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MAC iPHONE iPAD

MARCH 2017 NO.125

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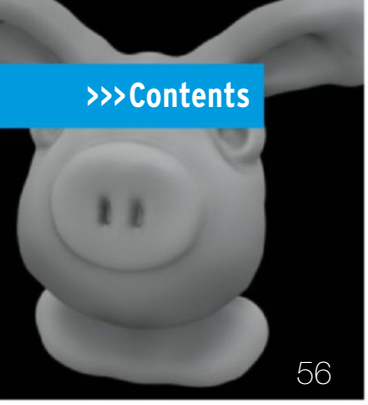

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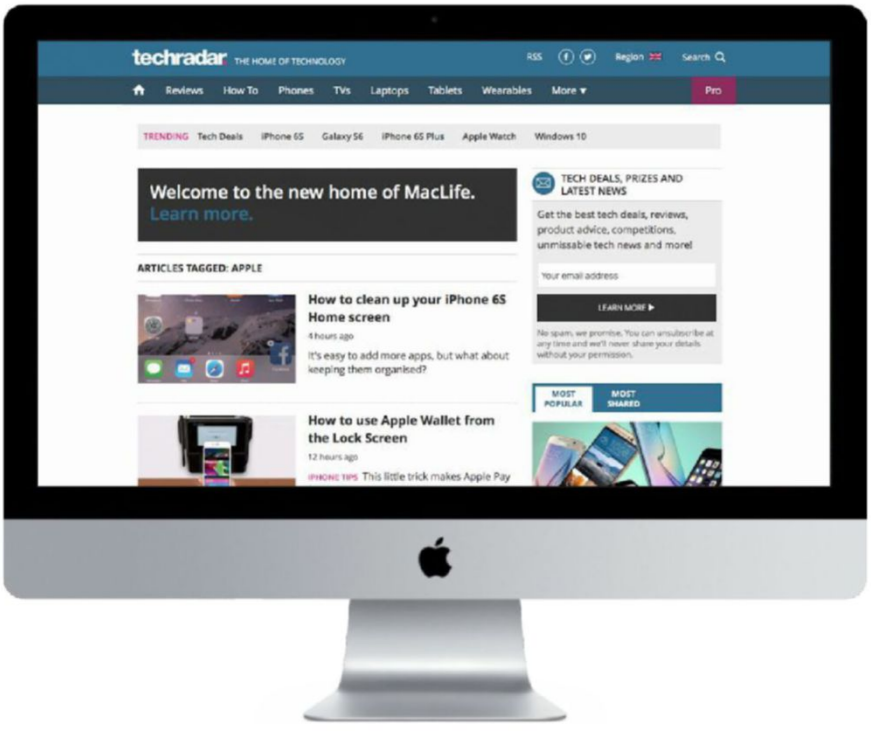

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Volume 11, Issue 3

MAC|LIFE (ISSN 1935-4010) is published monthly by Future US, Inc., One Lombard Street, Suite 200, San Francisco, CA 94111 (650) 872-1642. www.futureus.com. Periodicals postage paid at San Bruno, CA, and at additional mailing offices. Newsstand distribution is handled by Curtis Circulation Company. Basic print subscription rates: 13 issues U.S. $24.95, Foreign: $39.95. U.S. prepaid funds only. Subscriptions do not include newsstand specials.

POSTMASTER: Send address changes to PO Box 2024, Langhorne, PA 19047, USA. Ride-Along Enclosure in the following editions: None. Standard Mail Enclosure in the following editions: None. Canadian returns should be sent to IMEX Global Solutions, PO Box 25542, London, ON N6C 6B2, Canada. Future US, Inc. also publishes **Maximum PC, Official Xbox Magazine, and PC Gamer.**
PRODUCED IN THE UNITED STATES OF AMERICA.

SUBSCRIBER CUSTOMER SERVICE: Mac|Life Customer Care, PO Box 2024, Langhorne, PA 19047, USA. Online: www.myfavouritemagazines.co.uk/youraccount. Toll free: 1-844-779-2822 (Opening hours: Mon- Fri 8am to 7pm; Sat 10am to 2pm EDT). Email: contact@myfavouritemagazines.com.

REPRINTS: Future US, Inc., 4000 Shoreline Court, Suite 400, South San Francisco, CA 94080. Phone: (650) 872-1642. Fax (650) 872-2207. Website: www.futureus.com.

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THE AIRPOD INTERFACE

APPLE'S AIRPODS were introduced alongside the iPhone 7, and at first, they looked like just an accessory to soften the removal of the audio jack. Apple went to lengths to say they're a particularly smart pair of wireless headphones, but they still looked like an answer to a practical question, rather than an amazing new appliance. Certainly, that's what I thought.

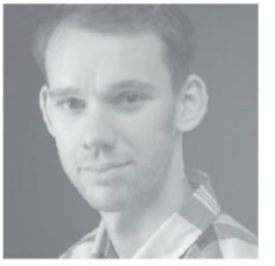
But I'm starting to change my mind. You can read our review of the AirPods on p64, though that's a review of what they're like now, and what I've come to realize is that they're an important step on the road of things to come. The complete lack of wires and all-day battery life (with a bit of charging from their smart case) makes them an interface for your phone you can wear all day without it interfering too much with your life, kind of like the Watch. Double-tap and you can command your iPhone to send messages, book a Lyft, read your appointments, get directions to somewhere (which appear seamlessly on your Watch), and so on. With a Watch and AirPods, your phone could stay in your pocket or bag most of the time now.

It's clear that AI is the future of a huge amount of computer use. Right now, that means using Siri to trigger things both on your phone and in the cloud. But that will change – as more of your data gets stored in the cloud, Siri can be further divorced from your phone without losing functionality. The next step will surely be an Apple Watch with a cellular internet connection of its own, paired with AirPods, talking to AI that's based in the cloud and tailored to your data. It's information at your eartips. In some ways, I see the AirPods as Apple's first product that compares to Google Glass, as massively different as they are.

Of course, the Glass comparison brings up the specter of whether all this is really viable from a social point of view, rather than a technological one. You'll be able to control your life by speaking aloud to nobody in particular… but would you?

MATT BOLTON, Editor
Twitter: @matthewbbolton

>>>THE TEAM



Mat Gartside
Art Editor
Mat's best Mac timesaving tip is to make sure you customize the Dock.

Jo Membery
Operations Editor
Jo uses Automator to perform common tasks with just a few clicks.

Adam Banks
Contributor
The Finder is my mind palace. My mind's a mess, so shortcuts are a must.

LETTER OF THE MONTH

I read with much interest your article on email encryption in issues #121 and #122. The step-by-step instructions are very useful for those who never set up email encryption or know about digital certificates. I would like to recommend that in a future issue, you also write an article on how to do this with a CA (certificate authority) such as Comodo. They provide free certificates, and the benefit is that the recipient of digitally signed email can see that the certificate is valid the first time they received such email – i.e. no need to trust a self-signed certificate beforehand. CHARLES S.

Thanks for the suggestion, Charles! There are big conveniences in using a certificate authority for signing your emails, but they also introduce risk: they're vulnerable to "man-in-the-middle" attacks, where hackers impersonating a CA sign digital certificates and intercept the traffic you're expecting to be secure. In fact, this happened to Comodo in the past, though new security measures have been introduced to mitigate the risk. It's still a good idea, but it's important to know the risks!

The iKlips DUO is great for transferring files between Mac and iOS.

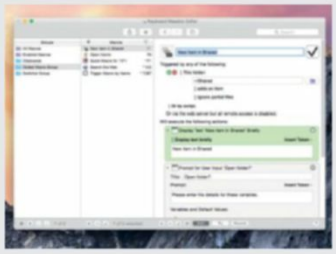
Card copying

When is one going to be able to download items to an SD card or other recording device from iPad? I would also like for the iPad to support a SuperDrive. I now use my iPhone most of the time, but if I photograph a party and want to give people the photos, I give them an SD card with their photos on it. Can't do that if I use my iPhone.
PAT GREENWOOD

I don't think you'll ever be able to do this, unless a company comes out with an accessory and app specifically designed for it (I'm not aware of any). When it comes to sharing things from iOS, Apple's answer seems to always be: the cloud. iCloud Photo Library shared albums (or an equivalent in Dropbox or similar services) are the easiest ways. The closest you could get is a flash drive that connects to the Lightning port (such as Adam Elements iKlips DUO) that also has a USB connection, so you can transfer the photos onto it, then your friends can just plug it into their computer.

Shortcut to success

Regarding the letter "Key problems" in the December issue (#122), I was a long time user of QuicKeys. But that product has not been maintained for a number of years, and really no longer works well if at all with macOS Sierra. But good news: there is an alternative product available called Keyboard Maestro (keyboardmaestro.com). It does all of what QuicKeys did and more, is very powerful, and reasonably priced. Online support for KM is very quick and responsive. I hope you will do a full review on this extremely helpful tool. In the meantime, I highly recommend it.
RICK OBERNDORF



We really like Keyboard Maestro and it's being improved upon all the time.

Great suggestion, Rick! We reviewed Keyboard Maestro's last big update (version 7) back in issue #108 and gave it our "Excellent" rating! It's a fantastic tool.

Settling scores

On the Contents page is four columns. Mark each review with the number of squares the review has. It will save readers sifting through them!
RON STARK

This is an interesting idea, but I'm always wary of highlighting the scores too much. They're useful, but they're one part of the whole – I *want* people to sift through the reviews, so they get the full story on whether a product might work for them despite a mediocre score overall, for example.

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START

FEED YOUR MIND. FEAST YOUR EYES.

Is it the end of the line if your Mac is obsolete?

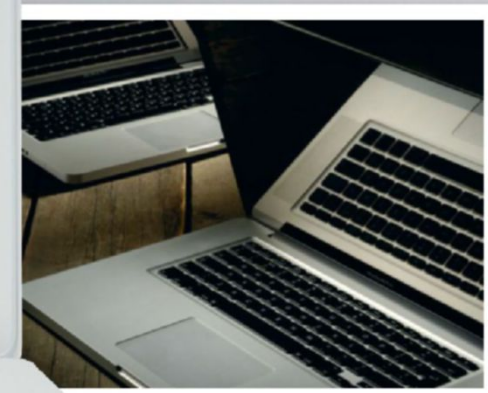
Apple designates Macs as "obsolete" after a period of time. We look at what that means **BY ALEX BLAKE**

GO
FIND OUT HOW TO KEEP OLD MACS RUNNING WELL
p44

APPLE RECENTLY recategorized a number of its Macs as "obsolete" or "vintage." This specifically affected the Early 2009 Mac mini and Mid 2009 13-inch MacBook (obsolete), and the 15- and 17-inch Early 2011 MacBook Pros (vintage). What does this mean, and what can you do if you own one of these?

Obsolete means that Apple will no longer offer official repair support through its retail stores and third-party resellers. Vintage is the same in all regions except California and Turkey, where residents can get limited support on certain products up to two years after they become obsolete. Apple tends to classify its products as obsolete between five and seven years after manufacturing has been discontinued.

There's no need to panic if your Mac is affected and you need to replace a part, though. Companies



Having an obsolete or vintage Mac doesn't mean it's worthless – hardware upgrades can give it new life.

such as iFixit (ifixit.com) publish detailed guides to replacing almost every part in your Mac, should you need to. As long as you can source replacement parts, from eBay for example, and don't mind getting hands-on, repairs can be made. What might be more of a concern is the time and effort you have to invest in replacing parts, rather than having Apple do it for you. For some components, such as the hard drive, this is an easy process (depending on your model of Mac). If a fan or speaker goes, it's much trickier. If keeping your Mac running involves numerous complicated fixes with hard-to-find components, you may be better off buying a new computer.

HARDWARE ISN'T your only consideration when working with an obsolete Mac – you'll need to find out what software it can run. The most important consideration is that Apple no longer offers security updates to any version of OS X earlier than OS X 10.9 Mavericks. How much that's likely to affect you depends on what you do with your Mac – running it offline should be fine, but using it as your main work device could spell trouble. There's no point upgrading the hardware if it falls prey to malware! Swapping your old version of Safari for a recent alternative, such as Camino (caminobrowser.org), and using anti-malware software will help, but you're still at risk when online.

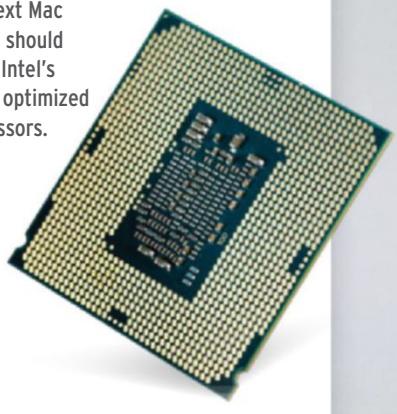
Intel's new graphics-boosting chips

What improvements can we expect from Intel's latest processors? BY MATT BOLTON

IN JANUARY, Intel revealed models of its latest generation of processors, codenamed Kaby Lake, including models that will almost certainly find their way into future MacBook Pros, iMacs, and Mac minis (possibly even by the time you read this in the case of the desktops, though we expect it to take a little longer). Many of Intel's recent releases have focused on battery life improvements, but Kaby Lake will offer similar battery life to existing chips in most cases. In terms of performance, it will be optimized for some specific tasks (including working with and viewing 4K video), but mostly you're looking at a slightly faster version of what we have now. The biggest gains will probably be in Intel's integrated graphics chips, which Apple relies on heavily in many Macs, where performance may increase by around 20% (with the GPUs rebranded to Iris Plus instead of Iris Pro, presumably just to annoy tech writers who have to explain the difference).

AS EVER, we don't know exactly what Apple will use, but Intel announced some chips that are right in Cupertino's comfort zone. For example, the obvious chips for the stock 27-inch iMacs would raise speeds from the current 3.2GHz and 3.3GHz to 3.3GHz and 3.4GHz (the actual improvement would likely be better than those numbers suggest), though the 4K 21-inch iMac is less clear, since Intel has yet to announce any Iris Plus desktop parts. Chips suitable for the MacBook Pro were released too, but we wouldn't expect to see an upgrade for those until late in the year, though these chips would also work nicely for a Mac mini: we might see one with 3.1GHz and 3.3GHz dual-core Core i5 processors as standard, with Iris Plus graphics.

Kaby Lake also supports Thunderbolt 3 across the range, and should be able to lift the 16GB RAM limit of the new MacBook Pros, according to reports. It also supports a new faster type of storage, named Octane, but we suspect Apple is happy with its current ridiculously fast storage.



The next Mac lineup should boast Intel's latest optimized processors.

New ways to touch your iPhone

The next iPhone could have new touch sensor technology. We look at what, and why

BY MATT BOLTON

RUMORS ABOUT THE future of the iPhone come thick and fast, but two relating to new sensor types caught our eye, and seem just crazy enough to maybe work. The first that the iPhone screen's surrounding bezel will be reduced, becoming so small that it cannot accommodate a Home button any more, or the earpiece speaker at the top. The latter can be replaced with a speaker effectively attached to the glass itself, and we'll come to what happens to the Home button later, because the big question here is what happens with Touch ID. Reports say that it's possible for Apple to move the fingerprint sensor under the screen itself, so there might just be a circle that appears on-screen when you lift your phone, and you place your thumb there to unlock it. These sensors already exist, so it's well within Apple's capabilities to produce one, though we're not sure how we feel about an iPhone without the iconic Home button.

Will the next generation of iPhone lose the iconic Home button? As long as we don't lose Touch ID...

The other rumor is that there may be more touch sensors around the phone, either on the side or back, separate to the screen, meaning you'd be able to interact with apps without touching the display. You could slide your thumb down the right edge to scroll websites, or move your finger along the iPhone's edge to quickly scrub through a video; you could zoom when using the camera by sliding your finger along the edge, and take a photo by just tapping your finger gently on top... in all cases, you'd have great control, without obscuring the content you're concentrating on with your fingers. Oh, and this kind of gesture could replace the Home button.

Once upon a time, we'd have said this seemed hugely unlikely, but 3D Touch surprised us, and showed that Apple is open to experimentation with "invisible" options for controlling apps. We like this idea a lot, and though it's just speculation now, we could see it as a potential 7S feature even if the Home button redesign doesn't happen.

3D Touch surprised us, and there may be more sensor surprises in store...

>THE SHIFT

Expectations weigh heavy on the Mac in 2017, and **DAVID CHARTIER** says there's a fork in the road

I'VE WORKED IN and covered the Apple space for over a decade. But for the first time in a long while, it feels like there's real, legitimate unrest among the Mac community. In its quest to evolve and simplify the Mac, it feels like Apple has forgotten who wants the Mac, and why.

Exhibit A: for the first time in about a decade, Consumer Reports decided it cannot recommend the latest MacBook Pro. While the new Touch Bar is a clever addition, Apple's latest pro portables suffer from battery performance fluctuations wild enough that Consumer Reports couldn't sign off on them (Apple has said it's working with Consumer Reports to work out what happened).

Making things more difficult is that the new MacBook Pro lost every kind of port except for the next-generation, incredibly thin USB-C/Thunderbolt 3. Now, most consumers may not have much to upgrade. But professionals usually have hundreds, if not thousands, of dollars' worth of equipment and cables. Eliminating longstanding ports in one fell swoop, instead of gradually, and expecting the pro users to buy new equipment or do the Dongle Dance, has been labeled as everything from shortsighted to inept product design. Considering Apple put all its dongles on a 50% off sale for a few months, I think there's some valid criticism here.

It feels like Apple has forgotten who wants the Mac, and why

Apple saved about a half-pound of weight and made the MacBook Pros thinner. But did so at the expense of a meager performance gain and dropping the ball for professionals – the community for which these machines are designed, or at least named.

EXHIBIT B IS the dust collecting on the Mac Pro. It's a beautiful design, but it's also difficult to upgrade. Plus, Apple hasn't bothered with it in over three years. As of late 2016, the Mac Pro's web page still mentioned Aperture, Apple's pro photo editing and organizing tool it discontinued two years prior.

A few years ago, Apple went "Back to the Mac," using lessons learned from the success of iOS to enhance the Mac. Apple upgraded macOS with iOS-inspired features such as Trackpad gestures, iCloud sync, and Launchpad. But I worry that Apple may have brought too much back to the Mac. It's easy to argue the iPad and maybe even the iPhone have had to get thinner and lighter over the years. But the Mac, and especially the Pros, aren't built for everyone. They have unique needs and customers, and it feels like Apple has forgotten about them in the name of growing the overall Mac base or, worse, being progressive for the sake of it.

Will Apple regain community allegiance in 2017...?

I see two roads for the Mac. Either Apple learns from this stumble and adjusts the Mac's course back to its unique audience and needs. Or the Mac continues its slow descent towards inadequacy and irrelevance, ceding the desktop and notebook market to rejuvenated competitors. Surely, if Tim Cook's promises of new Macs are true, 2017 will show us where Apple's compass points.

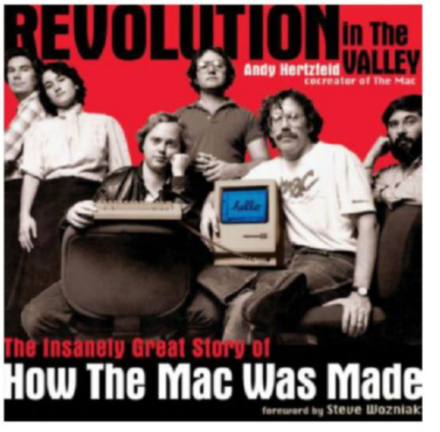
>>> David Chartier is a content strategist and writer with vast experience analyzing the tech world. He runs the website *Finer Things in Tech* (finerthings.in) and hosts its podcast, The Finer Things In.

6 excellent books for Apple fans

Get the inside story of Apple and its products with these great reads!

BY MATT BOLTON

Get an inside look at Apple's products with *Designed by Apple in California*.



Find out more about the history of the Mac.

ANY COMPANY WITH a history stretching back over forty years will have some interesting stories to tell, but we all know that Apple's lore is especially intriguing. It's got a humble beginning, early successes, internal struggles, external villains, betrayal, falls from grace, some very low points, a triumphant return… and we're only up to the late '90s!

There have been many books chronicling not just Apple's history, but also its creations. Here, we've picked some of the best to check out, many of which revolve around its products and Steve Jobs, somewhat inevitably. There are many more out there that talk about its methods and how it's run, but if you're an Apple fan, these are the places to start.

1

Designed by Apple in California

Let's begin with this $199 tome from Apple – a huge coffee table photo book of Apple's product designs over the last 20 years. It's lush, meticulously presented, took eight years to create, and shows products you thought you knew in a new light in many cases.

Apple's co-founder looks back at the early days.

2

Revolution in the Valley

Andy Hertzfeld was one of the key architects of the original Mac, and runs Apple history site folklore.org. In this book, he tells the story behind creating the Mac.

3

Steve Jobs

The official biography of Jobs by Walter Isaacson had access to the man himself shortly before his death, so offers some unique looks into his work.

4

iWoz

Apple's other founder, Steve Wozniak, writes his own story here, up to the creation of the Apple II. It's about those early years of tinkering and pure creation.

5

ICONIC

You'll have seen Jonathan Zufi's work on our pages – his book is full of original images of older and rarer Apple products, as well as the recent stuff. It's brilliant.

6

The Second Coming of Steve Jobs

This is the warts-and-all telling of Jobs' ousting and return to Apple. Stark and honest.

>GAME LOOP

Email hacking is a risk for anyone, and **BRIANNA WU** thinks its time Apple helped make communication more secure

MORE THAN any other tech company, Apple is not afraid to break up legacy formats and face public blowback. It helped kill Flash, the CD-ROM drive, and with the new Retina MacBook having only USB-C, it's only a matter of time before old USB inputs disappear.

For its next magic trick, I'd like to see Apple make our old email protocol disappear. As a public figure, every day I worry that my email will be hacked. And with good reason – email is a shockingly unsafe way to send a message to someone. Although it's usually encrypted in transit through TLS, you can't count on it – and it's still vulnerable while stored on a server. If you use a webmail-based service like Gmail, that information can be subpoenaed by the Government or even stolen by hackers.

The foundation of email protocol was invented in 1982, and it's still in widespread use today. And although services like Gmail and Microsoft Exchange use their own internal formats, it defaults back to SMTP when communicating with other services. In many cases, email ends up in a completely unencrypted format, quite readable in '80s ASCII. I can do everything right my end. I can have a 50-digit randomly generated password. I can have two-factor authentication on, and my email is still not safe. I'm at the mercy of hackers, Government subpoenas, and every server to send my message.

IT DOESN'T need to be this way. When you send an iMessage, you can feel reasonably confident about the security. Apple designed the service with end-to-end encryption, meaning no one at Apple ever has the message in a format they can understand. You trade public keys and private keys with whomever you text. The Government could ask for your text, and Apple might be forced to give it to them – but it wouldn't be in a format it could understand.

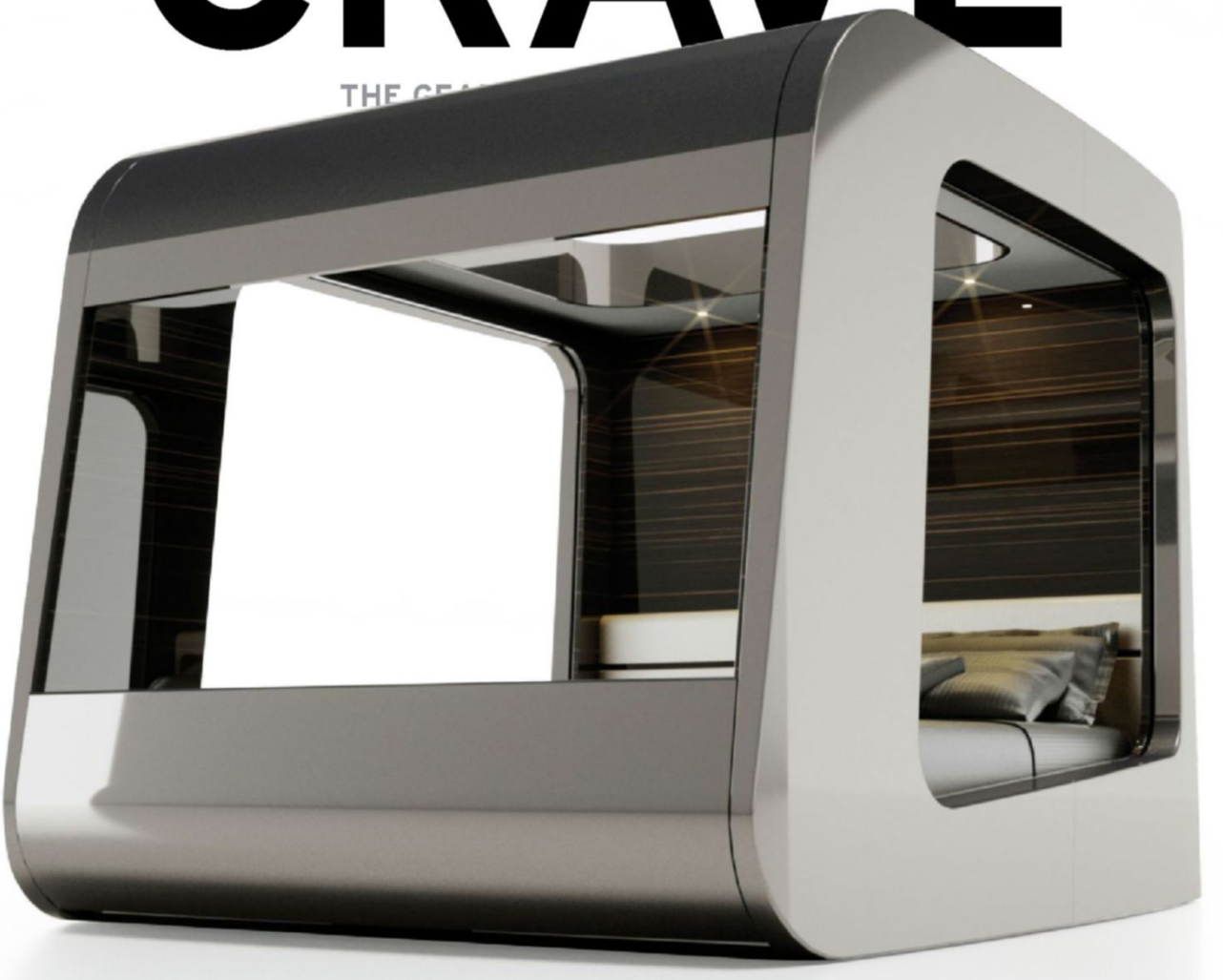
That safeguard really doesn't work with SMS, so you can't count on security when texting friends on Android. But that just speaks to the need for Apple to work with other industry leaders and adopt standards. The Mail app on macOS and iOS has its critics, but it's in wide use. Building a proprietary mail protocol for Apple devices would be a selling point for Apple. Imagine clicking a box in Mail, "Send Securely." Your message would be encrypted and sent out with traditional SMTP methods. If you were on an Apple device, it would be automatically decrypted. If you were on a Windows machine, the email would start with a link to iCloud to register so you could read it. Hopefully, Apple would make this kind of technology open source to foster wider adoption.

If 2016 proved anything, it's that email hacking is a serious threat. The Government can't solve it, Google can't solve it – this is the kind of step forward only Apple can take. Courage.

Even if your password is strong, without end-to-end encryption, your email is vulnerable.

>>> Brianna Wu is the head of development at Giant Spacekat, developer of Revolution 60 on iPhone and iPad, and is a regular speaker at industry events, as well as host on the podcasts Isometric and Rocket.

CRAVE



1 Hi-Can High Fidelity Canopy

Around $38,000
hi-interiors.com

>>> Now you can get your all-important beauty sleep in a revolutionary new smart bed. HiCan's "technological cocoon" is packed with features: configurable touch headboard, automated privacy blinds, dimmable lighting, a motorized footboard with home theater and multimedia capabilities – HD projector and projection screen, integrated surround sound system, Apple TV, and Xbox One or PS4. The height and angle of the mattress are also configurable using the compatible iOS (and Apple Watch) app. It's currently raising funds on Indiegogo.

2 LightMode Helmet Kit: Redesign

lightmodehelmets.com
$149

>>> There's riding a motorbike, and there's riding a motorbike looking like you've just come cruising off the Grid from *Tron*. This Kickstarter project comprises battery-powered electroluminescent lights to transform your bike helmet from the mundane to the realms of cyberspace. Compatible with any helmet, the lighting strips are water-resistant and USB rechargeable. It's a tad "DIY" as a kit – you have to glue down the wire and tape on your helmet, but that makes it affordable and means that each design is unique (find inspiration on the LightMode Helmets Instagram account).

3 BeoSound 1

bang-olufsen.com
$1,495

>>> The BeoSound 1 is a portable wireless speaker that offers 360-degree sound and integrated access to a variety of audio sources. The speaker can connect with Google Cast, AirPlay, and DLNA (as well as the free BeoMusic app) via Bluetooth or Wi-Fi, and it boasts integrated access to Spotify, Deezer, QPlay, and internet radio TuneIn. The Acoustic Lens Technology results in room-wide sound that promises delivery in volume and detail, and the touch-control feature has a built-in proximity sensor, which activates the speaker in preparation for your control.

4 Canon ME20F-SH

usa.canon.com
$19,999

>>> Infrared cameras are useful while shooting in really dark conditions, but the resulting videos are usually more creepy than visually impressive. The Canon ME20F-SH is a high-ISO shooter that can capture crystal-clear images in near pitch-black conditions. Billed as the company's first ultra-high-sensitivity multi-purpose camera, the ME20F-SH uses a full-frame, 35mm CMOS sensor with massive photosites, enabling it to record quality HD video (little to no noise, accurate colors) in settings with illumination as low as 0.0005 lux – about the same level as an overcast night...

Essential macOS Timesavers

Sierra is the Mac's smartest, most powerful operating system ever. **Nik Rawlinson** shows 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

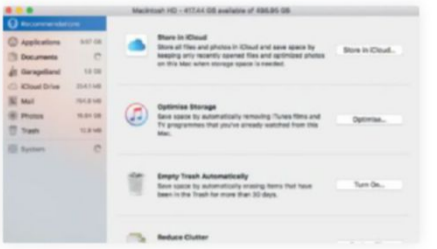
The key new improvements in macOS Sierra

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 ⌘+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 p30 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

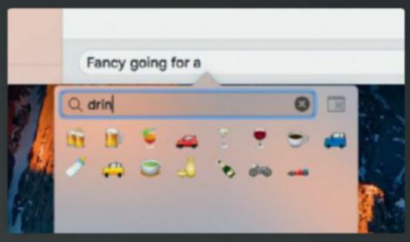
Top tips for getting your work done faster and for sharing it more easily

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.



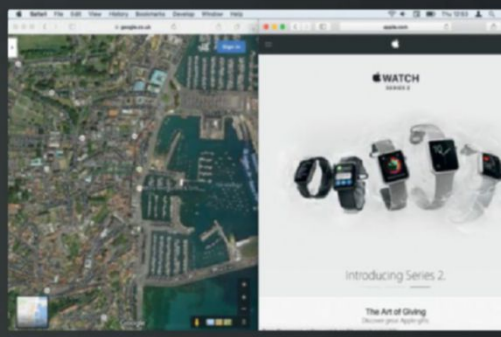
5 FOCUS WITH DARK MODE
In the General prefs pane you can make the menu bar and Dock dimmer, helping you to focus better on editing images, say. (Spotlight's affected too, but not Notification Center). Use the item above that to set the highlight color for controls to graphite and dim the colored window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

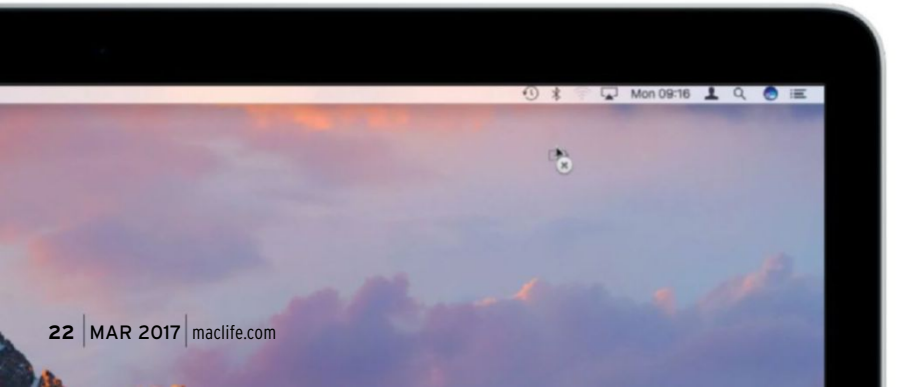
THE LATEST operating system comes with an ever-evolving collection of apps that greatly add to your Mac's total value. Many of them have gained helpful enhancements in Sierra, and new features, such as Siri, offer you fresh ways to work.

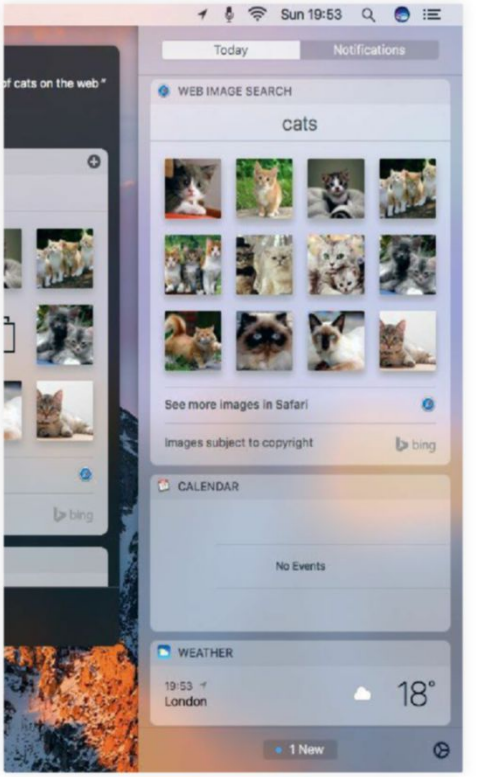
Though the bundled apps and built-in features can each be used in isolation, some interact to save you time. Sierra detects new people and events in more apps than just Mail, and adds them to Calendar and Contacts if that behavior is enabled in the latter two apps' General prefs. Let's look at other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

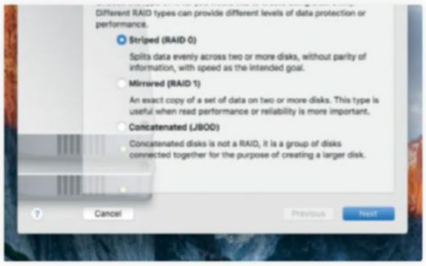
If you need images to use in a document, say, you can ask Siri to "Search the web for Golden Gate Bridge" and then drag results from its window onto the page. Notice the results pane has a + in the corner; click this to add the results, or any other list such as recent Pages documents, to Notification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

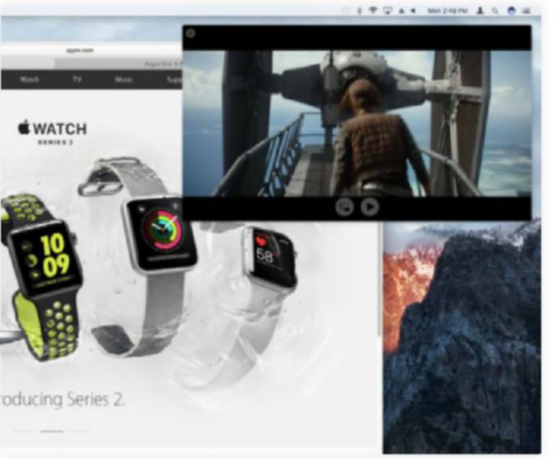
PHOTOS

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.

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 ⌘ and drag it to place it anywhere, not just in a corner.



NOTES

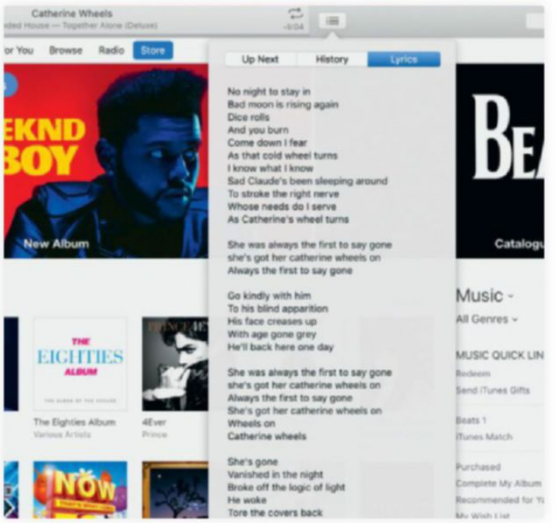
After previously gaining the ability to make memos that contain more than just text, the version of Notes in Sierra (and iOS 10) enables you to collaborate with other people over iCloud. From the note you want to share, click the icon of a person on the toolbar, and enter email addresses or phone numbers 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.

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

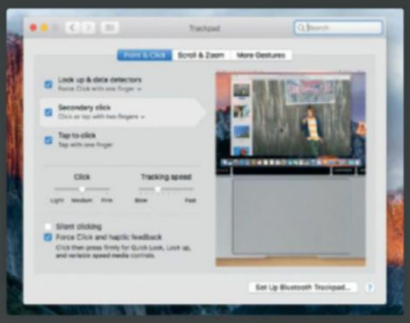
Forget the menu bar – use swipes and gestures for easy control

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 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.



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

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.

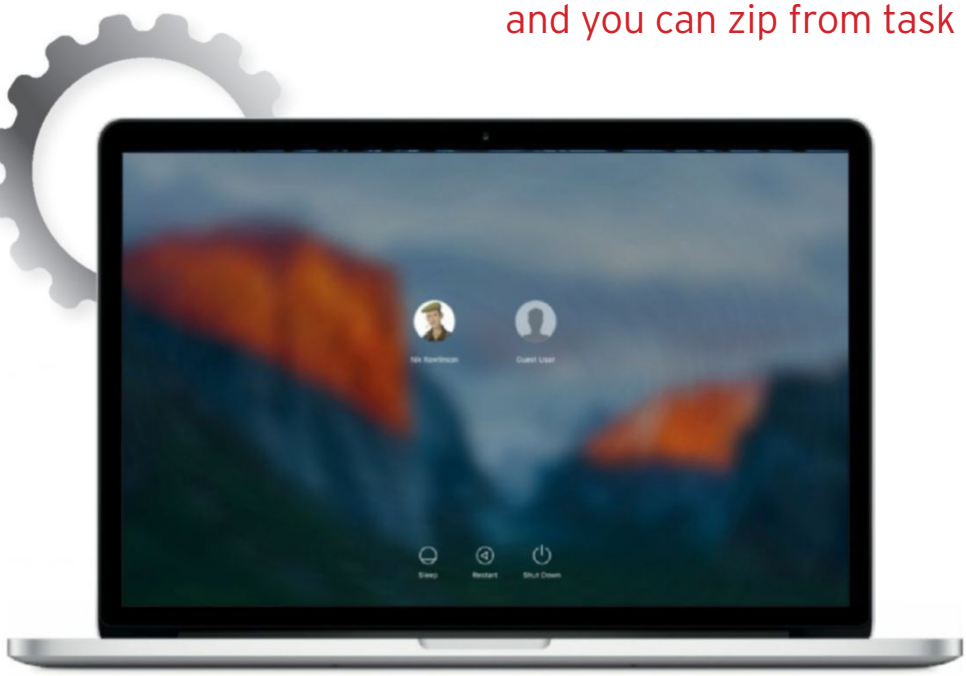
MAKE USE OF FORCE TOUCH

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

The Force Quit key combo (⌘+Alt+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.

Force Quit can quickly tell you which apps have crashed.

HIDE EVERYTHING

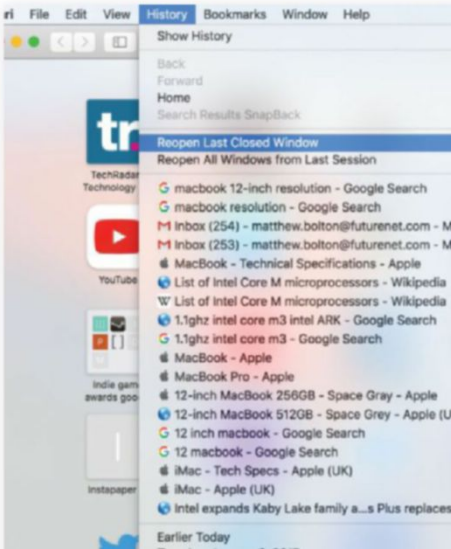
You may know that ⌘+H hides all of the active app's windows, and that you can click the app's Dock icon to bring them back. If you have a screen full of sensitive info in multiple apps, you might put the display to sleep using a method described at **apple.co/2frGvfl**, which differ between models.

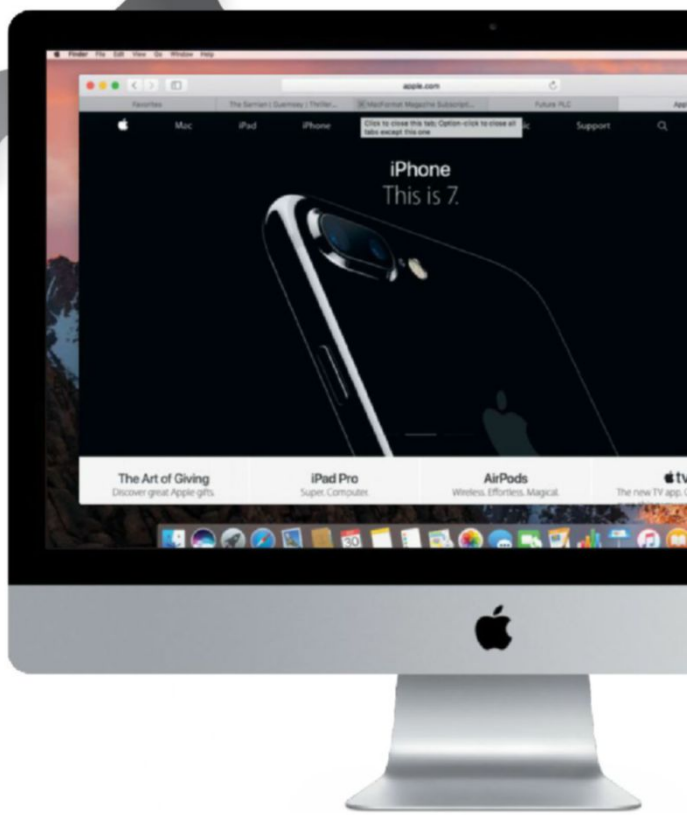
SECURE YOUR MAC

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 ⌘+⇧+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": ctrl+T swaps the characters either side of the text cursor.

MOVE OR COPY FILES

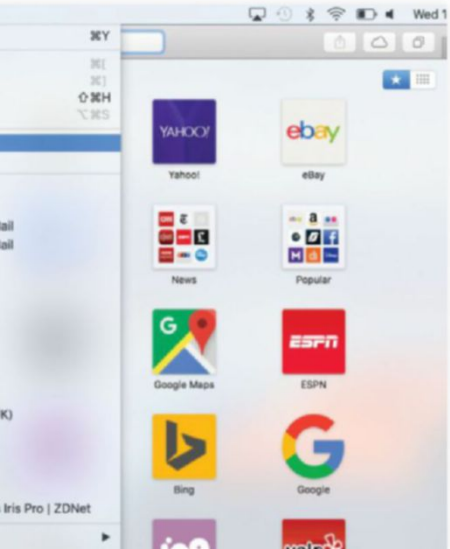
Dragging a file between two folders on the same drive moves it from one to the other, but doing so between different drives copies it. Hold ⌘ when dragging between drives to move a file, saving you the task of deleting the original. Hold Alt when dragging between folders on the same drive to create a 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 ctrl 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 ctrl+⇥ or ctrl+⇧+⇥ to advance right or left, respectively, along the tab bar with each press.



It's easy to reopen accidentally closed Safari tabs.

NAVIGATE WITHOUT A MOUSE

When your trackpad or mouse battery is flat, just press ctrl+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 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/2fZOO6f**, **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

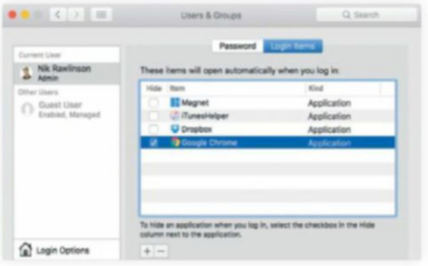
THE NEW MacBook Pro's Touch Bar puts contextual shortcuts at your fingertips without you having to recall key combos that trigger menu items.

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.

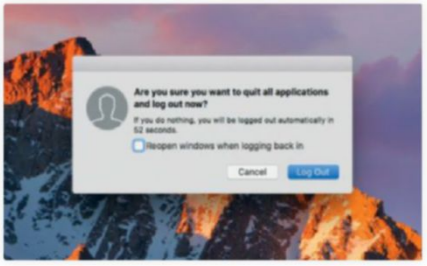
In the Keyboard pane's Text tab, you can stop typing suggestions appearing in the bar for all apps. While in an app, choose View > Customize Touch Bar to find an option to disable suggestions only for that one, and sometimes additional shortcuts you can add to the bar.

HOW TO Make startup speedier



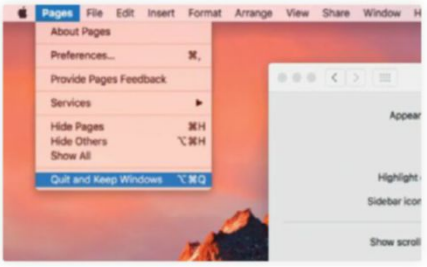
1 Login items

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 > 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.

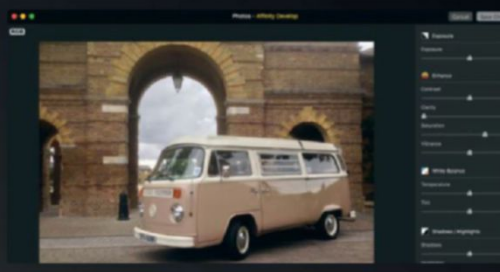
Customize Sierra with third-party apps

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

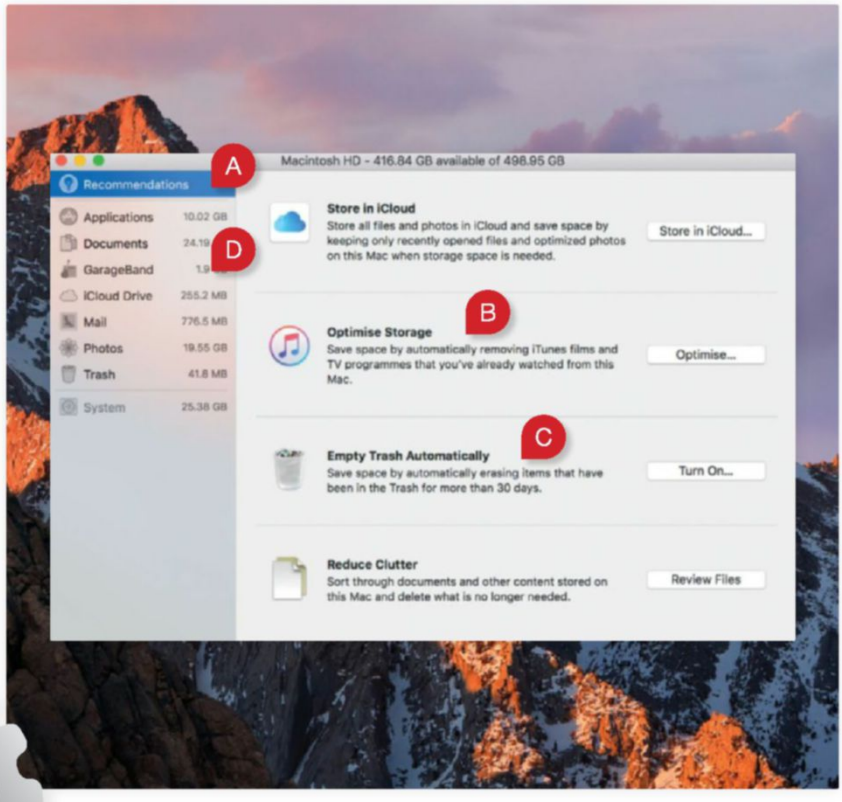
$4.99 fluidapp.com

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.

Manage your files more efficiently



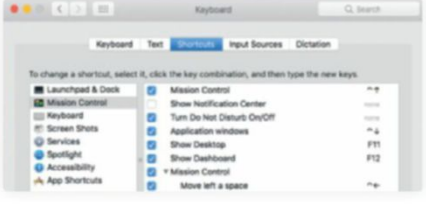
A The Optimized Storage feature helps free up space. Go to > About this Mac, click Storage, then Manage. Its first suggestion can turn on iCloud Photo Library in Photos, and put Documents and Desktop online.

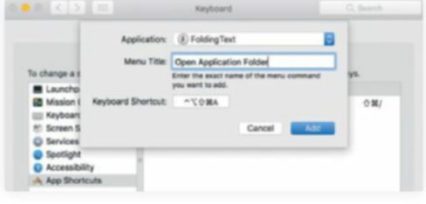
B The next suggestion is more discerning, with options to only download recent email attachments (or none at all) and to remove movies and TV episodes once watched (you can redownload past purchases later.

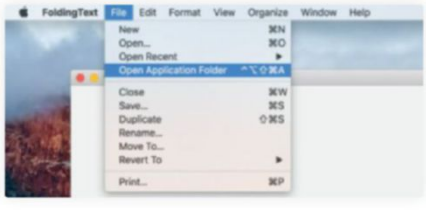
C Be careful with this option, which removes items from the Trash when they've been there more than 30 days; as long as you use Trash properly, only putting things in that you're sure you won't need again, this is a useful auto space saver.

D GarageBand's sound library may be taking up several GB of storage; select GarageBand (or Music Creation) on the left for an option to remove it. To get it back, go to GarageBand > Sound Library submenu in music creation tool.

HOW TO Assign your own keyboard shortcuts







1 Where to add

If a menu item you use often lacks a predefined keyboard shortcut, you can add your own. You can set shortcuts to work in a specific app or all of them (handy for common items). Start by going to System Preferences' Keyboard pane and clicking the Shortcuts tab.

2 What's available

Many shortcuts provided by Apple aren't active by default. Click through the categories on the left and scroll through the items on the right; check whether the item you want to access quickly is listed. If it is, simply put a check mark in the box on its left side.

3 Set your own

Otherwise, click App Shortcuts, then the + button below the right pane. Optionally, limit the shortcut to a single app. Type the menu item's title exactly as it's written (press Alt+; to type an ellipsis), then click the shortcut box and press the combo you want to use.

Future

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GET MORE FROM
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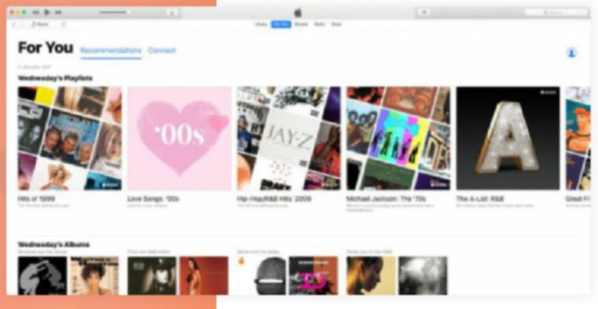
Alan Stonebridge shows you how to get the best value from tailored suggestions, millions of tracks and other great music features

WHILE THERE ARE numerous other music streaming services around, there's something to be said for close integration with all your Apple devices. You may already have thousands of songs stored in iTunes and simply want the easiest option. That is, of course, Apple Music, but what do you get for your money? This feature explains its features, and you'll learn useful techniques to help ensure you're getting great value from the service.

As a new subscriber, you can sign up for a no-commitment, three-month trial that won't cost you a cent. Perhaps you did that already when Apple Music launched in 2015. If you can set aside your bad memories of its poor integration with iTunes and iOS at that time, you'll soon see that the revamped interface makes Apple Music in 2017 a far more compelling experience.

What is Apple Music?

Your existing library and millions more tracks on demand



The redesigned Apple Music has better iTunes integration and clearer navigation.

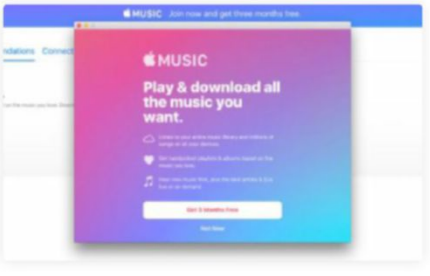
THE TIME when you had to decide which music to spend your hard-earned cash on are a thing of the past. Apple Music gives you access to so many options that you'll always have something fresh and exciting to play, for no more each month than you might have paid for each album in the past.

Apple Music provides recommendations tailored to your individual tastes, and you can search its millions of tracks manually too, add them to playlists, and download them to play offline. Not everything available from the iTunes Store or rival services is on Apple Music – some artists have resisted streaming services. Nevertheless, new releases are often available on day one or soon after. Even Kanye West's *The Life of Pablo*, initially said to "never be on Apple," is there.

Apple Music doesn't mean leaving behind the collection you've built over the years; iCloud Music Library puts it online so you can access it when you want, without syncing with iTunes on your Mac. Apple Music works on Mac and Windows PCs, iOS, Apple TV, and Apple Watch, and even Android devices running Android OS 4.3 or higher.

Find out below how to sign up and, if you're new to the service, enjoy your first three months for free. The minimum term is one month, so you can cancel any time without worrying about a long-term commitment. However, we think you'll soon forget about buying music and keep subscribing.

HOW TO Sign up and subscribe



1 Start signing up

In iTunes on your Mac or Music on iOS, go to the For You page (iTunes > Music). If you haven't subscribed already, click Choose Your Plan. You can cancel the subscription you're about to set up at any time.

2 Choose a plan

You'll see the three plans (details on opposite page). Select one, click Start Free 3 Months, then sign in using the Apple ID you use for the iTunes Store – enabling your past track purchases to appear in iCloud Music Library.

3 Indicate your tastes

You'll be asked to identify genres and artists you like, used as initial clues for personalized recommendations. After this, you'll see the For You feature (see page 36). If you want to cancel the trial or subscription, refer to page 42.

What it costs

Make sure you're not paying more than you need to

ONE PERSON
$9.99 per month

If you haven't got a partner or kids to share your music collection with, and you're not a student, this is the Apple Music subscription for you. It provides you with access to all of the features we've mentioned already and plenty more that you'll read about in detail over the next few pages. If the disproportionate cost of an individual subscription compared to a six-person family sub annoys you, read the money-saving advice just below, which can help you save a significant amount on a year's subscription.

FAMILY
$14.99 per month

Up to six people in a family can get a more affordable rate than by signing up individually. Each member can play different music at the same time (individual subs play only on one device at a time). Each member gets full Apple Music access, including their own iCloud Music Library. You'll need to set up Family Sharing to use this type of sub; full details are at apple.co/2iAP6zS; among the most appealing features are the ability to authorize or reject your kids' purchases, and access to each other's music and other media.

STUDENTS
$4.99 per month

As a college student, you can get a 50% discount on monthly pricing for individuals. Student membership can last for up to four years; Apple uses the UNiDAYS service to verify that your status still applies and whether you've reached the 48-month limit it imposes on student sign-ups; if that happens, it'll switch you to the $9.99 rate. However, those 48 months don't have to be taken in a continuous block, which might help if you're taking a year off, for example.

How to save money

IF THE special pricing for families and students leaves you feeling a little shortchanged as an individual, you can save some money on a year's service by paying up front. This will give you 12 months of Apple Music for the same price that would normally only get you 10 months of it.

That works out at $9.25 per month, saving you almost $20 over the course of a year and bringing the annual total down into more palatable double digits. Of course, taking advantage of this requires you to have a hundred bucks to spare right now.

You can obtain this discounted pricing at apple.co/2egdB1W, as a gift card that's delivered as a physical item or by email. Take care not to leave the form on that page set to a three-month subscription, which gives no discount over simply paying monthly.

You can also pay for Apple Music with iTunes Gift Cards, so look out for discounts on these at online retailers!

You can save 17 percent on a year of Apple Music.

Personal suggestions

Discover artists and tracks picked especially for you

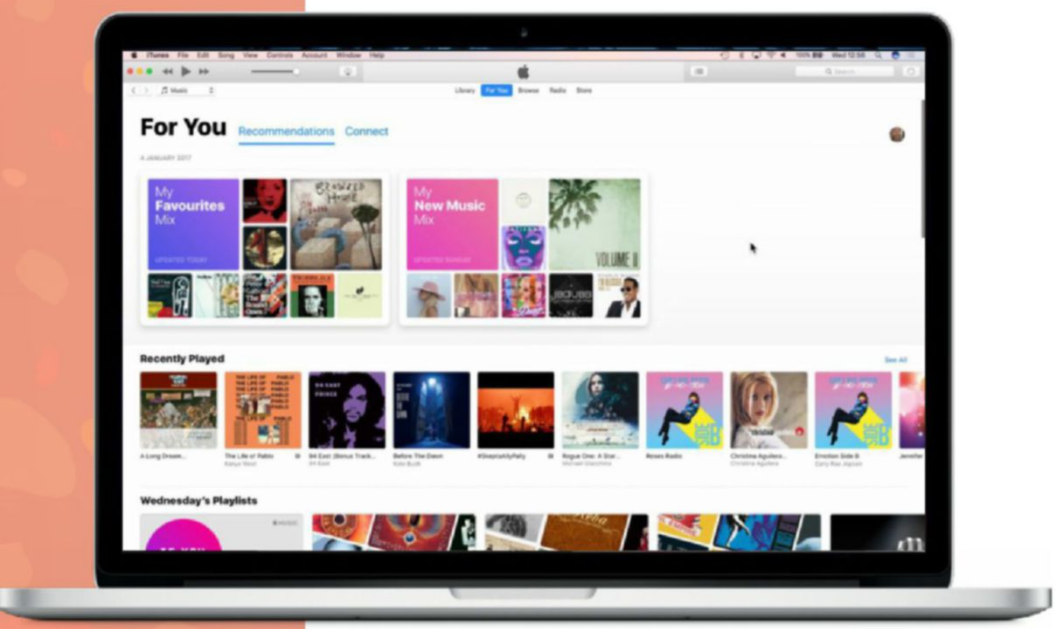
THE **"FOR YOU"** feature provides personalized recommendations of music it thinks you'll like, based on your listening habits and feedback. Click it near the top of iTunes, or tap it at the bottom of iOS's Music app. You'll see two special mixes: one of new music it thinks you might like, which updates on Fridays, and another of tracks you've indicated you love, which refreshes on Wednesdays. These are a quick way to play songs that fit your overall tastes.

If you have time to put in a bit more effort, lower down the page you can explore categorized suggestions. Note that the selection of albums, updated daily, identifies the basis of their suggestion, helping you weed out any that don't fit your mood.

TELL APPLE MUSIC WHICH SONGS YOU LOVE OR DISLIKE TO INFLUENCE SUGGESTIONS

Some rows say "See All" at their end; click those words on the New Releases row and you'll be able to browse further back by release date.

On your Mac, note the subsections next to the For You heading at the top of the page. Click Connect there to read posts from artists and curators; those you identified when signing up to Apple Music, and artists whose music you've bought from the iTunes Store. On iOS, these posts are found below For You's other content. To manage who you're following, choose Account > Following (Mac), or tap Following alongside the Connect Posts headline (iOS). To follow someone specific, enter their name in the search bar/page, click or tap them in the results, then click or tap the ellipsis that's displayed near their name and choose Follow.



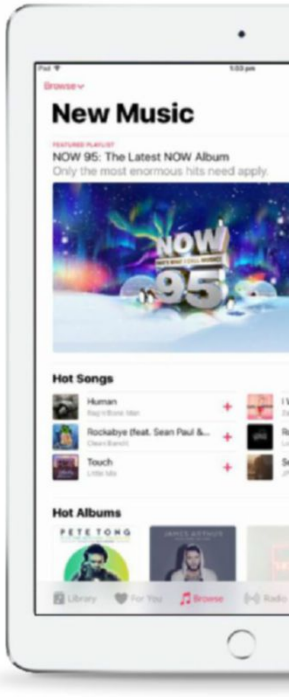
Go to the For You page when you want to discover new music that's tailored to you.

HOW TO GUIDE SUGGESTIONS

We mentioned earlier that items in For You are affected by your feedback. To provide information about an item, whether it's in your library or elsewhere on Apple Music, click or tap on the ellipsis shown next to it, or press firmly on the item if your device has a 3D Touch screen, and choose Love or Dislike.

Browse freely

Explore new releases and what's hot right now



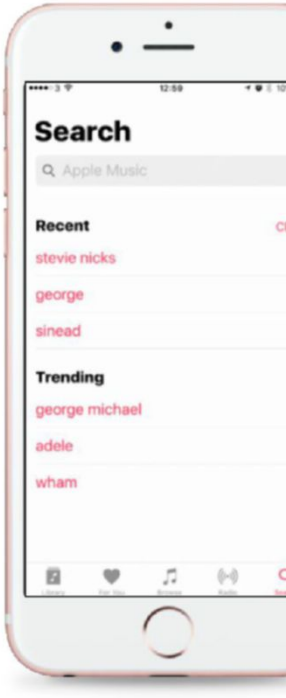
WHAT IF you want to see music that's new or hot? In this case, head to the Browse page. Like For You, there are several subsections listed next to the heading at the top of the Browse page. (On iOS, they're listed lower down the page.) These enable you to browse what's new, charts of what's popular, videos, playlists curated by Apple Music's editors and third parties (such as Abbey Road Studios, Motown, and other brands both big and small), or you can browse by genre to find more specific sounds.

The content in the Browse section isn't tailored. It's about promoting things on the basis of being new or popular. However, the curation aspect, notably of playlists, means you can expect a certain level of quality. Take time to check out the specifics of each subsection. Playlists, for example, contains a whole group that's been picked with certain activities and moods in mind, so you're bound to find something to help you chill, spur you on through a workout, or get a party going.

Videos contains more than just pop promos. You'll also find documentaries and live shows. In macOS Sierra, you can easily enjoy long videos while you get on with other tasks: click the Picture in Picture icon on a video that's playing to put it in a window in a corner of the screen.

Find things manually

Listen to exactly what springs to mind with just a few taps



YOU'RE NOT limited to using the For You and Browse pages to find things in the huge Apple Music library, of course. Click in iTunes' search bar or tap Search at the bottom of Music on iOS, then ensure the option to search Apple Music rather than your library is selected. Before you type in the search bar, check the lists of your recent searches and others that are popular among Apple Music subscribers below it; you may not need to type anything at all. You'll also see an option to clear your recent searches.

Otherwise, click or tap in the search bar and then type; suggestions of what you might be looking for are shown in the list; use the arrow keys and then ↵ to choose one, or continue typing and then press ↵ to display results that match your entry fill most of iTunes' window or your iOS device's screen.

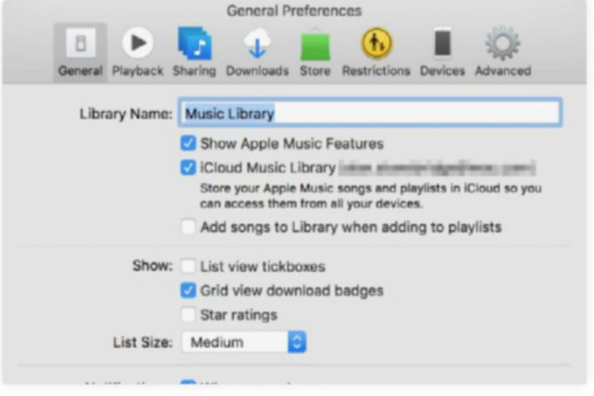
FIND LYRICS FOR A SONG

You may not have to search the web for lyrics to songs in Apple Music's library; they're included with many of them. To see them for the currently playing song, click the button to the right of iTunes' status area, then click the Lyrics tab. On iOS, tap the Now Playing bar and then swipe up on its expanded view; if a song has lyrics, they're shown just below the Shuffle and Repeat buttons.

iCloud Music Library

Make your existing music collection available on all devices

Connect your other Macs to iCloud Music Library in iTunes' General prefs.



HAVING on-demand access to millions of songs is just part of what an Apple Music subscription offers, and you may be wondering what happens with all the music that's in your iTunes library. You may have acquired tracks from the iTunes Store and its rivals, and imported tracks from CDs or other physical formats. From the latter type, you may have music that isn't available through Apple Music or any other download or streaming service. Thankfully, the music in your iTunes library isn't confined to your Mac.

Apple Music provides a feature called iCloud Music Library that makes your personal music collection stored in iTunes available on all of your devices, including Windows PCs running iTunes and Android devices using the Apple Music app. This is achieved without you having to mess around with the old-fashioned method of syncing other devices with your Mac. Instead, your library there is inspected and any music that's also available in Apple Music's massive collection is immediately available to you on all your devices. This includes any music you have bought from other download store or a physical format.

Songs you've purchased from the iTunes Store are automatically part of your iCloud Music Library as long as you use the same Apple ID to subscribe to Apple Music as you did to sign in and buy them from the iTunes Store.

TRACKS APPLE LACKS

Any of your tracks that aren't featured in Apple Music are then uploaded to iCloud, though they have to meet some criteria. The time it will take for all such tracks to be added to your iCloud Music Library and playable on all your devices depends on a combination of how many of those tracks you have and your internet connection's upload speed (often a lot slower than for downloads). Taking these into account, it may take several days for your entire library to become available to play on all your devices.

Despite the iCloud in its name, tracks that are uploaded to iCloud Music Library aren't counted against your iCloud account's storage quota. The only cost Apple charges is your Apple Music subscription.

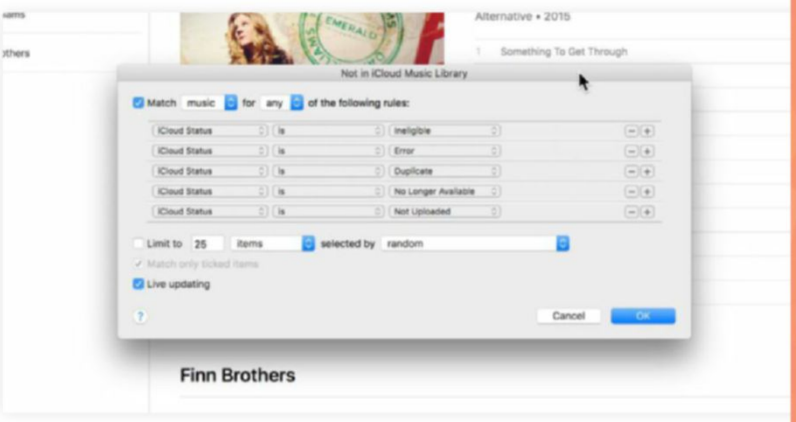
If this kind of syncing is all you want from Apple Music, read the box "What about

What about iTunes Match?

>>> If iCloud Music Library is the only part of Apple Music that interests you, Apple offers a second, lower cost service called iTunes Match for this purpose at $24.99/year.

To sign up, pick Music at the top left of iTunes, click Store to the right, then click iTunes Match under Quick Links in the right column of the storefront.

There's no need to have both iTunes Match and Apple Music subscriptions. To stop whichever service you don't want, pick Account > View My Account, sign in with your Apple ID, scroll down to Settings then click Manage next to Subscriptions. Near the button that cancels a service is the date until which you'll retain its benefits.



This playlist shows tracks that aren't in iCloud Music Library; you get details of why they're not included, such as Not Uploaded or No Longer Available.

iTunes Match" because this will save you a lot of money.

Tracks that have to be uploaded are only processed if they conform to a few rules. They must be under 200MB in size or less than two hours long. Up to 100,000 songs can be uploaded to your iCloud Music Library (songs from the iTunes Store don't count towards this limit) and so if you have more than that in your iTunes library, you'll need to consider pruning your main iTunes library. Items that are in a high-quality format – such as Apple Lossless, WAV, or AIFF – are uploaded in AAC format at 256kbps (the same quality as tracks from the iTunes Store), and the original remains on your Mac.

There are some minimum quality requirements, too. If a track is already in MP3 or AAC format, its bit rate can't be 96kbps (kilobits per second) or less; such low-quality tracks are ineligible to be added to iCloud Music Library – see the guide to the right for icons that indicate this and other statuses. Bear in mind that you can use a Smart Playlist (File > New > Smart Playlist) like the one shown in the screen above to check which, if any, of your music can't be uploaded to iCloud Music Library.

Sadly, there's a downside to Apple's track matching technology: the track that plays on your other devices may not be the version you expect. It may be a censored version, for example, even if the lyrics are only mildly offensive, as we found with the phrase "his broke ass" in TLC's *No Scrubs*.

One thing Apple notes, though not prominently enough, is that you shouldn't treat iCloud Music Library as a backup. Software glitches or accidental deletion of a track from your library aren't necessarily trivial to recover from. Back up your entire iTunes library to an external drive, update the backup periodically, and ideally store it at another location than your Mac. SuperDuper is a good tool for this ($27.95, shirt-pocket.com).

Status icons

>>> This item is in iCloud Music Library and can be streamed; click to download a local copy.

>>> A version of this item is in your library, so this version wasn't duplicated to iCloud Music Library.

>>> This item is yet to be matched or uploaded to iCloud Music Library. The song may have been added on iOS but can't be matched; if you have the song on your Mac, enable iCloud Music Library on it.

>>> Songs removed from iCloud using iOS are still on your Mac. You can delete this manually.

>>> The track is ineligible to upload due to size or quality, or bought using another Apple ID.

>>> Uploading failed. Choose File > Library > Update... to try again, or reimport the item if its file is damaged.

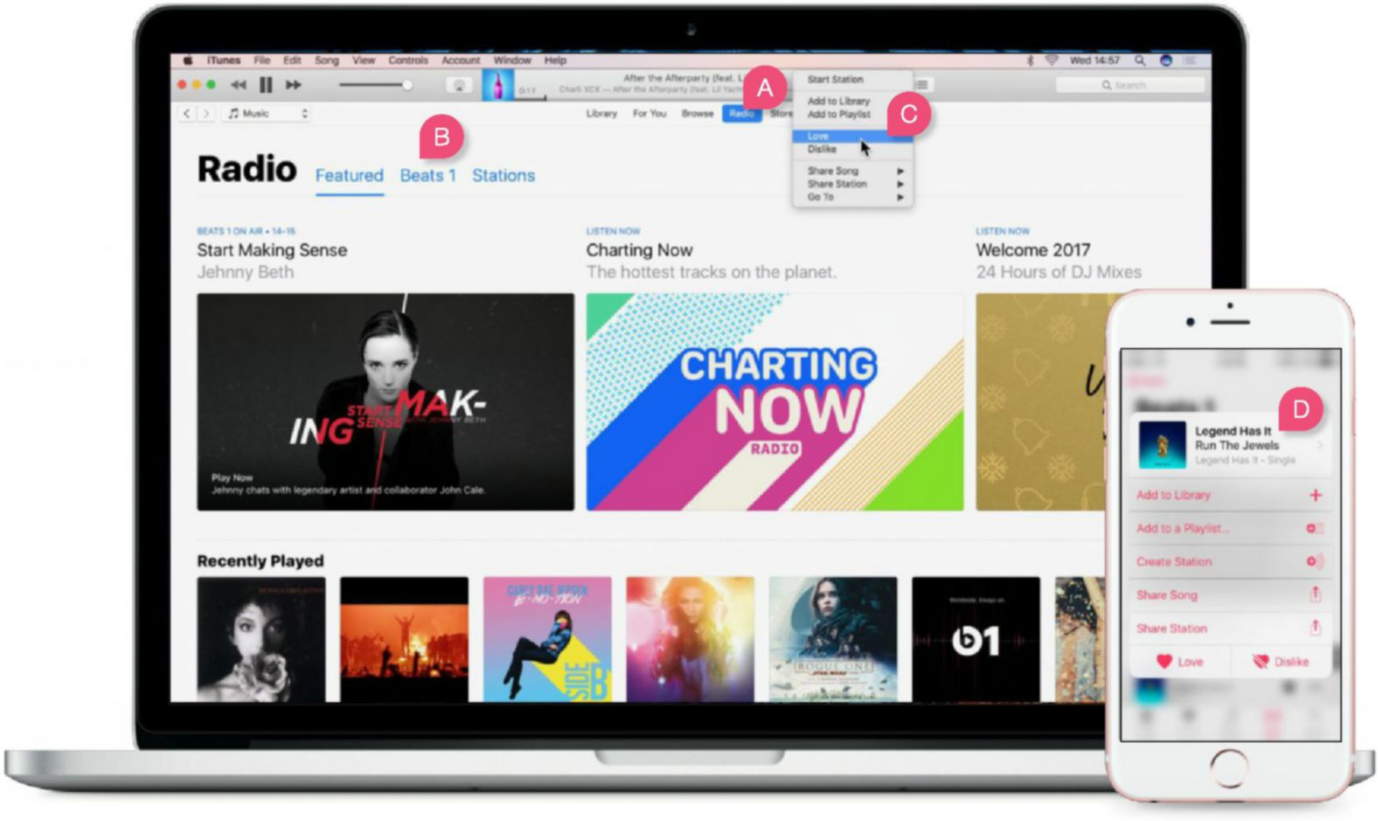
>>> The item has been removed from Apple Music's library, so you're unable to play it again.

>>> When you set up iCloud Music Library or update it, this appears top right of iTunes.

>>> iTunes can't reach iCloud Music Library (check you are online), or you've hit the 100,000-track limit.

Internet radio

Soak up cool new sounds or familiar hits with curated online radio



A **PPLE MUSIC'S** debut in 2015 was joined by Apple's own internet radio station, Beats 1. You don't need to subscribe, though doing so enables you to listen to shows after they've aired, in full broadcast form or as playlists of showcased tracks without commentary. A subscription also gives access to themed stations such as Charting Now and Discover New Artists.

A TUNE IN TO BEATS 1

Click or tap Radio. What's currently playing on Beats 1 is always the first thing here. Click or tap it to listen. To help you return to shows you've played previously, they're listed lower down the page.

B CATCH UP ON OLD SHOWS

Click the Beats 1 heading at the top of the Radio page in iTunes (or tap Beats 1 Shows in Music on iOS) to see what's coming up, and to browse older shows by anchor or name and play them.

C FEEDBACK FROM A MAC

If you like the track that's playing, put the pointer over the status area at the top of iTunes and click the ellipsis that appears to indicate you love or dislike it, or add it to your library or a playlist.

D FEEDBACK FROM IOS

On iOS, tap Music's Now Playing bar, then + to add the current track to your library or the ellipsis to indicate you love or dislike it. (On a device that has 3D Touch, just press firmly on the bar.)

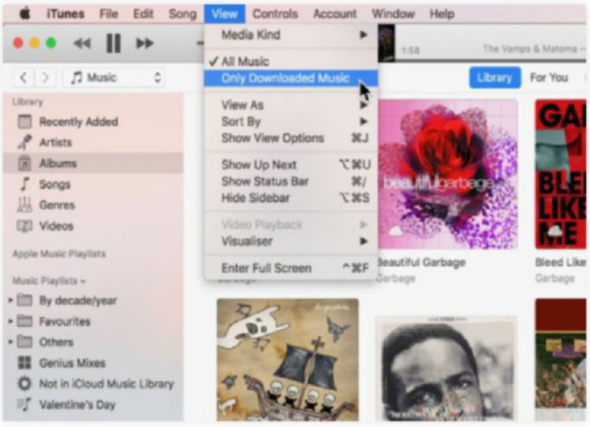
HOW TO Add to your library

1 Add Apple Music to library

You can add items from Apple Music to your own library to play for as long as your subscription is active. To do so, simply click or tap Add at the top of an album or playlist to add the whole thing to your library at once, or tap the + next to an individual track. By default, tracks are also added to your library automatically when you add them to a playlist, which you may not want. Don't worry, as this can be prevented.

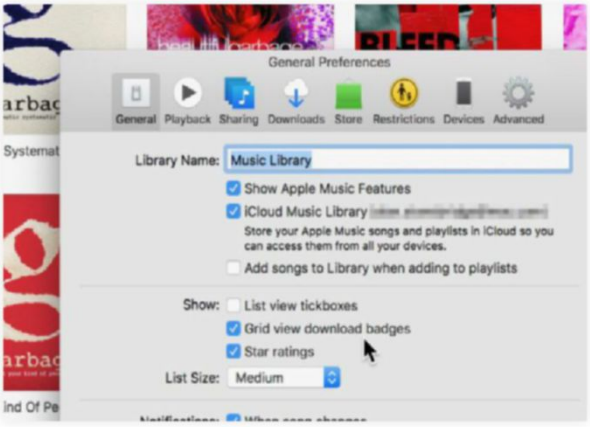
2 Keep items separate

Thankfully, iTunes and the Music app on iOS each include a simple setting that you can switch off to prevent Apple Music items you add to playlists also ending up in your personal library. On your Mac, go to iTunes > Preferences > General and uncheck "Add songs to Library when adding to playlists." In iOS, go to Settings > Music and switch off Add Playlist Songs. Note that you'll need to repeat this on each of your devices.



3 Show only downloaded music

Items with an adjacent cloud icon are available in iCloud Music Library but haven't downloaded to the device you are using, so you won't be able to play them without an internet connection. While browsing your library on a Mac, pick View > Only Downloaded Items, or in Music on iOS choose Downloaded Music from the category selector (if it isn't listed, tap Edit and put a check mark next to it) to temporarily hide these items.



4 Hide download badges

The Albums view in iTunes displays a cloud icon at the bottom left of the cover of each album that isn't stored on your Mac. You may find these distracting, especially in light of the our earlier advice about how to switch between viewing your whole library and only what's on your device. To hide the cloud icons, choose iTunes > Preferences > General and clear the checkbox that's labeled "Grid view download badges."

Get more from iTunes

Unleash the hidden powers of Apple's jukebox software

APPLE HAS made efforts to tidy iTunes' interface, but you may notice the absence of useful features such as star ratings. Check out these ways to take control and make iTunes work better for you.

1 BUY APPLE MUSIC TRACKS

Access to Apple Music tracks only lasts for as long as you pay, and only work in Apple software. To buy a track for ongoing access or to play it on another device that can use AAC-encoded tracks, put the pointer over the status area, click the ellipsis then choose Go To > Song in iTunes Store. On iOS, tap the Now Playing bar (or press firmly on it if your iPhone has 3D Touch), tap the ellipsis, Share Song, and then Copy. Switch to Safari, hold your finger on search and choose Paste and Go. You'll be asked whether to open the link in the iTunes Store app.

2 IDENTIFY APPLE TRACKS

If you've already added Apple Music tracks to your library and want to remove them, choose File > New > Smart Playlist and set the playlist's sole rule to "iCloud Status is Apple Music." Be wary of simply selecting and deleting everything in this playlist without first inspecting it, particularly if you joined Apple Music early after its launch; glitches from this time may have left some tracks incorrectly attributed as being from Apple Music.

3 USE STAR RATINGS

Indicating your love or dislike of a track guides the suggestions in For You, but iTunes' old five-star rating system provided greater flexibility in Smart Playlists. Go to iTunes' General preferences and put a check mark next to "Star ratings" to bring it back. Put the pointer over a track in your personal library to reveal a control for rating it, or click the ellipsis in the status area and use the Rating submenu to rate what's playing. On iOS, go to Settings > Music and switch on Show Star Ratings. Tap the ellipsis on the Now Playing screen or apply 3D Touch to a song in your library, then choose Rate Song.

4 CHOOSE LIBRARY VIEWS

Various ways to view your library are shown at the top of the sidebar. Place the pointer over the Library heading and the word Edit is revealed; click it to choose which views you see. Clear the check mark next to any views you don't need, then click or tap Done.

5 APPLE MUSIC PLAYLISTS

Playlists from Apple Music that you add to your library are listed under a dedicated heading in iTunes' sidebar. As in many other Mac apps, putting the pointer over this heading reveals an option to hide its contents until you need them – handy if you find yourself subscribing to many.

6 START YOUR OWN STATION

You can use any track from your personal library to indicate the kind of music you want to hear, rather than taking a gamble even on one of the themed stations found in the Radio tab. Click or tap the ellipsis next to a track name and choose Start Station (Create Station on iOS) to play similar music to fit your mood; it'll include music from Apple Music, not just your own library. Tap the star in the playback controls to give feedback on whether you want to hear more or less like the current song.

If you don't want Apple Music

>>> To end your subscription, go to iTunes, choose Account > View My Account, sign in, scroll to Settings, then click Manage next to Subscriptions. In iOS's iTunes Store app, tap your Apple ID, sign in and tap Subscriptions. In either place, you can cancel your sub (it remains active for the period paid for). Some features become inaccessible but remain visible. To hide them in iTunes, open preferences, click General and switch off Apple Music; on iOS, go to Settings > Music switch off Show Apple Music. Set up Restrictions (see apple.co/2j1ho9s) to hide the Connect option.

Apple Music versus rivals

Compare Apple with alternatives before you commit to it

NATURALLY, rivals to Apple Music exist for a wide range of devices, from game consoles to multiroom speaker systems, but here we compare direct competitors – those you can access on Mac and iOS devices, and often other kinds of devices. A major reason to stick with Apple Music is its tight integration with iTunes and other Apple devices. Connecting iTunes to iCloud Music Library so that it puts your existing music online takes just a few clicks. However, Apple Music isn't alone in offering this kind of feature. Notably, Google Play Music's free plan enables you to put 50,000 tracks in the cloud.

Each service below offers a family plan, most enabling up to six people who live at the same address to pay a reduced rate – but check that each person's preferred device is compatible.

One thing Apple Music lacks that the four rivals below offer is the ability to access your library through a web browser. You may not see this as a deal-breaker, yet it's nice to have access to your music where you have limited privileges – on a work laptop, say.

THE SPECS	APPLE MUSIC	AMAZON MUSIC UNLIMITED	GOOGLE PLAY MUSIC	SPOTIFY PREMIUM	TIDAL
PRICE (ONE PERSON)	$9.99/month	$7.99/month	$9.99/month	$9.99/month	$9.99/month Premium $19.99/month HiFi
WEBSITE	apple.com/music	amzn.to/2jv7TQf	google.com/music	spotify.com	tidal.com
TRIAL PERIOD	3 months	30 days	30 days	30 days	30 days
ADDITIONAL PLANS	$14.99/month (family of 6) $4.99/month (student)	$14.99/month (family of 6), $149/year (Prime members)	$14.99/month (family of 6)	$14.99/month (family of 6) $4.99/month (student)	50% off additional subscriptions (up to 4 extra family members)
FREE VERSION	Beats 1 radio and Connect access	No	Yes, with ads, inability to skip tracks, and personal music locker	Yes, with ads, and with shuffle-only playback on mobile devices	No
AVAILABLE SONGS	Over 40 million	40 million	35 million	Over 30 million	Over 40 million
FILE QUALITY	256kbps AAC	Unspecified	Unspecified	Ogg Vorbis, 320kbps (96kbps and 160kbps in the free version)	96kbps AAC+ or 320kbps AAC (Prem), 1,411kbps FLAC (HiFi)
OFFLINE PLAYBACK	Yes	Yes	Yes (purchased tracks)	Yes (up to 3,333 tracks)	Yes (Premium and HiFi)
PUT YOUR PERSONAL LIBRARY ONLINE	Up to 100,000 tracks (+ what you've bought from the iTunes Store)	Up to 250,000 tracks	Up to 50,000 tracks (even on a free account)	n/a	n/a
MINIMUM SYSTEM REQUIREMENTS	Windows 7, OS X 10.9.5, iOS 8.4 or Android 4.3	iOS 9, Android, Mac, PC , Amazon Echo, Amazon Fire tablets and TV, or Sonos	Windows XP, OS X 10.5, Linux, iOS 7, or Android 2.2 w/OpenGL ES 2.0 support	Windows 7, OS X 10.9, iOS 8, Android 4.0.3, or Windows Phone 8	Windows 7, OS X 10.9, iOS 8.1, or Android 4.1
WEB PLAYER	No	Yes	Yes	Yes	Yes

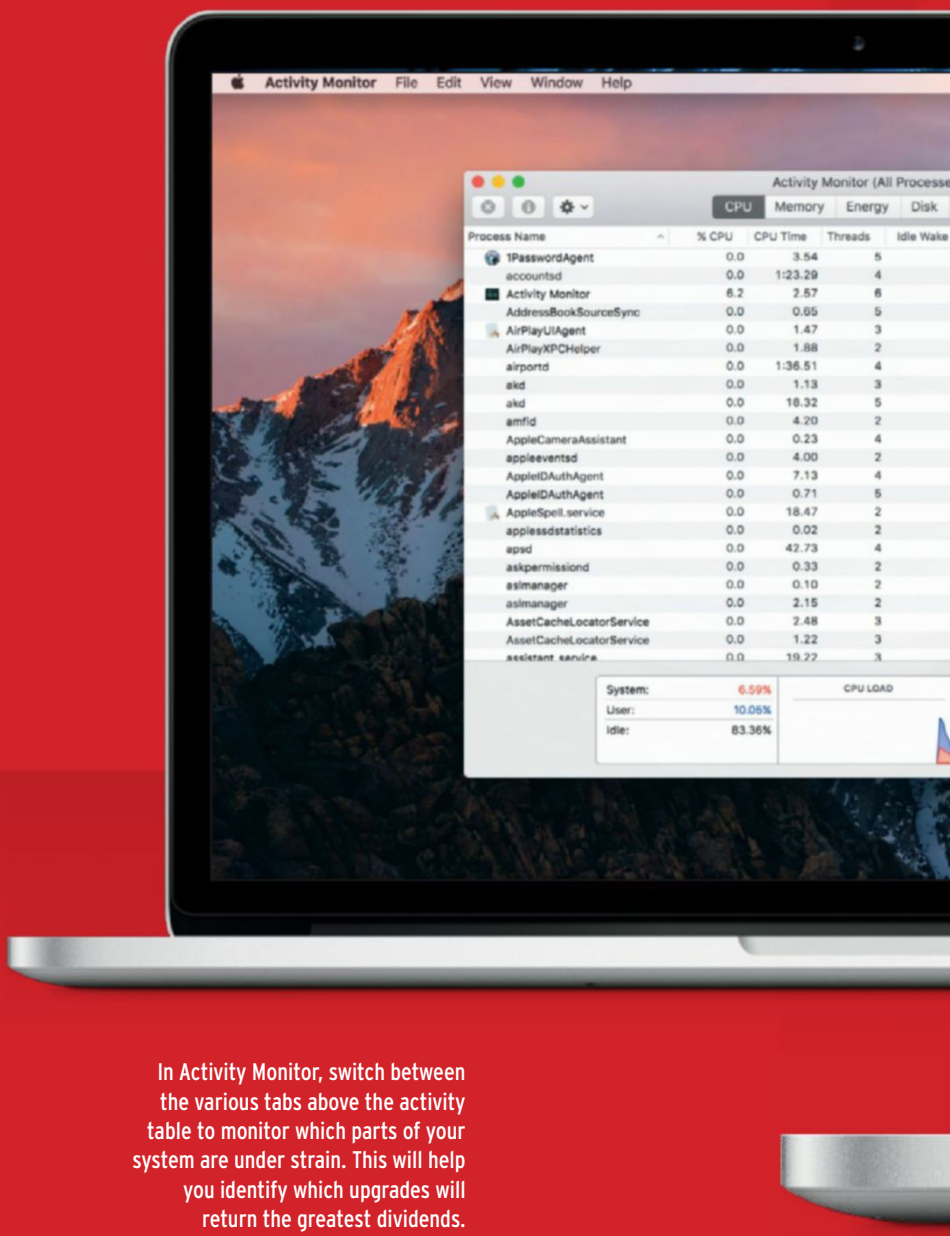
MAKE YOUR MACBOOK LAST LONGER

With times tight and even used Macs staunchly keeping their value, **Nik Rawlinson** reveals how to make your current setup last longer

EVERYONE LOVES getting a new computer, but with the holiday season just behind us and constantly rising prices, you're probably asking how you can put off upgrading a little while longer. Here's where we'll give you the answer. So long as you're running an Intel-based MacBook, MacBook Pro, Air, or desktop machine from 2012 or later, there's a lot you can do to make it last longer.

In this feature, we'll walk you through some of the most practical tweaks and component upgrades you can perform on a Mac of this vintage – with a particular focus on notebooks. None of them is particularly tricky or overly expensive.

We'll start by showing you how to diagnose what's making your machine run slowly, so you know what needs to be looked at. We'll move on to which parts you can – and can't – upgrade while keeping the bulk of your Mac intact, and finally tackle macOS, with tips for refreshing and, if needed, reinstalling from scratch.



In Activity Monitor, switch between the various tabs above the activity table to monitor which parts of your system are under strain. This will help you identify which upgrades will return the greatest dividends.

Component costs

›››› WHILE MACBOOK prices have been fluctuating, component costs have been steadily falling. This can change as global currencies rise and fall, but it certainly makes a strong case for upgrading parts rather than a whole computer if you're on a tight budget. The chart opposite tracks the changing price of memory and storage from 1980 until the present day.

Year	Storage price per gigabyte	Memory price per gigabyte
1980	$437,500	$6,328,125
1985	$105,000	$859,375
1990	$11,200	$103,880
1995	$1,120	$30,875
2000	$11	$1,107
2005	$1.24	$189
2010	$0.09	$12
2013	$0.05	$5.50
2014	$0.03	$4.94
2015	$0.022	$4.37
2016	$0.019	$4.50 *

***self-calculated average online price**

Average Cost of Hard Drive Storage
2016 Statistic Brain Research Institute, publishing as Statistic Brain
statisticbrain.com/average-cost-of-hard-drive-storage

Average Historic Price of RAM
2015 Statistic Brain Research Institute, publishing as Statistic Brain
statisticbrain.com/average-historic-price-of-ram

Recognizing likely faults

Diagnose problems and identify which components are underperforming the most

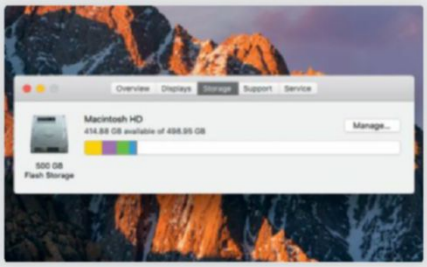
1

BEFORE SPENDING cash on upgrades, you need to know it'll be money well spent. Slow-running Macs aren't always hampered by overloaded processors – something you can't upgrade, in any case.

More often they have insufficient memory, or a hard drive that's so full macOS can't write cached files to disk. The exact reason for any slowdown will almost always be specific to your machine, so this is one occasion when turning to Google isn't the best solution. Instead, use the tools we recommend here, or fire up Activity Manager (in the Utilities folder) and work through the various tabs until you've identified the bottleneck.

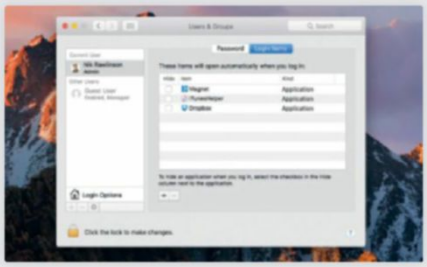
Click the column headings to sort your active apps according to how many resources they're using; for example, if any are hogging the CPU, check for an app update and, if this doesn't fix the problem, consider switching to a lighter-weight alternative.

HOW TO Assess the slowdown



1 Storage space

Open > About this Mac, click through to Storage and compare the capacity and available space of your primary drive. If you have less than 15 percent free, macOS will have trouble organizing itself – free up some space.



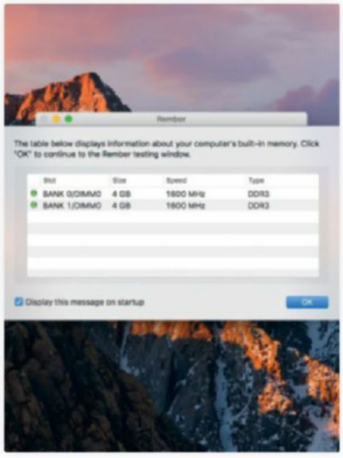
2 Launch items

Open System Preferences' Users & Groups pane, select your account, and the Login Items tab. How many things launch when you enter your password? Each one consumes resources. Reduce this number to the bare minimum.

3 Disk integrity

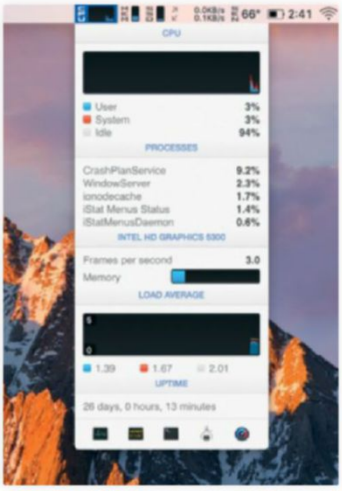
Apple-provided storage can self-diagnose some problems. Open Disk Utility, select your primary drive on the left, and check SMART status in the table. Anything other than Verified indicates a problem, which could slow your Mac.

RAM test



››› Small chunks of memory can corrupt, which may impact performance. Your Mac will notify you of serious memory failures through a series of startup beeps, and ignore minor flaws. If you suspect memory might be in the early stages of developing a problem, use Rember (**bit.ly/2gySvxd**) to test the chips in your machine. The launch screen uses traffic signals to indicate its status, but even if these are green, run the full test to double-check.

CPU test

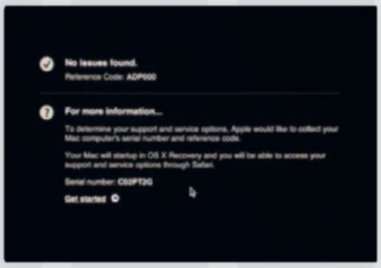


››› You can't upgrade your processor, but you can check that it's healthy and not being hogged by greedy applications. iStat Menus (**bit.ly/2haSM9r**) puts graphs on your menu bar that help you keep an eye on resource use; click them to see which applications are consuming the most resources. Click the SEN menu to display the temperature of your various components. If the processor is running hot, take it to a service center and ask them to renew the thermal paste. Overheating processors can cause unexpected shutdowns.

Battery test

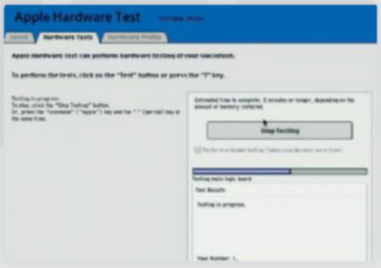
››› Batteries don't last forever. Over time they lose their ability to hold a full charge, and their constituent cells can die one by one, which you'll never recover without replacing the battery wholesale. Use coconut Battery (**bit.ly/2hoXmrQ**) to check the health of your battery. Check Design Capacity, which is its factory-fresh state, and Maximum Charge, which is what it can take now. If there's more than 50 percent between these, follow our battery replacement tips overleaf.

Meet your diagnostic toolkit



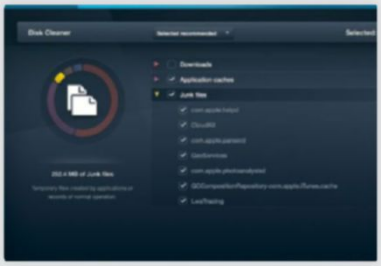
1 Hardware test

Your Mac has a full diagnostic suite built in. Hold D while rebooting to launch Apple Hardware Test, then click the Test button.



2 Diagnostics

On Macs introduced prior to June 2013, the same reboot shortcut launches Apple Diagnostics, which runs an automated test sequence.



3 AVG Cleaner

AVG Cleaner (apple.co/2h2iyha) identifies lost and wasted space on your drive, and enables you to remove clutter so you can reclaim it.

Change core components

Don't trash it... upgrade it! Here's how

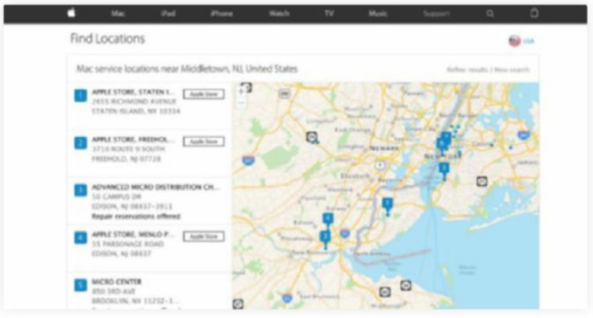
2

BY NOW you should have a good idea of which parts of your current setup are coming under the greatest strain – but don't run off to the Apple Store just yet. Although you might consider your Mac to be a sealed device, it's not, and there are plenty of upgrades you can effect yourself.

If you don't have confidence to crack open the case personally, an Apple Authorized Service Partner will be able to help. You can look up your closest outlet at **locate.apple.com**. Bear in mind it doesn't need to be an official Apple Store, either; the third-party stores recommended through that link are all authorized and overseen by Apple itself.

GETTING THE GOODS

You can source components from a wide range of mainstream outlets, including Amazon and Newegg, or head for specialist Apple-focused component shops. iFixit (**ifixit.com**) can identify compatible parts when you enter your serial number. You'll find this engraved on the case or on the About this Mac pane (open this from the menu). It will also point you to its huge number of free online guides and problem-solving techniques for your specific model.



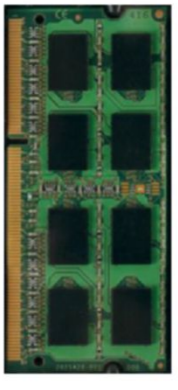
Apple maintains a comprehensive list of Authorized Service Partners who can help with more challenging upgrades.

If you only need an SSD or memory upgrade, check out Crucial's system scanner (**crucial.com**). It's free to download, and any components bought on the back of its recommendations are guaranteed to be compatible.

One final note: bear in mind that in many systems Apple has made performing aftermarket upgrades impractical, by soldering the memory and storage directly onto the motherboard – effectively making them impossible to remove. So you may find that some of our recommendations below aren't available for your model.

RAM Recommended buys

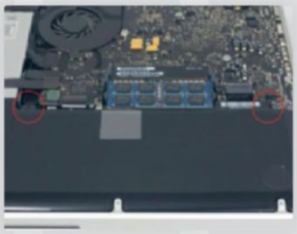
CRUCIAL 4GB DDR3-1066 KIT
$42
crucial.com
This maxes out the memory in a 13-inch, 2GHz Core 2 Duo MacBook, yet costs less than $50. You'll need to dispose of what's already fitted.



KINGSTON 8GB DDR3 KIT
$55
kingston.com
Early Unibody MacBook Pros can be upgraded, and this 8GB kit from Kingston, rated at 1333MHz, will once again provide the max possible RAM.

CORSAIR 16GB DUAL CHANNEL DDR3L SODIMM
$130
corsair.com
This ultra-fast memory will work with most upgradeable MacBook Pros, iMacs and Mac minis after 2011.

HOW TO Replace a Mid 2010 MacBook Pro's battery



1 Get the case off

Disconnect your MacBook from the power outlet and let the battery run flat. Use a Phillips #00 screwdriver to remove the 10 screws that secure the underside of the MacBook case. Keep them safe while you slide the bottom plate slightly towards the hinge and lift it up from the opposite side to reveal the innards.

2 Unscrew the battery

Use a Y1 tri-wing screwdriver to remove the screws at either end of the battery – these secure it to the chassis. You'll know which ones to use as they're directly connected to the battery itself; don't touch others. If you don't have the necessary tools, iFixit has them available separately, as well as in toolkits.

3 Disconnect the battery

With the hinge of the MacBook away from you, you'll find the battery connector to the right of the memory module. Lever it up from the logic board using a plastic spudger (which is a bit like a small spatula). Don't be tempted to use a flathead screwdriver – you want to avoid touching the logic board with any metal.

4 Replace the battery

You can now lift out the battery and dispose of it responsibly (check your local area for battery recycling facilities). Source a replacement battery from a specialist supplier like Anker. Replacing batteries in pre-unibody MacBooks often requires no more than unclipping and swapping them out.

SSDs Recommended buys

KINGSTON DATATRAVELER MICRODUO 3C
$70 for 128GB
kingston.com

You can't upgrade the memory or SSD in the two most recent MacBook lines, but the microDuo Flash Drive fits into the USB-C port to provide up to 128GB of removable storage.

SANDISK ULTRA II 120GB SSD
$90
sandisk.com

Lower-capacity SSDs are perfect for ageing machines used for office tasks rather than games and video editing. Perfect for those on a budget, this costs less than $100 while still giving excellent performance.

CRUCIAL MX300 SATA 2TB SSD
$550
crucial.com

Feel like going for the ultimate storage upgrade? This is expensive, sure, but it's also capacious and fast, so represents a significant futureproofing upgrade for any compatible MacBook (or any other Mac!).

Refresh macOS

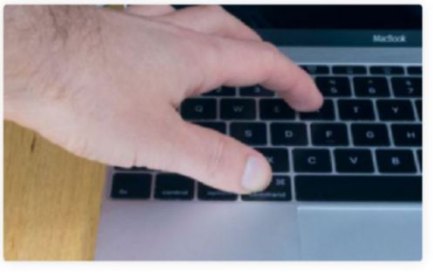
Running OS X or macOS for several years can leave your Mac feeling bloated and sluggish

3

LIKE ANY operating system, OS X and macOS will eventually slow down without the occasional reinstall every few years. Before going any further, if you haven't upgraded to macOS Sierra, check whether your Mac can handle it – and if it can, upgrade now. MacBooks from late 2009, MacBook Pros from mid-2010, MacBook Airs from late 2010 and anything more recent can upgrade. Check Apple's requirements at **apple.co/2gztXnN**.

If you've already installed Sierra, it's so new it should still be running at optimum performance, as Apple will have performed some routine housekeeping at the point of installation. Keep our walkthrough on reinstalling it stored for later reference, and follow the advice right for removing other unnecessary data. And always back up first!

HOW TO Re-install macOS

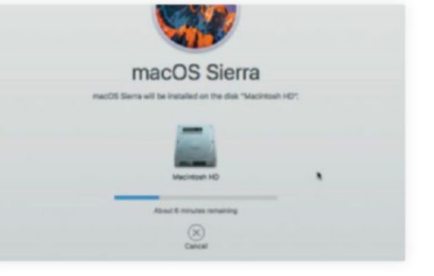


1 Recovery mode

Hold ⌘+R while restarting your Mac to boot into Recovery mode. Keep them held down until the macOS utilities window appears. Pick Disk Utility and wipe your boot drive, with Mac OS Extended selected on the Format menu.

2 Reinstall...

Quit Disk Utility and pick Reinstall macOS. You'll need to be connected to the internet so the installer can check your eligibility for the operating system and then download the installation data. Specify the drive you've just formatted.



3 ...and wait

Installation time depends on your Mac and the speed of your net connection, so go and do something else while it completes. Once it's finished you'll need to set up your user account and re-enter your iCloud credentials.

Useful speed-up tips

There a few day-to-day things you can do to ensure top speed

Reclaim disk space using Sierra's built-in tools

›››› Open About this Mac, click the Storage tab and then Manage… Click Review Files in the Reduce Clutter section and organize the results by Last Accessed date. Archive the oldest files to external media by clicking the magnifier that appears beside their names to reveal them in the Finder, and you'll be able to reclaim the space they occupied.

If you no longer need them, click the x to delete them. (Don't forget to empty the Trash afterwards.) The more free space you have, the better, as macOS needs to use some of it to cache data that it can't store in RAM.

Uninstall apps completely

›››› Deleting an app from the Applications folder removes the executable, but can leave extra data and background routines in place (and running). Delete them fully using AppZapper (**appzapper.com**), which is free for the first five uses.

Got a broken port?

›››› Fixing a broken USB port requires a complete logic board replacement. You can easily find these online from the likes of Amazon, but fitting one requires soldering, a steady hand, and a certain amount of expertise (iFixit rates the process as "Difficult"). Before you start work, though, check it's not a configuration issue by rebooting while holding Alt+⇧+⌘ to reset the System Management Controller (SMC). Re-test the port after rebooting.

Replacing the MagSafe port is easier as it's a simple matter of unplugging it from the logic board. It's still a 20-stage process, though, which requires the almost complete disassembly of your MacBook and the use of several tools for 10 differently sized screws.

Keep your apps up to date

›››› Check the App Store regularly for updates to your apps. As well as adding features and fixing security issues, updates frequently improve performance as developers take advantage of new software. For applications that you downloaded and installed outside of the App Store, check out AppFresh for Mac ($14.99, **metaquark.de/appfresh/mac**), which identifies what software you're running and performs regular checks for updates. Several manufacturers, including Adobe (with Creative Cloud) and Microsoft (with Office), check for updates automatically. Although it's tedious installing them when you need to get on with your work, make a point of doing so after quitting each app so your Mac remains in the best possible shape.

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APP LIFE

THIS MONTH'S MOST INTERESTING iPHONE & iPAD APPS

Notion Email Intelligence

Terrible name, pretty good app

Free **Developer** Notion AI, notion.ai

Platform Universal **Requirements** iOS 9 or later

Email is a pain in the apps. It's hard to find something that suits your specifications – perhaps you use it for keeping in touch with family, or for your job, or for running a business, but whatever you use it for, it always feels like the app is optimized for someone else.

Notion Email Intelligence apparently "learns your behavior" to tailor its service to you. It certainly works pretty damn well, especially for something that's free. The main draw of the app is that it uses artificial intelligence to figure out who and what is important to you. It's not entirely obvious how it does it, but after 25–60 minutes of thinking about it when you first set up the app, it does pretty well. It's a little creepy having a list of "people that are the most important to you," especially if it's a business email account and it starts rating your clients as 10/10 in terms of closeness, but sure. It works.

You can, with just one swipe, archive, flag, and mark emails as read. Once you get used to which direction does what, it makes going through emails an absolute breeze. There is a "Radar" tab, too, which is absolutely fantastic (as long as it works) – it picks up on questions within your emails and flags them up for you, telling you to respond ASAP and monitoring other people's delayed responses. It even prompts you to respond to new questions within a certain time, presumably to get better at email!

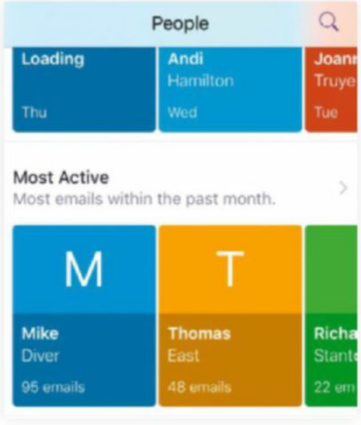
Notion has some issues, mostly to do with its simplicity. It's hard to figure out how to tell the app who is important to you if it's already decided that they aren't. "Unimportant" emails are gray, and can be archived in bulk, but if there are important emails in there you might accidentally archive those, too. You can also filter by which emails are starred, but not by unread. There are also options like "Insight Signature" which offers to add relevant statistics to "encourage responses," but that's terrifyingly vague.

All in all, Notion Email Intelligence – despite being slightly obfuscated by its minimal design – is an excellent way to manage email, even if it's perhaps best paired with another email app to make sure nothing slips through the cracks.

THE BOTTOM LINE. A useful, thoughtful email app that makes sure you only see the most important messages.

KATE GRAY

It's nice to be able to see at a glance which emails need chasing up.



Find out who you've emailed most in a month. Why? No idea... Why not!

NOTION EMAIL INTELLIGENCE

- ✚ Email filtration that actually works
- ✚ A simple, easy-to-read design
- ✚ Radar is a fantastic addition
- ✖ Not as customizable as it could be

GREAT

Streaks Workout

The workout app that needs some work

$2.99 **Developer** Crunchy Bagel, streaksworkout.com

Platform Universal **Requirements** iOS 8.2 or later

The app fails to indicate the benefit of each exercise, and needs to offer more guidance.

The idea of this app is that it can help you with basic fitness by giving you simple exercises in a workout tailored to how much time you have available that day. You try to build your "streak" of consecutive workout days, and watch your improvement over time. You can already do the tracking parts of this with other apps (including the original Streaks app), but the convenience here is that the tracking and workout guides are all in one place, so it's easier to keep up with.

In practice, we're not fans of the way the app actually works. You're asked as part of the setup to choose from a library of exercises which ones you'd like the app to choose from when building your routines, but how do you know which workouts will best help with your particular exercise goals? There's no indication of the expected benefit of each one. And when you trigger a workout, you're expected to follow the movements of stick figures going through two- or three-frame animations. That and a brief description are all the guidance you get of posture and range of movement. For an app that bills itself as a "personal trainer," this isn't good enough. At the very least, it needs videos and more guidance for its workouts. The app itself works fine, but without more information, we don't consider it fit for purpose.

THE BOTTOM LINE. A fitness app that aims to be flexible, but that stumbles at the first hurdle with poor instructions. **MATT BOLTON**

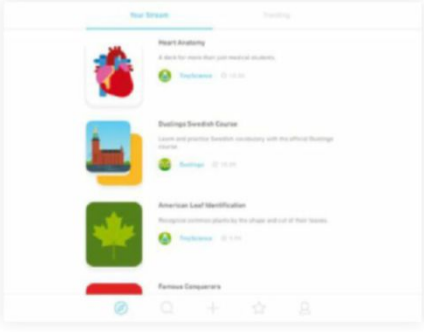
POOR

Tinycards

A flashcard app that's worth remembering

Free **Developer** Duolingo, tinycards.duolingo.com

Platform Universal **Requirements** iOS 8.2 or later



There are thousands of subjects, and often a huge variety of decks within each subject.

Tinycards is the latest release from the team behind the popular (and also free) language learning app, Duolingo. Those familiar with Duolingo will find the interface reassuringly similar – colorful and easy to navigate.

Tinycards is based on the age-old flashcard system of learning. Pick a subject (choose from trending, your own favorites or search), and you'll be invited to level one. You're presented with a visual icon card, tap to turn the card and reveal its description. You can turn the card repeatedly to commit the image and name to memory. Swipe the card away to move on. After two or three cards, Tinycards will test you. You get a mix of multiple choice graphics answers, multiple choice word answers, and typing the answer in (the tricky one, but you get the occasional bit of assistance here!). Get the answer right, and you get a smiley face. Once you've completed a level, you move on to the next. A weight training icon takes you through another test should you want to consolidate your learning from a previous level.

The graphics are appealing, the gesture-based controls are easy for all ages, and there are literally thousands of topics to choose from. It would be nice to get more of a "reward" when, say, you've completed all levels of a deck. You can, however, boast about your level by emailing the link to a friend. You can also create and submit your own decks.

THE BOTTOM LINE. A simple but comprehensive and effective learning app. **JO MEMBERY**

GREAT

Putty 3D's user interface stays out of the way, allowing your creative freedom to bloom.

Putty 3D

An intuitive digital 3D sculpting app

$3.99 **Developer** Nga Nguyen, putty3d.com

Platform Universal **Requirements** iOS 10 or later

Putty 3D turns your iPad into a full-fledged virtual sculpting studio, complete with support for Apple Pencil.

Putty 3D's specialty is digital sculpting. Using just a finger, it's easy to sculpt, carve, and model using a variety of different virtual materials such as putty, clay, plastic, and ceramic. Gestures enable you to zoom with a pinch, rotate the camera view by dragging two fingers, undo with two-finger tap, and more.

The user interface is straightforward, intuitive, and easy to use. Most importantly, the available tools don't hinder the creative process, allowing creations to occupy the maximum amount of on-screen real estate. (There's even a setting to automatically collapse tools while sculpting.) It's quite remarkable what you can come up with after spending only a few minutes with Putty 3D.

For the more artistically inclined, the app offers full support for 3D Touch on recent iPhone models as well as Apple Pencil, which allows for more accurate, pressure-sensitive sculpting. We used both during testing for this review, and found the Apple Pencil nicely suited to smaller details or fine-tuning your designs

Speaking of finishing touches, you can change the background to white, black, a gradient, or image-based lighting, change the focus for a bokeh effect, or add a vignette as needed; you can't import existing background images, however. When you're finished, Putty 3D enables you to export high-resolution PNG files via the iOS sharing extension, with or without transparency if needed.

The app is optimized for both iPhone 7 and iPad Pro, which allow for larger objects and higher-quality rendering with Wide Color thanks to the heftier GPU of those devices. Overall rendering looked good, but the edges would occasionally show subtle blocking at times.

One feature we'd love to see added is iCloud sync – there's currently no way to start a sculpture on iPhone and finish on iPad, for example. The developer is working on OBJ and STL file export for the next version, which will allow sculptures to be imported into Mac or PC applications, and to be used for 3D printing.

THE BOTTOM LINE. For only four dollars, Putty 3D impressively puts digital sculpting in the palm of your hands. **J.R. BOOKWALTER**

PUTTY 3D

- ✚ Apple Pencil, 3D Touch support
- ✚ Universal build
- ✖ 3D renders occasionally look blocky around edges
- ✖ No iCloud sync

GREAT

Patch: Smart Portrait Editor

An attempt to emulate iPhone 7 Plus portraits

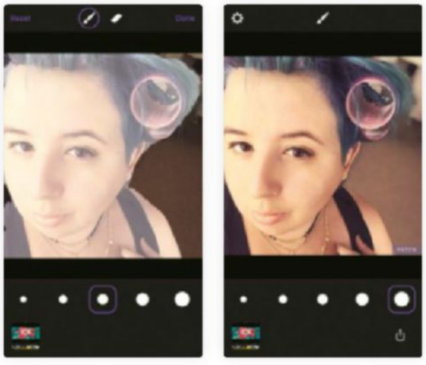
Free (with IAP) **Developer** Henry Lee, patch.photos

Platform Universal **Requirements** iOS 9 or later

If you've not made the leap to the iPhone 7 Plus yet, but are keen to achieve stunning portrait photos with blurred backgrounds, here's an app that could help – Patch: Smart Portrait Editor. It's simple: you open the app, you pick your picture, it helps you select the subject to stand out of the background, and then you can save the result to your Camera Roll. You won't be able to edit the photo's colors, crop it down to size, or do any of the things that we normally associate with photography apps, though.

The auto-masking algorithm the app uses to detect what is the subject and what is the background worked pleasantly well and only required us to do a little bit of manual touching up. Unfortunately, the manual masking tool can be a little difficult to work with, especially on smaller images. The size of the brushes are very limited and Patch doesn't allow for a lot of zooming in. That being said, it does work, it just takes a bit of patience.

It's not a terrible app, but it is very limited. We've already tried other apps that give you a little more control and don't attempt to put a pay-to-remove watermark on your images. Still, if you're new to the game, we think that it's not a bad app to try out if you want to emulate the DSLR-like background blur of the iPhone 7 Plus's Portrait mode.



Manually selecting the edges of your subject can be an awkward process.

THE BOTTOM LINE. While novice photo editors might like it, Patch will be too simple for hobbyist photographers. **AMBER NEELY**

OKAY

BeCasso

Turn your photos into masterpieces

$1.99 **Developer** DigitalMasterpieces, digitalmasterpieces.com

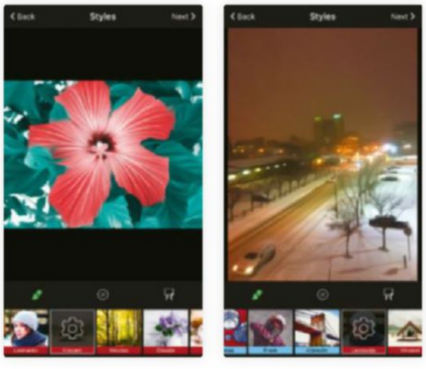
Platform Universal **Requirements** iOS 9 or later

You may not be a digital artist, but that doesn't mean that you can't experiment with the fun of digital art. There are tons of apps on the App Store that are geared toward turning your iPhone photography into pieces of digital artwork. One of the options we're most impressed with is BeCasso.

BeCasso is a neat app. It's designed to create startlingly realistic digital art from any pictures you take or save on your iPhone. Using BeCasso couldn't be easier. You choose an image, you select a couple of filters, and the app does all the heavy lifting. You can simulate watercolor, oil, or acrylic painting styles with BeCasso, and we had fun trying out all of them.

We do have a few tips for you, though. If you're going to try out BeCasso, it seems to favor images that have decent saturation and a somewhat high contrast – that is to say, colorful images with a big difference between bright and dark areas. While you can use images that are somewhat more muted, you'll get the best effect with more vibrant images. We also suggest using bigger images, as BeCasso is capable of spitting out high resolution artwork with no problem.

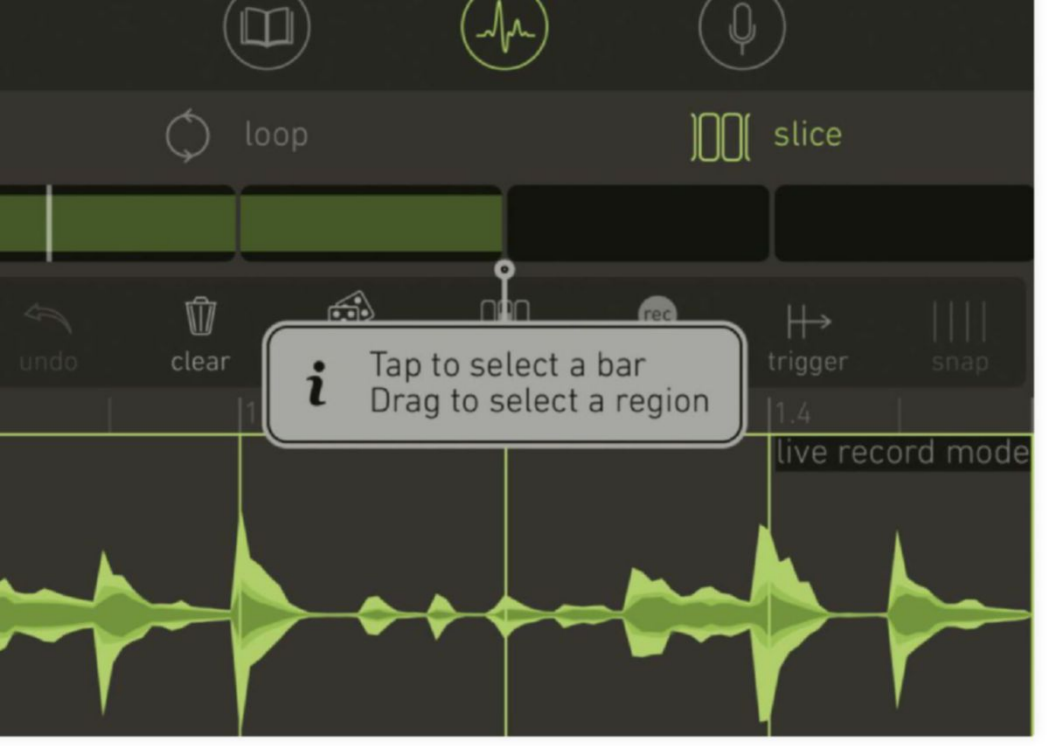
If you've ever wanted to take a shot at altering photos to look like digital artwork, we highly suggest that you check out BeCasso. It's a great app that we think most people will be able to create very cool images with.



We love the effect that BeCasso has on particularly high-contrast images.

THE BOTTOM LINE. Definitely one of the better photo-to-painting apps we've checked out. **AMBER NEELY**

GREAT



The app is based around sets of loops, which you can slice and edit to get them just right.

Blocs Wave

A great music app with a toy's friendliness

$2.99 **Developer** Novation/Focusrite Audio Engineering, blocs.cc

Platform Universal **Requirements** iOS 8.1 or later

Novation knows a thing or two about making music – we love its Launchpad MIDI controller and Launchkey keyboard so much, they're next to us right now – so any Novation app is likely to be interesting. Blocs Wave is designed for fast music composition and recording, and it delivers: with two taps we had a fantastic EDM tune playing.

It might look like a toy, but Blocs Wave is deceptively powerful.

Blocs Wave is deceptively simple. You start with six hexagonal pads, each with a different kind of instrument – drums, melody, FX, vocal, percussion and bass – and if you tap on the pad it'll play a loop. Tap again for a different one; tap a different pad for another instrument. And that's all you need to create music.

If you're familiar with apps such as Ableton you'll recognize the approach: you create your song as individual sections and move between them without duplicating, so instead of having the chorus in there twice you just create it once and tap it when you want it. Bloc Wave has room for six different sections, each of which can have eight instruments, and you switch between them with a tap.

It's the kind of app that rewards experimentation. Tap the tuning fork icon and you can pitch-shift in real time; do the same with the dial icon and you can change the tempo. You can also change the volume and pan of each track, as well as cutting up sounds to make them unique. There's a basic selection of instrumental loops, and there are lots more available via IAPs. You can also record your own audio.

Bloc Wave plays well with others, too. It supports Ableton Link so you can jam in time with Ableton users on the same network, and it also supports hardware input, Audiobus and AudioCopy/AudioShare so you can use it with other music apps. You can export as AAC or WAV and specify how many bars the song should run for, and input your own sounds via iCloud Drive or Dropbox as well as from Novation's Launchpad app. Best of all, you can export it as an Ableton Live project.

If the measure of a music app is how quickly you can make something you like then Blocs Wave scores very highly: our productivity has plummeted as we've been engrossed in the app. It's enormous fun for amateurs and pros alike.

THE BOTTOM LINE. Beautifully designed and enormous fun, Blocs Wave is a terrific toy that turns out to be a useful tool too.

GARY MARSHALL

BLOCS WAVE

- ✚ Easy to use and ridiculously good fun
- ✚ Deceptively powerful
- ✚ Ableton Live compatibility
- ✖ Loop library is quite basic

GREAT

Le Parker: Sous Chef Extraordinaire

If you can't stand the heat, get off the platform

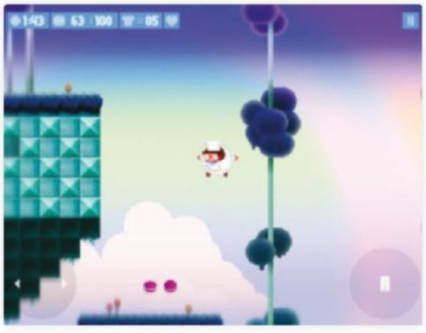
$2.99 **Developer** Play Pretend, playpretend.com

Platform Universal **Requirements** iOS 10 or later

We're jealous of this titular sous chef. Sure, he's been banished from the kingdom, separated from his one true love and – horror of horrors, as any baker reading will appreciate – lost his recipe for a lighter-than-air meringue. But if he guzzles down macarons in excessive numbers, he's gifted with an extra life rather than medical problems. Lucky jerk.

Le Parker is a relatively simple outing that's clearly indebted to genre greats such as Mario and Sonic. You gambol and jump through deliberately tricky levels more than slightly reminiscent of the blue hedgehog's first outing, hoovering up sugary treats and exploring to find the pieces of kitchen equipment that will enable you to rebuild your career. They're well hidden, so you're unlikely to find everything on your first run-through. Levels have multiple labyrinthine paths to follow, so this exploration fuels repeated plays.

If we could tweak one element of the dish, it would be the jumping, which is occasionally clumsy. You tap A for a small hop or press and hold for a longer jump, plus, of course, you're able to double-jump. It's not quite as easy to control as we'd have liked, and we found it a bit more of an annoyance than simply having one flavor of leap available. The balance of the recipe isn't always spot-on, but there's plenty to recommend Le Parker, especially if you're a fan of old-school platforming.



If you eat a mega-sized macaron, you puff up, temporarily gaining the ability to fly.

THE BOTTOM LINE. This is a solid choice that's simple in setup yet demands precision from you. **EMMA DAVIES**

GREAT

Phrase Shift

More cross words than crossword

$1.99 **Developer** Hyper Hippo Productions, hyperhippo.ca

Platform Universal **Requirements** iOS 6 or later

For those that love them, words can be a truly joyful playground. Whether that's a hard-fought game of Scrabble in which you manage to land "quixotic" just right across a triple-word multiplier, or cramming a crossword together so that your most audacious guess fits, word games are addictive.

Phrase Shift tries to leverage this vowel-mangling obsession; essentially, it's a crossword puzzle with just one clue. Each puzzle provides you with a set of words, which act as both clue and answer. You slide these words so that letters line up in a column to form the correct solution. "Freezing cold water?" Time to line up the I, C, and E. Next.

And that's it. While there are 120 puzzles on offer (split evenly across three difficulty levels – plus an additional one per day), they're all in exactly the same format. How about more complex puzzles that challenge you to solve multiple clues at once? Alas not. When you've seen one, you've seen them all.

Also – although we'll admit this is an issue with crosswords in general – the nature of these puzzles is you'll either get the clue near-instantly, or just be left scratching your head through hint after hint. Your brain is on the same wavelength as whoever wrote that puzzle, or you're out of luck. With a half-decent vocabulary, though, you're likely to burn through the whole game in less than two hours.

Tapping "hint" reveals one letter at a time, with a cool-down timer before the next.

THE BOTTOM LINE. An overly simple word puzzle game that will fail to satisfy most crossword fans. **EMMA DAVIES**

OKAY

We hope you like Ghost House levels, because there's way too many of them.

Super Mario Run

It's-a him, Mario... on iOS

Free ($9.99 IAP) **Developer** Nintendo, nintendo.com

Platform Universal **Requirements** iOS 8 or later

Everyone expected something different from Super Mario Run: a handheld version of the original Super Mario Bros., or something more akin to mobile games like Temple Run. Super Mario Run is neither, but also sort-of both. When you have an audience of millions, the ones who are disappointed with that dichtomy will number in the thousands at least.

Decorating your kingdom is aesthetically pleasing, but mostly pointless.

But it's not a bad game because it's not what people expected. It is, objectively, very good. It's polished like all Nintendo games, it's very suited to mobile, and despite only having 24 levels, it has surprising depth.

It's a regular Mario platformer, but he runs and vaults small obstacles automatically, and one tap will make him jump. If you time taps correctly, you can make him do more: spin jumps, wall jumps, high jumps. Knowing and perfecting that makes the game work for you.

The 24 levels in World Tour each have three tiers of coin to collect: hard, harder, and hardest. But already there are thousands of people who have beaten the game, unlocking the three secret levels that you get for grabbing every coin. It's not all that hard, really, as each level is about a minute-and-a-half long. So what then?

Then, you play Toad Rally, which – annoyingly, for a $10 game – costs tickets to play. You are pitted against a stranger (or friend from your friends list) as you try to impress an audience of Toads with your acrobatic moves. The better you do, the more likely you are to win, and the more Toads join your kingdom and level up your castle.

It all feels finite, though. Once you know the levels inside-out, that's it. Even some clever random level generation, or player-created levels, might help it feel more replayable. Hopefully it will continue to be updated, expanded and improved upon, like many of Nintendo's other titles, in the coming months.

There is one huge gotcha, though: Super Mario Run needs a constant internet connection to work. That's fairly manageable in big cities, but in the boondocks, or when traveling arond, it's nearly impossible. The game's need to be connected to the MyNintendo system lets it down more than any other disappointment you may find within its colorful levels.

THE BOTTOM LINE. A great deal of fun, but you might just devour it too quickly to want to play again. **KATE GRAY**

SUPER MARIO RUN

- ✚ Flawless artistic design
- ✚ Perfectly reactive to touch
- ✚ Simple and fun to play
- ✖ Requires internet connection

GREAT

ROUNDUP

6 apps for meeting new friends

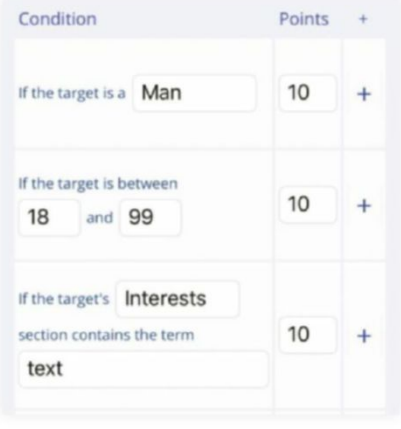
These social apps help you find like-minded platonic friends in real life

BY NOËL DUAN

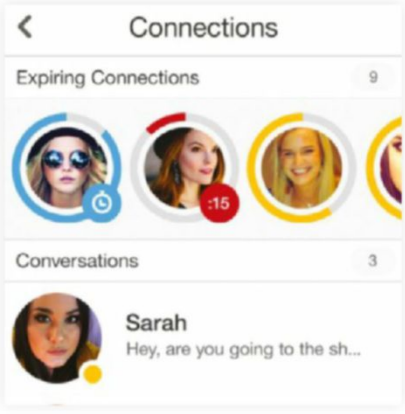
Whether you've just moved to a new city, you're looking to branch out of your usual social group, or you're just shy about meeting strangers, there are some great socializing apps for kindling strictly platonic relationships.

If you want to invite your neighbors to a house party or need a local bar recommendation, meet your virtual community bulletin board, **NEXTDOOR** (Free, iPhone). It's like your Facebook feed, but only with people living around you. Your neighborhood is verified by comparing your bank card billing address, and every user is required to use full names when joining.

The team behind **PATOOK** (Free, Universal) is so committed to platonic friendships that they've developed an Automatic Flirt Detection (AFD) algorithm that parses basic sentence structures, differentiating between "you are hot" and "the weather is hot." AFD also notices when someone



You can use the point system on Patook to weight your friendship criteria.



You have 24 hours to initiate conversation with your connections on BumbleBFF.

is repeatedly messaging someone without getting a response, among other observations.

BumbleBFF is a sub-feature of **BUMBLE** (Free, iPhone), a self-described "for women, by women" dating app created by Tinder co-founder Whitney Wolfe. While men and women can use Bumble for romance, only women can use BFF. Both romantic and platonic features of the app work the same way, though; you fill out your profile, and start swiping on nearby women who are also looking for new friends. If you have a match, you have 24 hours to message each other before your connection vanishes.

HEY! VINA (Free, iPhone) is another location-based, women-only friendship app that asks you a series of basic questions, such as whether you prefer meeting up for coffee or drinks (or both!). Connection to Facebook is mandatory, so your profile is automatically filled out for you. You're encouraged to chat first.

Now, imagine Facebook – but for dog people only. **MEET MY DOG** (Free, iPhone) is a simple solution to a dilemma well-known to dog owners: where can I find a friend for my dog – and myself? In this private social network, you can share photos of you and your dog, find out who else is nearby, chat with other dog owners, and schedule playdates with pooches.

Maybe you don't believe in judging a book by its cover. **REAL - MEET NEW FRIENDS** (Free, iPhone) doesn't let you see the other person's face until you match. There's no gender filter, either – this optimistic app matches you solely based on interests and personality traits. Once you've matched, the app even suggests local coffee shops and volunteering opportunities the two of you could partake in, to get to know each other better.

Imagine if your Facebook feed were populated by cute dogs instead of politics.

WATCH

APPS AND GUIDES TO GET MORE FROM YOUR WATCH

Daily Habits

Keep yourself in check

Free **Developer** Denys Yevenko, xwavesoft.com

Platform watchOS, Universal **Requirements** iOS 9 or later

Few things are harder to overcome than human nature, which is what often makes some of us lazy and prone to avoid work at any cost.

While there is no shortage of apps to help overcome these kind of challenges, Daily Habits is one of the few with real potential to get a handle on your routines.

This Universal app helps users organize, maintain, and track good habits, while kicking negative, more harmful ones to the curb.

From the main iPhone and iPad app, you can create groups of users with similar interests, invite family and friends, share your progress, and keep in touch with in-app chat; there's also Today view widget and 3D Touch support.

Naturally, setting up and scheduling your library of habits takes place entirely on your main iOS device, but once that's been done, users will be able to view the list of habits on Apple Watch and can act on them by skipping or marking as done. By default, launching the Apple Watch app opens that particular day's items, but you can swipe left or right to access two days' prior or two days ahead.

To make the most of Daily Habits, you'll want to spring for $2.99 Pro upgrade, which allows the app to integrate with your iOS calendar, use Touch ID to protect data, display more detailed statistics, sync between other devices, and most importantly, purge the ads and banners from the main app.

THE BOTTOM LINE. Straightforward and easy to use, Daily Habits helps keep a positive focus on the things you need to get done.
J.R. BOOKWALTER

DAILY HABITS

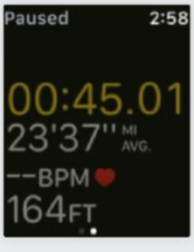
- ✚ Simple, intuitive way to keep tabs on good habits
- ✚ Mark habits complete or skip entirely from Apple Watch
- ✖ Features such as iCloud sync, calendar integration requires in-app one-time Pro upgrade
- ✖ Free version of main app includes ads, banners

GOOD

WATCH TIP

Stop, pause, run

With watchOS 3, you don't need to pause Workout when stopping on a run. Browse to My Watch > Workout from the iPhone Watch app and toggle on Running Auto Pause. When you come to a stop, the Apple Watch will pause.



Decibel Meter Pro

Make sure audio levels are to hand

99¢ **Developer** Performance Audio, performanceaudio.com

Platform watchOS, Universal **Requirements** iOS 9 or later

Watch apps can be a bit on the gimmicky side, often with little utility. For musicians or audio engineers, the latest 3.1 update to Performance Audio's Decibel Meter Pro could very well offer enough function.

In addition to being able to measure sound levels on your iPhone or iPad, Decibel Meter Pro now includes Apple Watch support, allowing smartwatch owners to view the average sensitivity of nearby audio right from the wrist. The app features the same slick graphics found in the main app, which faithfully replicates real audio meters.

Unfortunately, the microphone built into Apple Watch isn't the one used to measure surrounding audio levels – you'll need to pull out the connected iPhone and unlock the screen to view real-time levels on your wrist. Not ideal, but you can now place the iPhone where the audio is without having to strain your neck to view the display.

THE BOTTOM LINE. Not quite as useful as it could be, but pretty slick for a watch app. **J.R. BOOKWALTER**

SOLID

Marble Watchness

A nice looking, dedicated Apple Watch game

99¢ **Developer** Alexandre Minard, arwatchexperience.com

Platform watchOS **Requirements** iOS 10 or later

Marble Watchness is one of the latest mobile games that exclusively play on Apple Watch, and it's unusual mostly because the game lacks support for the Digital Crown, which is the controller most used to date. Instead, players must tap on-screen arrows to direct a 3D marble around a free-floating maze, collecting colored balls along the way.

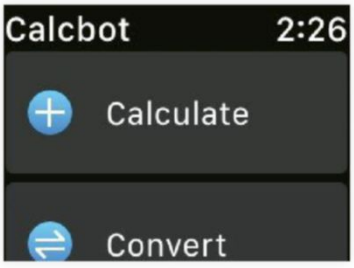
The graphics are undeniably nice, and the game is appropriately challenging, especially for those with pudgier digits. We're also giving bonus points to the developer for making the required iPhone app have some real utility – when launched, players can enter a nickname, reset game progress, or view rankings for others around the world. There's even a catchy music score, which is more than we can say for the Apple Watch version, which is absent of any sound at all.

THE BOTTOM LINE. Slick graphics make Marble Watchness nice to look at; the game can be frustrating for those with fatter fingers. **J.R. BOOKWALTER**

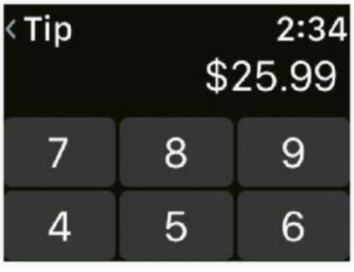
GOOD

HOW TO

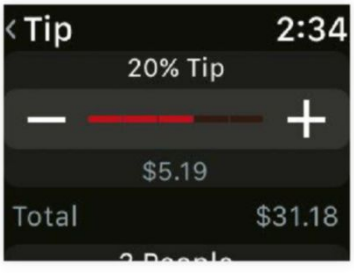
Tip like a pro with Calcbot



1 **RESTAURANT PAL**
The free Calcbot app is great for calculations, but also makes a perfect meal companion. From your wrist, launch the app and tap option three, Tip Calc.



2 **CHECK PLEASE**
Next, use your finger to type the total amount of your breakfast, lunch, or dinner using the large numeric keypad; tap the red C key to clear.



3 **BIG TIPPER**
Use the Digital Crown to scroll down, add a generous tip in five-percent increments, split the bill with friends, and quickly see how much each person owes.

REVIEWS

TOUGH TESTING, TRUSTED RATINGS

Apple AirPods

The first Apple-branded headphones you'll want to wear

$159 **Manufacturer** Apple, apple.com

Features Lightning cable for charging, beamforming microphones, optical sensors and motion accelerometers

Apple's previous forays into headphones managed to elicit mockery from many people, so let's make a couple of things clear about its new wireless AirPods right away: they sound great, and they're surprisingly comfortable to wear for a lengthy duration, even if their visual similarity to cabled EarPods may make you think otherwise. Unlike EarPods, though, they didn't fall out of our ears even once in weeks of testing, though we can't account for variations in ear shapes.

The EarPods that come with the iPhone sound too muffled and lack clarity, so we use them only as a last resort. AirPods, however, are delightful, giving good output with our iPhone set to 50 percent volume – though background noise can readily leak in since they don't form an airtight seal. Audio quality stayed great even as we cranked up the volume close to max.

Apple's battery-life estimate of five hours from a full charge appears to be accurate, and even a little conservative; with volume at around 70 percent, we saw about 17 percent of the battery capacity used per hour.

In Settings in iOS or the Bluetooth pane in macOS, you can customize how the AirPods behave when you double-tap either earpiece. Invoking Siri is the default, or you can opt to play/pause – removing an AirPod also does this, as long as you leave automatic ear detection enabled – or take no action at all. We would have appreciated the ability to skip a track without speaking to Siri or reaching for the iPhone; it's also a pity you can't set a different action for each AirPod.

The silence which sometimes precedes the chime that tells you Siri is listening feels more awkward with the AirPods, as you're reliant on that cue to confirm your double-tap has worked. That aside, after a couple of days we found the gesture easy to reliably use.

As for the beamforming mics (there's one in each AirPod's stem), they're meant to focus on your voice and filter out other sound, but our experience was mixed. Indoors and amid moderate noise outdoors they worked great, but Siri became highly inaccurate near noisy traffic.

If you're wondering about the AirPods' size, yes, we worried about losing them. Just one day after we received them, we found their case had slid up and out of a jeans pocket while we were sitting down – and it took someone else to point it out. Blame the case's smoothness, which a little rubber strip for added friction would fix.

THE BOTTOM LINE. AirPods sound great and are really comfy, but limited controls and mic performance may irk depending on where you use them. **ALAN STONEBRIDGE**

AIRPODS

- ✚ Solid sound quality
- ✚ They stay in your ears!
- ➖ Double-tap inflexibility
- ➖ Mic performance isn't great in loud environments

GOOD

Spark for Mac

The impressive mobile mail client arrives on the desktop

Free **Developer** Readdle, readdle.com

Requirements OS X 10.11 or later, 64-bit processor

Spark's Smart Inbox sorts incoming messages into Personal, Newsletter, or Notification categories.

Readdle made a splash last year with Spark, a feature-rich iPhone email app that, while far from perfect at launch, quickly blossomed into one of the best mobile mail clients around. Now Spark is coming to the desktop.

Spark for Mac isn't yet a straight port from iOS, but successfully checks off most of the key features, including Smart Inbox (which automatically sorts incoming messages), natural language search, Quick Replies, and smart notifications. The macOS version also syncs existing accounts, signatures, and other settings from iOS, which made our initial setup almost nonexistent.

The app bears more than a passing resemblance to rival third-party email client Airmail, which itself sticks to the tri-paned playbook established by Apple Mail. Accounts and folders occupy a small dark sidebar at left, with a list of messages in the center that can be configured to preview up to three lines of text. The rest of the window displays full messages in a threaded, conversational view. There's no way to open individual missives here, although you can by double-clicking from the messages list. Navigation is intuitive, but Spark lacks some of Apple Mail's nicer features, such as contextual menu shortcuts or the ability to make important senders stand out with color-coded rules.

Spark makes up for this with more elaborate gestures: swipes can be configured to perform a total of four different actions (two each at left and right), including Move and Move to Spam, which we use far more than the clichéd Archive option found in modern email clients. As with Mail, it's also easy to move messages between different mail accounts – something we do daily – although Spark sometimes took upwards of 15 seconds to complete such tasks.

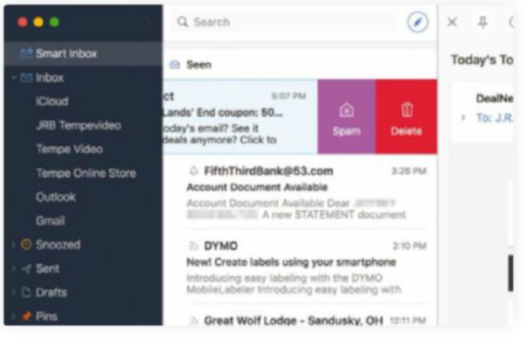
For a first release, Spark for Mac is impressive and, best of all, free. There are no ads or features to unlock – at least not yet. Readdle plans to eventually offer in-app extensions that add new features, and hopefully deliver feature parity for missing iOS features such as connected cloud services and sharing extension support.

THE BOTTOM LINE. Spark successfully makes the leap to macOS, but work remains before it's a match for the superior mobile version. **J.R. BOOKWALTER**

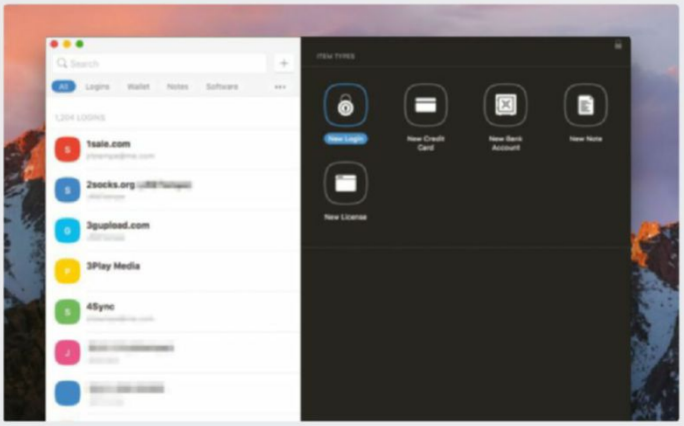
SPARK FOR MAC

- ➕ Four configurable message swipe actions
- ➕ iCloud sync with iOS version makes initial setup a breeze
- ➖ No contextual menu shortcuts or color-coded rules
- ➖ Lacks many iOS features

GREAT ■■■■□



Spark can be configured with four different message swipes, although there's no contextual shortcut menu.



Secrets

Speedy solution for sensitive info

Free ($19.99 Premium) **Developer** Outer Corner, outercorner.com

Requirements iOS 10.10 or later, 64-bit processor

Like popular Mac password manager solutions 1Password and LastPass, Secrets securely stores sensitive info. Secrets for Mac isn't quite as comprehensive as those older rivals. Entries can be assigned one of five item types: website logins, credit card, bank accounts, notes, or software licenses. By comparison, 1Password offers plenty of potential categories, including Identities, Driver Licenses, Reward Programs, and Wireless Routers. Secrets does offer a password generator and Safari extension to save and autofill login credentials, although using these isn't quite as intuitive. Secrets is now free for up to 10 items, with the option to purchase a Premium upgrade for $19.99.

We got up to speed quickly by importing more than 1,200 entries from 1Password, a mostly effortless process except for a single rogue login that kept causing Secrets to crash. There's also a companion Universal iOS app called Secrets Touch that syncs data via iCloud, but in our testing it wasn't particularly reliable.

THE BOTTOM LINE. If you want a no-frills, subscription-free password manager, Secrets for Mac is worth a look – but watch out for the janky iCloud sync. **J.R. BOOKWALTER**

SECRETS

- ✚ Mac password manager, free for up to 10 items
- ✚ Safari extension for website login autofill
- ✖ Limited item categories
- ✖ Unreliable iCloud sync

SOLID

Later

Reminders with choices

$9.99 **Manufacturer** Regular SIA, laterapp.co

Requirements iOS 10.10 or later, 64-bit processor

Later is a Mac reminders app that lives in the menu bar and strips away complexity. Instead of requiring users to choose a specific day and time to be reminded about each new entry, Later offers nine one-click presets. There are choices such as 3 Hours Later, This Afternoon, This Evening, This Weekend, and Next Week, as well as the option to choose a specific date. There's the option to use ⌘ shortcuts to select presets, and record a shortcut to add new reminders without the mouse.

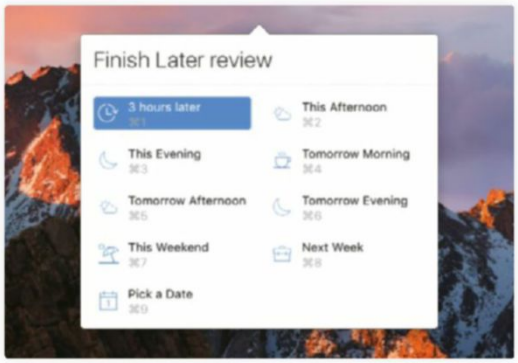
Reminders automatically sync to other Macs via iCloud, as well as a free iPhone app that offers the same simplicity. The first preset can be configured so "later today" means anywhere from one to eight hours, but you can't add new presets or customize existing ones, aside from adjusting default start or end times. If simplicity is what you seek, Later delivers – but at $9.99, quick and simple comes at a price. There's no way to create location-based reminders, nor do entries sync with Apple Reminders – Later is a standalone app.

THE BOTTOM LINE. Quick reminders sorted, but possibly a little too basic. **J.R. BOOKWALTER**

LATER

- ✚ Quick reminders app for Mac menu bar
- ✚ Nine one-click presets with keyboard shortcuts
- ✖ Can't add or customize most presets
- ✖ No location-based reminders

GOOD



AList

This colorful list app knows there's a time and place

99¢ **Developer** iLife Touch, ilifetouch.com

Requirements OS X 10.10 or later, 64 bit processor

Location-based reminders: never pass by the store again!

AList is a simple and colorful list app that can be used for a variety of tasks, ranging from work related projects to personal errands. Is it going to persuade you to switch from your current list app? Maybe not, but aside from being pretty, it has a unique location-based feature. AList comes in both Mac and iOS versions. To get the most out of it, you will want to purchase both, but at 99¢ each, it's a bargain.

Getting started on AList can be mildly confusing: the app's minimalist design leaves you with almost no direction to start, aside from creating a task group. After that, it becomes slightly more intuitive. You create task groups, and, if you like, subgroups, and then add individual list items. You can then add detailed comments to each item, a feature only in the premium version of other apps, like ToDoList. Tasks can be identified, categorized, and prioritized using color coding and various icons. This is a relatively rare feature: other apps allow you to pick color schemes, but stick to an overall monochrome template. Being able to quickly locate the urgent red list in a soothing sea of green, purple, or blue is a definite plus. The color coding, in addition to being useful, adds a fun and cheerful note to your devices.

The ability to create groups allows this app to be useful for a variety of tasks because you can make your lists as simple or as detailed as you like. The structure is simple and gives you a lot of freedom. One potential drawback is its lack of collaborative features; AList is not the app you want for group projects since you can't share or delegate tasks.

AList has one stand-out feature: location-based reminders. The location feature activates reminders either when arriving or leaving a location. They can be set up from both the iOS or Mac versions, as long as you're connected to Wi-Fi, and the setup is similar to that of Apple's Reminders app, but with a more appealing layout. It's a great feature for anyone with a tendency to go through their routine on autopilot.

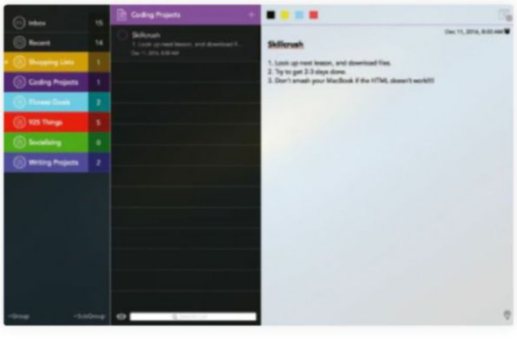
The Mac and iOS versions sync nicely with each other as well as your all of your devices' native calendars and reminders, but that is a feature that should be expected in a paid app. Unfortunately, AList's current version lacks a recurring reminder feature, which is a shame since daily reminders are a great tool for forming new habits or adjusting to major changes in your routine.

THE BOTTOM LINE. This app is a nice tool and has a few useful features, but lacks others. This makes it nice to have, but not a necessity. **S. ADRIANE KAYLOR**

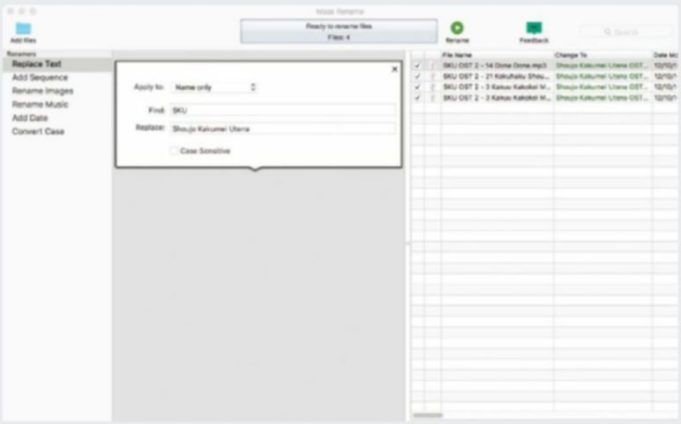
ALIST

- ✚ Location sensitive reminders
- ✚ The price is right
- ➖ Almost no initial setup assistance
- ➖ No recurring reminder setup

GOOD



The ability to customize your lists in AList certainly makes the app visually appealing and adds clarity.



Mass Rename

A simple batch-renaming facility

99¢ **Developer** GTrigonakis mac tools, gtrigonakis.com

Requirements OS X 10.8 or later

Mass Rename does exactly what it says; it is a utility meant to make the mass renaming of files less tedious. The clean aesthetic and top bar of the interface is reminiscent of iTunes, making it feel well suited to macOS. The interface has specific options for photos and music, using as much metadata as it can pull from the files themselves – if there is any available – making renaming photos imported from cameras and SD cards, for example, a lot easier. It really alleviates the cognitive strain for a lot of file types. For people intimidated by using Automator or macros for renaming lots of files, Mass Rename provides a workflow that is more intuitive, though is perhaps too reliant on the bare bones approach; the very highlight of its interface – its clean simplicity – can be initially confusing, before you figure out what you're supposed to take action on first. (The app does provide step by step hints, but these could be worded more clearly.)

THE BOTTOM LINE. Not as flexible as Automator or more advanced tools, but does the job and does it well. **KATRIEL PAIGE**

MASS RENAME

- ✚ Clean interface
- ✚ Quick options for photos and media
- ➖ Basic utility (renaming files) can be done using Automator, macros, other apps
- ➖ A little confusing to begin with

GREAT ■■■■□

Squash 2 for Mac

Speed up websites and cut bandwidth bills

$20 **Developer** Realmac Software, realmacsoftware.com

Requirements OS X 10.11 or later

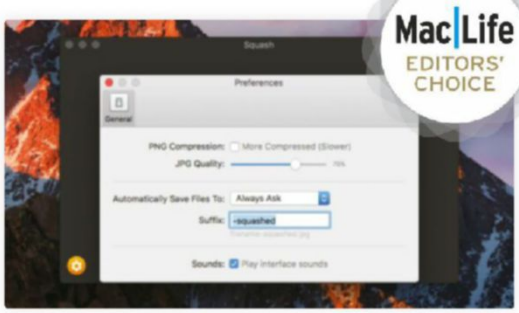
Squash is designed to optimize, convert and/or rename image files for emailing or uploading to websites and social media, and it does so exceptionally well. And it's fun to use, too. Using Squash is simple. Just drag the file or files you want to optimize over the app window and it'll start crunching. It can compress JPEG and PNG images to make them dramatically smaller with no loss of visual quality, and you can adjust the level of compression to make it more or less aggressive in the app preferences or in your Mac's Touch Bar. There's an option to strip metadata from JPEGs. Squash can convert files too: PSD, RAW, CR2, and TIFFs become compressed JPEGs without you having to open (or own) Photoshop. That makes it particularly useful for designers who need to send ideas, works in progress, or finished designs to clients. Fast, effective, easy to use and with impressive results, it shines a little ray of sunshine on a task that's normally dull and dreary.

THE BOTTOM LINE. If you're constantly uploading images, Squash 2 will save you time and money. And make you smile. **GARY MARSHALL**

SQUASH 2 FOR MAC

- ✚ Easy to use
- ✚ Fast, funny, and strangely satisfying
- ✚ Inexpensive
- ✚ Touch Bar support

AWESOME ■■■■■



Finder File Edit View Go Window Help
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Primitive
94.54 Score
607 Shapes
New Open Save Setup Stop
MacBook Pro
esc
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option
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Primitive

Painting with geometry

$9.99 **Developer** Michael Fogleman, primitive.lol

Requirements OS X 10.10 or later

When talking in computer graphics terms, "primitives" are the simplest shapes a system can draw – circles, cubes, spheres and so on – from which more complex designs are constructed. 3D artists will be familiar with the concept, but photographers don't usually think this way: our primitives are square pixels, and we just throw enough of them at the job for an acceptable level of dumb accuracy.

Over the years, a lot of work has been done on how photographic images could be represented by primitives, not least for the purposes of file compression. Michael Fogleman, the science software engineer who wrote this app, has applied that kind of thinking to a new take on automatic painting.

Import a picture, pick a type of primitive – triangles, circles, rectangles, or curves – and the app works out how to get as close as it can to the original by overlaying this shape at diminishing sizes. Click More Options and you can give it extra rules.

The process takes a little while to complete, but part of the fun is watching it happen. It starts with large areas, then adds detail until you click Stop. The method looks strikingly similar to how a painter would work. You can also use the Drawing mode to do the painting yourself: the canvas starts blank, and wherever you click, shapes are generated, so you could for example build up detail in key areas, while leaving the background as big, bold shapes.

Frustratingly, curves tended to spread far beyond where we clicked – possibly as a limitation of the algorithms involved – but other shapes were more responsive. You can even switch shapes part-way through. It's rare to find an "art" filter that so successfully enables you to produce unique results without skilled technique but through genuine creative decisions.

By default, Primitive works on a downscaled version of your photo, between 256 and 1,024 pixels wide. You can use the full resolution if you don't mind a lot of waiting, but 1,024 pixels gave as much detail as we wanted – so you could also work on a small area pre-cropped from a scene. The result can be exported as a bitmap at any size or, much more interestingly, as an SVG vector file, which you can then edit further in an app such as Adobe Illustrator or Affinity Designer. Even when we let Primitive run until the image looked almost as detailed as the original, there were few enough shapes (thousands, not millions) to edit comfortably – a remarkable effect.

THE BOTTOM LINE. Turn photos into art with an unusual and beautifully effective process of visual reduction. **ADAM BANKS**

PRIMITIVE

- ✚ Very simple to use
- ✚ Adequate custom options
- ✚ Allows creative interaction
- ➖ No saved settings or undo tool

GREAT

Life

It's really not a wonderful Life

99¢ **Developer** MacAppStudio, macappstudio.com

Requirements OS X 10.11 or later

Life's feature set isn't nearly as complete as more seasoned rivals like Day One.

Journaling apps are great for capturing life's moments so you can look back on events any time in the future. Popular software like Day One makes this easy to do from any device, complete with photos and maps that offer a more faithful recollection of bygone days.

Life is a new Mac journaling app with similarly lofty goals, but one that lacks the overall finesse of more seasoned rivals. The basic premise is the same: add one or more daily entries, spicing them up with icons, emoji, custom tags, location, or marking your favorite events.

Notably absent from the lineup are photos, a feature clearly touted in developer MacAppStudio's marketing but missing in action from the initial release. Dragging and dropping JPEG files from the desktop does little more than add a text-based file path to the desired image, although you can import a new avatar image (or change the profile name) via the app's settings.

Even if photos were part of Life's initial release, the remaining functionality feels half-baked at best. While you can add the name of a location, it's simply a placeholder – there's no GPS lookup or data-matching, but a true "places" feature is in the works. Text formatting is currently limited to bold, italics, or underlined, although markdown, alignment, and real-time word or character counts are also promised for a future update.

Life works best with multiple entries per day, which are displayed as a timeline under the date in the left third of the window. Search is also quite robust, with the ability to find entries by date, tags, location, icon, or emotions; basic text search leaves a lot to be desired, however, failing to find terms that are clearly present in the selected day.

We do applaud the developer for making it easy to dive in with a quick-start guide and intro video, although these helpful escorts are inexplicably buried in a Settings tab. iCloud sync allows Life to work with other Macs as well as a paid companion iPhone app, and you can set up reminders to encourage more frequent journaling. It's also easy to print or email entries, but there's no sharing to social networks yet.

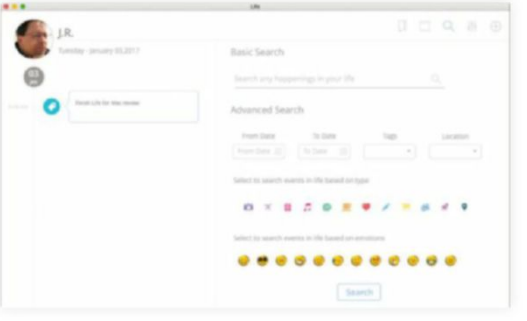
THE BOTTOM LINE. For a buck, Life makes lots of promises but has a long way to go before it can deliver a comprehensive journaling experience for Mac.

J.R. BOOKWALTER

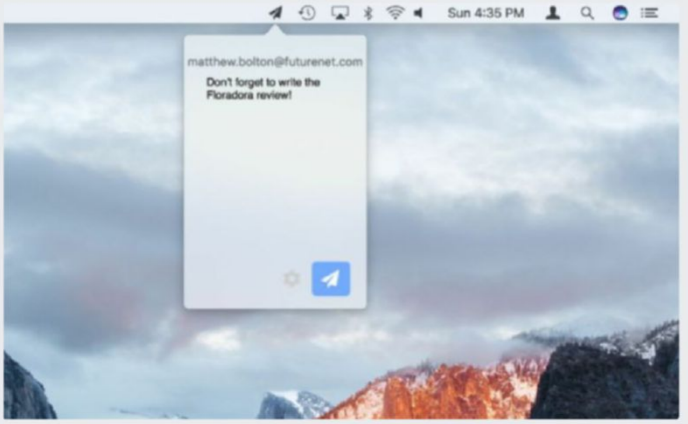
LIFE

- ✚ Quick-start guide, easy to use
- ▬ No photo import, places, or maps
- ▬ Lacks text formatting beyond bold, italic, and underline
- ▬ Basic text search doesn't work

WEAK



We didn't have much luck with basic text searches, but Life's other power-search tools work quite nicely.



Floradora

Easy email notes

$2.99 **Developer** Justin Duke, floradora.cloud

Requirements OS X 10.10, 64-bit processor

This is a nice idea if you use email for storing notes or as a kind of to-do list. If you want to send yourself a little reminder to your inbox, instead of firing up the Mail app or logging onto a website, click Floradora's icon in the Menu bar. When you first set it up, you tell it what address it should be sending to, and what the subject line of its emails should be. After that, the window that pops up consists of a text field and send button – type or paste in what you want to send, hit the button, and off it goes. Easy.

If that sounds good to you, you should grab it. But for us, it needs a little more flexibility to be truly useful. We don't mind that you can't send to more than one email address, but the option to switch to another would be nice. We think the inability to change the subject line is a bigger mistake, though: it means you can't label your notes clearly, and makes it harder to use Rules/Smart Mailboxes with emails sent from the app. And while you can paste images into the window, you can't drag them in from files – a limitation of its nature as a Menu bar app, but still a shame.

THE BOTTOM LINE. A nice idea, but we need a little more flexibility to get the most out of it. **MATT BOLTON**

FLORADORA

- ✚ Useful for people who live in their inbox
- ✚ Easy and convenient to use
- ▬ More flexibility would be useful
- ▬ Can't drag images in

GOOD

Photo Wormhole

Access-all editing extension

99¢ **Developer** Alexander Zats, zats.io

Requirements macOS 10.12 or later

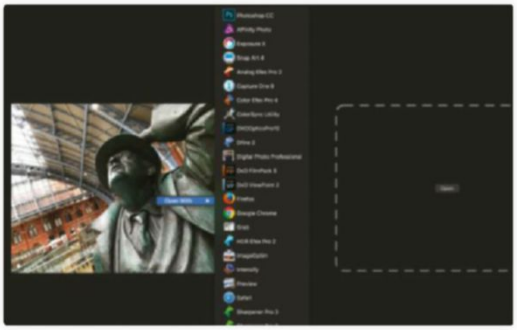
Photos is a great app, but we've all got a favorite editing package that doesn't work as a Photos extension. However, with Photo Wormhole you can open just about any editing software from within Photos. Download it via the Mac App Store and install it via System Preferences > Extensions > Photos. The interface is uncomplicated, but it isn't immediately obvious how to access the external editors; right-click or secondary-click with two fingers (weirdly, ctrl+click doesn't work) to see "Open with." Hovering over this reveals the compatible software. Photo Wormhole recognized all packages we tried, including Adobe Photoshop, Affinity Photo, Capture One, and Snapseed. Once you've chosen, the software opens promptly with the image showing. After you've finished making edits, save the image and close it in the software before returning to Photos, where you'll see the original alongside the edited version. If you're happy, select Save Changes (you can still click on Revert to Original in Photos to undo your editing).

THE BOTTOM LINE. A great choice if you love the convenience of Photos but miss an external editing package. **ANGELA NICHOLSON**

PHOTO WORMHOLE

- ✚ Great price
- ✚ Simple to use
- ✚ Accesses all the main editing software
- ▬ Not clear how to access the editors

GREAT



Grab File Edit Capture Window Help
Favorites
Blur
Color Adjustments
Color Effects
Distortion Effects
Halftone Effects
Sharpen
Stylize
Tile Effects
Other
Box Blur
Gaussian Blur
Masked Variable Blur
Motion Blur
Noise Reduction
Zoom Blur
Cancel
Add
Histogram
Exposure Adjust
EV
Color Controls
Saturation
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Artistry Photo Pro

The fun of Instagram with some of the power of Photoshop

$19.99 **Developer** It's About Time Products, helloiat.com

Requirements OS X 10.11 or later

One of the reasons that Instagram is so popular is that it makes editing images incredibly easy. You don't have to go on a course or spend hours on YouTube learning how to use it; you just scroll through a few options, give your image a tweak and it's ready to share. Artistry Photo Pro tries to achieve the same thing in a desktop package with a little extra control.

The first step is easy, after you've opened an image, you scroll through the options at the bottom of the screen until you find one that you like the look of. Once you've made your treatment selection, the controls for all the adjustments that have been applied to create your chosen effect are shown in the column on the right of the screen. If you want you can use them to tweak the image further. Simple sliders, backed up by clickable numbers, make the edits easy and a series of thumbnails indicates their impact. If you don't like your adjustments, a double-click on the slider returns it to the default settings. It's also possible to apply additional effects by selecting the "Add Adjustment" option at the top of the right-hand column. There's a good selection of options available and the thumbnail makes it easy to experiment, but a couple of basic controls – crop and straighten – are missing. However, we're told that Photos app extension support is just a few days away at the time of writing and that will solve the issue.

In addition to making global adjustments, it's also possible to paint in an effect using the controls revealed by clicking on the paintbrush icon to the right of each adjustment title. There's an option to detect the edges in your image to limit the adjustment to specific areas, but we found this had mixed success. While the selective adjustment feature can be very useful, using it can get frustrating because you have to click on the brush icon twice every time you want to adjust the size, hardness or opacity of the adjustment brush, or switch to the eraser to correct a mistake. It's also particularly annoying that if you change your mind about the treatment that you want to use and click on a different effect in the bottom row, your carefully crafted painting is lost.

THE BOTTOM LINE. It's not perfect, but Artistry Photo Pro is easy to use and there are some powerful tools available.
ANGELA NICHOLSON

ARTISTRY PHOTO PRO

- \+ Easy to use
- \+ Selective adjustments possible
- – No crop control
- – Selective adjustment process is clunky

GOOD

ExoLens with Optics by Zeiss

Life through (an expensive) lens

$200 **Manufacturer** Zeiss Optics, exolens.com

Features 18mm focal length, lens hood, rubber grips for iPhone 6/6s

Zeiss is world reknowned for making amazing lenses for the high-end camera market, but the iPhone – really? So far, lens-boosting accessories for the iPhone have been dominated by manufacturers that don't necessarily make SLR equivalents. So, when big manufacturers get in on the act, are they really worth the extra premium on price?

Here Zeiss has gone for a one-lens solution rather than a complete lens studio of the sort you can get for a similar price from the likes of Manfrotto and Olloclip. Note that ExoLens has a non-Zeiss lens kit for a similar price to Olloclip/Manfrotto multilens systems. So, for just one lens – in this case a wide-angle one (0.6x) – what do you get for the cash? Well, images are crisp, just wide enough to make landscape shots really pop, and though the case system looks odd, it excels with a tight rubber grip that can be slid off your iPhone in seconds.

We have found other wide-angle iPhone lenses tend to suffer from a degree of horizon curvature. The same artefact is found here, but it's less noticeable than on most lenses. This is a lovely add-on for an iPhone snapper but, in terms of price and flexibility, a multilens system will suit most people better.

THE BOTTOM LINE. We can't argue with the images or the great case, but wow, it will hurt your wallet. **CHRISTIAN HALL**

EXOLENS WITH OPTICS BY ZEISS

- ✚ Sharp, wide shots
- ✚ Frame allows for tripod and flash attachments
- ➖ Very expensive
- ➖ Multilens systems available at this price

GREAT ■■■■□

HP Sprocket

Battery-powered Bluetooth printer

£99 **Manufacturer** HP, hp.com

Features Bluetooth, Zink zero-ink printing, 1200x600 dpi

HP's printing prowess is brought to bear on social photographers in the Sprocket. The small (2.95x4.57 inches) device packs in Bluetooth, a lithium-ion battery and just enough printing technology to allow it to print onto sticky-backed sheets of 2 x 3in Zink sheets. (Zink is a contraction of zero-ink – referring to sheets of photo paper which are embedded with heat-activated CMY layers.) Load the paper, install the app and you're ready to go; pairing our iPhone with the Sprocket over Bluetooth was painless and once the app is open you can choose images from your Camera Roll, Flickr, Instagram, or Facebook. The app includes various editing tools and filters, including the de rigeur washed-out effect. There are also various emoji-style stickers to add, as well as the option of including a line or two of text.

We timed a print at just over 50 seconds. Print quality is merely so-so – it's unfair to expect terribly good quality but even so, the banding and blocky color graduations suggests the Sprocket is more for fire-and-forget fun than the production of important mementos.

THE BOTTOM LINE. Print quality isn't the best, but customizable stickers are undeniable fun. **DAVE STEVENSON**

HP SPROCKET

- ✚ Fun stickers
- ✚ Good app
- ✖ Mediocre quality
- ✖ Fairly expensive

SOLID

Griffin iTrip Clip

Wireless headphones for all

$19 **Manufacturer** Griffin, griffintechnology.com

Features Bluetooth, playback controls, mic, USB

The obvious audience for this accessory is iPhone 7 users with old headphones that they love: plug any headphones into the jack on this unit and they become Bluetooth cans. The iTrip Clip pairs with your iPhone (or any Bluetooth audio device) and then plays sound to whatever's plugged into it. It has its own playback controls – including play/pause, skip, and volume – and is powered by an internal battery that charges over micro-USB (an extra charger to carry, but it comes with a short cable). Sound quality is good, it's really cheap, and even includes a mic for calls or Siri (you can clip it near your mouth). It's also good for home audio or car stereo systems that you'd like to take wireless.

There is a problem, though: there's a delay on the audio. This doesn't matter for audio-only stuff, but it's irritating for video when the picture and sound are out of sync. If this won't bother you, we totally recommend it – but if you're an avid mobile movie fan, it's not the solution you need.

THE BOTTOM LINE. An inexpensive option to turn wired 3.5mm headphones into Bluetooth sets. Best suited for audio, not video. **MATT BOLTON**

GRIFFIN iTRIP CLIP

- ✚ Sound quality is good
- ✚ Inexpensive
- ✚ Includes a mic for calls
- ✖ Delay on audio

GOOD

FUJIFILM
FUJINON ASPHERICAL LENS
SUPER EBC XF 18-55mm 1:2.8-4 R LM OIS Ø58
OFF ON
M C S

Fujifilm X-T2

Can a mirrorless camera really keep up in the world of fast-action photography?

$1,599 **Manufacturer** Fujifilm, fujifilm.com

Features APS-C X-Trans III CMOS sensor at 24.3MP, 3-inch tilt-angle screen, 1,040,000 dots, 4K video capture

With the X-T2 sitting alongside the X-Pro2 as the joint flagship camera of the brand, Fujifilm believes it now offers two distinct options for photographers. The X-Pro2, with its rangefinder design, is less obtrusive and suited to Fujifilm's range of prime lenses, while the more SLR-like X-T2 is designed with the brand's growing range of fast zoom lenses in mind.

It's no great surprise to see the 24.3MP APS-C X-Trans III CMOS sensor that we first saw in the X-Pro2 is now in the X-T2. Fujifilm's latest sensor, with its clever filter designed to eke out even more detail compared to conventional designs, has delivered some impressive results.

The sensitivity range covers a modest ISO200-12,800, but can be expanded to ISO100-51,200 – and the good news is that, unlike the X-T1, this extended range doesn't force you to shoot in JPEG-only, with raw capture now possible as well.

The X-T2's electronic viewfinder has also come in for some attention, and while the 2.36-million-dot OLED display with 0.77x magnification remains the same, there are numerous improvements over the one used in the X-T1 – not least improved brightness.

Meanwhile, the new double-jointed articulated display makes it possible to pull the screen outwards and away from the body when the camera is tilted on its side. Interestingly, though, Fujifilm has opted to omit a touchscreen from the X-T2.

The X-T2 is the first Fujifilm X-series camera to offer 4K UHD (3840x2160) video recording, with a bit rate of 100Mbps (compared to 34Mbps on the X-T1) at 30, 25 or 24fps. Finally, the X-T2 now features dual SD card slots, and unlike the X-Pro2 both are UHS-II compatible.

Autofocusing is nice and quick, while the level of sophistication when it comes to tracking is impressive, making the X-T1 look very pedestrian indeed. We trialed it on fast-moving cars using the in-built Preset 3 (Accelerating/decelerating subjects). Coupled with the improved frequency of the autofocus search timing – reduced from 280ms on the X-T1 to just 114ms on the X-T2 – it rarely missed a beat when taking a shot.

The unchanged TTL 256-zone metering system performs very well, especially when challenged by high-contrast scenes; indeed, if anything it tended to underexpose. Raw files deliver very pleasing color, while those shooting in JPEG have Fuji's excellent set of Film Simulation modes on tap as well.

THE BOTTOM LINE. There's still a bit of room for improvement (isn't there always?), but the improved AF performance and the new sensor that delivers pin-sharp results makes the X-T2 one of the most desirable cameras available right now. **PHIL HALL**

Mac|Life EDITORS' CHOICE

FUJIFILM X-T2

- ✚ Greatly improved AF
- ✚ Large and bright EVF
- ✚ 24.3MP X-Trans CMOS sensor
- ➖ No touchscreen

AWESOME ■■■■■

Brik Book for Mac

A case you can personalize with LEGO

From $59.99 **Manufacturer** Jolt Team, brik.co

Requirements 13/15-inch Retina MacBook Pro (models before 2016), 11/13-inch MacBook Air

The LEGO-compatible Brik Book is a shell for your MacBook that adds a surface you can build designs on from bricks. Deciding what to build might be the most challenging step. Jolt Team sell Briks (their own equivalent of LEGO bricks) in a range of colors, and on their online Pixel Art Design Gallery, they offer countless sample designs, from a classic Mac Hello script to Libra scales. A basic set comes with a recreation of the white Apple logo, and extra sets are available at additional cost. The case itself comes in gray, clear, and blue, with other colors available at certain times (red and green were available over the holidays, for example).

Attaching the Brik Book to the back of an 11-inch MacBook Air is an easy feat, but some initial legwork is needed to properly assemble the cover art. Unfortunately, the manufacturer doesn't include instructions for all of the designs available on the website. As a result, assembling the design seemed overwhelming at first, but ultimately, we found it rewarding.

Removing a poorly positioned Brik is not that easy. Jolt Team does offer a Brik removal tool, but only includes it some select packs as standard. The most effective strategy we found without one was to stack two Briks atop of each other then remove both from the grid. The total time needed to assemble most of the designs suggested on the website is under an hour, but a single ill-placed Brik can torpedo that estimate. Having said that, the Brik pieces stay firmly in place no matter what; they're not in the business of just popping off. The Book fits crisply on the laptop and does not add substantial weight. It's almost de-stressing to run our hands over the Brik Book's outside; the texture is both playful and soothing.

If you want your MacBook to stand out from the crowd, this case will help to make yours a nice little conversation piece.

THE BOTTOM LINE. The Brik Book is a great notebook accessory, bringing a bit of fun to your MacBook. **MUIRA MCCAMMON**

BRIK BOOK FOR MAC

- ✚ Durable, secure pop-on laptop cover
- ✚ Creative alternative to stickers
- ➖ Challenging to remove the Briks once placed
- ➖ Lack of instructions

GREAT ■■■■■

Netatmo Healthy Home Coach

Monitor climate and air quality

$99 **Manufacturer** Netatmo, netatmo.com

Features 802.11b/g/n (2.4GHz) Wi-Fi, iOS 8.1 or higher (iOS 9 for HomeKit integration)

This unit monitors air quality, CO_2 (but not carbon monoxide), temperature, noise, and humidity in a single room in your home. It connects to Wi-Fi on the 2.4GHz band and is set up, controlled and measured using an iOS app.

After the simple set-up process, you can get a quick reading from the device by touching the top of the cylinder – a pulsating light from red (bad) to green (excellent), will give you a "mood" reading. For exact measurements, use the app, which will also alert you should it record any unusual figures, such as high CO_2 levels or low temperatures.

The app is flexible and versatile – there are options for keeping it calibrated, plus profiles for asthmatic and baby users, plus support for multi-user access. The unit also links in neatly with other Netatmo smart home devices, and its readings can also be used to trigger your other HomeKit devices.

However, it's far too expensive, particularly if you want to monitor more than one room, and doesn't really do enough to stand out from the likes of Elgato's Eve Room.

THE BOTTOM LINE. We love the design and user-friendly app, but the Healthy Home Coach is too pricey. **NICK PEERS**

NETATMO HEALTHY HOME COACH

- ✚ Beautiful, well built
- ✚ Can trigger other HomeKit devices
- ➖ Far too expensive
- ➖ Doesn't monitor for carbon monoxide

SOLID

The Little Acre

A pint-sized adventure lacking in challenge

$12.99 **Developer** Pewter Games Studios, pewtergamesstudios.com

Requirements OS X 10.10 or later, Intel Core i7 2.3GHz, 2GB RAM, GeForce 9400M or equivalent graphics

One of the game's first puzzles: dressing yourself.

What would happen if you were just minding your own business in your modest cottage in 1950s Ireland and stumbled upon a portal to another dimension? That's the premise upon which point-and-click adventure The Little Acre is built. After the disappearance of his scientist father, Aidan is struggling to raise his rambunctious daughter Lily on his own. Fooling around with the missing Arthur's inventions, Aidan accidentally stumbles into a mysterious, dangerous, and technologically advanced place – and while he's looking for a way out, Lily climbs in after him.

Both Aidan and Lily are playable in this charming adventure, though they can't be selected at will. Instead, the game will switch between them at certain story points as they try to reunite and escape – and maybe find out what happened to Arthur along the way.

The tale is conveyed through animated cut-scenes and lovely hand-drawn artwork, and you can really feel the influence of '90s adventure games such as Broken Steel in every frame. Also retaining that classic feel is the simple way you play: collecting items and figuring out how to use them within the varied environments.

The Little Acre is on the short side, with the story wrapping up in less than three hours, depending on how long you linger on any particular puzzle. The length alone isn't a problem, but the lack of challenge is definitely a drawback. You'll never have more than a handful of items in your inventory at any one time, and the game's hand-holding and lengthy dialog explainers mean you'll never really be stumped. That's great if you're new to the genre or looking for a brief experience, but not so much if you want the satisfaction of unraveling a truly devious brainteaser.

Still, even without the memorable cleverness of some of its adventure game counterparts, The Little Acre is enjoyable from start to finish. The story and characters are lovely, and its distinct style perfectly suits the tone.

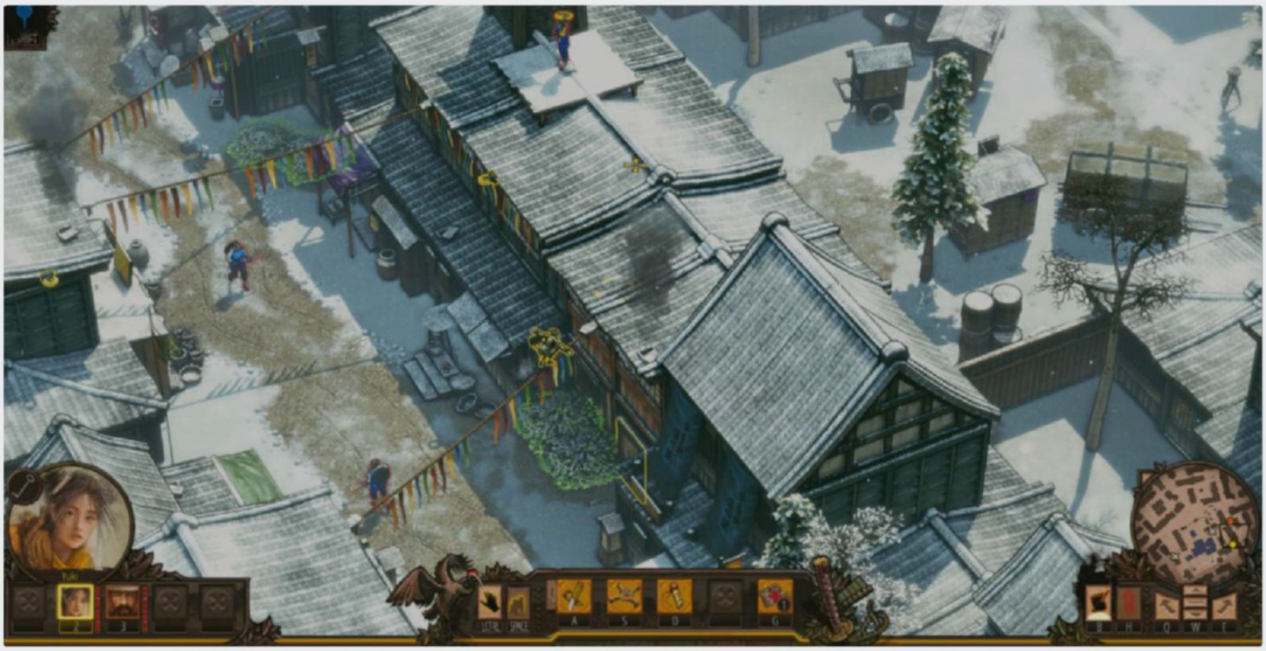
THE BOTTOM LINE. Though not the most challenging experience the genre has to offer, The Little Acre is nonetheless a completely charming point-and-click adventure. **SARAH LEBOEUF**

THE LITTLE ACRE

- ✚ Hand-drawn art style
- ✚ Story and voice acting really bring the characters to life
- ▬ A little too short
- ▬ A little too easy

GOOD

Home sweet home. Now pick up everything you can and use it with everything else...



Some guards are harder to distract than others, but a dagger in the back is a great leveler.

Shadow Tactics: Blades of the Shogun

Staying alive by tapping F5

$39.99 **Developer** Mimimi Productions, mimimi-productions.de

Requirements OS X 10.10, Intel dual-core processor, 4GB RAM, Nvidia 9800 GTX, AMD Radeon HD 7770, 1GB VRAM

Set in Edo Japan, each stage in Shadow Tactics is a sprawling diorama of twisting alleys, fortified courtyards, and soaring pagodas, brimming with curious guards and stern watchmen. Shadow Tactics is a stealth game in the old style – there's nothing innovative about skirting cones representing sightlines or dragging corpses out of sight. Not one member of your five-man team is particularly suited to brawling, and Shadow Tactics requires a hermetic devotion to staying hidden.

The internal clockwork that governs what enemies see, hear, and react to is hard-nosed but judiciously fair. Sightlines are affected by height and brush, and it takes practice to learn how to hide in plain sight. There's a fine line between raising suspicions and raising a red flag, but killing is noisy, messy work.

The flashiest thing about Shadow Tactics is "Shadow Mode," which queues simultaneous actions for each member of your squad – with careful planning, you can dispatch an entire room with one keystroke. Still, the legacy of real-time stealth games lives on, especially in its liberal use of quick-saving. Successfully goaded an ox into kicking a passing soldier to death? F5 to save. Cut down where you stand by a snarling, armored samurai? F8 to reload. Quick-saving encourages players to experiment (and fail) freely. With that safety nets comes the freedom to approach Shadow Tactics' challenges, large and small, as you see fit.

THE BOTTOM LINE. Shadow Tactics feels considered and hand-crafted, at once an homage to – and a path forward for – the best in stealth gaming. **JOSEPH LERAY**

SHADOW TACTICS: BLADES OF THE SHOGUN

- ✚ Meticulous attention to detail
- ✚ Generous quick-save and branching levels
- ▬ Some persistent visual glitches
- ▬ Fragile AI can cause problems rare cases

EXCELLENT

› GET STARTED WITH THE...

SUPER SMART HOME

There's an ever-increasing range of smart devices that you can use to monitor and protect your home

BY CLIFF JOSEPH

Security, lighting, and heating are the three main types of devices that tempt people to get started with home automation, and we regularly see new security cameras, smart lights, and thermostats every month in Home Life.

However, there are a number of smaller and less eye-catching devices that help to join the dots between those three major product categories. There are security sensors that can detect movement in a dark room, or warn you if a window has been opened when you're away from home. You can turn on just one radiator in an upstairs bedroom using Siri voice commands, or get an early warning with a smart fire alarm.

The Internet of Things is rapidly taking shape, and there's now a dazzling variety of smart devices and appliances that you can buy for your high-tech smart home. However, there's one very simple option that can save you quite a lot of money when you're getting started. You can make most electrical devices "smart" – albeit in a limited way – by using a "smart plug" to control their power supply.

Belkin's WeMo Switch ($50) is one of the most popular smart plugs at the moment, and TP-Link has recently launched its own plug called the HS100 ($30). Samsung, D-Link, and Devolo all make smart plugs too, although these are generally sold as part of a larger

LIKE EVERY COOL GADGET NOWADAYS, THESE SMART THERMOSTATS ARE PART OF THE INTERNET OF THINGS

The Eve Energy smart plug and app help you control your utility bills.

Eve's Motion Sensor works over Bluetooth rather than Wi-Fi, but it Is compatible with HomeKit.

home-automation system and may not work on their own, so check on that before buying.

PLUG AND PLAY

A smart plug is simply an adapter that goes into an AC outlet, and then allows you to plug in other devices such as a lamp or a radio, or maybe even a washing machine. Most smart plugs use Wi-Fi to connect to your network, enabling you to control the power supply even when you're away from home – perhaps turning your lights on in the evening to make it look like your home is occupied while you're away on vacation.

One unusual product here is Elgato's Eve Energy ($50), which uses Bluetooth rather than Wi-Fi to connect to the Eve app on your iPhone. Bluetooth only has a limited range, but the Eve Energy is the only smart plug that currently works with Apple's HomeKit software, which means that your Apple TV can help you get around their limited range. They can connect to the Apple TV, which acts as a hub for them, meaning you can control them with your phone remotely – even outside the home.

SOME SMART PLUGS CAN ALSO HELP YOU TO SAVE MONEY BY MONITORING ENERGY USAGE

Some smart plugs can also help you to save money by monitoring and analyzing your energy usage. Smart thermostats are another good option for saving money, but if you want really fine control over your temperature, you can also buy devices that control your air conditioning. Tado's Smart AC Control works with your phone and automatically turns the air con down when the last person leaves the house, and starts cooling/heating when someone returns.

IN MOTION

We all want to keep our homes safe, so security cameras are often the first smart devices that most people buy for their home. But cameras aren't the

The Nest Protect smoke alarm both talks and alerts your phone.

only security option worth thinking about. Many companies make motion sensors that can be used to detect movement within a room during times when your home should be empty, or just so that you can keep an eye on what's going on. There are also sensors that can be attached to doors or windows to warn you if they've been opened.

These sensors are often sold as part of a larger security kit, such as Samsung's SmartThings kit ($230), or Panasonic's Home Monitoring and Control kit ($250), both of which also include a smart outlet and a central control hub that you need to connect to your Wi-Fi router. Once you've got that control hub, you can buy additional sensors for around $40-$50 each, so it won't cost a fortune to cover most average homes.

If you're on a tight budget, or you just want to monitor one specific location, you can also buy standalone sensors that just work on their own. The D-Link Wi-Fi Smart Motion Sensor ($35) can connect directly to your home network and its 26 ft range will cover most medium-sized rooms. Elgato's Eve range includes both the Eve Motion sensor ($50) and a Door/Window sensor ($35). Again, Elgato opts for Bluetooth rather than Wi-Fi connectivity, but the HomeKit support means that you can create "scenes" that combine devices; you could use the door sensor to automatically turn on your Philips Hue lights when you open the door.

To really proect your home, you can buy smoke detectors for fire prevention, and water sensors that can warn of leaking pipes. There are several options here, with Nest's Protect ($100) smoke alarm being one of the most well-known, although Honeywell, D-Link, and Samsung all make smoke alarms and water sensors that work in conjunction with their other security products.

If you buy all your smart devices from one manufacturer you shouldn't have too much trouble getting them to work together. Unfortunately, getting devices from different manufacturers to talk to each other remains a real challenge, just as you might expect.

Apple's HomeKit is still only making slow progress, and it's early days for the promising Amazon Echo right now. However, Logitech recently popped up with Pop, a simple "button" that helps you link multiple devices together and activate them with a quick press of your finger – perhaps turning on your lights, Sonos speakers, and Belkin WeMo smart plug all at once.

The advantage of this approach is that once the Pop has been set up, you can just stick it onto a convenient wall or other spot, and other people can use it to control your home devices without having to use an iPhone or app at all.

Belkin's WeMo Switch works over Wi-Fi.

FIVE OF THE BEST

We recommend the best five smart devices for you

1

BELKIN WEMO SWITCH
$40
belkin.com

› Belkin's WeMo is one of the most popular smart plugs currently available, and there's a second model for $50 that can monitor and analyze your energy usage too. The WeMo is compatible with the Nest thermostat and Amazon Echo – but, sadly, there's no support for Apple's HomeKit yet.

2

SAMSUNG SMARTTHINGS HOME MONITORING KIT
$250
samsung.com

› This Starter Pack includes a smart outlet, a motion sensor, and two multipurpose sensors, along with a central hub that links them. The hub also enables you to add compatible cameras, locks, alarms, and more from the likes of Yale and Honeywell.

3

D-LINK WI-FI SMART MOTION SENSOR
$35
dlink.com

› The Wi-Fi Motion Sensor is a simple and affordable way to monitor a single room, or any smaller location such as a hallway. It plugs directly into a power outlet, and then connects to your Wi-Fi network to send you alarms when you're away at work, for example.

4

ELGATO EVE ENERGY
$50
elgato.com

› The Eve Energy uses Bluetooth to talk to its app on your iPhone rather than Wi-Fi, but it's the only smart plug we've seen that works with Apple's HomeKit. That lets you control it with Siri voice commands, and link it up with other HomeKit devices, such as Philips' Hue lights.

5

LOGITECH POP
$100
logitech.com

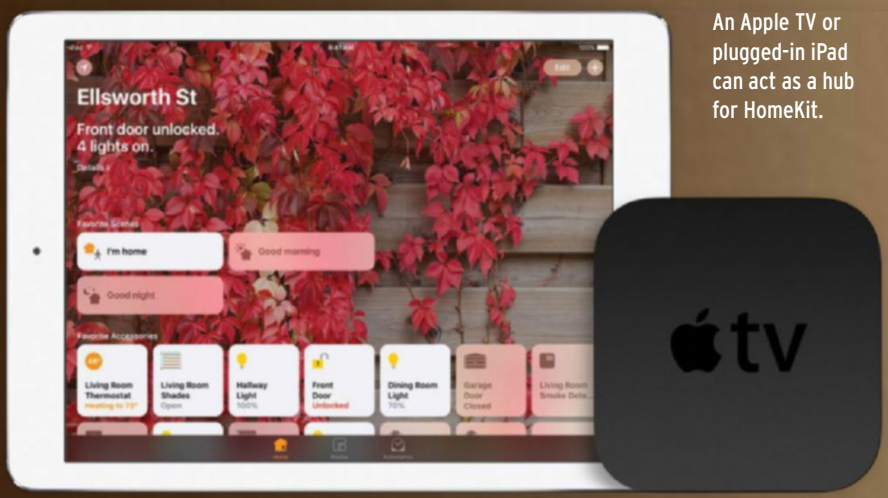
› The Pop is a "smart button" that lets you control multiple devices with a quick tap of your finger – no iPhone or iPad needed once it's set up. The Pop starter kit includes two buttons, and will work with devices from Philips, Samsung, Belkin, and others, and you can add extra buttons for $40 each.

› WHAT ELSE SHOULD I THINK ABOUT...

THE HUB OF YOUR HOME

If you're really serious about having fine control of your devices, consider investing in an Apple TV

The Home app that arrived in iOS 10 works well as a way of quickly controlling multiple smart devices within your home – as long as those devices support HomeKit, of course. If you're only running the app on your iPhone, you can control all your smart devices when at home. To use HomeKit devices to their fullest, you'll need an iPad or Apple TV (3rd or 4th gen) set up as a Home Hub – see apple.co/2hlxmJU; an iPhone or iPod touch can't be used. Setting up one of those devices as a Home Hub on your network enables you to remotely control your HomeKit accessories and, if you have a 4th-gen Apple TV or an iPad, set up automations and user permissions. The former of these capabilities enables you to control devices based on paramters such as you leaving or arriving somewhere, the time of day, you manually controlling an accessory, or a sensor detecting something.



An Apple TV or plugged-in iPad can act as a hub for HomeKit.

HOW TO

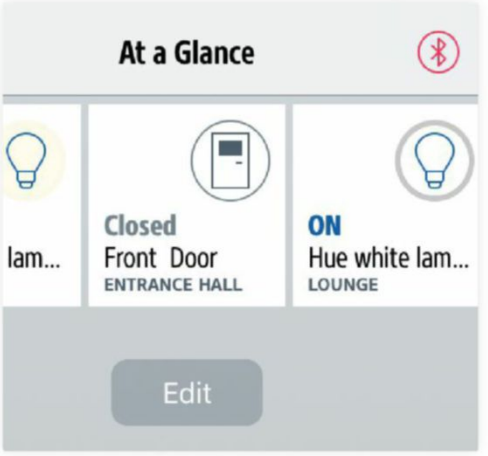
CONTROL YOUR HOME WITH HOMEKIT

JARGON BUSTER

The Home app gives you the ability to define scenes, in which you specify settings for multiple accessories, enabling you to tap once to activate preset choices in an instant. You can even set a scene to activate as part of an automation.

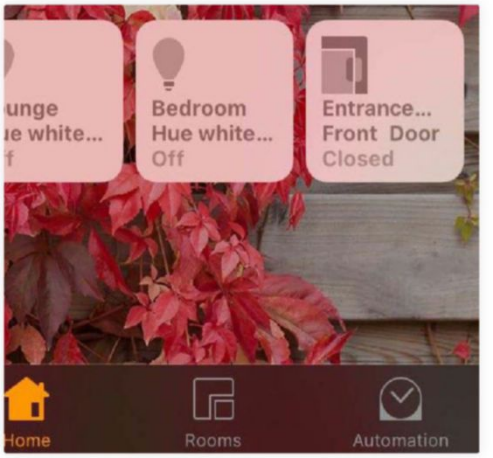
ALL TOGETHER

Once you've got an iPad or Apple TV set up as your Home Hub, you can invite other family members to share control of your devices too.



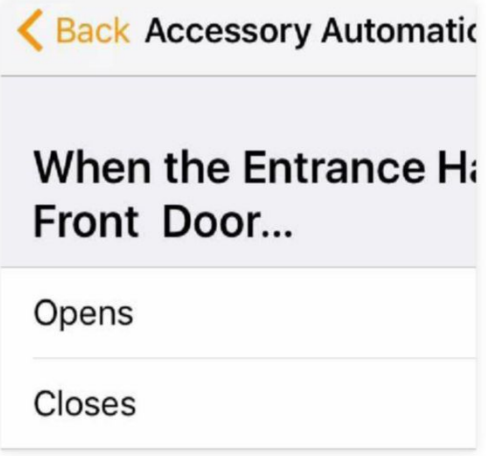
1 HomeKit apps

Devices that support HomeKit can work together – and even show up in each other's apps. This is Elgato's Eve app, which we're using to set up an Eve door sensor. However, the Elgato app can also see and control our Philips Hue lights as well.



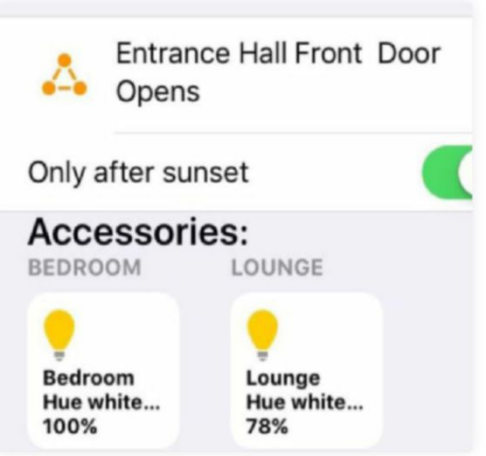
2 Room to room

Apple's Home app also lists all your HomeKit devices and enables you to group them in rooms and automate them. Not every app for managing HomeKit is as versatile as Apple's app or Elgato's Eve app, so you'll probably stick with Apple's.



3 In control

You need an Apple TV or iPad to enable automations to work – you can't do it with just an iPhone – but they provide really fine control over your devices. Here we'll create an automation that is triggered when the Elgato sensor detects that the front door opens.



4 Trigger happy

You can specify other triggers too, so we've set this automation to trigger only if the front door is opened after sunset in the evening. Then we can tell it to turn on the Philips Hue lights in various rooms, and even adjust the brightness of each light separately.

techradar.

The home of technology

techradar.com

GET SMART

CONNECTED G ETS TO ENHANCE YOUR LIFESTYLE

1 Plume

plumewifi.com
From $69

>>> The Plume system aims to "put the router in the cloud," using sleek little pods to provide Wi-Fi coverage throughout your home. The system is self-optimizing, so it adjusts the network usage depending on your needs and keeps an eye out for signal drops and dead spots. Each pod boasts an Ethernet port and plugs directly into a power outlet in whichever room you need it. The pods then link up wirelessly to spread the adaptive Wi-Fi signal. A single pod is $69, a three-pack is $179, and a six-pack is $329. They're available in very tasteful Silver, Onyx, or Champagne finishes.

2 Smanos UFO

smanos.com
$179

>>> Dutch outfit Smanos has a good reputation in the security business, and the latest addition to its range of smart security devices is the eye-catching UFO camera. The circular design of the UFO isn't just for show, as it houses a fisheye lens that provides a full 360-degree view of a room when mounted on the ceiling, or a narrower 180-degree view if you stick it on a wall. It also has useful night-vision and motion-detection security features.

3 Misfit Phase

misfit.com
$175

>>> There's been a bit of a backlash against high-tech smartwatches, so a number of companies are launching hybrid watches that have a more traditional watch face, while still hiding some smart tech inside. The Misfit Phase looks like a stylish, conventional wristwatch, and is available in a variety of colors, yet by pairing it with the Misfit app it can track all your exercise activities and sync with iOS's Health app. It can also vibrate to let you know when you receive an email or some other kind of notification.

>SMART HOME LIVING

When it comes to air quality, **JENNIFER PHIN** can hardly breathe for worrying

>>> **I HAVE** started monitoring the air quality in our home using Eve Room, an innocent-looking little wireless box that sits in judgment in the corner of the room, declaring the majority of the house as unfit for human habitation.

Temperature anxiety came first, but once I'd established that our baby was an actual human and would complain loudly if her temperature was anything other than optimal, I started noticing that Eve was not happy with the quality of *the very air we were breathing*.

"Hey, it says the air in the baby's room is Poor," I say to my husband one evening.

He nods, apparently unperturbed. "Yeah. It's not anything terrible, it's just measuring Volatile Organic Compounds," he says, ignoring the fact that I am now Googling frantically.

"Okay, don't panic," I say, mostly to myself. "Do we store any dry-cleaning solvents, printer inks or products for the manufacture of footwear or pharmaceuticals in there? Or do you secretly smoke?"

"Uh, no," he says. "Maybe the baby does. Hey, why don't you look up the proper Elgato website?"

Elgato has helpfully provided a large graph on the Eve Room landing page, presumably to calm panicky hypochondriacs like me. It is quite clear on the matter – I just need to open the window. For five minutes. The baby sighs, Eve is happy, my husband switches the TV back on, and I rest assured that we are not all about to suffocate on our own exhalations.

Maybe I'll read the instructions next time. Maybe.

APPLE TV

THE LATEST tvOS APPS AND THE HOTTEST HARDWARE

It may not be perfect, but DIRECTV NOW has been improved and is now a very viable cable-free streaming contender.

DIRECTV NOW

Cord-cutter's dream

Free (subscription required)

After much teasing on social media, AT&T finally unveiled its cable-free, all-streaming DIRECTV NOW service in November, offering over 100 live TV channels and more than 10,000 on-demand movies and shows. Naturally, one of the first places to tune in was the fourth-generation Apple TV, courtesy of the free TV and iOS app.

Despite initial growing pains with channels that would freeze up or go missing, DIRECTNOW mostly succeeded in bringing live TV to viewers without a cable or satellite subscription. The Apple TV app offers an extensive guide, the ability to save favorite channels, and access to shows added to your watch list on iPhone or iPad. There are still a few things missing, like DVR capabilities and live broadcasts from ABC and NBC (only available in select markets), but it's a good start. The first seven days are free, and there are no contracts, credit checks, or equipment to lease. **J.R. BOOKWALTER**

TripUSA

Take a little trip

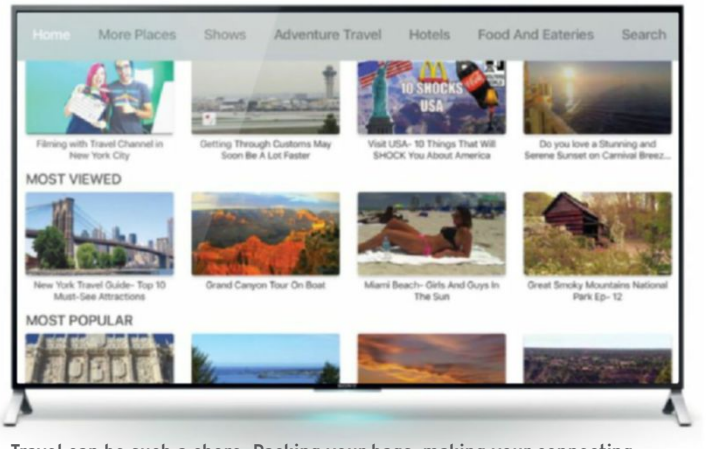
Free

Feel like getting out of town but strapped for cash? Next time the urge to travel strikes, curl up on the couch with your Siri Remote and download TripUSA instead.

This free app is loaded with videos shot all over the United States, sorted by city and state, with an emphasis on adventure travel, hotels, and eateries located from coast to coast. There's also a search option for armchair travelers looking for a specific destination.

In addition to national parks and popular hotspots like Walt Disney World, there are plenty of virtual tours through New York, Las Vegas, Hollywood (California and Florida), Hawaii, Miami, Los Angeles, and much more. You can even become a virtual guest at some of the finest bed and breakfasts around, without having to pay for a room.

The only real downside is that some of the videos aren't exactly shot in high-quality, high-definition video formats. We noted a bit of pixelization and occasional low-resolution image quality, but considering the price, TripUSA is just the ticket to beat travel blues. **J.R. BOOKWALTER**



Travel can be such a chore. Packing your bags, making your connecting flights, losing your baggage. Travel around America the easy way...

Tiny Wings TV

Fly away

$2.99

Remember all the hoopla surrounding Tiny Wings, the 2011 mobile gaming sensation many expected to become the next Angry Birds? Now you can flap your wings across the big screen.

Tiny Wings TV comes with two game modes – Day Trip and Flight School – featuring "procedural generated graphics" that make the game look different every day. iCloud sync allows progress made on the iPhone and iPad to pick up where you left off on Apple TV, and there are 25 levels in the new Flight School mode. Best of all, Tiny Wings TV offers split-screen multiplayer using the Siri Remote, a MFi game controller, or even the regular iOS app, which allows your iPhone, iPod touch, or iPad to be used as a controller. Play as mama bird or one of her four children, upgrading your nest by completing tasks. **J.R. BOOKWALTER**

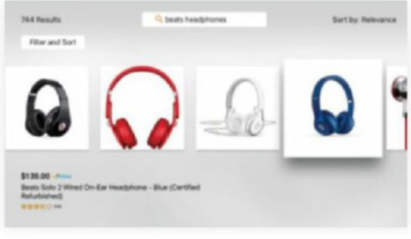
Try to get yourself a fancier nest by completing tasks on Tiny Wings TV.

Amazon App

Shop 'til you drop

Free

It's kind of sad that there's still no Amazon Video app available for Apple TV despite rumors to the contrary, but in the meantime, you can fire up Cupertino's favorite media box and shop Amazon's virtual shelves instead. Amazon App is an official Apple TV storefront that allows you to browse, search, view product details, read reviews, and see immersive images and video for millions of products, on your TV screen. Prime members can make purchases; everyone else can use the remote to add items to a wishlist for purchasing from a mobile device or computer.



Forget window shopping and start TV shopping with the Amazon App on Apple TV.

The ability to watch product videos from the comfort of our living room is cool. If this is the future, we'll take it – and the ability to do voice search like the iOS app totally rocks. **J.R. BOOKWALTER**

HOME THEATER

Make the most of home entertainment

HITACHI 65R8 ROKU TV

$999 hitachi-america.us

In search of a new 65-inch 4K Ultra HD LED TV but want to stream content from apps like VUDU or Amazon Video that aren't available on Apple TV? Hitachi's latest Roku-powered set is enormously capable considering the price, with a great picture, simple remote, four HDMI inputs, built-in wireless, and Ethernet port.

HAPURS 2 IN 1 UNIVERSAL MOUNTING SYSTEM

$7.99 amazon.com

With this ingenious and inexpensive little mounting bracket, the diminutive Apple TV remote will remain with your television until you're ready to use it. The kit includes a protective silicone rubber skin that makes it easier to hold while browsing movies and shows or playing games.

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?

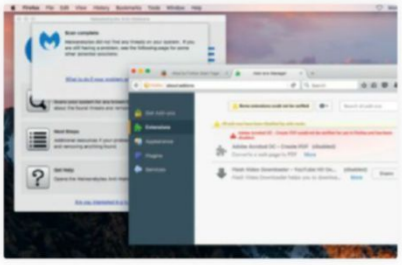
I have a problem with Firefox. While accessing Hotmail messages, I accidentally clicked on an adjacent ad. To my alarm a window popped up flashing "Trojan," accompanied by beeping sounds. I shut down Firefox immediately. What can I do to make my Mac safe again?

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.

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.

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/2gcIUj7. 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.

Folder aliases

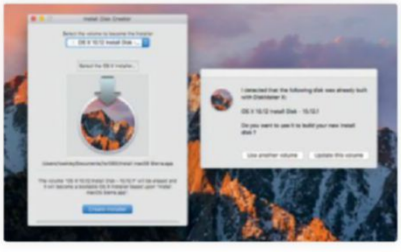
Why can't Sierra correctly show folder aliases?

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 *Mac|Life* #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).

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.

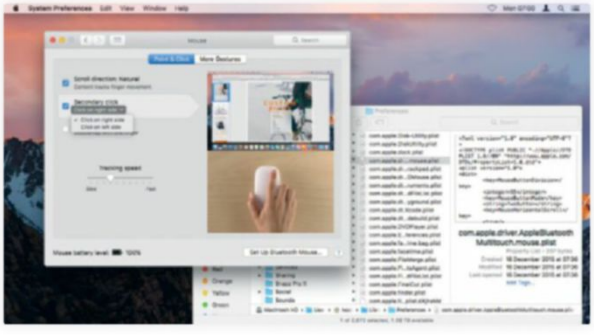
Immutable Magic Mouse

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.



Going into recovery

Has Sierra changed the way you enter Recovery Mode?

No, you still hold ⌘+R 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.

SHARE WITH US!

EMAIL: letters@maclife.com
FACEBOOK: facebook.com/maclife **TWITTER:** twitter.com/maclife

Get more from Sierra's Today view

Expand Notification Center's Today view with add-on widgets

REQUIRES
macOS Sierra, internet connection, Apple ID, third-party widgets

YOU WILL LEARN
How to add and manage widgets using macOS's Today view settings

IT WILL TAKE
10 minutes

SCREEN CORNER

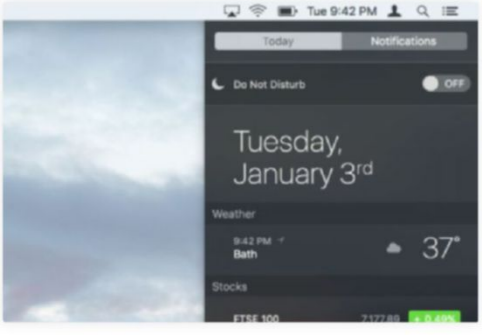
If you find it hard to hit Notification Center's menu-bar icon, try dragging your pointer to a hot corner. Open Mission Control in System Prefs, click Hot Corners, choose a corner menu and select Notification Center.

THE BIG REVAMP to Notification Center in iOS 8 proved very popular, enabling users to use the Today view to see regularly accessed information, and add widgets to customize the experience.

The Today view made its way into OS X (now macOS) in 10.10 Yosemite in 2014, providing at-a-glance views of calendar events, reminders, weather forecasts, stock prices, and more. Although developers have been slower to get the Today view on the Mac than they have been on the iPhone and iPad, there are a number of very useful third-party widgets available in the Mac App Store. Here we'll show you how to use these and Apple's default widgets, along with the Today view in general.

One thing worth noting if you try out a lot of widgets and then discard a bunch of them is that macOS Sierra has a tendency to cache them in memory, even if you uninstall their parent apps. Restarting your Mac fixes this, but it's quicker to reboot Finder by opening Terminal, typing the command `killall Finder` and then pressing ⏎. You'll find your Finder windows briefly disappear, then reappear. Now when you reopen Notification Center, any uninstalled widgets will be gone. **ALAN STONEBRIDGE**

HOW TO Get started with Today view



1 Notification Center

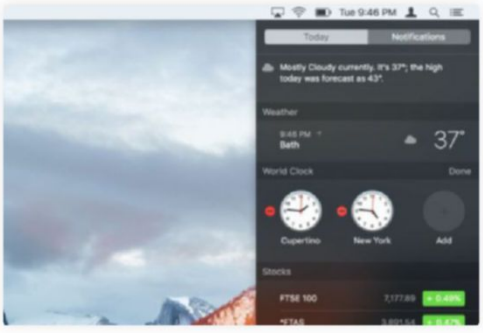
To access Notification Center, click the icon on the far-right of the menu bar. It slides across, above other content. As in iOS, you get a Today tab for time-sensitive info and widgets. You can scroll up and down if needed.

2 Get started with editing

The Weather app will ask for permission to use your location; click OK in the Weather widget. Click Edit (at the foot of the panel) to expand Notification Center to see installed widgets (left) and those you can add (right).

3 Switch some widgets

Widgets can be changed via drag and drop or using the +/– buttons. Try removing Stocks by clicking its – button; it moves to the right-hand pane. Drag the handles at the right of widget titles to reorder your widgets.



4 Customize a widget

Click Done to stop editing, then move your pointer over the World Clock widget, and click the "i" to put the widget into edit mode. Click Add to create a new clock, then select a location for it. Drag the clocks to reorder them.

5 Access weather details

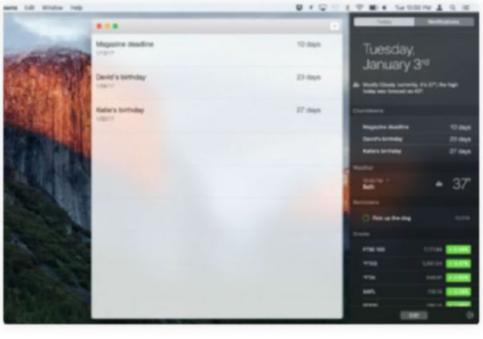
Some widgets, such as Weather, provide more info when interacted with. By default you see current conditions, but click a location and an extended forecast is provided, showing the next few hours and also the coming days.

6 Third-party widgets

The Today view is extensible, which means you can add third-party widgets installed via the Mac App Store. When a new widget is detected by your Mac, the Edit button will alert you to new items.

7 Add third-party widgets

You add third-party widgets in the same way as the built-in ones, and some may need configuring. Note that Today view is primarily designed for "at a glance" information that's important to you, so don't go too crazy.



8 Interact and experiment

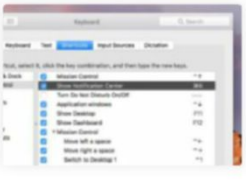
Some third-party widgets may interact with their parent apps. For example, if you use the Countdowns widget to set reminders, you'll need to click the Settings button next to Add to open the main app to edit any timers.

JARGON BUSTER

Widgets are tiny applications that are typically very straightforward and often have a single, focused purpose, such as showing the current time.

KEYBOARD SHORTCUT

To use the keyboard to activate Notification Center, open System Prefs, and select Keyboard > Shortcuts > Mission Control. Check Show Notification Center, and click the shortcut area. Press your shortcut (such as ⌘+F6) to define it.



Automate file organization

Harness the power of Hazel to monitor folders and arrange your files

REQUIRES
Hazel 4

YOU WILL LEARN
How to build rules in Hazel, in order to automate tidying up your Mac's files

IT WILL TAKE
30 minutes

APPLE'S TRYING quite hard to nudge everyone towards storing their data on iCloud Drive. The problem is that you only get 5GB of iCloud storage for free, which is shared among many of its services, not just iCloud Drive. So managing the files you keep on your Mac – and in cloud storage services generally – is definitely a smart idea.

There are, of course, pieces of software that will check through your Mac's drive and show you some kind of graph to help you locate and delete huge files (GrandPerspective being a free example from grandperspectiv.sourceforge.net). However, Hazel deals with bloating in a different way. Recognizing that a lot of clutter is down to poor organization, it offers a rules-based system for automating your Mac's file housekeeping.

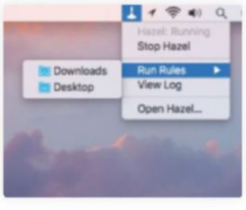
It works by silently monitoring specific folders and running "rules" on them when relevant files are discovered. These rules can be extremely simple – moving documents to their most suitable destination if you've just dumped them on the desktop – or you can delve deeper into complex rule sets, nesting conditions, adding tags and labels, creating archives, uploading content to servers, and even running scripts.

In the walkthrough, we'll start you off with some straightforward rules, so you can get to grips with Hazel. If you're a little concerned about Hazel wreaking havoc with more complex rules, try them on test folders. Create a Hazel folder somewhere in your user folder, add copies (not originals) of documents to it, and then run your rules to see what happens. (Also, back up. Always.)

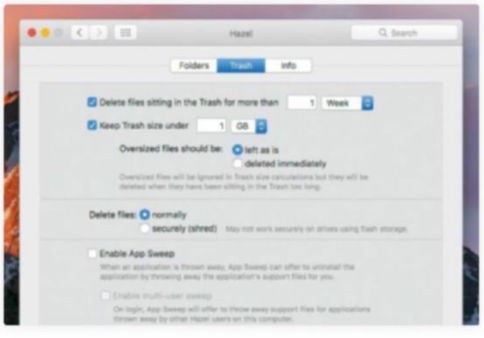
Hazel will cost you $32 from noodlesoft.com. A fully functional trial version is available for download, which you can use for this tutorial. As far as we're concerned, the app's well worth the outlay and effort, for the time – and potentially even money – it'll save you in the long run. **CRAIG GRANNELL**

QUICK TIP

Hazel performs actions within seconds of files appearing in monitored folders. You can turn Hazel off, though, to temporarily revert to manually sorting the contents of folders.



HOW TO Get started with Hazel

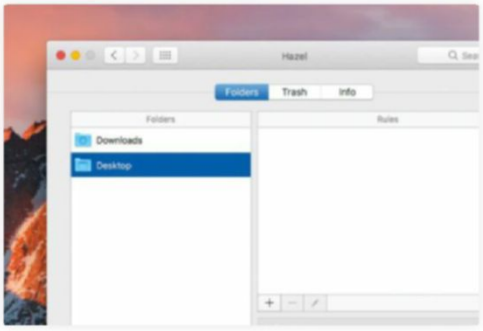


1 Take out the trash

Install Hazel and open its System Preferences pane. In the Trash tab, you can use the top two checkboxes to delete files over a certain age, and to keep the Trash below a set size. The defaults are one week and 1GB.

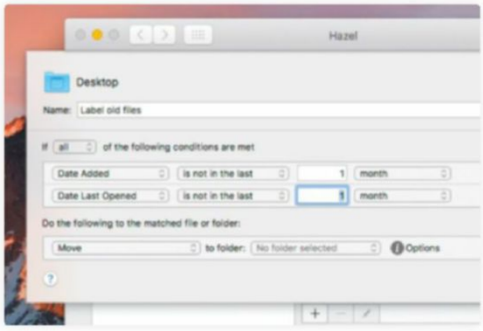
2 Remove app leftovers

At the bottom of the pane, enable App Sweep. Hazel then monitors your Mac for when you uninstall apps and attempts to (optionally) get rid of support files during the process. (Few of these are very large, but some are.)



3 Define a target folder

Let's create a rule that monitors the Desktop. Select the Folders tab and click + under the Folders panel. Choose Desktop and click Open. Select Desktop in the Folders panel, then click + under Rules to create a new one.

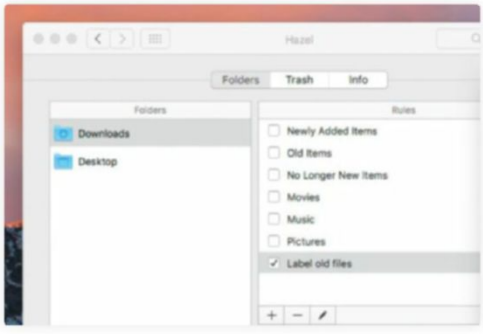


4 Label old files

Name your rule, then set the "If" pop-up menu so that all conditions must be met. Set the condition to "Date Added is not in the last 1 month." Click + to add another, and set to "Date Last Opened is not in the last 1 month."

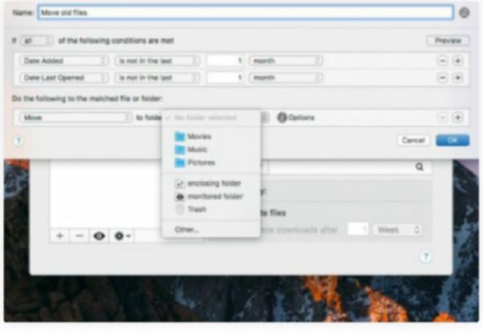
5 Add an action

Under "Do the following..." pick "Set color label" and a color. Click OK to save your rule. Now, items on your desktop that were added over a month ago and haven't been opened within the last month get a red label.



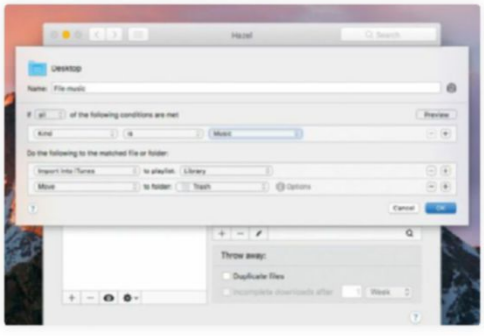
6 Copy and test

You can copy your rule to other folders by dragging and dropping it in Hazel's window. Wait a few seconds and you'll see the results. You can also open the rule, click Preview and pick a file to test it against to see its effect.



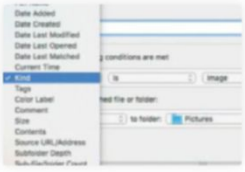
7 Move older files

Select Desktop, right-click your rule and pick Duplicate. Rename the copy "Move old files," set its action to Move, and pick Other in the folder pop-up. Create a "To sort" folder in your Home folder, select it, click Open and OK.



8 Manage rules

You now have two competing rules in Desktop, so turn off the one you don't want to use. Experiment with rules, such as to have Hazel import music files from the desktop into iTunes so they don't use iCloud Drive space.



JARGON BUSTER

Hazel's system is based on **rules** and **conditions**. Conditions are actions based on specific criteria. Each rule can include one or more conditions, and can be named. Multiple rules can be assigned to any folder.

QUICK TIP

In Hazel's System Preferences pane, click Info. Here you can set Hazel to appear in the menu bar, enabling you to quickly turn it on or off, or run a specific folder rule immediately.

Write and style text rapidly

Markdown makes it easy to write things for the web – and elsewhere!

REQUIRES
A text editor or a Markdown-friendly app

YOU WILL LEARN
How Markdown speeds up all kinds of writing

IT WILL TAKE
15 minutes

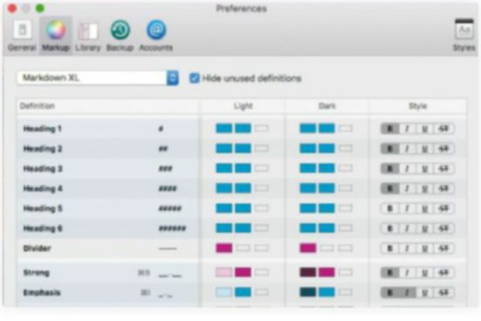
IF YOU'VE ever looked at, written, or edited HTML, you'll know that while it's fairly straightforward it can also get horribly messy-looking, even when you've created a style sheet to separate out the formatting for its content. For example, for a numbered list you'd have something like this:

```
<p>Best Macs ever</p>
<ol>
<li>MacBook Pro with Retina display</li>
<li>New MacBook</li>
<li>Power Macintosh</li>
<ol>
```

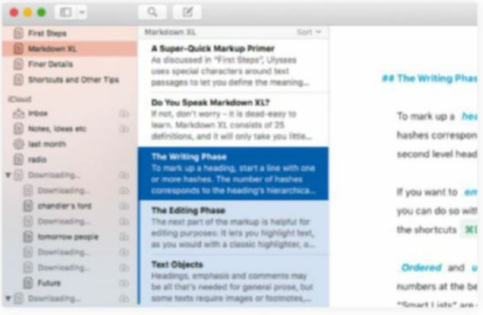
Wouldn't it be better if you could just type this:

```
Best Macs Ever
1. MacBook Pro with Retina display
2. New MacBook
3. Power Macintosh
```

for the same results? That's what Markdown is for. It's designed to make writing for the web as easy as possible, so instead of HTML tags you use simpler methods to indicate what's what. You can then run your finished document through a Markdown processor to turn it into proper HTML. Easy!



Apps such as Ulysses can automatically color your Markdown text for easy identification and navigation.



You don't need a special app to write Markdown, but some apps offer useful features to help you.

There are many benefits to Markdown. The most obvious is time, because it enables you to fly through your documents adding formatting tags as you go. You don't need special software to do it, either, because you can write Markdown in any text editor – even TextEdit – so the system requirements to use it are light and file sizes are tiny.

Still, it's worth investing in a specific Markdown-friendly app such as Byword or Ulysses if you do a lot of writing. Such apps add even more useful features, including autocomplete, automatic formatting, familiar keyboard shortcuts, and (most usefully of all) publishing.

Markdown publishing enables you to export your work to whatever format suits without having to worry about changing any of your document's content. So, in Ulysses you can send your document in plain text, rich text, Markdown, TextBundle, HTML, ePub, PDF, or DOCX format, and automatically publish to Medium or WordPress. The app's built-in Markdown processor handles conversion, so your headings are wrapped in <h1> tags in HTML and assigned Heading 1 styles if you export as a Word document.

Markdown might not make you a better writer, but it'll make you a much more productive one. **GARY MARSHALL**

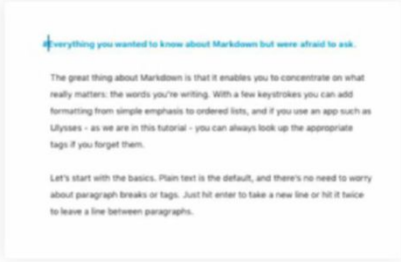
MARKDOWN'S CREATION

Everything you need to know about Markdown's origins and syntax is at Daring Fireball – see bit.ly/2eWCGSG.

HOW TO Use Markdown to style and structure writing

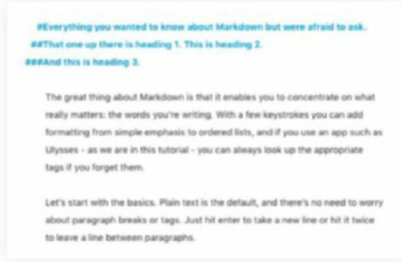
1 Make your mark

In this tutorial we'll be using Ulysses, but you can write Markdown text in any text editor. The first thing to do is to start writing your content. Don't worry about formatting any text just yet; concentrate on your words.



2 Use your heads

One of the most common parts of a document is its heading. Prefacing a line of text with a hash (#) turns it into the biggest title of all, Heading 1. Ulysses color-codes Markdown text, as you can see above.



3 Make a hash of it

If one hash makes your text into Heading 1, you'll never guess what two hashes do... Markdown enables you to set heading styles 1 to 6 by prefixing a line of text with the corresponding number of hash symbols.

4 Be bold

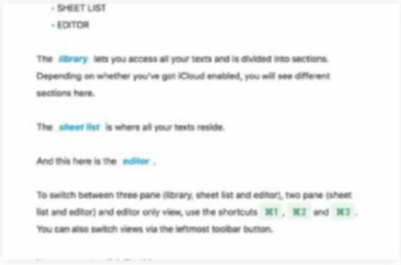
Emphasis is the next most common kind of text formatting. In addition to symbols – double asterisks for bold, single for italic – Markdown-friendly apps enable the use of the familiar ⌘+B and ⌘+I shortcuts.

5 Make a list

To create a bulleted list, there's no need to remember complicated tag structures: an asterisk or dash followed by a space automatically prefixes and indents your text. Lists continue until you press the ← key on an empty line.

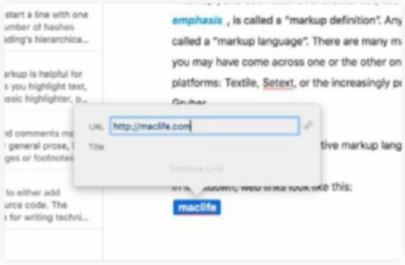
6 Get the numbers

The other kind of list is a numbered one, and once again it's simple to create: type a number, followed by a full stop and then a space to start your numbered list. Once again, Ulysses color-codes these.



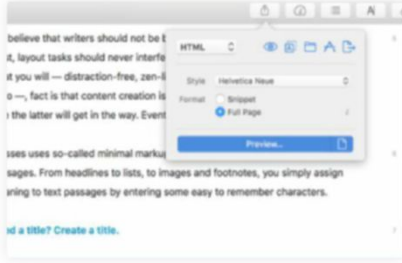
7 Link it up

To add a hyperlink, type the display text for it in square brackets and then the target address in parentheses – say, [MacLife](http://maclife.com). Don't leave a space between the name and URL.



8 Let the app help

Shortcuts make adding hyperlinks faster: highlight some text, press ⌘+K and then type or paste an address into the pop-up that appears. You can then see the target address by double-clicking the link's title.



9 Publish

Ulysses' share sheet enables you to copy your document or export it in plain or rich (formatted) text, PDF, ePub, DOCX, or HTML format. Document formats also offer a range of design templates to choose from.

Get your website listed by Google

Built your site in RapidWeaver? Let's get it in front of people's eyes

REQUIRES
RapidWeaver 7, your own website hosting space

YOU WILL LEARN
How to publish your site to the web

IT WILL TAKE
30 minutes

PART 5 OF 5
MISSED AN ISSUE?
Visit myfavoritemagazines.com to order!

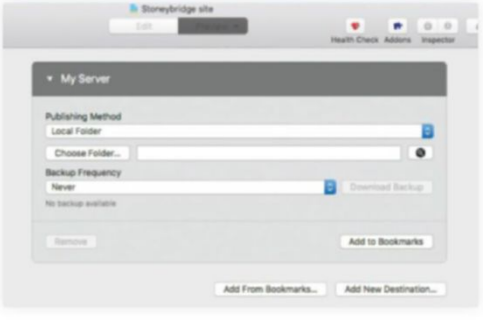
SINCE APPLE canned the MobileMe service and its website hosting capability a few years ago, RapidWeaver's publishing options have centered around FTP (File Transfer Protocol), which is a way to quickly transfer files. To use FTP, you'll need to get the appropriate login FTP server type details (FTP, SFTP or FTPS) from your web hosting provider.

FTP access to your website's storage is protected with a username and a password. You don't need a separate FTP app to upload your site: RapidWeaver has an FTP uploader built right into it. However, before you upload anything, there's one thing to consider: how your site will appear to search engines. Time for us to think about SEO.

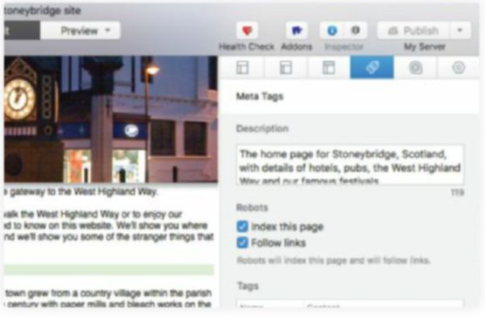
SET UP FOR SEARCH

Search engine optimization, or SEO for short, is the dark art of getting a website to appear near the top of Google's search results. Other search engines are available, of course, but Google has almost all the search market in the US, and other engines tend to follow the same principles anyway.

At its simplest, SEO asks: what does Google want? The number one criterion is relevancy; more relevant results mean Google is better perceived by its users,



If you don't have direct access to your hosting space, you can test by exporting to a local folder instead.



It's a good idea to add meta tags to individual pages of your site so that Google sees each one as unique.

so if somebody searches for "Thai food Bay Area" then Google wants to serve up the most relevant results for that query. The exact way Google works out relevancy is secret, but key steps to its calculation include having a good-quality website with original content, simple and effective navigation, frequent updates, captions and alt text on every image, and useful meta tags on each page.

Meta tags are bits of info that your site's visitors don't see. They are there for Google's benefit, and include the meta description tag, where you can add additional descriptions for each individual page in your site. Don't try to write for robots, though. Write for real people; Google can tell if you're just shoehorning a bunch of irrelevant words or phrases into your tags.

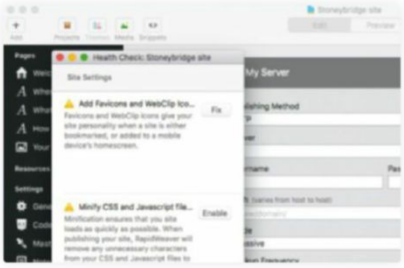
Google also judges your site on how many incoming links it has, so it's a good idea to contact relevant websites to ask them to link to yours. However, the source of links must also be of good quality, and relevant to your site.

It's possible to get very detailed with SEO advice, but the part you need to know is really simple: make your site as good as you can, always think about your potential readers, and keep it up to date with content that's fresh and interesting. Then your site should thrive. **GARY MARSHALL**

RULE YOUR DOMAIN

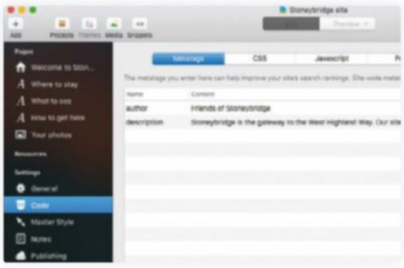
It's sensible to buy a domain and hosting space; **cats.com** looks better than **somedomain.com/users/21414/files/cats.**

HOW TO Tag, test, and publish your web pages



1 Check your health

RapidWeaver's Health Check button runs a scan on your website to identify any errors that might prevent it from working properly. If its finds anything, click Fix next to an item to go to the appropriate page.

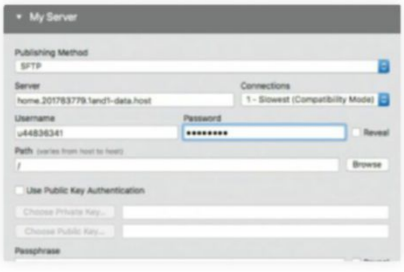


2 Tag your pages

Make sure you've added meta descriptions not just in Code View here, but for individual pages in the Inspector as well. Try to keep your descriptions under 156 characters and don't write them for robots.

3 Prepare to publish

Click Publishing in the left-hand pane. To continue you'll need to know your hosting space's FTP server address, your username and password for logging in to it, and the server type your hosting provider uses.

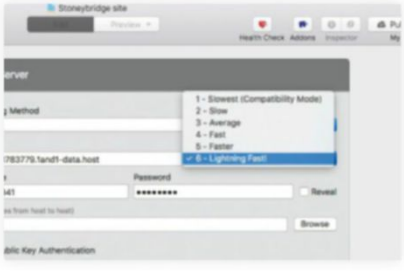


4 Choose your path

By default, RapidWeaver uploads your site to the top level of your hosting space (and your domain as well). If you want it in a subfolder, such as "mysite," enter or browse to **/mysite/** in the field labeled Path.

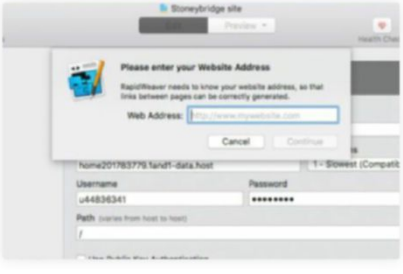
5 Test connection

Click Test and RapidWeaver will try to establish a connection to your hosting space's FTP server. If the test doesn't work, double-check you didn't make any typing mistakes in the details you entered in the last two steps.



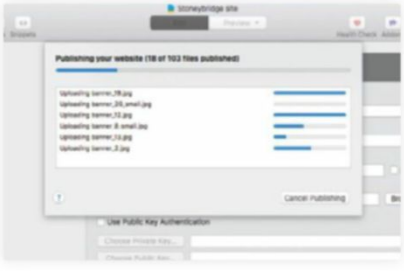
6 Speed it up

If you received the OK message, go back to the Connections pop-up menu and choose the fastest connection option that's listed in it. Make sure you add your FTP server to RapidWeaver's bookmarks as well.



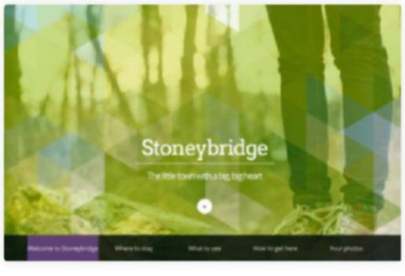
7 Publish your pages

When you're ready to upload, click the arrow to the right of the toolbar's Publish button and choose your server to start the FTP process. You'll be asked for your site's address; for example, mysite.com.



8 Make coffee

Even a fairly small website can take a while to upload because internet upload speeds are a fraction of download speeds. RapidWeaver keeps you informed and will notify you when it is finished.



9 Admire your efforts

Once the upload is done, click Visit on the notification (top right) to view your site in Safari. Pick a browser in RapidWeaver's preferences, or turn on Safari's Develop menu in Advanced prefs; pick Develop > Open Page With.

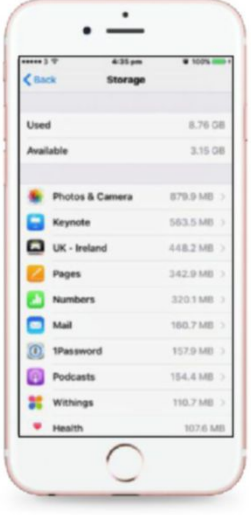
Free up storage space on iOS devices

Make room on your iPhone or iPad for new apps and media

REQUIRES
iPhone, iTunes (optional)

YOU WILL LEARN
How to use storage settings in iOS itself, as well as in iTunes

IT WILL TAKE
10 minutes



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

NO MATTER what capacity iPhone you have, there will come a time when you'll find it's running out of storage space. 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.

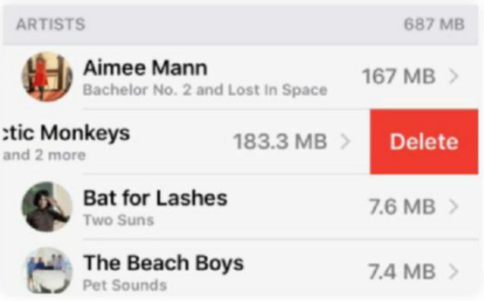
You can also delete apps from your Home screen: tap and hold an icon until they all jiggle, then tap X on an icon to delete that app. Bear in mind that deleting an app will delete its saved documents and data. You can redownload any app purchased from the App Store, but this won't restore its data.

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.

DELETE PHOTOS

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



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

DELETE A SONG

The best place to see what music is stored on your iPhone, especially if you've enabled iCloud Music Library, is at Settings > General > Storage & iCloud Usage > Manage Storage (under Storage) > Music. Swipe leftwards on any item, or All Songs at the top of the list, then tap Delete to get rid of it.

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

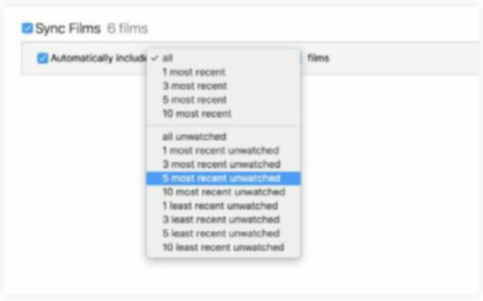
Remember you can always restore your previous app and media purchases by tapping Purchased in the bottom bar of the respective apps.

ROB MEAD-GREEN

HOW TO Manage space on your iPhone using iTunes

1 Control the music

If you manage your iPhone using iTunes and your music library is set to sync to your device in its entirety, consider changing. Go to Music, under Sync Music, switch to "Selected playlists, artists, albums, and genres."

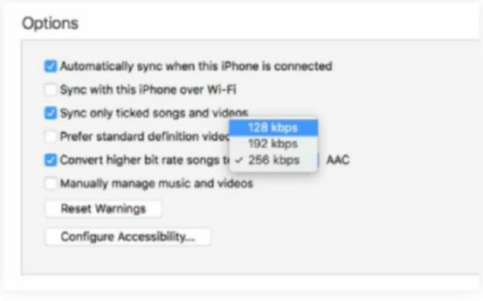


2 Manage other media

Also turn off "Automatically fill free space with songs." Now tweak other settings. In Movies and TV Shows, you can specify that only unwatched items are synced to your iPhone, or limit shows to a few episodes.

3 Clear unwanted apps

Click Apps in the sidebar and, in the pop-up menu, 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."

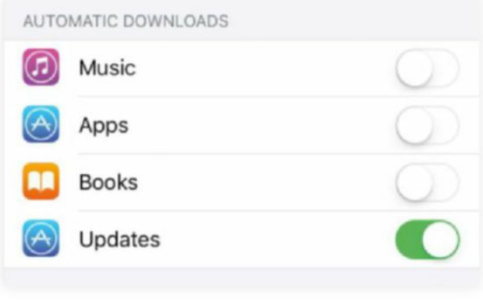


4 Make songs smaller

You can choose to sync music at a lower quality. In Summary, under Options, check "Convert higher bit rate songs to..." and select an option. A lower bit rate means less space taken up, and lower sound quality.

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. Click Apply to commit the changes you've made to your device, then press Sync.



6 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 individually.

SYSTEM APPS

iOS 10 gives you the ability to "delete" built-in apps such as Stocks – although you gain very little space back by doing this.

Organize files in Office for iOS

How to manage, share, and collaborate in Word, Excel, and PowerPoint

REQUIRES
Microsoft Word, Excel, or PowerPoint

YOU WILL LEARN
How to use file storage options in Microsoft's iOS Office apps

IT WILL TAKE
15 minutes

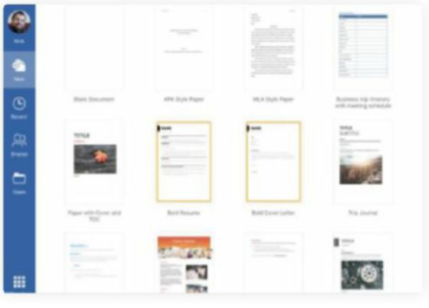
ONE OF THE key requirements of an office package is that it's flexible with document organization. Apple's iWork iOS apps technically allow you to edit and move documents between cloud storage providers, but it's not that flexible. If you want easy access to documents, you're driven towards storing them all in iCloud Drive. In contrast, Microsoft's Office apps – Word, Excel, and PowerPoint – are far more forgiving. All three apps enable you to link into a wide range of cloud-based solutions, putting you in charge when it comes to choosing where to store documents. You can also easily choose to store documents offline on your iPad.

There's direct support for seven different cloud providers at present – these make it easy to save changed documents back to their original location (manage these services by tapping your account picture and choosing Edit). But even if your chosen service isn't directly supported, Office is flexible enough to indirectly support it – install its associated app and it should appear as an option in the iOS Share menu when you tap More. It's not quite as friendly this way (you can't save automatically back to the original folder), but the step-by-step guide reveals how to work around this.

The Microsoft apps also offer ways of both sharing documents and collaborating on documents shared by others. The second half of the guide shows you how to share and collaborate – if your contacts have multiple email addresses, use the one associated with their Microsoft Account so they can edit the doc in Word.

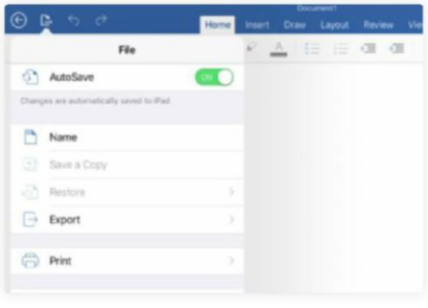
Tap Share > Shared With to review who has what access – tap their name to change privileges, or to stop sharing the document. The web link option makes it easier to share more widely (but beware, anyone with access to the link can then view or edit the document), while Send a Copy allows you to share a separate copy of the file by another medium, typically email. **NICK PEERS**

HOW TO Organize and share documents in Word



1 A quick tour

Once you've signed in, you'll have access to all files on your OneDrive account, plus any files you store on your iPad. Tap New to create a document from scratch – pick from a template, or choose the blank option.



2 Save file

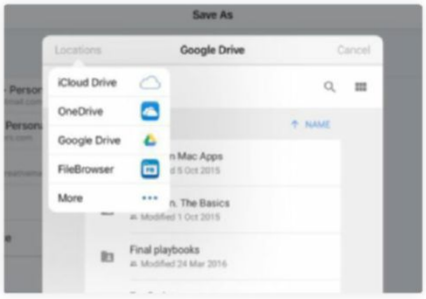
Auto-save is on, and the document will be saved to OneDrive by default as Document1. Tap the File button and select Name to give it a different file name, plus choose where to store it – on your iPad, for example.

3 Connect services

To add a new supported service (you can do this from the Open and Account screens too), tap Add a Place to view a list of supported services, including Dropbox and Box. Tap your chosen service to continue.

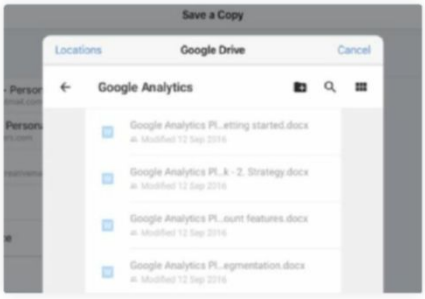
4 Link to app or log in

If you've installed the app for the service you'll use, Word will open it and link the apps; otherwise you'll need to enter your username and password, then grant OneDrive access to the service in question when prompted.



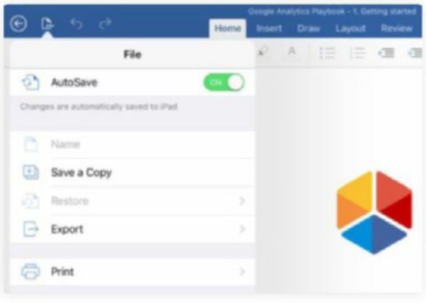
5 Use unsupported services

If the service isn't listed – for example, iCloud Drive or Google Drive – tap More... instead. Tap Locations to select your service, then browse and choose Save Here or select the file you wish to open.



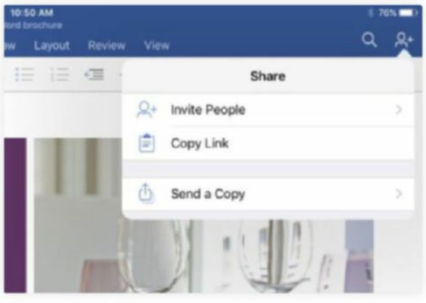
6 Save back

Files opened using the More... method are downloaded to your iPad, where all changes are subsequently saved. To save the file back, you'll need to choose Save a Copy to upload it back to the original location.



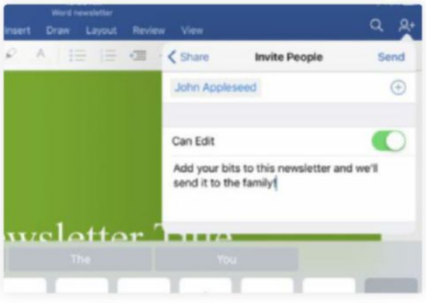
7 Move and export

Tap the File button and choose Save a Copy to save your file to a different location; choose Export to save a copy in OpenOffice (.odt for text, .odp for presentations, and .ods for spreadsheets) format instead.



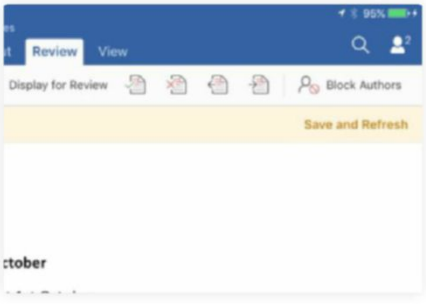
8 Share docs

You can share a document with other people if it's saved to OneDrive. With it open, tap the Share button in the top right-hand corner; you can also tap "..." next to a document's name in the File Open screen. Choose Invite People.



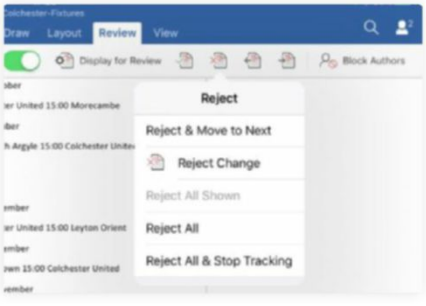
9 Enter contacts

Office will ask to connect to your contacts – let it do so, and start typing someone's name. Matches will appear – select the email address, choose to make the document editable or not, add a message, and tap Send.



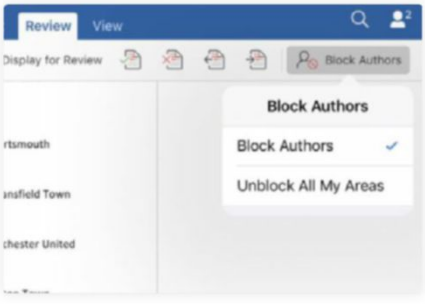
10 Collaboration

Use the Review tab to track changes made by yourself and your collaborators. If changes are made by other users, you'll be notified – tap Save and Refresh to update your version to incorporate their edits.



11 Review changes

Flick the Track Changes button on to monitor what's changed – the type of edit and who made it are displayed next to the change. Use the controls to the right to set what's shown, plus approve or reject changes.



12 Protect document

If your document is saved to OneDrive, you can select a portion of your document and protect it from other users by tapping Block Authors and choosing Block Authors. Select Unblock All My Areas to undo.

Advanced editing in iMovie for iOS

Enhance your productions with precision editing and video overlay effects

REQUIRES
iMovie, some fun and active clips

YOU WILL LEARN
How to add cutaways, split screen and picture-in-picture effects

IT WILL TAKE
15 minutes

WHEN USING iMovie on an iPad it's a simple matter to drag-and-drop the best parts of your raw footage into the timeline and then trim them for a tighter cut. You can easily swap the running order of each clip in the non-linear timeline to tell a story more clearly. This results in a series of consecutive clips that you can share easily with family and friends to a range of social media sites.

By deploying iMovie's more advanced editing features you can make your iPad-edited movie stand out from the crowd. Here we'll demonstrate how iMovie's advanced editing tools and techniques enable you to apply more professional-looking production values to your programmes.

When filming repetitive activities (such as a man juggling) you can make your movie look more engaging by varying the shot sizes and camera angles that you use. With careful editing you can then cut from a wide shot to a close up and the action will flow seamlessly (despite the fact that the two clips were shot at different times). This makes it look like you were filming the action using two cameras instead of one. iMovie's Precision Editor enables you to fine-tune the in and out points of consecutive shots to ensure continuity of movement – we'll show you how.

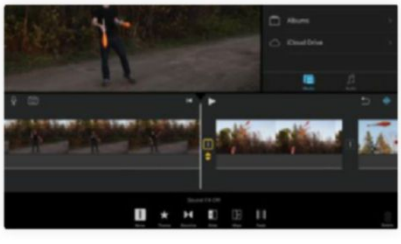
ADD VIDEO LAYERS

Next, we'll move on to demonstrate other advanced features, such as combining video clips in layers. This enables you to add cutaway clips. Professional editors use cutaways to illustrate a point being made or hide jump cuts in interviews. Cutaways also add texture and variety to your programmes.

By editing in layers you can also display two clips at the same time. This adds more visual variety and enables you to tell a story more creatively. By splitting the screen to show sections of two clips you can create a title sequence montage, for example. Alternatively, you can place one picture inside another to add extra information to your project's narrative.

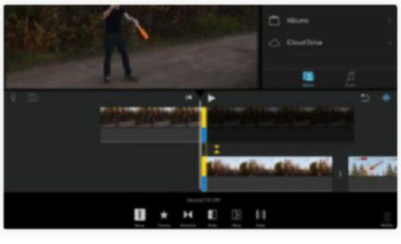
GEORGE CAIRNS

HOW TO Use the Precision Editor



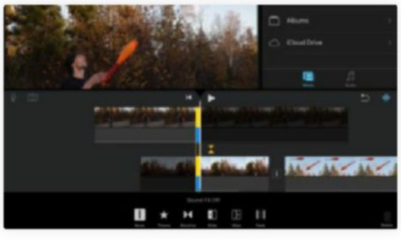
1 Precision Editor

Tap the transition icon between two clips to select it. Then tap the yellow arrows icon below the transition icon to summon the Precision Editor. This will place the two adjacent the clips onto separate tracks.



2 Choose Out point

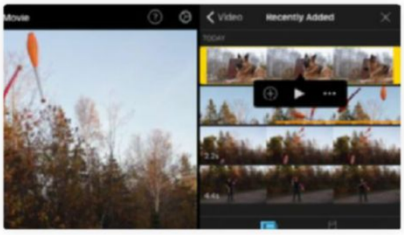
Now drag the top clip's yellow trim handle to scrub through individual frames. In this example we've chosen a frame where the club is about to leave the juggler's right hand near the end of the wide shot.



3 Choose In point

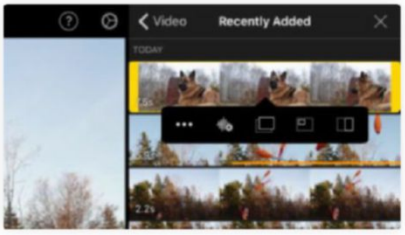
Drag the lower layer clip's yellow control handle until you find the precise frame that you want to cut to. Here we've matched the action of the wide shot to the movement in the mid shot, ensuring seamless continuity.

HOW TO Add a cutaway clip



1 Select a cutaway

You can hide an edit point in the timeline by placing a separate clip above it as a cutaway layer. Place the timeline's playhead where you want to insert a cutaway. Tap to select a cutaway clip in the browser.



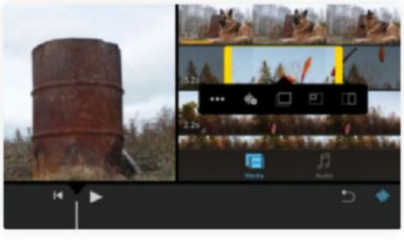
2 Add an overlay

Tap the three dots in the dialog box that appears next to the selected clip to access more options. You can tap the overlapping rectangles cutaway icon to overlay the clip as a separate video layer in the timeline.

3 Trim the cutaway

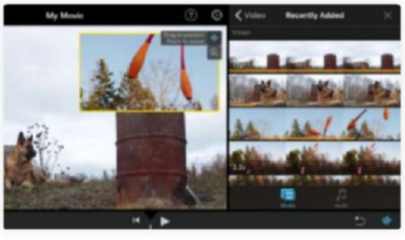
Tap the cutaways layer to select it in yellow to edit. Then drag the trim handles to choose where it starts and ends. Here we've cut from the juggler to a cutaway of the dog watching and then back to the action.

HOW TO Add a picture in picture



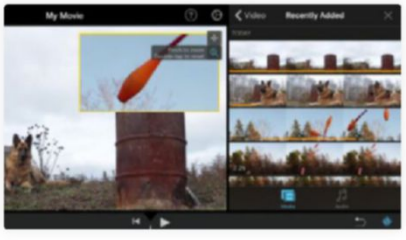
1 Choose PIP effect

Place the playhead where you want to insert a picture in picture (PIP) effect. Select a clip in the browser. Tap the ... icon and choose the icon of a small rectangle inside the larger one. The clip will appear as an overlay.



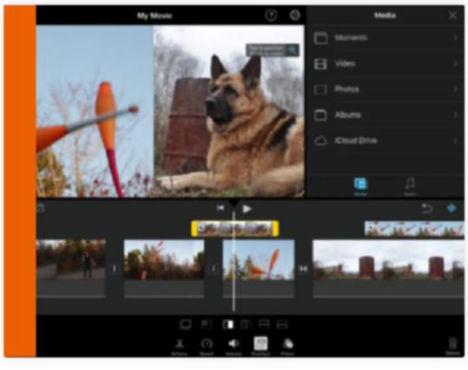
2 Reposition the overlay

Tap the PIP overlay clip in the timeline. Tap the move tool icon (arrows) in the viewer. Drag the inserted clip to re-position it. Pinch the inserted clip to resize it within the bigger frame.



3 Zoom in

You can magnify the content within the inserted picture to make it easier to see. Tap the magnifying glass icon in the viewer. Pinch inside the frame to zoom in on an area. Drag to reposition the zoomed area.



> LET'S SPLIT

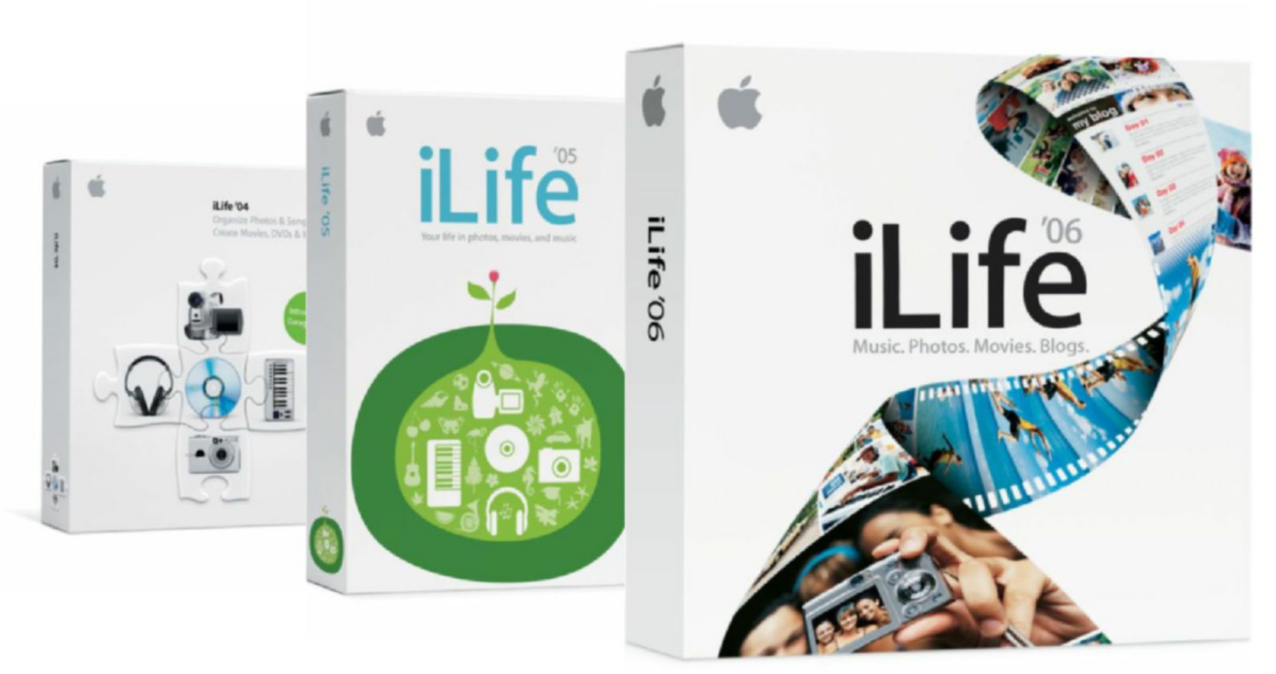
Create a split-screen sequence

Even after you've added a clip as a cutaway or picture-in-picture overlay, you can change the way it mixes with footage on the timeline's lower layer. Tap the overlay clip to select it. An Overlays icon appears below the timeline. Tap it. You can now choose from a range of split-screen effects that combine parallel timeline clips left/right or top/bottom. Once you've split the screen, tap the magnifying glass and pinch and drag to fine-tune the composition of the overlay layer's contents. Here we've juxtaposed the dog and the clubs.

RANDOM APPLE MEMORY

iLife

Adam Banks recalls Apple's early dabbles with media software



APPLE NEVER wanted to be a consumer software company. When it shipped MacWrite and MacPaint with the original Macintosh, it was in the hope that they'd inspire third-party rivals. Few took the bait. By 1998, the big A had spun off a subsidiary, Claris, to avoid having to develop apps in-house – then accidentally killed it by trying to force it to adopt the ill-fated OpenDoc. Now apps were taking up time and attention again – and still there were more to make.

In 1999, the iMac DV was launched with the unique selling point of FireWire, a super-fast interface for which the only obvious use was to import video from tape-based cameras. That called for a video-editing app, and iMovie was born. DVD burners were the next hardware innovation in search of software support, which duly arrived in iDVD. And in 2002, Apple's response to the rise of digital cameras (even though it had stopped making them itself) was iPhoto. "We believe the Mac can become the hub of our new emerging digital lifestyle," said Steve Jobs at the time.

A vision of integration delivered by three unrelated programs – informally known as the "iApps" – felt incongruous, and on January 7 2003, during a product-packed Macworld Expo keynote, Jobs announced they'd be rolled into a suite, iLife. This was the big idea, by his own account, of software VP Todd Basche. In fact, the iApps still felt like unrelated programs, and when GarageBand was added in 2004, then iWeb in 2006, they didn't integrate particularly well either.

With the advent of the Mac App Store, even the box bearing the iLife branding disappeared, leaving no more than a name. Today, only two of the iApps survive. As for Basche, he works for Taser, integrating surveillance cameras and smart weapons...

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