Bluetooth on your iPhone and ensure it is turned on. Next, follow your headphones' instructions for entering pairing mode. Soon after, you should see the headphones' name under Other Devices on your phone; tap that row, wait for pairing to finish and 'Connected' will appear next to them.



Reconnect headphones

3 If your Bluetooth headphones are paired only with your iPhone, turning them on should be enough to establish a connection. If they aren't playing sound, you can check the current output in the bottom row of Control Centre's second card; it'll show the headphones' name if they're active. If not, go to Settings > Bluetooth and tap their name under My Devices.

VISUAL GUIDE | AIRPODS



Pairing AirPods with your iPhone

1 Although the pairing process for other Bluetooth headphones isn't exactly complicated, connecting AirPods to your iPhone couldn't really get any simpler. With the EarPods still in their charging case, just place them near your iPhone, open the case, and a prompt will appear on the screen with a button to establish a connection.

Pairing your AirPods with other devices

2 There's really nothing more to do to get the AirPods working with your other Apple devices. If you have paired an Apple Watch with your iPhone, the AirPods are automatically available to play music from it as well. Whichever device you're using to play audio at a given time, the AirPods will connect to it. Ownership of your pair of AirPods is sent to your iCloud account, and then to your other Apple devices (iPads and Macs) so you can use the AirPods with them, too. The headphones can also be paired with non-Apple devices using Bluetooth.

Voice control

3 Accelerometers in the AirPods are used to detect when you've tapped on the top part of the earpiece. A double-tap starts a conversation with Siri, so you can give it commands such as "Play songs by Suzanne Vega" or "Skip", as well as controlling volume with your voice. Naturally, you can use Siri's many

other functions, perhaps the most important being to make and receive phone calls without having to remove your iPhone from a pocket.

Automatic pausing

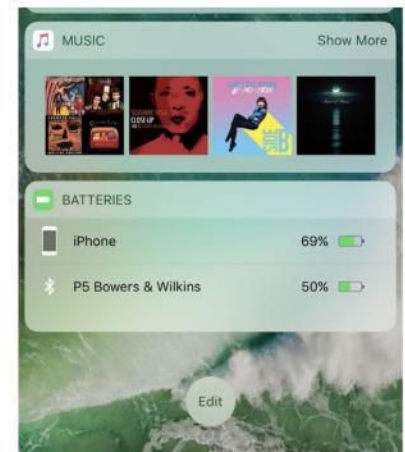
4 The AirPods have optical sensors that are used to tell when they are in your ears. When you remove one, the sensor tells your device to pause playback – even if you remove just one AirPod. Playback picks up automatically when you put the AirPods back in your ears.

Battery life

5 Each AirPod has a battery in its stem. Apple quotes a five-hour battery life. The supplied case also has an integrated battery for recharging the AirPods. In total, Apple says you can get up to 24 hours of listening from the AirPods this way, and that just 15 minutes in the case provides three hours' worth of listening. When the case needs a top-up, you connect it to a USB power source using the provided Lightning to USB cable; this charges the AirPods at the same time. The AirPods and their case weigh just 46 grams.

Noise cancelling

6 Accelerometers are also used to recognise the vibration and source of your voice, which works in conjunction with the beamforming microphones in the AirPods' stems to reduce external noise, enabling you to have clear conversations.



CHECK BLUETOOTH HEADPHONES' POWER

Your headphones may provide feedback about their battery level as an audio prompt or using an LED when it gets low. You can also check the battery's level as a percentage in Today view (see page 34).

With your Bluetooth headphones connected, Today view adds a Batteries widget. If it's not visible, or you want to adjust its position in the view, scroll all the way down, tap Edit, then drag from the handle to the right of the widget's name.





DO

There's more to iOS 10 than first meets the eye - and more new features are arriving with updates. Here are the latest tips for your iPhone and iPad

MORE

Every new version of iOS brings with it a host of changes. Sometimes that means headline features such as an entirely new style of interface, though more often than not, the tweaks are more subtle, if just as useful.

iOS 10 was a huge update that added a ridiculous number of new options to your iPhone and iPad - we revealed over 100 in our big feature in issue 120, but there are still more to discover, and new features have been added with Apple's latest updates. So here are more tips and tricks for iOS 10!

WITH



iOS 10

iOS 10 tips and tricks

Get more from your iPhone and iPad

› 3D Touch in Control Center

We've mentioned in a previous iOS feature that you can 3D Touch on the flashlight icon in Control Center to choose different light levels, but that's not the only option. You can hard press on the timer icon to choose preset countdown times, or on the camera icon to open the app straight to different photo modes.

› Spotlight in iCloud Drive

iOS 10's Spotlight search, which is accessed either by

opening the Today view, or swiping down on a Home screen (or in any app by slowing pulling from the top of the screen), can now search files in iCloud Drive, so it's easy to find even well-hidden documents and open them from anywhere on your iOS device.

› In-line video playback

When you're browsing in Safari on iPhone, and you play a video, it used to always take over the screen. Now, you can play videos in-line in the web page. If a video opens fullscreen, tap the arrow in the corner to reduce its size with the video still playing, then keep browsing the page. You might also find some videos play in-line automatically – this now an option for web developers to implement.

› Announce Calls

Make it easier to know who's trying to get hold of you without looking at the screen using the Announce Calls feature, which states the name of whoever's calling you when the phone rings. You can find the option in Settings>Phone>Announce Calls. It comes with several options: Always, so it does this every time the phone rings; Headphones, so

you don't need to get your phone out of your pocket to see who's calling before you hit the in-line remote to answer; Headphones & Car, which can help avoid distraction when driving; and Never.

› Avoid tolls and highways in Maps

Like to avoid toll roads or highways when driving? Go to Settings>Maps>Driving & Navigation and you can choose to have your device find routes that don't feature them. Each of these options has an individual switch in the Avoid section at the top, so just turn on whichever you want, or both.

› Find my Apple Watch

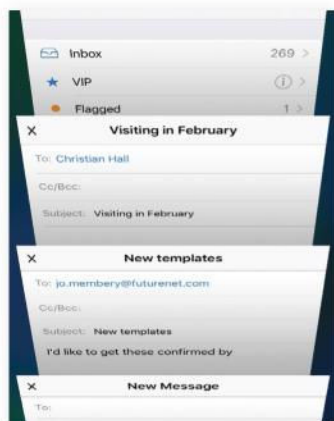
After updating your devices to iOS 10 and your Apple Watch to watchOS 3, the Find My iPhone app gets a new feature: it can now tell you where your Apple Watch is if you've misplaced it, provided it's connected to the internet. Open the app and your Watch will appear as a device in the list at the bottom, and will display its location, if known. You can also perform the usual actions, including making it play a sound so you can find it, activating Lost Mode, or even erasing it remotely.

Use 3D Touch to quickly access extra settings.

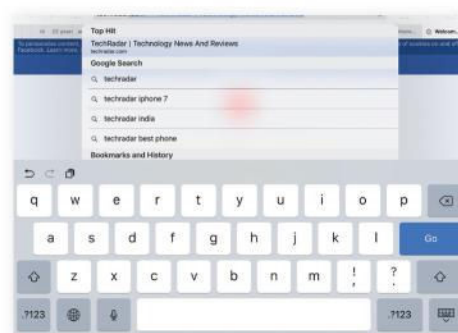


> Multiple Mail compose panels

>>> A lot of the time, when we're working on something, a more important or urgent task comes along and distracts us. This can be especially common if you're emailing, with conversations bouncing back and forth.



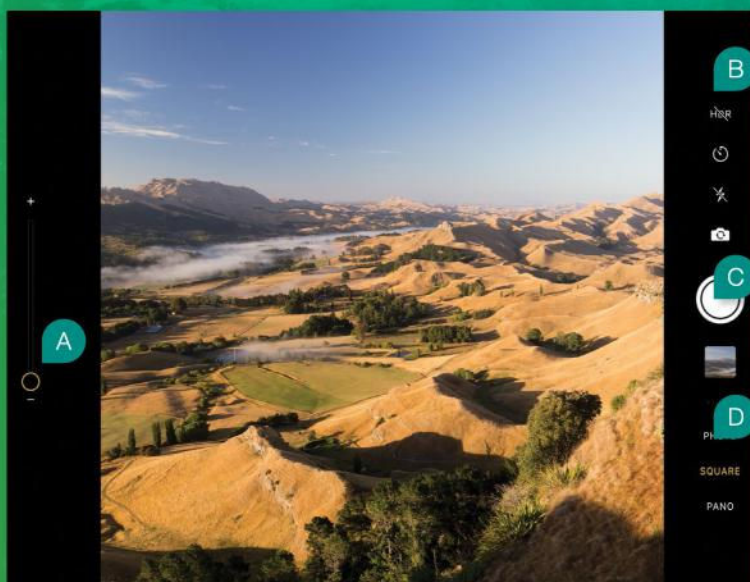
iOS 10's Mail app has a new option that makes it easier to quickly hide a message you're writing. Just place your finger on the title bar of the composition panel (where it says the subject in bold lettering), then drag it down, towards the bottom of the screen. You can basically minimize the message, then look up messages in your inbox, reply to them, or even create a new composition window. You'll see that your messages are stored at the bottom of the screen - just tap to view them in a 3D interface that looks a bit like the tabs view in Safari for iPhone. Tap one to return to it, or tap the X to close it.



> Rest & Type iPad keyboard

>>> Those who type on the iPad's touchscreen keyboard a lot get a little quality-of-life improvement in iOS 10: intelligent rejection of your palms if they touch the keyboard when you're trying to interact with text or other options above it. In fact, you can now rest your palms right onto the iPad's keyboard, and it won't trigger any keys. It's a small thing, but it's useful.

QUICK LOOK The new iPad camera



A ZOOM LEVEL
Drag this slider up and down to change the zoom level of the camera. Remember, this is a digital zoom, so using it reduces image quality.

B EXTRA OPTIONS
These are your controls for the self-timer, flash, HDR mode, Live Photos mode, or switching to the forward-facing Selfie camera.

C SHUTTER & PREVIEW
Press the shutter to take a photo or start a video - or hold it for burst photo mode. Tap the preview of the last image taken to open it in Photos.

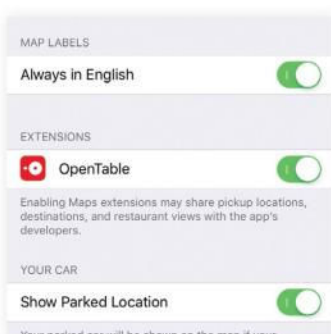
D CHANGE MODE
Swipe up or down here to go through the photo and video modes. You can also tap above or below the current selection.



Apps and games can record your screen, and you can save the footage for later.

› Activate Maps extensions

They haven't had as much fanfare as iMessage apps, but many apps now support extensions in the Maps app, adding new options when you're looking at locations. These range from the likes of OpenTable giving you a bigger set of restaurant reviews, to the ability to instantly call up a ride-sharing service such as Uber to take you to the destination at which



you're looking. To activate extensions, you must have the main app for the service installed. Then, go to the Settings app, and open the Maps section. Scroll down and you'll see the Extensions category. Just turn on any that you want to use with the switches. If you don't have any suitable apps installed, this setting simply doesn't appear at all.

› Unlock your device the old way

Because of changes to the Lock screen, you now need to press the Home button to open your phone. If you prefer to just rest your finger on the Touch ID sensor, as you could before, go to Settings>General>Accessibility>Home Button,

and turn on the Rest Finger to Open option.

› Press and Hold to Speak

In iOS 10.2, in the same settings location as the previous tip is an extra option for controlling your device with your voice. Press and Hold to Speak changes what your device does when you hold the Home button: Siri activates Siri, Voice Control offers the old-style Voice Control feature, and Off stops it doing anything.

› Suggestions for Siri corrections

If Siri thinks it got a word wrong, it will underline it in blue. Tap it and Siri can bring up a list of alternatives you might have meant instead. You can also tap and hold on the underlined word, bringing up the pop-up text menu. Tap Replace... to see possible correction options.

› Revealed Music options

In iOS 10.2, the Music app now points you to where the repeat and shuffle options are in the Now Playing screen (just off the bottom), and these buttons are larger.

› Screen recording

Apps (mostly games) have the ability to record what's happening on screen. They'll ask for permission before



doing this. How you start recording will depend on how each app implements it. When you stop recording, you'll have the option to view the video, trim it, save it to the Camera Roll, or share it right away.

> New emoji

iOS 10 added a bunch of new emoji characters, and iOS 10.2 adds even more. Finally, we have a bacon emoji!

> Apple TV keyboard

When you activate a text-entry field on Apple TV, you get a notification on your iPhone, if you have the Apple TV Remote app installed. Interact with this to type in the text on your phone!

> The new TV app

Apple's replacement for the Videos app in iOS 10.2

> COLLECTING WHAT YOU'RE WATCHING

The new TV app in iOS 10.2 is designed to bring together what you might be watching from a bunch of different sources. Partly, it acts as a replacement for the Videos app, so your iTunes TV shows and movies will be available here. But app developers can also work with it, so shows from the HBO GO app can appear alongside titles from the SHOWTIME app. One company that isn't currently supporting it is Netflix, however.

> WATCH NOW

The TV app is cross-platform between iOS (on iPhone and iPad) and Apple TV. It remembers your progress in shows, so in the app's Watch Now section, you can start watching on your iPad and pick up where you left off on Apple TV – and that applies to all the shows from the various different services. It remembers all your recent shows.

> UP NEXT

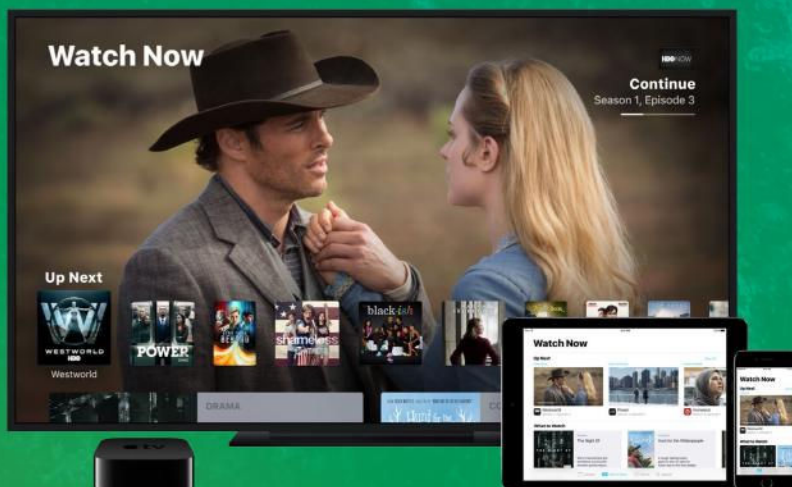
When you finish an episode, the TV app will queue up the next one automatically if you're binge-viewing. For shows appearing weekly, when a new one becomes available the app will immediately add it to your line-up.

> RECOMMENDED

The TV app will recommend new shows and movies you might like. Much like Apple Music, these are chosen by curators at Apple, while also highlighting popular trending shows. It's something different to the algorithmic recommendations we're used to from Netflix.

> SIRI

This doesn't apply to iOS 10, but on Apple TV, the TV app will work with Siri, naturally. You can just ask Siri to pick up whatever you were last watching from the point you left it, or take you to the next episode.



Camera & Photos

More new options for photography lovers

› Preserve Camera settings in iOS 10.2

The Camera app defaults to the standard Photo setting when you open it, but maybe you tend to mostly use the Square setting, or take video. A new setting in iOS 10.2 will help – go to Settings > Photos & Camera > Preserve Settings. If you switch on “Camera Mode,” the app will remember what mode you used when you last used the app, and will open to that. “Photo Filter” and “Live

Photo” do the same for Live Filters you were using and Live Photos, respectively.

› View related photos

When viewing an image in Photos, if you place your finger on it and swipe upwards, you’ll be shown more information. First are any people in the image, then location. Under that will be a Related section, showing any Memories that the app thinks are relevant,

based on things like who’s in the picture, or location.

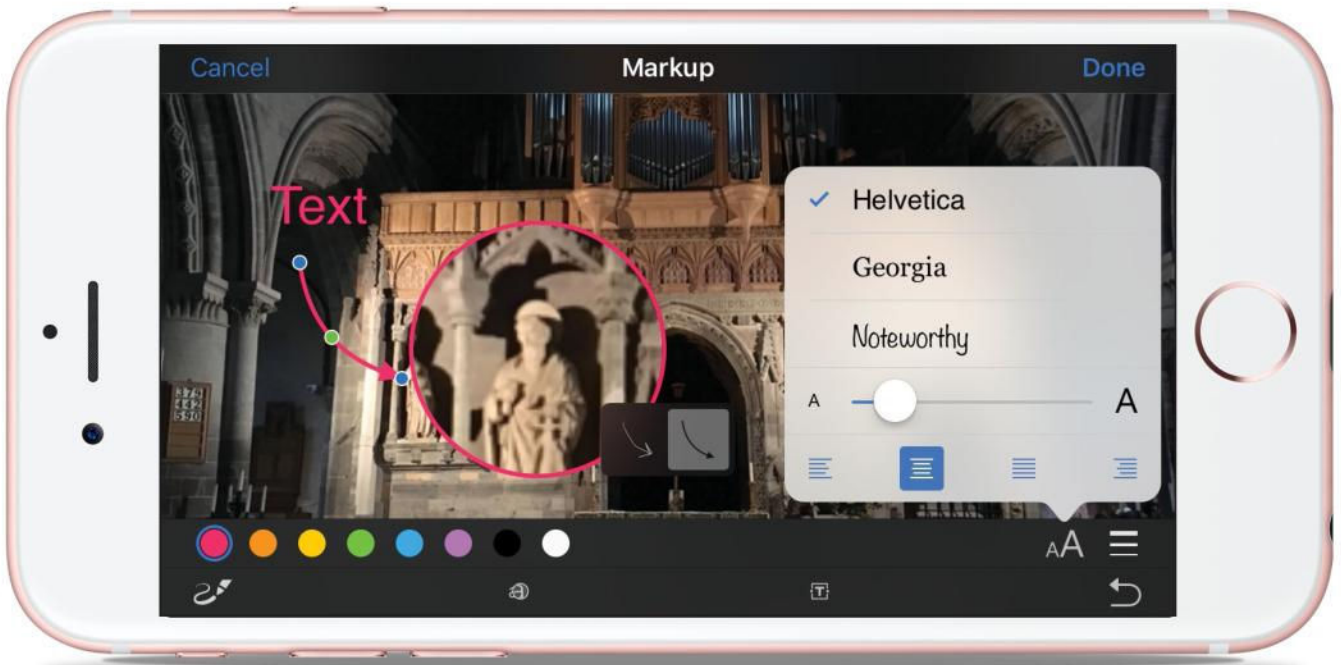
› Markup in Photos

Apple’s useful tool for annotating images is available in the Photos app as an editing extension. Open an image, tap the editing button, tap the three dots in a circle, and choose Markup. If it’s not visible, tap “More...” and activate it.

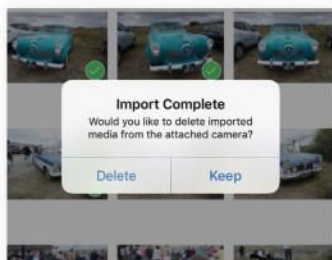
› Live Photo stabilization

The video element of Live Photos is now stabilized, so it looks much smoother when you use it.

**PLACE YOUR FINGER ON IT
AND SWIPE UPWARDS, YOU’LL
BE SHOWN MORE INFORMATION**

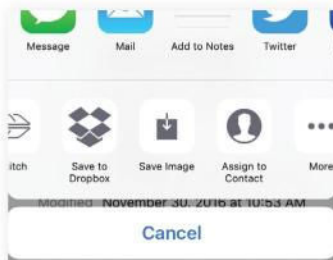


> How to import raw images



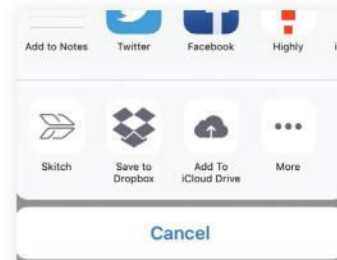
> CAMERA CONNECTION KIT

You can import raw images into the Photos app from your camera (or SD card) by connecting it to your iPhone or iPad with Apple's Lightning-to-USB or Lightning-to-SD card adapters. Be warned: if you shot in raw+JPEG, iOS imports the JPEG version, apparently ignoring the raw.



> iCloud DRIVE

If you save a raw image to iCloud Drive (from a Mac or PC, say), you can then find it on your iOS device in the iCloud Drive app in its original form. Select it, tap the Share button, and you can then either choose Save Image to add it to Photos, or choose another editing app to open in, if you like.



> FROM OTHER STORAGE

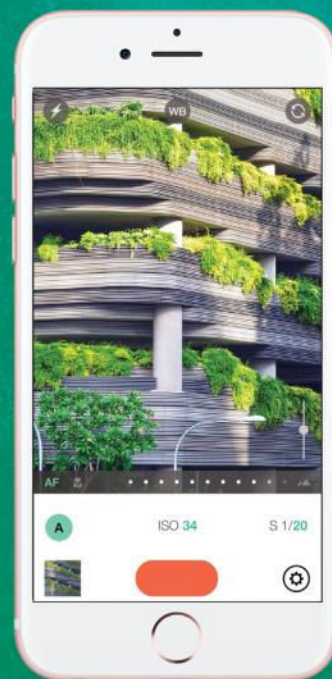
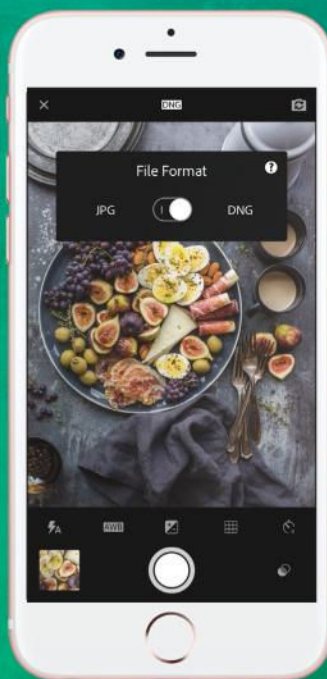
If you have raw images saved in other storage apps, such as Dropbox, and you can't see an option to save them to Photos, use the iCloud Drive app as a go-between. For example, in Dropbox, tap the Share icon > Export > Open In... > Add to iCloud Drive. Then follow the instruction on the left!

> Shoot raw photos on your iPhone

>>> As of iOS 10, it's now possible to shoot raw photos directly on your iPhone, in the DNG file format. You'll need an iPhone 6s/6s Plus, an iPhone SE, or an iPhone 7/7 Plus. Taking raw photos basically means that the raw pixel data from the camera is captured, bypassing the processing that Apple normally applies.

It means the images look kind of dull compared to normal shots from the camera, but you can edit them much more dramatically without losing detail. Raw images are larger than the usual JPEGs the iPhone takes, so watch your storage. These pictures still work with the Photos app - they can be opened and edited there.

The only catch is that the built-in Camera app can't take these raw photos - you'll need a third-party app. Adobe Photoshop Lightroom is free, or paid apps such as Manual (\$3.99) offer support.





ASK

TECH SUPPORT & TECHSPLANATIONS



If you backup to a Synology or other network-attached storage, it may need to be updated to work with Sierra's Time Machine.

BACKUPS STOP IN SIERRA

Since I upgraded my Mac to Sierra, Time Machine has stopped backing up to my Synology DS411J NAS drive, although I can still log on to the drive directly. I've tried deleting my old backups, and unmounting and remounting the drive, but when Time Machine does make a backup following such maneuvers, it hangs when preparing the next one. How can I get Time Machine working again?

This problem hasn't just affected many users of Synology NAS drives, but people using alternatives from some other vendors, too. There have been long discussions and suggestions of solutions on Synology's and other support forums – see bit.ly/2fbYBCR for just one example – but no one has yet discovered a lasting answer.

It's probably the result of a mismatch between Synology's software and macOS Sierra. To convince Time Machine that it's a

suitable backup store, the software running on the NAS has to follow various protocols. Sierra has apparently changed its side of that, either intentionally or due to bugs, and thrown the process off.

It's always worth checking that your NAS is running the latest version of its software, and that you've followed the instructions in its documentation fully. Sometimes software updates can silently alter your Mac's network settings, for example.

Your best option is to raise a support ticket with Synology. The company should be able to give you a clearer idea as to when it and Apple will arrive at a resolution for this issue, and it may offer early-release test updates, which could get your NAS up and running sooner.

Is my Mac infected?

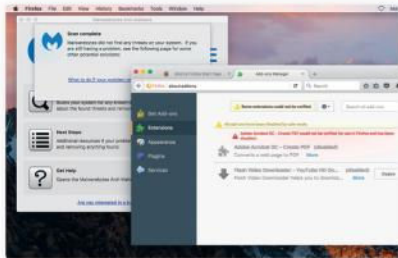
I have a problem with Firefox. While accessing Hotmail messages, I accidentally clicked on an adjacent ad. To my alarm a window popped up flashing "Trojan," accompanied by beeping sounds. I shut down Firefox immediately. What can I do to make my Mac safe again?

As the link was on the Hotmail page rather than in the body of an email, the risk of malware is low, but it was clearly unwanted and unnerving. Most likely it was an ad that simply displays such a message by default to scare you into buying unnecessary anti-virus software. You've probably seen similar ads saying things like "Your system is slow, click here to optimize," which are also completely bogus.

Still, to confirm your Mac isn't infected with anything nasty, download an anti-malware utility such as Malwarebytes – you can get that one for free from bit.ly/2ftmVmV.

There's no need to trash Firefox, but it would be wise to check its extensions in case the link you clicked downloaded anything that could prove a nuisance. To do this, open a new window in Finder, browse to the Firefox app and then double-click its icon while holding the ALT key: that window will close, and Firefox will start in its Safe Mode, which checks its integrity and extensions. (It also offers an option to restore Firefox to its default state.)

Next, browse to your usual Home page, close that window or tab, and then open a new one. The new tab should be clean and clear. If it is, then your actions should have rid Firefox of any traces of the pop-up. You should then be able to return to browsing.



Malwarebytes' eponymous free tool should be your go-to for checking for malware.

Headphones losing lipsync

When I use LG wireless headphones with my iPad Air 2, I notice audio and video play back slightly out of sync. Without the headphones they play in perfect sync. What can I do to fix this?

This is a tricky problem that can be more noticeable to some people than others. Its underlying cause is that it takes time to send audio via Bluetooth and convert the digital signal to analog in the headphones. iPads and other devices push video playback to the display as quickly as possible, so the combination results in your seeing any given moment tens of milliseconds before you hear the corresponding audio signal.

It's worth making sure your network settings are correct, and that you don't have other Bluetooth audio devices cluttering up your settings. It's also important that you use the latest version of iOS and apply any current firmware update that's available for your headphones.

Higher-specification headphones should reduce the audio delay, but different people have different thresholds. You could spend a lot of money on new headphones and still notice the problem, so try any alternatives before committing cash. Our brains can also compensate for loss of sync, and the effect normally appears reduced while watching a movie, as we get used to it. Switching to wired headphones should make it vanish altogether, as audio and video will then be virtually synchronous.

> Strange error in El Capitan

When I started up my MacBook, running El Capitan, it promptly warned me that there was a "CoreTelephony Trace File Error" suggesting that I might be out of disk space. As I have ample free disk space, I don't believe that's the cause, and everything still seems to be working normally. How can I stop the error?

This seems to be a not uncommon error with OS X 10.11 El Capitan, and various solutions have been suggested. The full error normally refers to a problem opening a file in the hidden `"/tmp"` folder.

The first thing to try is to start up in OS X Recovery (hold `⌘` + `R` at the startup sound), choose Utilities>Disk Utility and use the app's First Aid feature to check and potentially repair your startup disk.

If the error persists, it's likely that reinstalling OS X could fix it, but that's a lot of time and effort to expend if your Mac works well otherwise. Some people have suggested that the error results from System Integrity Protection (SIP) feature, and have offered a command-line formula that's claimed to "fix" it. However, the `/tmp` folder

is explicitly excluded from SIP's coverage.

Because the error relates to a networking library, it may be that when you next use your MacBook away from home, particularly over a Wi-Fi network, it fixes itself. The other good news is that it doesn't seem to occur in macOS Sierra, so if you upgrade, that should fix things.



RAID gone wrong

My Promise Pegasus J4 external drive array stopped working when I upgraded my Mac to El Capitan. I've just upgraded again, to Sierra, and it still doesn't seem to work. Is this due to missing software, and how can I put it right?

Your Pegasus system is an unusual slimline, four-drive external RAID drive with its own hardware RAID controller. Some external drives like this one

operate without any additional drivers, but this model relies on at least one kernel extension, and a utility app, to work with the controller.

Promise's last software update for it covers OS X up to version 10.9, but there have been no updates issued since. You should first try to install that latest version, which might yet prove compatible with Sierra, too.

Security in El Capitan and Sierra has changed, and they might not even



Though Promise's Pegasus J4 drive has issues on El Capitan and Sierra, its R4 and R6 drives work fine.



When erasing a drive to pass to someone else, opt to securely erase the whole of it.

Printers + Sierra = ? Which printers are confirmed to work with Sierra?

Apple provides a list of all printers and scanners that are supported by drivers supplied with macOS Sierra at apple.co/2gc1Uj7. Most if not all Canon models require macOS 10.12.1 or higher, because they have problems with the initial release of Sierra. Other printer manufacturers may also offer separate drivers on their website.

Two become one How do I convert a drive from having two partitions to one?

Disk Utility may be able to do this without losing the files currently stored on the drive, but otherwise you must assume that everything on it will be wiped. Make at least one full backup of the disk's volumes. Next, open Disk Utility, select the drive on the left, click Partition, then click the partition on the pie chart that you want to delete, followed by the - (minus) button below.

iCloud access What should I do if someone accessed my iCloud account?

If you have security concerns about your Apple ID account, which includes iCloud, contact Apple's support desk immediately through getsupport.apple.com. Also contact your credit card provider to check recent card transactions and discover if any are fraudulent. They should be knowledgeable as this sort of problem is, sadly, all too common.

>>> permit such an old installer to put a kernel extension where it wishes; an old kernel extension might make your Mac unstable, but sometimes surprisingly old extensions install and run perfectly well.

If you have no joy, contact Promise's tech support and ask what the company's plans for your model of RAID drive are. You might be lucky to find there's an update due very soon. These issues don't seem to have affected Promise's more conventional Pegasus R4 and R6 RAID systems, whose extensions and utility appear to be compatible with Sierra.

Making a fresh start I'm giving my old iMac to my daughter. It last ran El Capitan, and I want to install a clean copy of that system for her to use. Is that possible, and how?

You need to initialize the hard disk and install a fresh copy of El Capitan on it, stopping once the setup phase starts. There used to be several ways

of installing El Capitan, but Apple has withdrawn that version of the OS X installer from new customers, so unless your daughter has already acquired it from the Mac App Store using her Apple ID, she won't be able to obtain it any more.

With your Mac connected to the internet, restart in Recovery mode, open Disk Utility, select the startup volume and click Erase. Next, click the Security Options button and select an appropriate security level to wipe the entire volume completely, including free space.

When that's complete, quit Disk Utility, select Reinstall OS X and click Continue. You'll be prompted through the process. Once the Mac restarts and invites you to select your country, press **⌘ + Q** to shut it down - you may need to be persistent at this stage to get this to work.

When your daughter starts up the Mac, she will see the Setup Assistant and no trace of your previous use of the computer.

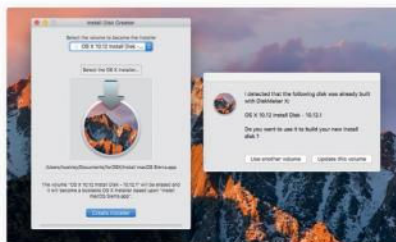
Folder aliases

Why can't Sierra correctly show folder aliases?

This strange bug first appeared in macOS 10.12. Sometimes Finder and Open/Save dialogs show folder aliases with the correct icon, but at other times they're shown as documents. They work correctly, though, so it seems to be a cosmetic issue, not a functional one.

Sierra and a (con)fusion drive I turned my internal hard drive and an external USB 3 SSD into a Fusion Drive following the instructions in *MacLife* #113. I've tried upgrading to macOS Sierra, and although the first phase of the install runs, my iMac then restarts in El Capitan. Is Sierra incompatible with my homemade Fusion Drive?

This doesn't appear to be a general problem with non-Apple Fusion Drives, but sometimes the Sierra installer refuses to work properly. The solution is to make yourself a bootable Sierra installer on a USB thumb drive (empty and at least 8GB capacity), and use that to install Sierra instead.



DiskMaker X can use Sierra's installer to turn a USB flash drive into an install disk.

If the InstallmacOSSierra app has deleted itself, download a fresh copy from the Mac App Store and copy it to another folder, and perhaps to another drive too. You can follow Apple's instructions for making an install disk using Terminal at apple.co/2gd1dEI, but the process is much easier using Install Disk Creator (free, macdaddy.io) or DiskMaker X (donationware, diskmakerx.com).

> Immutable Magic Mouse

I'm using a wireless Magic Mouse with my iMac running OS X 10.11.6. Every so often the secondary mouse button stops working. I can fix this in System Preferences' Mouse pane, but a little later it stops working again. How can I get my choice of settings to persist?

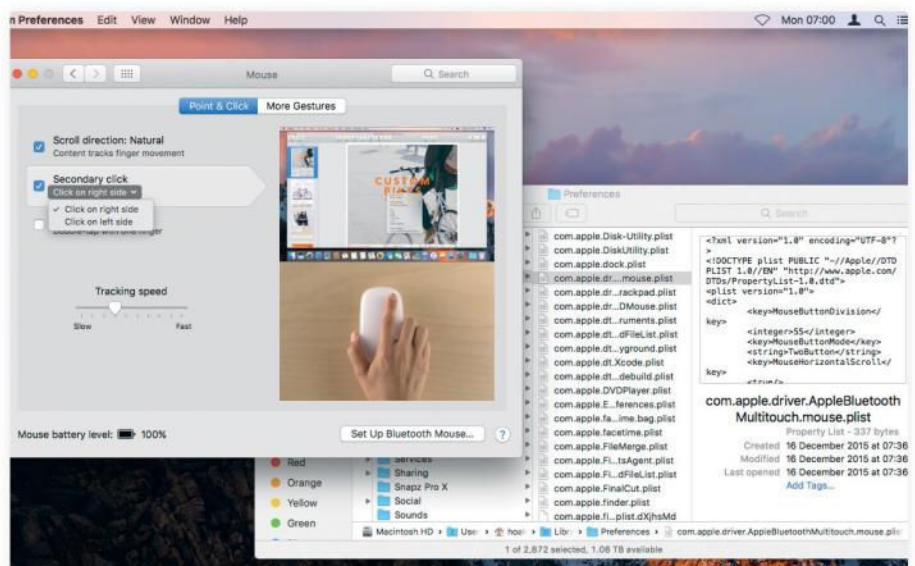
This could be a problem with the mouse, so if you can, confirm that it works properly with a different

Mac. It might also be the result of El Capitan's persistent problems with Bluetooth, for which the only good solution is to upgrade to Sierra, to be completely blunt.

But the simplest of answers is that this may result from a "stuck" preferences file for the Mouse pane. In Finder hold Alt and choose Go> Library, open the Preferences folder and move "com.apple.driver.

AppleBluetoothMultitouch.mouse.plist" somewhere else, such as your Documents folder. Next, open the Mouse pane and set up your mouse as you want it.

Doing that should save your choices to a new preferences file, which in turn should retain them properly. If that doesn't work, look for third-party software on your Mac that might be interfering.



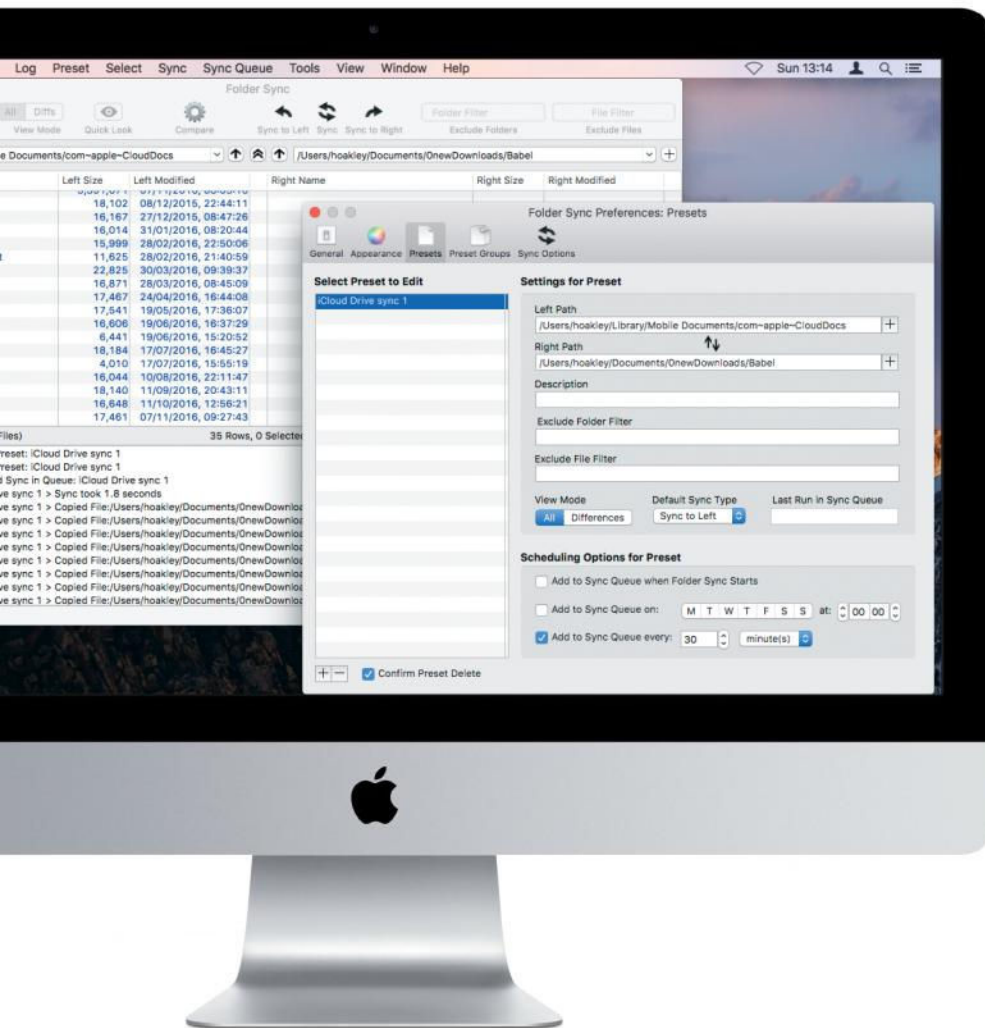
Once the install disk is created, keep it connected to your Mac, restart and hold Alt at the startup sound to enter the Startup Manager.

Select the install disk you made and press . Your iMac will then start up from the stick and the installer will run properly from it.

Going into recovery
Has Sierra changed the way you enter Recovery Mode?

No, you still hold + when you hear the startup sound to enter the Recovery system.

However, if you use a wireless keyboard, you may find that that your Mac ignores its input at this stage. If that happens, try connecting a wired USB keyboard to your Mac, or connect Apple's Magic Keyboard to a USB port on your Mac using the charging cable provided with it.



CROSS-PLATFORM SYNC

I'm delighted with my new MacBook Pro, but I still use a Windows PC too, so I'd like to use iCloud to keep files and folders synchronized between them. Is it possible to automatically update changed files on my PC to iCloud, and with my Mac too? I want to keep originals on my PC, and have them copied to my iCloud Drive.

There are two ways to use iCloud for this type of synchronization. The simpler way is to work on the files in iCloud, and only make local copies for backups and archives. This is easier because you don't have to do any synchronization, just pull down copies when you want to back them up locally.

You can use iCloud Drive as a means of synchronizing local copies, as you've said you would prefer. Of the two methods, this is inevitably the more complicated option, as it requires local software that copies from each computer whenever you make changes to the local copy of each file. If you're

not careful, the iCloud copy won't be up to date, and you could end up with different versions of files on your Mac and PC.

To implement the second method, you'll need folder synchronization software running on both your Mac and your PC. It must be able to see your iCloud Drive so it can copy to it, and it must run automatically. For your Mac, the Mac App Store has good options, such as Folder Sync (\$8.99, apple.co/2gwdzn5).

Backups halt in Sierra

I upgraded to a 27-inch iMac with a 1TB Fusion Drive, but every time it tries to run a Time Machine backup, the process stalls at the same point. I have even bought a new external hard drive, but it won't complete the first backup to that either. Is Time Machine broken in Sierra?

Some users have reported problems backing up with Time Machine, but most of these issues can be fixed. If you can, archive the drive containing your old backups and switch to using the new one, starting afresh with it.

Ensure that Sierra is fully up to date, and that there's ample free space on the external drive to perform a full backup, as well as incremental backups thereafter. It's also wise to check that any migration from your old Mac didn't bring old or buggy software across to your new one, particularly extensions and enhancements.

Turn off Time Machine, connect the new external drive, and restart in macOS Recovery (hold **⌘**+**⌘** at boot). Using Disk Utility there, run First Aid on your Fusion Drive, then initialize the external drive to Mac OS Extended (Journaled) format. Restart your Mac as normal. In Time Machine's preferences, click Options and add any folders you don't want backed up to the exclusions.

Re-enable Time Machine to back up to the new drive. Leave the iMac alone to back up, running no apps; overnight is ideal. If Time Machine sticks again,

Sierra's Console isn't much help in diagnosing it. You could try to use Recovery to reinstall Sierra, erase the new back-up drive, and then try again.

Lost Handoff in Sierra

I upgraded my MacBookPro (Late 2011) with an internal SSD, along with Bluetooth 4.0 (LE) support so I can use Handoff. Now that I've upgraded the MacBook to Sierra, Handoff has stopped working. How can I restore it?

According to Apple, your model of MacBook Pro doesn't support any Continuity features, including Handoff. The oldest MacBook Pro models that support them are those released in Mid 2012. This is despite your upgrade enabling your Mac to support Bluetooth Low Energy.

You can check that by opening System Information and selecting Bluetooth under Hardware in the list on the left. The pane on the right will probably report that Bluetooth Low Energy is supported but Handoff isn't.

When you upgraded your Mac's hardware, El Capitan's Bluetooth drivers were clearly happy to work with the new components.

Unfortunately many people have found that such ad hoc support doesn't extend to macOS Sierra, and the moment they upgraded to that system, Handoff stopped working - probably a result of the new Bluetooth drivers in Sierra.

There is currently nothing that you can do to get Handoff working again under Sierra. Hopefully this will be restored in a future update, but given that Apple considers that your MacBook Pro doesn't support Handoff, it's best that you don't expect it.

Ongoing memory hogs

When running OS X 10.11 El Capitan, Safari, and Safari DAVClient consumed huge amounts of memory - up to 50GB according to Activity Monitor - and I often saw the spinning beach ball and heard the

> iCloud Photo Library mess

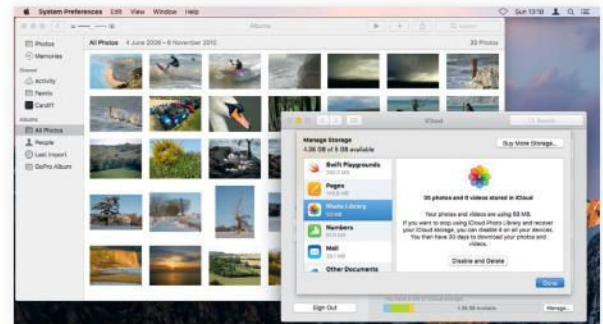
Over many years, I've built a large and carefully ordered photo library, first in iPhoto, and more recently in Photos. I use iCloud Photo Library so that I can access this from all my devices. A few weeks ago I needed to change my Apple ID. Ever since I first signed in to my new account, new albums have proliferated and the library has become badly messed up. How can I restore order?

With a lot of photos and albums, once an iCloud copy becomes corrupted like this, it's very hard to reorganize properly.

One strategy is to get everything back onto a single Mac, kill the iCloud

Photo Library, reorganize the library on that Mac, then turn iCloud Photo Library back on, first on that Mac, then on your other devices. It's best if you ensure that all are upgraded to macOS Sierra and iOS 10 before starting. Killing the iCloud Photo Library is the only step that can be tricky. Once you're confident that

you have the whole library stored locally on your Mac, on an iOS device go to Settings>iCloud>Storage>Manage Storage>iCloud Photo Library and tap Disable and Delete. Or, on a Mac, open System Preferences' iCloud pane, click Manage (bottom right), select Photo Library, then click Disable and Delete.

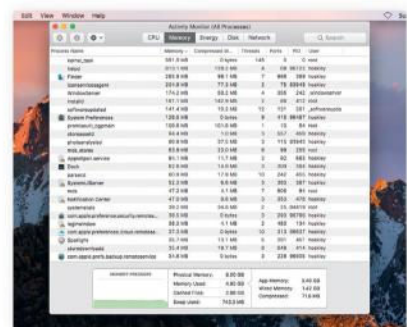


disk in my Mac thrashing. I thought that upgrading to Sierra might fix this, but it continues. What can I do?

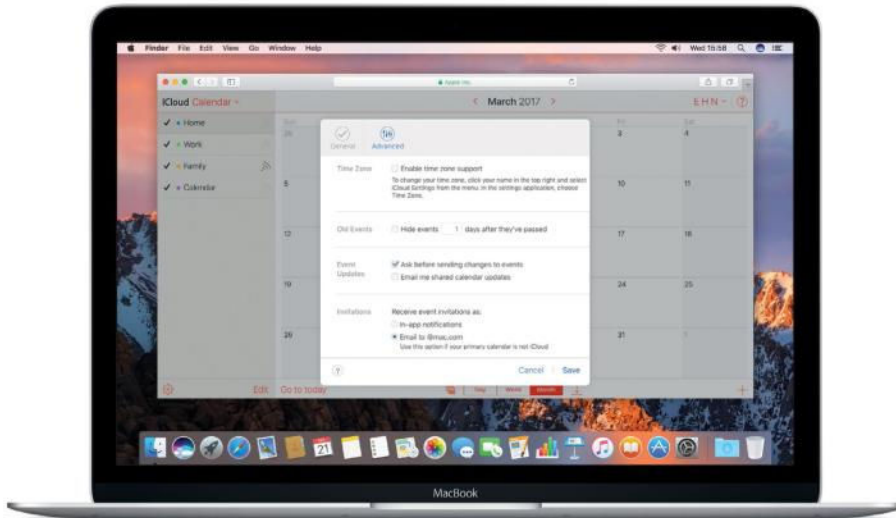
Run a malware checker, such as Malwarebytes (Free, malwarebytes.com/mac), as a common cause of Safari swallowing lots of memory is unwanted software. SafariDAVClient is unusual to see running; find out the cause and ensure the instigator is current and configured correctly.

Next, check Safari for old and unwanted extensions and plugins; extensions are listed in a tab in Safari's prefs, but also check these folders for plug-ins: /Library/Internet Plug-ins and ~/Library/Internet Plug-ins, and look for extensions in ~/Library/Safari/Extensions.

Activity Monitor should still show quite a lot of memory in use; macOS is designed to make best use of what's available, and the Memory Pressure chart on the Memory tab should show



Memory Pressure should almost always be green, and not venture into the red zone. >>>



Block unwanted invitations in Calendar by changing a setting that's only available at [iCloud.com](https://www.icloud.com).

>>> green almost all of the time, and never hit the red. Utilities that claim to “free up” memory are pointless.

Wrong search engine Whichever search engine I choose in Safari, it keeps defaulting back to Yahoo. How can I get it to stick?

This is almost certainly being set by unwanted software on your machine. Like the previous question, check your Mac for that and malware by running the current version of a tool such as Malwarebytes Anti-Malware (Free, bit.ly/2hF6oKi), which should be able to remove any nasties it finds and report back to you.

Next, browse Safari's preferences again, looking for old or suspicious extensions and plugins. In the Extensions tab, and by clicking on the Plug-in Settings button in the Security tab. It's also worth disabling all plugins for the time being, as that can help you track down the culprit.

Follow this up with a manual check of the three folders in which Safari's plugins and extensions are kept: /Library/Internet Plug-ins, ~/Library/Internet Plug-ins, and ~/Library/Safari/Extensions.

Once that's done, set the correct search engine, quit Safari, and then reopen it. If the first anti-malware scan

picked up anything, consider running another scan now to check that there's nothing left behind.

How to stop spam calendar invites Just recently, I've been getting unwanted Calendar appointments inserted automatically from someone who's writing them in Chinese. Have they gained access to my iCloud account, and how can I stop this?

These almost certainly don't result from any failure on your part, or any compromise of your iCloud account.

They result from Calendar's ability to receive push notifications about event invitations that have been sent to you. This feature would normally work as a benefit to you by alerting you when people you know invite you to an event. In fact, anyone can send you invitations. All this spammer has been doing is using your iCloud account's email address to send an event invitation. Apple's servers then convert that into a push notification, which ends up in your calendar.

In the Calendar web app over at [iCloud.com](https://www.icloud.com), there's an option to receive event invitations as emails instead. Sign in through your browser on a Mac or PC using the same Apple

ID and password as on your iOS device, then click Calendar's icon. Click the cog icon (bottom left) and choose Preferences, then click Advanced and, next to Invitations, set “Receive event notifications” to “Email to...”

You'll still receive these spam invitations, but only as emails, and they won't be inserted into your calendar automatically any more.

You can also delete these spam invitations without declining them and inadvertently confirming to the spammer that your email address is active. Move the invitations to a new and otherwise blank calendar, and then delete that calendar to get rid of it and the event invitation at the same time.

Partition location

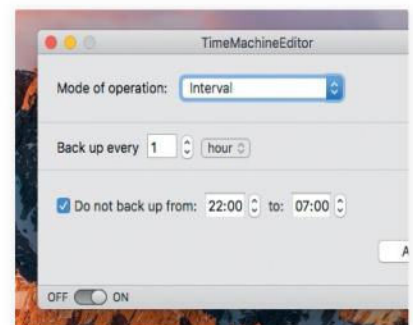
Why can't Boot Camp installer locate its partition?

This can happen if you have a Thunderbolt or USB storage device connected while trying to install Windows in Boot Camp. Disconnect all storage bar the USB media that contains the Windows installer, then start up and try again to install Windows. If that fails, try upgrading to Sierra, if possible.

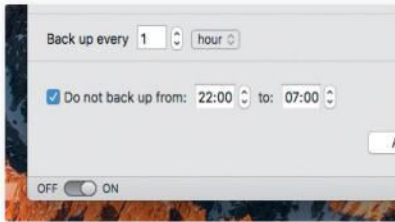
Nightly backups

How can I stop backups occurring during the night?

If you put your Mac to sleep overnight then, by disabling Power Nap in the Energy Saver pane, Time Machine will stop running.



TimeMachineEditor can suspend backups without affecting other Power Nap features.



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Alternatively, TimeMachineEditor (Free, bit.ly/2hI9KFS) can suspend backups between certain hours without affecting other Power Nap capabilities that occur while your Mac is ostensibly asleep.

Dropbox compatibility Is Dropbox compatible with macOS Sierra yet?

Yes, but there can be some problems. Full details are at bit.ly/2grNyFo. Avoid using it with iCloud Drive's Optimize Mac Storage feature or other forms of iCloud syncing, and don't move or rename Dropbox's folder from its defaults. Putting items with aliases into Dropbox can also cause issues.

Security code

Do I really have to use an iCloud Security Code?

No, but if you create one while setting up iCloud Keychain, it adds an extra level of security that enables you to access your keychain on additional devices without the need to approve them from one that's already authorized. It can be six digits, a complex alphanumeric code, or a random code.

Login keychain

How can I repair my login keychain in Sierra?

The Keychain First Aid feature was removed from Keychain Access in OS X 10.11.2 due to a security vulnerability. Unfortunately, all you can do to work around this is create a new keychain and copy the old one's items to it.

> Mail issues in Sierra

I've upgraded to Sierra, and have two issues with Apple Mail. First, I can't find a way to auto delete sent messages after a month, which was configured prior to Sierra. Second, an empty window appears every time I open Mail, which I have to close. How can I solve these problems?

There's no longer a setting in preferences to achieve this. In an account's Mailbox Behaviors' tab, you could

set sent messages to be saved in the Deleted Messages mailbox and have those erased after a month, but this carries the risk that you might erase things early. The blank window problem has occurred in the past when Mail had been upgraded. It's the remains of the Welcome to Mail splash screen, which should have been turned off after the upgraded app ran for the first time. A trick that has fixed this previously is to

open Mail, disable all accounts, quit Mail, open it again, re-enable accounts, quit the app again, and finally open it a third time.

If the window remains, you may be able to kill it by trashing Mail's preferences file, but that would create more work to configure the app again. You may find it simpler to live with it for now. Let's hope a future update to Mail will do away with this for good.



Sssh...

Why is AirPlay music quietened on my Apple TV?

This is because you've enabled the Reduce Loud Sounds feature on your Apple TV. This not only affects video played on that Apple TV, but also music sent from your iOS device via AirPlay. To restore normal volume, go to Settings>Audio and Video in Apple TV's settings.

Damaged app

How can I run an app macOS says is damaged?

You can't, and the only action you can take on it is to put it straight in the Trash.

When you open an app, macOS checks the signature, and if the app's damaged it will fail that check. You will need to obtain an undamaged copy of the app.



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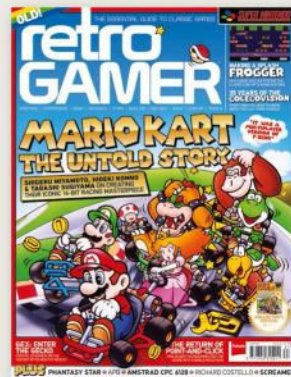
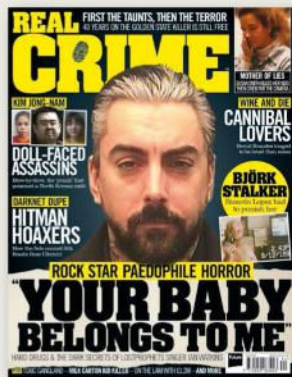


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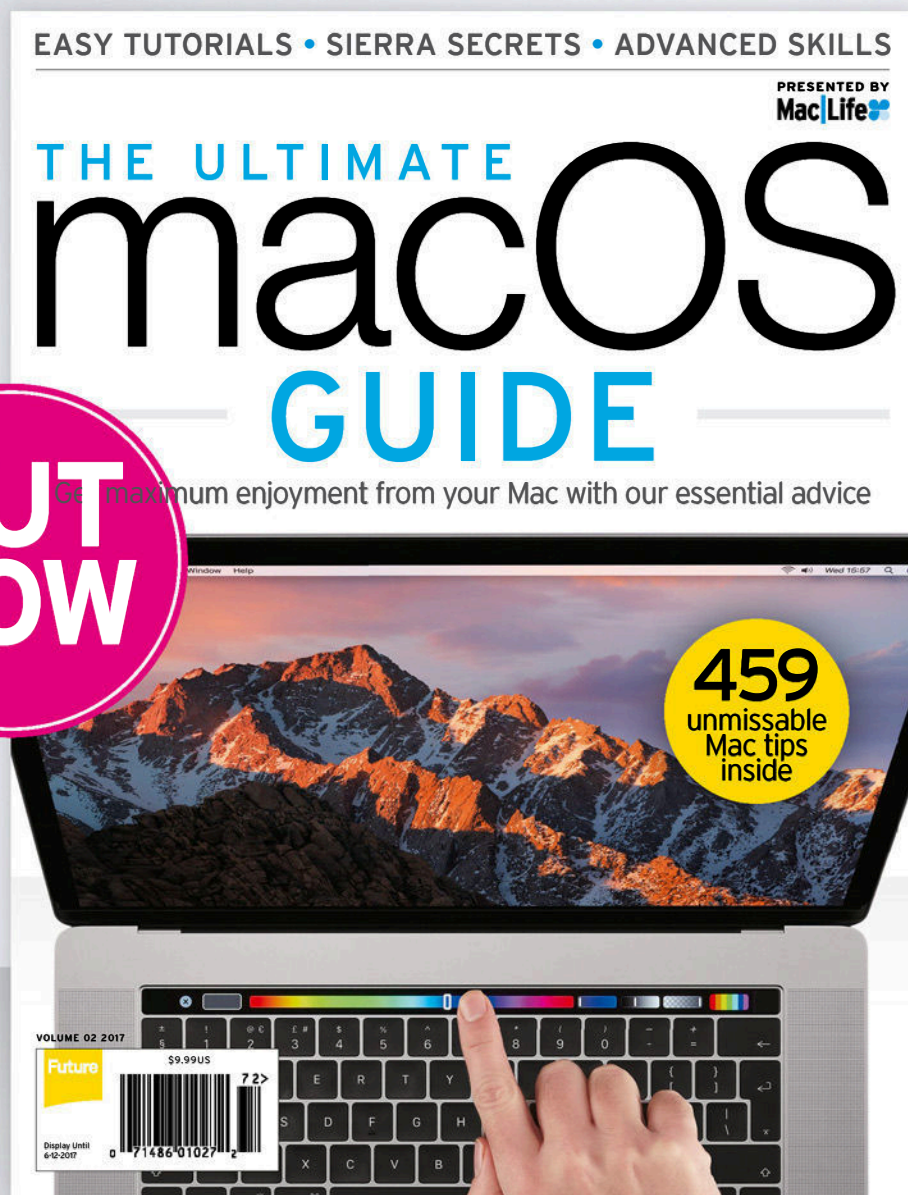
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