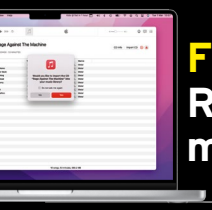
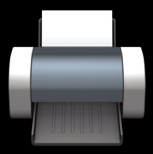


**FIX APPLE MUSIC!**
Rip tunes, manage metadata, & more



Tips to **print smarter** on any device

Group test: The best **to-do** apps to get organized

# Mac|Life

MAC iPHONE iPAD

JUN 2022 NO.194

**THE VERDICT**

**PLUS STUDIO DISPLAY ON TEST**

# Mac Studio

## Apple's all-new Mac is a Pro in all but name

**HOW TO:**

- Batch rename files on a Mac
- Set up your Hot Corners
- Master Universal Control
- Publish on Apple Books

FUTURE

**Gear for the great outdoors**
Top tech to take on your travels

# CREATING GUITARISTS FOR MORE THAN 50 YEARS

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# THINGS ARE WARMING UP

Summer is finally here! (For those of you in parts of California, Florida, and Arizona, and other parts of the US that experience great weather all the time, that's the part of the year when it kinda stops being miserably cold, and bodily joints start working again.) What better way to celebrate this joyous period than a collation of the best tech that can help to make it an even better experience? Over on page 28 you'll find a selection of awesome gear for the great outdoors, whether that's relaxing in your back yard, hitting the open road, or heading to the great outdoors on your next vacation.

We've also got something a lot of you have been asking about for some time now: a feature on helping you make the most of Apple Music, and to solve those niggling problems that prevent you from doing what you want with your tunes, whether it's on a CD, in an old iTunes folder, or what have you. That's over on page 12, so head there now, and once you've had a good read let me know what you think. Did it solve your issue? If not, then drop me an email with your exact technical query, and I will collate each and every one, and send them over to our resident Apple guru to take a look at. I'll then do a Q&A problem-solving roundup in a future issue, which will be a worthwhile read for those of you suffering with woes in the Apple media department.

On the main cover hit this issue — that's the all-new Mac Studio and Studio Display. You're probably excited to find out what we think about these new and intriguing Apple products. The Mac Studio is the first Mac to feature the brand new M1 Ultra chip, which is otherworldly powerful, but is it overkill for us mere mortals who were doing just fine on our regular M1 Macs? Do you even need a regular vanilla Mac Studio at all, or would a Mac mini suffice? And what of the Studio Display, Apple's new 5K monitor for the "masses" (compared to the Pro Display XDR — $1500 seems like good value versus $5000)? Find out what we think about them on page 38 and 42 with our in-depth ratings.

**NICK ODANTZIS,** Editor
Twitter: @maclife

## >>>THE TEAM

**Matt Lochrie**
**Art Editor**
Matt found it tricky to put the Studio Display back in its box – hopefully a move customers won't repeat...

**Olivia Weaver**
**Production Editor**
Olivia was quite green-eyed watching her sister buy a brand new rose gold MacBook Air.

**Kenny Hemphill**
**Contributor**
Kenny's to-do list this issue was huge, but his roundup of the best to-do apps (p50) fixed that.

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**Gear for the great outdoors**
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**Beginner's Guides: Master Printing**
Ah, printing...this irksome task becomes straightforward with our top tips – master it on your Mac, iPhone, or iPad.



Image rights: Apple.

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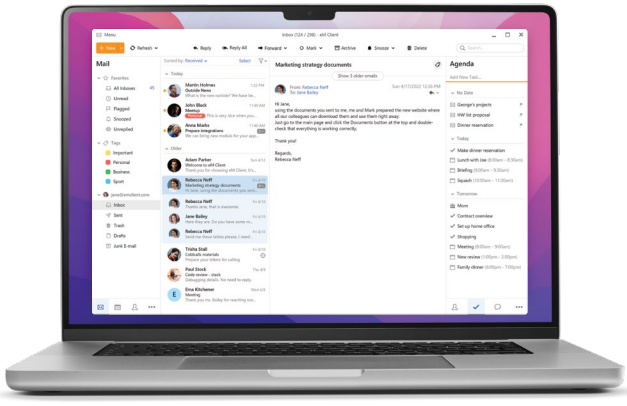

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Image rights: Skylum, eM Client, Apple, Aqara.

# > THE SHIFT

**MATT BOLTON** is worried that Apple's stance on app store changes have meant that it's become a follower, not a leader

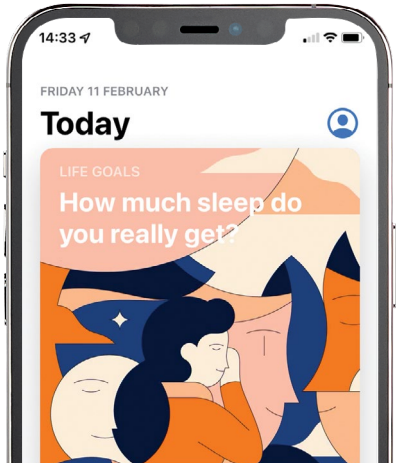
**OVER THE TIME** I've been following Apple, it's always (ish) been skating to where the digital platform puck is going, even in ways that were controversial. Take its refusal to support Flash. It was a drawn-out battle of wills, but Apple not only prevailed, it was proved to have taken the more forward-thinking stance all along. In less controversial examples, it always wanted to remove DRM from the iTunes music store, and was one of the first stores to do so. It stood firm that its iTunes movies store should give free upgrades to higher qualities, which reportedly caused a rift between it and Disney — but Disney now offers its movies the way Apple wanted them. Even MobileMe was really a precursor to Google Suite and other cloud-connected ecosystems. It just didn't work very well.

Microsoft's stance will turn its Store into the world's foremost... no, I can't even finish.

I've been thinking about this with Apple's current battles over the App Store, and the regulation it's trying to avoid (or cooperate with unenthusiastically). This stubbornness could read like a modern version of Apple standing firm against Flash on iPhone, but there's a key difference: Apple's stance then was about defining the future, and the web not being controlled by the whims of a single company (Adobe). But this App Store battle isn't like that. Here, Apple is the one looking backwards, protecting its existing revenue that the App Store's 30% cut generates, and trying to be the one company to control access to the iPhone.

Its refusal to budge in any truly meaningful way has meant that regulators are starting to step in, pushing Apple to support new options piecemeal, court loss by court loss. It already made Apple look out of touch to be fighting against such a clear changing of the wind's direction.

On the day I write this, it's been shown up by Microsoft, which has turned its sail fully into this new breeze. Microsoft has published a set of principles to define its approach to an app store going forward. Aside from promising to never promote its products above competitors or to use its data collection to advance its own products, it also promises that apps will be able to use any payment system they like, with free communication to customers.




If Apple had just lowered its App Store cut, this whole developer battle might never have started. Hey ho.

Now, it's easy for Microsoft to make sweeping commitments like this, since the Microsoft Store is not exactly the market leader. Should that matter? You might have said that about Apple in many of its principled stances. It's easy to imagine Apple of the past having taken a leadership step like Microsoft here, so why won't it now? Because it has too much to lose? Can't we see that it's going to lose it anyway? And if Apple can't see that, isn't that a worrying sign for where it's skating to today?

>>> Matt is the AV and smart home editor of Future's flagship technology website T3 and has been charting changes at Apple since his student days. He's skeptical of tech industry hyperbole, but still gets warm and fuzzy on hearing "one more thing."



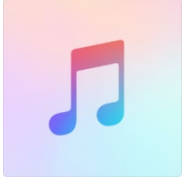
Image rights: Microsoft.

# LETTER OF THE MONTH

**I found the DAC article in the April issue (191) quite interesting, but one topic wasn't addressed. I play music from my MacBook Pro via an HDMI cable to one of the HDMI ports on my AV receiver. I do this either from my older MacBook Pro, via a USB–C to HDMI adapter; or from my M1 MacBook Pro via its HDMI port.**

**Would a DAC device make the sound better, or does my AV receiver take care of that? And are there DAC devices that take a signal from USB–C and output HDMI? Should I use an alternative input on the receiver? Thanks.**
**STEVE JOHGART**

Thank you for your letter on this, Steve — others may be pondering similar questions, too. Cliff Joseph wrote this one for us, so we asked him for a response: "The issue with Macs is that the analogue sound quality that comes out via the 3.5mm headphone socket is a bit poor — which is why you need a DAC to clean everything up. If Steve is using HDMI then he's getting a nice, clean digital audio signal from the MacBook to his AV receiver — so he shouldn't need a DAC at all." Hopefully that clears up the question of whether you should lay down your money for a DAC.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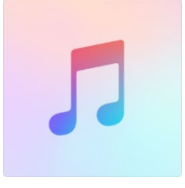
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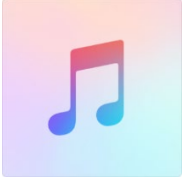
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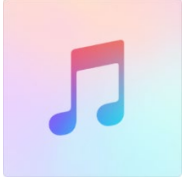
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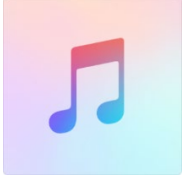
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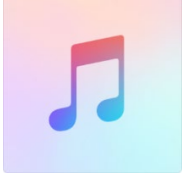
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Foreigner

## Folder foibles

In your letter of the month in the February 2022 (189) issue, the reader hit the nail on the head. I am so tired of figuring out what has been doubled, tripled, or quadrupled in my music and photos. I get so angry that my folders in Music keep changing when I want to add a song list from the computer to the phone. I have to keep a backup of how I want my folders named. Then, I can move it into music in iTunes so it will add to my phone.

In short, if I want something to go to the cloud, then I wish it would ask me before automatically doing it. I am also worried about jumping ship on my iCloud service. If I knew for sure that when I back up to an external drive, that everything I need from the cloud is on there, then of course – I would not hesitate to jump ship to another cloud storage service.

How about grandfathering some of this functionality back into iTunes? It was much easier to organize on iTunes and send it back to your phone. Thanks to Stephen Santangelo for wording it in a way that makes sense.
**WAYNE GUSTISON**
**IVOR, VIRGINIA**

## Older versions

In your February 2022 issue on page 28 (Mac time saver #11), you suggest that to tidy a desktop with many different kinds of items, one has to just Ctrl+click on the desktop and choose the "Use Stacks" option. This is supposed to neatly organize everything into stacks of similar kinds.

I am on macOS Sierra 10.12.6 and this doesn't work. According to another article, Stacks on the desktop only works in macOS Catalina 10.15. MacOS Mojave 10.14 and older only get stacks to work in the dock.

Perhaps you should mention exactly what macOS this item works in and whether there's an alternative option.
**ROBERT SPROULE**

**We always use the latest version of whatever operating system we are testing on, so in this instance it's Monterey for a Mac, for an iOS/iPadOS feature, it's 15, and for Apple Watch it's watchOS 7, and so on. That said, quite often the majority of tips included in these features will work on older versions, so they can still be really useful, even if you're unable to upgrade.**

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# START

THE LATEST NEWS FROM THE WORLD OF APPLE

# TV+ finally hits a home run

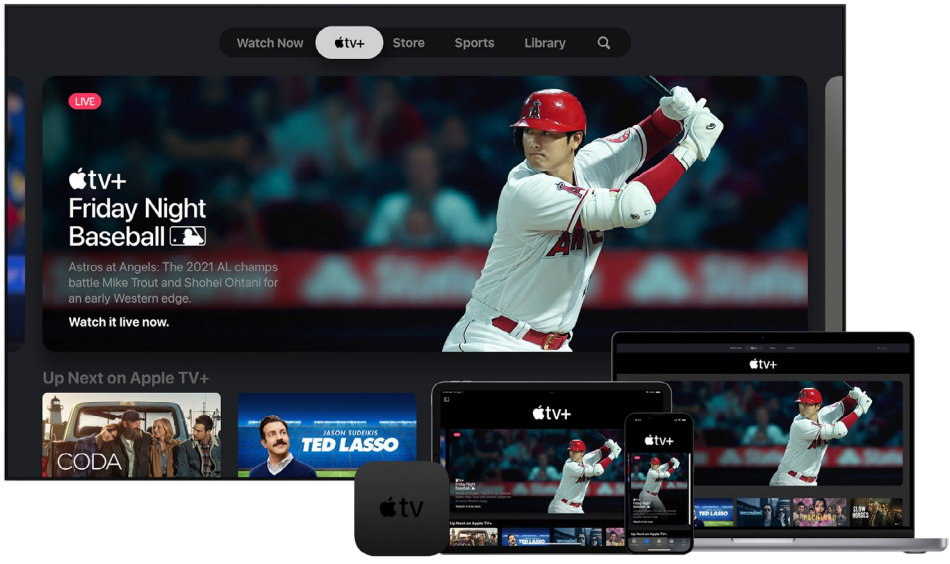
## Apple's streaming service on the rise as Netflix and CNN+ stall

**BY ALEX SUMMERSBY**

**THE STREAMING MARKET** is facing a shakeup as Netflix slumps while Apple TV+ grows. At the 94th annual Academy Awards in March, CODA won the Oscar for Best Picture — the first time this award has ever gone to a movie released by a streaming service, not in theaters. (Afterwards, however, Apple rereleased CODA for a limited run in over 600 US movie theaters, no doubt to help recoup the record $25m it paid for worldwide streaming rights to the movie.)

Since the launch of Apple TV+ in November 2019, Apple's original series and feature films have won many awards — 953 nominations and 240 wins, to be exact — but the milestone Oscar win gave Apple TV+ a significant boost. *Variety* reported that views of the movie were up more than 300% from the week before and new viewers up 25%. (Apple does not release figures, but industry observers estimate that Apple TV+ has roughly 50m global accounts and 25m paid subscribers. One analyst said the Oscar could mean an extra 10m paid subscribers.)

Adding to the momentum is the launch of Friday Night Baseball and related programming in association with Major League Baseball. MLB scheduled games are available to all with internet access, free of charge




"for a limited time," exclusively on Apple TV+. Fans also get on-demand replays, recaps, daily coverage, and additional exclusive content.

While Apple TV+ is expanding, the growth of Netflix has stalled in an unusual turn of events. It is still market leader, with more than 220m subscribers, but it announced that it lost 200,000 subscribers in Q1 2022, its first decline in growth in more than a decade. It also said it expects to lose two million more in the next quarter as users cut back their spending as a result of the global cost-of-living crunch.

Netflix admitted its decision to raise prices had cost it 600,000 subscribers in North America alone, on top of 700,000 lost when it quit Russia over the invasion of Ukraine.

Revenue was still up almost 10% year-on-year, but profit fell by 6%. Netflix shares plummeted, wiping more than $50 billion off its value.

Unrelatedly, CNN shut down its CNN+ news streaming service just a month after its launch. Its newly-merged parent company, WarnerBros. Discovery, is billions in debt and could not undertake to fund it until it reached profitability.



Image rights: Apple.

# iMovie updated

## Video creation made even easier for newbies

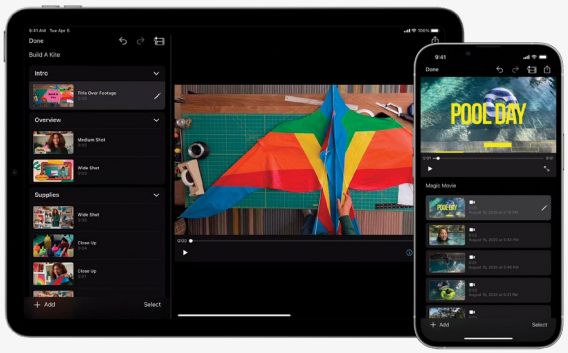
**APPLE HAS RELEASED** iMovie 3.0 for iPhone and iPad with new beginner-friendly features: Storyboards and Magic Movie.

Storyboards help novice creators get started. Instead of starting with a blank timeline, they can choose from 20 templates for popular video types including cooking tutorials, Q&As, news reports, and more. Each storyboard has a guide shot list and step-by-step advice on which clips to capture for each video type. Shots can be added, reordered, and deleted as needed. Titles, transitions, and filters can be added and customized. Music tracks dynamically adjust to fit the length of a project, and users can refine each clip with intuitive editing tools like trim, split, clip speed, and clip volume.

For even faster results, Magic Movie instantly creates a polished video for you – simply select an album or any group of photos or images from your library, and Magic Movie identifies the best bits and creates the project, automatically adding transitions, effects, and music. You can then rearrange or delete clips in the simplified Magic Movie shot list, or edit the project further.

Finished Storyboard videos and Magic Movies can be shared from iMovie via Messages, Mail, and on social media.

iMovie 3.0 is a free upgrade and requires iOS 15.2 or iPadOS 15.2.




# M2 Macs coming?

**WHEN IT INTRODUCED** its latest chip, the M1 Ultra used in the Mac Studio, Apple explicitly stated that this completes the M1 lineup. Will new Mac models from here on have a newer chip inside? Apple has reportedly begun testing of "at least nine" new Mac models with next-generation M2 processors, including:

› MacBook Air, Mac mini, and MacBook Pro models powered by an M2 chip with eight CPU cores and 10 graphics cores (compared to eight graphics cores in the current MacBook Air);

› 14-inch and 16-inch MacBook Pro models with M2 Pro and M2 Max chips, the latter with 12 CPU cores and 38 graphics cores (compared to 10 CPU cores and 32 graphics cores in the current model);

› A new Mac Pro with M2 Ultra chip.

Two or more new models could be announced as soon as June, at Apple's Worldwide Developer Conference.

# News in brief

## A bite of the Apple

**› iWORK APPS UPDATED**

Apple has released Pages 12.0, Numbers 12.0, and Keynote 12.0 for Mac, iPad, and iPhone. All are free updates. Even though this is a new whole-number version, there are nowhere near as many new features as in version 11.2 of these apps six months ago.

› On Mac, you can now use Shortcuts on macOS Monterey to create or open documents in all three apps, and to add rows to a table in Numbers or start presenting in Keynote.

› On iOS and iPadOS, you can now edit font size more precisely (up to two decimal places) in all three apps.

› On all platforms, you can use VoiceOver to read comments and track changes in Pages 12.0, or create formulas and autofill cells in Numbers 12.0. It is also possible to publish directly from Pages 12.0 to Apple Books with larger file sizes of up to 2GB on all platforms. There are a few other new features, detailed in Apple's support pages.

**› NEW 35W DUAL-USB ADAPTER?**

Apple is said to be bringing out a new 35W power adapter with fold-away prongs and dual USB-C ports. 35W would be suitable for charging a wide range of devices, from iPads to the latest MacBook Air. The design could be similar to this 20W adapter with folding prongs Apple sells in the UK.

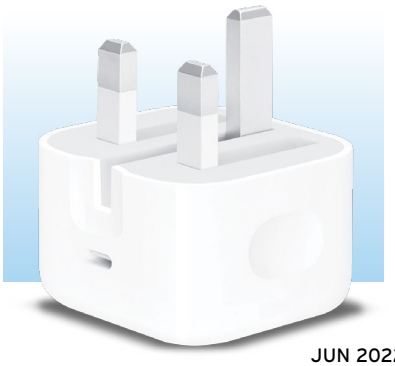


Image rights: Apple.

# CRAVE

THE GEAR WE'RE LUSTING AFTER

## 1 Sonus Faber Omnia

$1,999 **From** sonusfaber.com

>>> A great speaker doesn't just sound incredible, it looks so good that it becomes the centerpiece of any room it occupies. That's the case with the Sonus Faber Omnia, a sleekly gorgeous speaker that exudes class from every angle.

Its audio performance is simply sensational, with superb clarity, satisfying bass, and a wide soundstage all on offer. Never mind stereo speakers, the Omnia proves you don't have to sacrifice quality if you want the convenience of a single-speaker setup.

We also love its flexibility. There are heaps of wireless options, from AirPlay to Chromecast, plus built-in support for Spotify and Tidal. And if you prefer a wired connection, you're well served there too. In other words, the Sonus Faber Omnia is an exemplary wireless speaker that won't disappoint.

## 2 Love Hultén NES-SY37

$TBC **From** lovehulten.com

>>> As far as games consoles go, the Nintendo Entertainment System (NES) is up there in the pantheon of gaming gods. It's therefore unsurprising that there is a whole cottage industry of tributes to the device, but few are as downright cool as the Love Hultén NES-SY37.

On the surface, it's a conceptual synthesizer that lets you create deeply nostalgic tracks based on the sounds found in classic NES games. That alone makes it a great way to reconnect with the past and relive days gone by.

Built into the device is a MIDI visualizer display. In a clever twist, the NES-SY37 accepts NES cartridges, meaning you can play old-school games on the screen as well as create music inspired by them. If you're passionate about retro games and music, it's perfect.



Image rights: Love Hulten.

# 3 Continental electric vehicle charging robot

**$TBC From** continental.com

>>> As more people get electric cars, the problem of how to charge them at home gets ever more prevalent. Right now, most options involve a charging cord snaking its way along the floor.

Fortunately, Continental thinks it has a better idea. It's working on an as-yet-unnamed charging robot that automatically juices up your vehicle without the hassle of traditional systems.

All you need to do is place the robot on your garage floor. There's no need to manually plug in a lengthy cable every time your vehicle needs charging, just park your car over the robot and it'll get to work.

# 4 Roidmi Eva

**$999 From** roidmi.com

>>> Robotic vacuum cleaners might not be here to take over the world, but they certainly keep your house tidy. But the problem comes when their job is done: emptying them can inadvertently cause as much mess as you wanted to clean up.

Roidmi's Eva could put an end to that. It's a self-cleaning and emptying robo-vacuum that scores another point for robot sentience (and spotless homes). Its housing contains two water tanks that clean the robot, before fans buzz up to quickly dry it off.

As for what the bot itself can do – it comes with three modes for vacuuming, mopping, or a combination of the two. It'll reach into crevices and can hold 60 days' worth of dust. So, if you're sick of doing all the work yourself, send this little bot on its merry way.

# 5 Genki Waveform

**$279 From** genkithings.com

>>> Even if you consider yourself an excellent multitasker, managing different audio inputs at the same time can be particularly tricky. The Genki Waveform earphones are a step in the right direction, though, as they work with two audio streams simultaneously.

Although it was built with gaming and multitasking in mind, Waveform works with a huge range of products. You could use a games console while taking a phone call from your iPhone, or listen to a lecture on your Mac while concurrently playing some ambient music from your iPad, for instance.

It's not just a gimmick either, as it boasts aptX compatibility, Bluetooth 5.2, 24-bit audio, and 30 hours of battery life. It could be a great addition to your setup, work or play.

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# MUSIC & TV

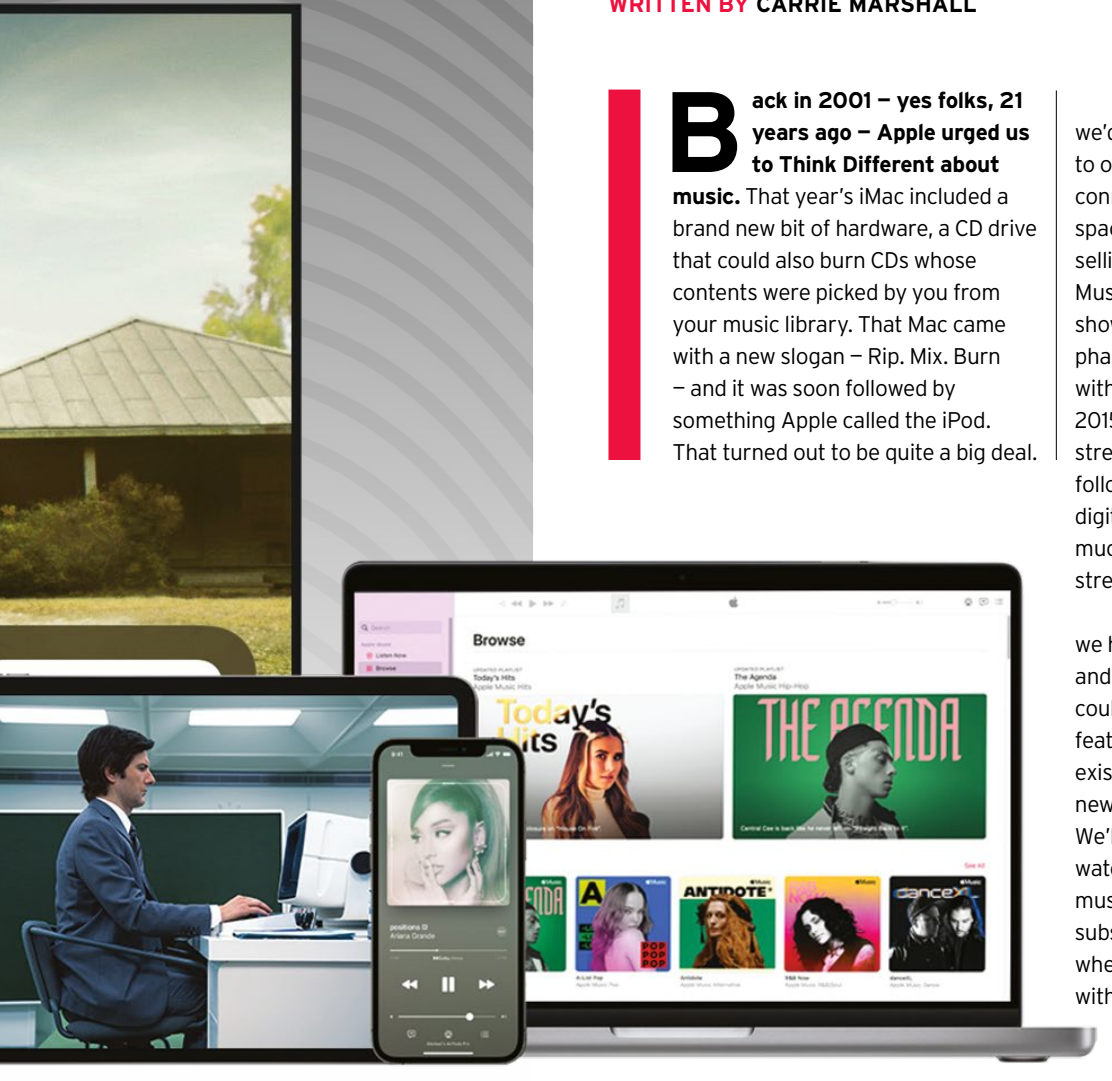
# MASTERCLASS



Image rights: Apple.

# Sharing your sounds, fixing mangled metadata and transforming your TV experience couldn't be easier

WRITTEN BY **CARRIE MARSHALL**




**Back in 2001 – yes folks, 21 years ago – Apple urged us to Think Different about music.** That year's iMac included a brand new bit of hardware, a CD drive that could also burn CDs whose contents were picked by you from your music library. That Mac came with a new slogan – Rip. Mix. Burn – and it was soon followed by something Apple called the iPod. That turned out to be quite a big deal.

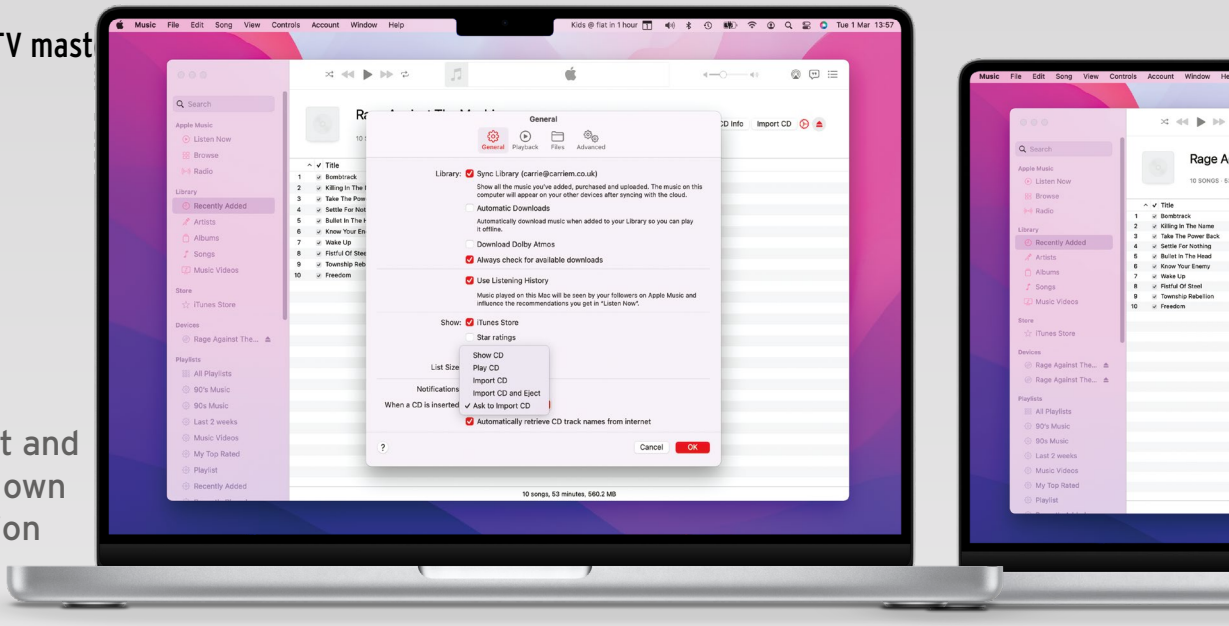
To begin with, Apple thought we'd copy CDs to our hard disks and to our iPods. But, as internet connections got faster and storage space got cheaper, Apple moved to selling downloads with the iTunes Music Store in 2003, adding TV shows and movies in 2006. It began phasing out optical drives in Macs with the MacBook Air in 2008, and in 2015 it launched the Apple Music streaming service; Apple TV+ followed in 2019. Apple still sells digital downloads, but it would much rather you took out a streaming subscription.

As much as we love streaming, we have existing libraries of music and video from the days when iMacs could still rip, mix, and burn. In this feature, we'll discover how your existing libraries can live with Apple's newer services in perfect harmony. We'll also discover what pitfalls to watch out for, how to get the most music and movie bang for your subscription buck, and what to do when you encounter problems with media in your library.

Image rights: Apple.

# RIP. MIX. BURN.

## How to import and manage your own Music collection



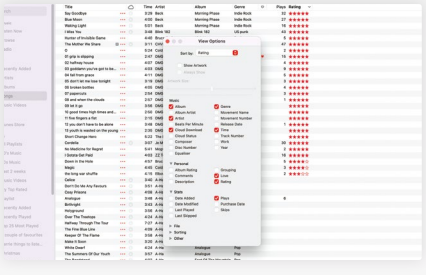
**AS LOVELY AS** it is to have an extensive collection of CDs, you can't beat the convenience of digital music. The first iPod promised 1,000 songs in your pocket and today's iPod touch or iPhone has room for more music than most of us buy in a lifetime, with Macs offering even more. So how do you get your CDs into the Apple Music app, or iTunes on older Macs, so you can play them, share them, and even burn your own CDs from them?

The good news is it's really simple; if you have a CD/DVD drive in your Mac just put the CD in the drive and your Music app will look it up online and find the title, track details, and artwork. If your Mac doesn't have a CD/DVD drive you can attach one via USB. Apple still makes the USB SuperDrive, a CD/DVD player and burner, and there are plenty of more affordable third-party options too.

Before you start to import, it's worth taking a trip into the Music app's settings (in Music > Preferences). If you have an internal CD/DVD drive or have connected an external one you should see an option in the General tab for "When a CD is inserted". You can choose between Show CD, which displays the disc in Music but doesn't play it; Play CD, which does what you'd expect; Import CD, which automatically copies the whole CD to your Library; and Import CD and Eject. This last option is best if you're going to be importing multiple discs.

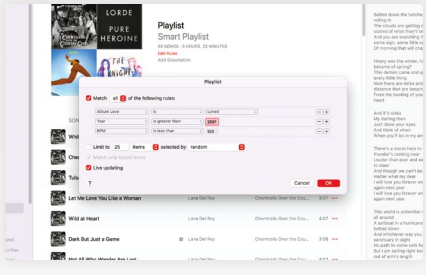
In Preferences, click on Files and ensure "Keep Music Media folder organized" and "Copy files To Music Media folder" are both checkmarked. This means your music always goes to the same place on your Mac, or on an external drive if you're short of storage. If you have multiple users on your Mac you should do this on their accounts too, ensuring that the location of their media folder is under their own user account – / Macintosh HD/Users/[their username]/ Music. This ensures that everybody's

## HOW TO Get the best from the Music app



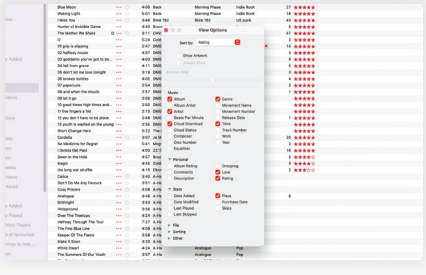
### 1 See all your stuff

Your existing library should now appear in the Artists, Albums, Songs, and Music Videos sections. As you can see, the interface is identical to Apple Music, and if the artist has included lyrics in their MP3s, you can sing along.



### 2 Smart Playlists

Smart Playlists enable you to create constantly updated playlists based on whatever rules you add. Go to File > New > Smart Playlist and select one or more rules to filter your music. We're going for low-key tunes we've clicked Love on.

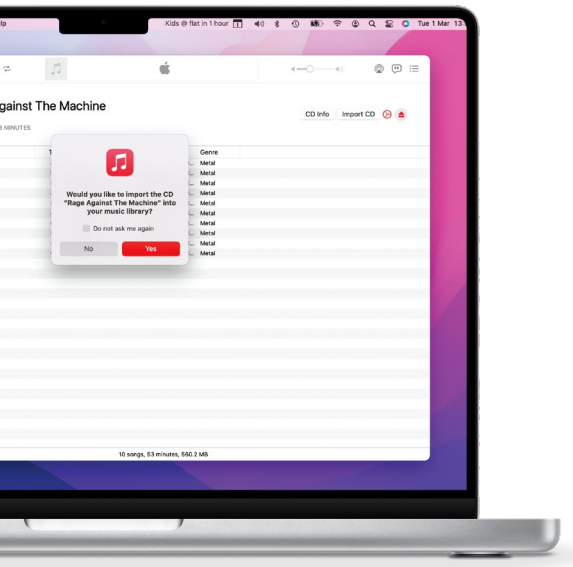


### 3 Restore ratings

Apple clearly wants to get rid of star ratings in favor of more basic love/dislike choices, but you can bring them back: click Songs in the sidebar then go to View > Show View Options > Rating to see and add star ratings out of five.



Image rights: Apple.




music is stored separately. You can all share the same storage location if you prefer; once you've got your Library on one account, open another and in Music use File > Import.

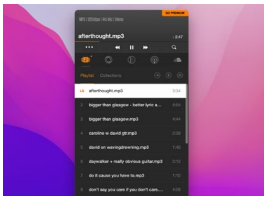
Next, click Import Settings. This is where you decide what file format and file quality your music will be when it's copied to your library. The default is Apple's AAC format, which is designed for mobile music; it's not full quality but it's hard to tell the difference on ordinary earbuds and the file sizes are fairly small.

Apple Lossless is our pick, as it stores the music without removing any of its musical information. That means you get the full audio experience without any loss of quality. If you want that but also want to make your files compatible with music apps, you can choose AIFF or WAV instead. They're lossless formats too, but they're less efficient than Apple Lossless so the files require a bit more space.

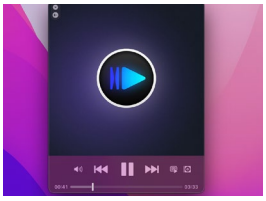
Once you've got your settings ready, look at the CD in your Music app and check that the details you see on screen are correct: is the artwork okay? Are the song titles correct? You can change this afterwards on individual tracks or albums by selecting them, Ctrl-clicking and choosing Get Info, or with a third-party fixer (see "Fix Your Music Library – Fast"), but it's better to get it right first time.

## > Alternatives to the Apple Music app

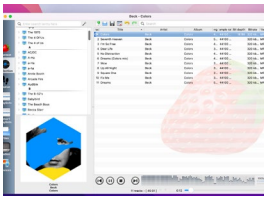
The Music app is good at what it does, but if you're looking for something a bit different you're spoilt for choice. These players offer things Music doesn't, such as support for more formats and more streamlined interfaces.



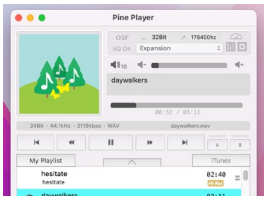
**VOX**
**From vox.rocks/mac-music-player**
Available for both Mac and iOS devices, Vox is a hi-res audio player that looks as good as it sounds. The core app is free but advanced settings will require a paid subscription.



**IINA**
**From iina.io**
Although designed primarily for video (see p24), IINA also has a Music Mode that makes it an attractive if quite simple music player. It's only available for macOS 10.11 or later and macOS 10.15 (Catalina) is recommended.



**STRAWBERRY**
**From strawberry musicplayer.org**
This open source music player for Mac, Linux, and Windows looks like iTunes used to, but fortunately the underlying tech is not dated. It's also a great music manager and tagger.

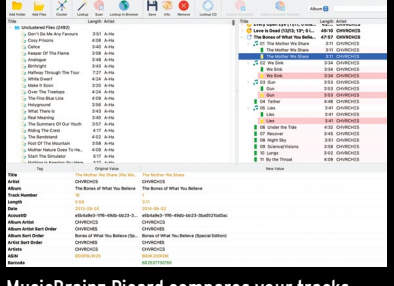



**PINE PLAYER**
**From digipine.com**
If you're looking for a capable player for very high-res audio tracks, Pine Player is definitely worth a look. The third-party app has wide format support including DSD and offers excellent upsampling too.

**FIDELIA**
**From audiofile.engineering/fidelia**
Remember when music apps looked like music hardware? Fidelia does. It's gorgeous, and it sounds great thanks to support for all the key music formats as well as plug-ins.

## FIX YOUR MUSIC LIBRARY

Sometimes Music's data for ripped songs and albums can be incorrect. A song might be assigned to a compilation album rather than the original LP, or it might have the Japanese artwork rather than the US version, or if there's a featured artist involved — the song may be listed as a separate artist to the artist whose record it is. There are several automatic ways to fix this; we particularly like Doug's Apple Scripts at dougscripts.com and the MusicBrainz Picard app from picard.musicbrainz.org. Both make it very easy to find and fix dodgy Music data.



MusicBrainz Picard compares your tracks with a massive online database of music.

Image rights: Coppertino Inc, iina.io, Ismael Carrea & Jonas Kvinge, digipine.com, Audiofile Engineering, MusicBrainz Team.

# UPLOAD. DOWNLOAD. SYNC.

## How to manage your iCloud Music Library

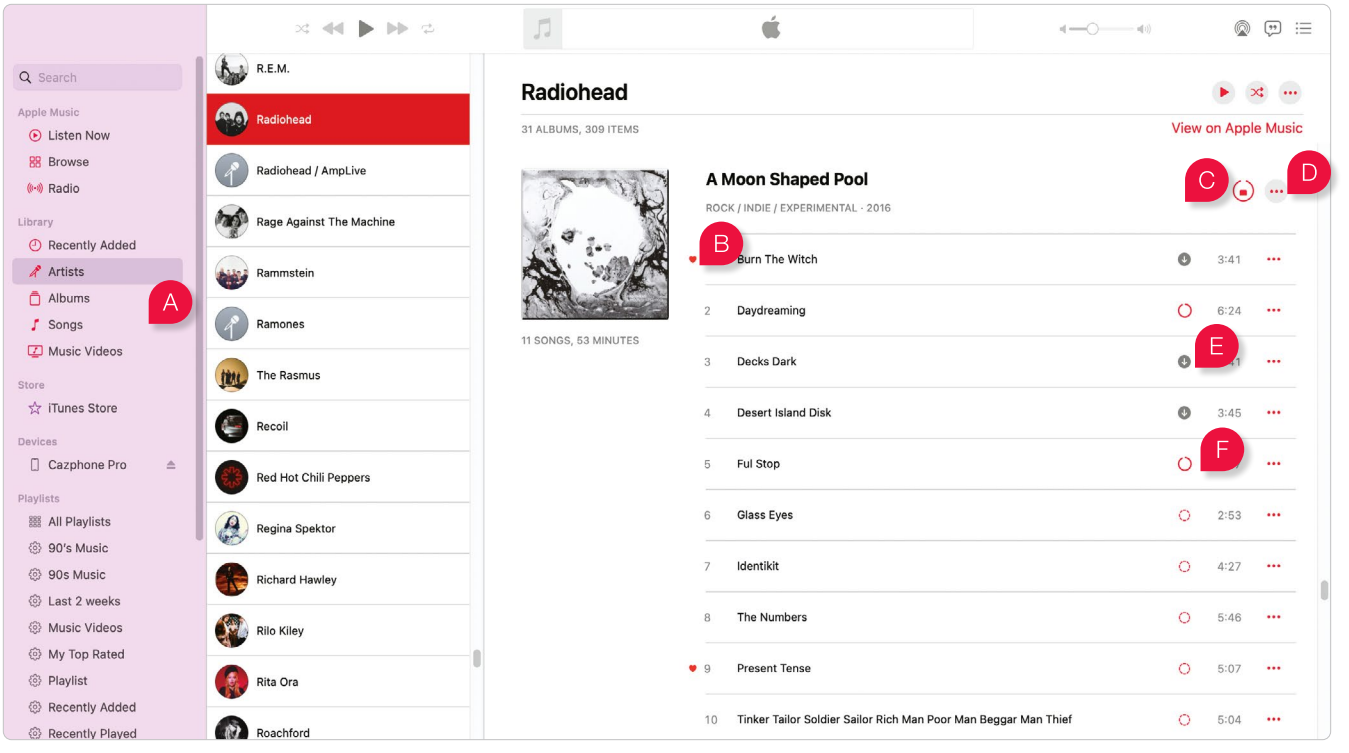
**FOR THOSE WITH** an Apple Music subscription, you can actually access your local music from any device if it's logged in with your Apple ID. The iCloud Music Library will even store up to 100,000 songs – and it doesn't matter whether you ripped them or bought them from iTunes.

However, there's another way to get the benefits of that feature without actually paying a subscription to Apple Music. For $25 per year, iTunes Match can copy all your music to the cloud and if it has a higher quality version of a song it replaces your one with that one. iTunes Match is limited to 25,000 songs.

### THAT SYNCING FEELING...

If you don't have Apple Music or iTunes Match, enable Wi-Fi syncing from your Mac by connecting your device via its USB/Lightning cable and selecting it in the Finder. Now choose "Show this device when on Wi-Fi" to enable Wi-Fi syncing. If you get connection errors with cables make sure your software is up to date and try connecting without any USB hub in the middle; if that doesn't work, try a different cable.

## QUICK LOOK iCloud Music Library




**A CATEGORIES**
Here, you can quickly jump to recently added songs or select the artists, albums, songs, and videos categories.

**B LOVED ICON**
These days Apple would rather you simply select Love for a song than give it your own rating out of 5.

**C DOWNLOAD STATUS**
A check mark means the album is stored locally; this icon means the album is now downloading.

**D MORE OPTIONS**
Click here to remove the download, view it in the Finder, and access additional options too.

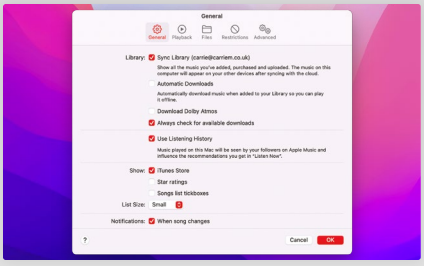
**E TRACK STATUS**
If you can't see the solid arrow icon, Ctrl-click the three dots to download the song.

**F DOWNLOADING**
An incomplete circle shows you how much of the track has been downloaded so far (it's also the same on an iOS device).



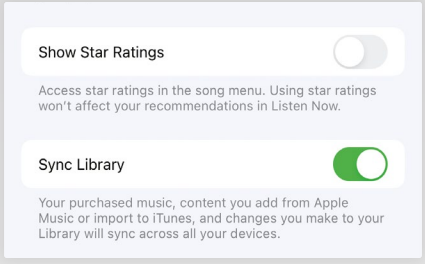
Image rights: Apple.

# **HOW TO** Sync and share iCloud Music Library



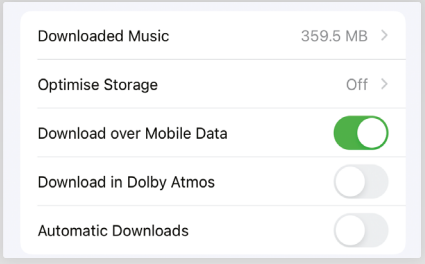
## 1 Check settings

When you join Apple Music or iTunes Match, the iTunes or Music app should automatically add a Sync Library option to the app's Preferences > General section. Make sure that option is checked or your songs won't sync.



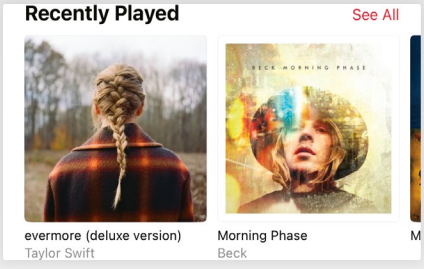

## 2 Check on mobile

On iPhone, iPad, and iPod touch the same setting lives in the Settings app's Music section. Once again Sync Library should be toggled on, but you can turn it off if for whatever reason you don't want to include this device.



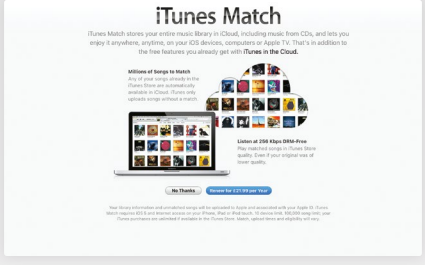

## 3 Decide on data

On your iPhone there's another option to think about: "Download over Mobile Data". Unless you have an unlimited data plan, switch this option off when you first upload your entire library to Apple's cloud.



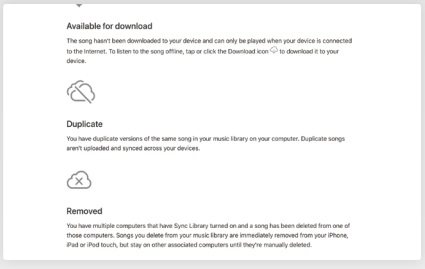

## 4 Sync devices

We haven't played anything on our iPhone yet, but as you can see there are already records in our Recently Played section of the Music app. That's exactly what we want; it means the syncing is working between Mac and iPhone.



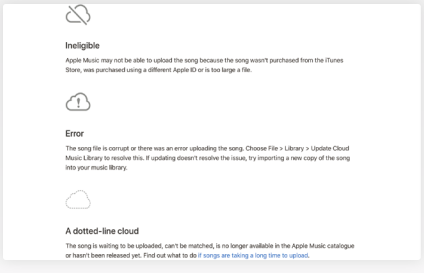

## 5 Make a Match

If you don't have Apple Music you can still take advantage of iCloud Music Library, for now at least... iTunes Match is $25 a year and you can subscribe by going into the iTunes Store in either the iTunes or Music apps.



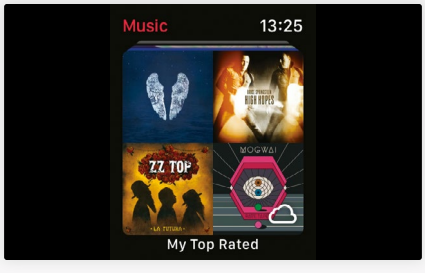

## 6 Know the code

Apple uses little status icons in the Library listings to show how your upload is doing. iTunes Match and Apple Music won't upload duplicates of the same song; the cloud with an arrow means the song will stream but isn't downloaded.



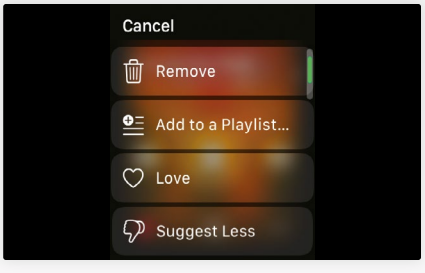

## 7 Look for errors

These are the icons to worry about: Ineligible typically means the song is too big (over 200MB), poor quality (96kbps or less) or too long (over 2 hours). You'll need to convert the file with an external app before iCloud will accept it.




## 8 Watch this space

Streaming from iCloud to your Apple Watch is brilliant, because it handily solves the problem of the Watch's limited storage space. As you can see, the Apple Watch app carries across your music ratings from your other devices.




## 9 Tame your tunes

The Apple Watch interface is deliberately simple, but you can still use it to add or remove tracks to and from playlists, to mark them as Loved or to tell Apple Music to suggest less songs like the current one.

Image rights: Apple, Republic Records, Capitol Records.

# SUBSCRIBE. STREAM. INDULGE.

## The pros and cons of subscribing to the Apple Music app

One of the best things about Apple Music is Spatial Audio, where tracks are mixed in 3D.

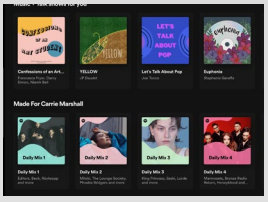
**APPLE MUSIC HAS** two big advantages over rival streaming services: Apple Lossless and Spatial Audio. The former delivers CD-quality streaming instead of the compressed music some other services deliver, and Spatial Audio delivers a three-dimensional effect that can make you feel you're right there in the studio with the artist. It's particularly good on AirPods Pro and Max.

Apple Music is $9.99/month or $4.99/month for the Voice Plan, which is only controllable via Siri. Apple Music is also included in every Apple One subscription. Every family member has their own playlists and preferences, and if you have HomePod minis they can recognize voices and use the appropriate account.

The downside is: if you stop paying, it stops playing. The music you're listening to, with the exception of your own library tracks that have been uploaded to the iCloud Music Library, is only rented. You might also find that, as with other streaming providers, tracks may be removed from the service: for example, some artists are currently in dispute with the Apple Music rival Spotify and have pulled their music. The solution? Stream everything but buy the legal downloads or CDs of the artists you want to support and the music you want to keep.

## Streaming alternatives to Apple Music

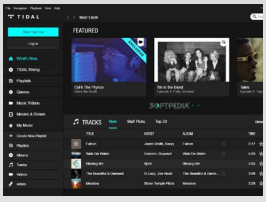
If you're all-in on Apple devices, we think Apple Music is far and away the best option thanks to its excellent device and Siri integration. But not everybody has an Apple-only home, and rival services may provide a better option.



### SPOTIFY

**From** open.spotify.com

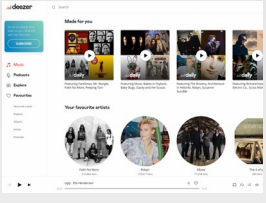
You can't knock Spotify's usability; thanks to Spotify Connect it works with almost anything. However controversies over its podcast division and its very low royalties mean some artists are now boycotting it.



### TIDAL

**From** tidal.com

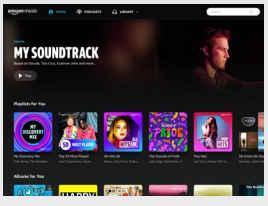
Founded (but no longer owned) by rap superstar Jay-Z, and with over 80 million tracks, TIDAL is one of the best streaming services for hi-res audio tracks, as well as other standard resolution streaming options.



### DEEZER

**From** deezer.com

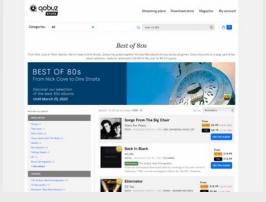
Deezer is a very big deal in mainland Europe thanks to a winning combination of great apps and a very large catalog of music. It boasts over 90 million audio offerings and its recommendations are good.




### AMAZON MUSIC UNLIMITED

**From** music.amazon.com

It doesn't have as many songs, but Amazon Music is cheap. Its one-Echo plan, which limits you to one Echo or Fire device, is just $3.99/month. The normal service is $7.99/month.




### QOBUZ

**From** qobuz.com

Qobuz isn't exactly a household name just yet but it's well known in hi-res audio and audophile circles thanks to its world-beating catalog of high-resolution audio files for a reasonably low monthly price.

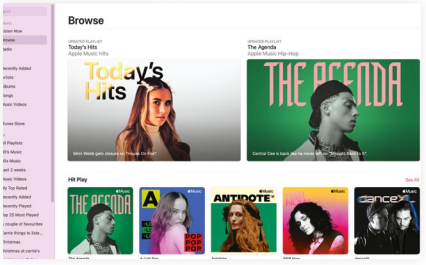
## HOW TO SWITCH BETWEEN STREAMING SERVICES

As a test case, we decided to defect from Spotify and go all in on Apple. Before we quit Spotify we transferred our favorite playlists to Apple Music using the Free Your Music app (freeyourmusic.com). The Mac app didn't work for us but on iOS it was fast and effective; we logged in with Spotify and with Apple Music, picked our playlists and transferred them across. It's free for up to 100 songs; for any more, or to copy albums, you'll need to pay for a premium account. That costs $10.99 for a month's access but if you're a long-time playlist maker it'll save you many hours – so it's worth it.



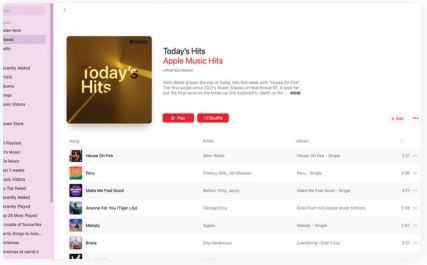
Image rights: Apple, Spotify Technology SA, Aspiro AB, Deezer, Amazon.com Inc, Xandrie SA.

# **HOW TO** Get started with Apple Music



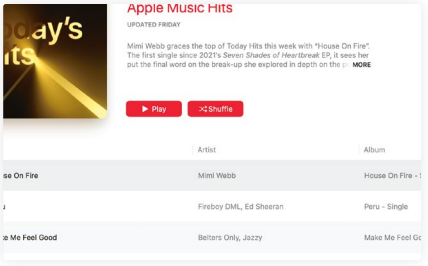

## 1 Take a look

You can sign up for Apple Music in Music on your Mac or iOS/iPadOS device. Here, we'll look at the full Apple Music service; there's a voice-only version for Siri devices too. Once you've signed up, Apple Music appears in the app.



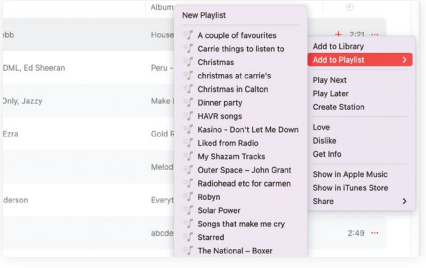

## 2 Play something

If you click on the Browse link you'll see a range of curated playlists to give you something to listen to. Opening a playlist looks and works just like it did in iTunes, and as it does with your own music library too.



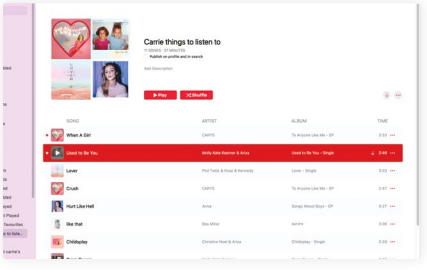

## 3 Find a keeper

If you discover something you really like, clicking on the "…" on the right enables you to do multiple things: love it, create a station based on that kind of music, add it to your library, share it or add it to a playlist.



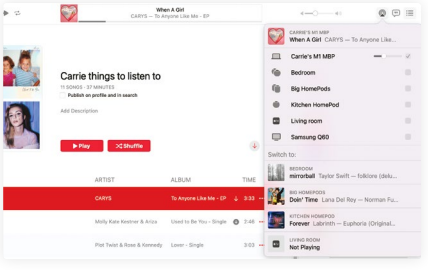

## 4 Pick a playlist

The Music app doesn't differentiate between Apple Music tracks and your own songs when you create or edit your playlists, although if you stop subscribing you won't be able to play any of the Apple Music tracks.



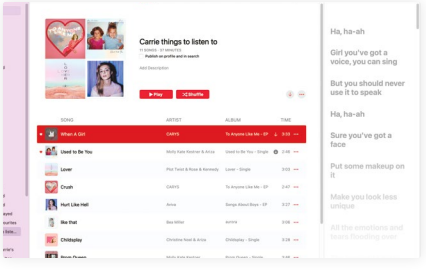

## 5 Save for later

By default, Apple Music streams all of its music via the cloud. If you want to download a song, for example because you're going somewhere you can't get internet access, you can download it by clicking the down arrow icon.



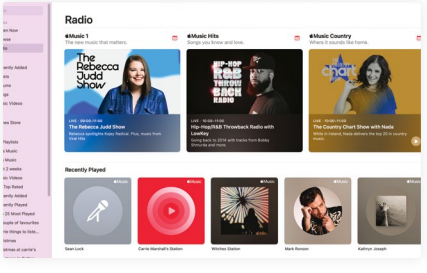

## 6 AirPlay it anywhere

If you have AirPlay devices, you can send your music to one or more of them by clicking the AirPlay icon at the top right of the window. This brings up a list of available devices; simply select the one(s) you want.



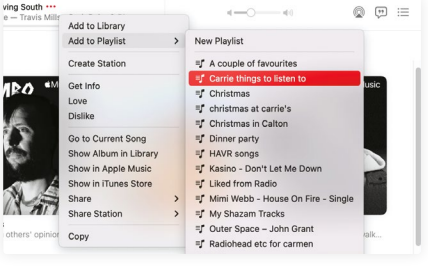

## 7 Sing along

Apple Music also has the lyrics to many songs. To display them either click on the speech bubble icon next to the AirPlay one or click View › Show Lyrics. The lyrics scroll as the song progresses so you can follow along.




## 8 Listen to Radio

Apple Music also includes tons of streaming radio stations, organized by genre and featuring a lot of big names from the world of music and beyond. It also creates custom stations based on the music you've been listening to.




## 9 Get the good stuff

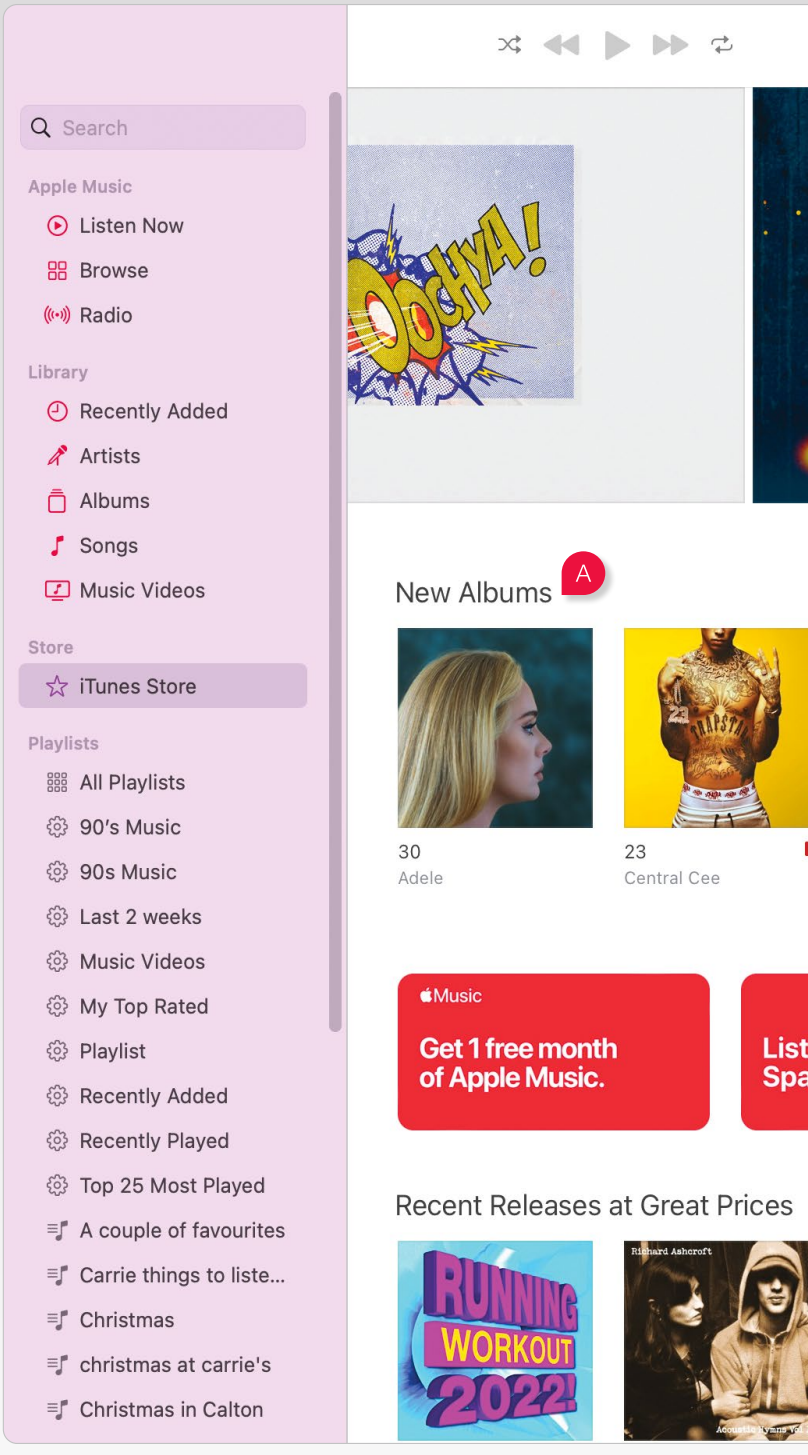
Is the station playing something new that you like? Click on the track name while Apple Music Radio is playing it and you'll see the same options that you get with other Apple Music tracks, so you can love, save, or share the song.

Image rights: Apple.

# BUY. DOWNLOAD. ENJOY.

## Master the options available to you in the iTunes Store

**FOR THOSE WHO** want to own their music rather than rent it, the iTunes Store is your friend. But it's wise to ensure you download (and backup, with Time Machine) everything you buy: if something is removed from the Store, it's gone and you can't re-download it. Purchases are associated with the Apple ID that bought them, so if you have multiple Apple IDs you won't see your other IDs' purchases. If you have Music or iTunes and haven't checkmarked View > All Music you won't see any purchases you haven't downloaded. And if you delete or hide music from one of your devices, it'll disappear from your other ones too. To unhide purchased tracks, go into Music on your Mac and click iTunes Store > Account > Downloads and Purchases > Hidden Purchases > Manage. If the iTunes link is not there, enable it in Music > Preferences > General > Show > iTunes Store.




## QUICK LOOK The iTunes Store explained

**A**

### NEW RELEASES

This strip and the carousel above showcase the latest big hitters that have been added.

**B**

### GENRE FILTER

Only interested in German nosebleed techno? No problem! You can filter the Store by genre.

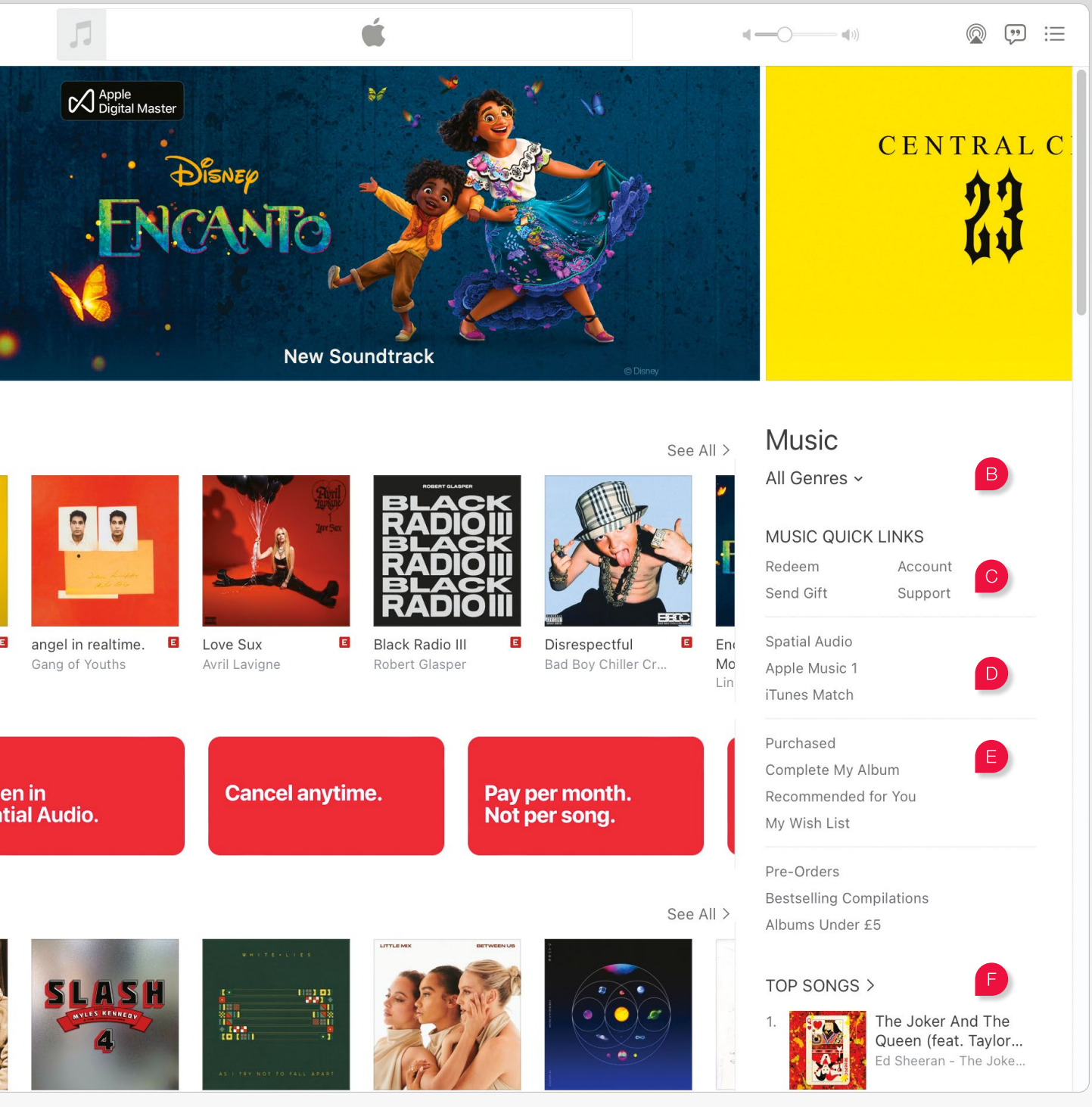
**C**

### ACCOUNT DETAILS

This is where you can redeem gift cards, check your account details, and get support.



Image rights: Apple.




D

**SPECIAL FEATURES**

View Spatial Audio tracks or Apple's cloud services Apple Music and iTunes Match.

E

**HISTORY AND TIPS**

See what you've already bought and get some suggestions for some more things to buy.

F

**TOP SONGS**

These are the best-selling songs on the iTunes Store right now and are usually by Ed Sheeran.

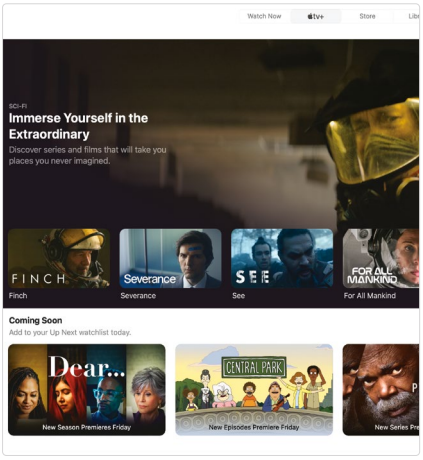
Image rights: Apple.

# WATCH WITH MAC (AND YOUR OTHER DEVICES)

## How the TV app makes it easy to stream shows

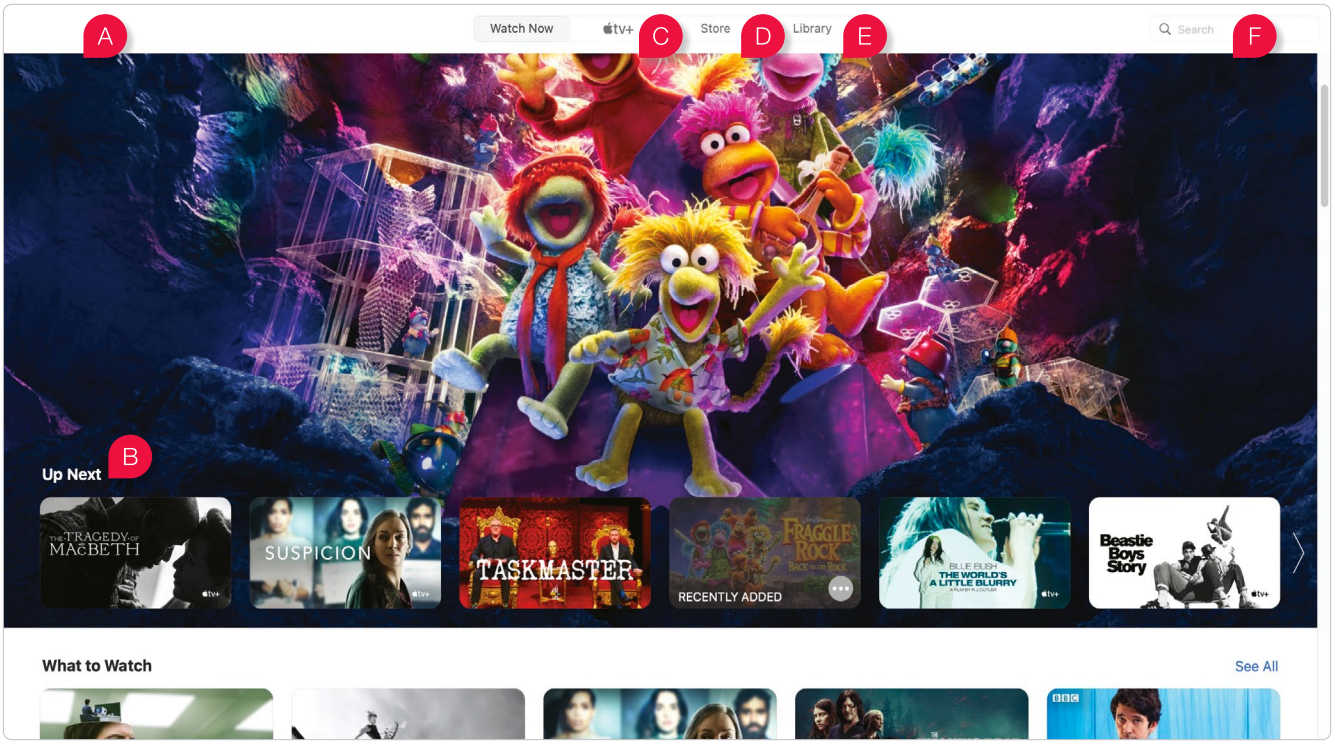
**UNTIL VERY RECENTLY**, buying digital content limited what you could do with it and what devices you could watch it on. And you could forget about converting it to make it more suitable for your phone. Now, the Apple TV app makes it easy to share your content and your Apple TV+ subscription with all your devices.

You can use an Apple TV to stream your home videos from iCloud, or from your Mac via Home Sharing (Settings > Users and Accounts > Home Sharing on Apple TV and System Prefs > Sharing on Mac). Home Sharing works with Windows PCs. Your Apple TV and the source Mac or PC need to be on the same Apple ID.




Apple is spending big on TV and movies. The current Apple TV+ line-up is very impressive.

## QUICK LOOK The Apple TV interface explained




**A HOME PAGE**
This displays your viewing options. Unlike on the Apple TV HD and 4K, the Mac app only shows Apple TV+ content.

**B UP NEXT**
Here is your to-watch queue. You can add shows in the app by Ctrl-clicking and choosing Add To Up Next.

**C APPLE TV+**
This button takes you to Apple's own TV+ streaming service where you can stream or download content.

**D STORE**
This is where the iTunes movie and TV store currently lives, with the option for you to buy or rent available titles.

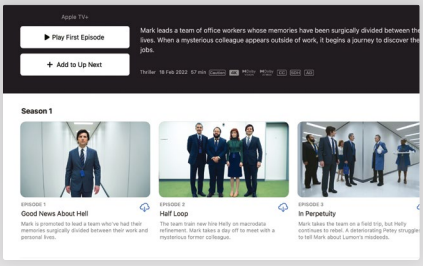
**E LIBRARY**
This area is where your own library of any downloaded movies and TV shows lives now iTunes is no more.

**F SEARCH**
Type here and the search field enables you to search your Library, the iTunes Store, and Apple TV+ for content.



Image rights: Apple.

## **HOW TO** Stream and download content via Apple TV

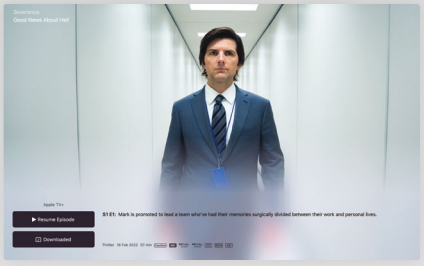



### 1 Click to stream

Apple TV+ makes it easy to start watching selected content. Once you've found what you want, click Play First Episode to start streaming. Apple TV can stream in 4K; Apple recommends a 25Mbps internet connection for this.

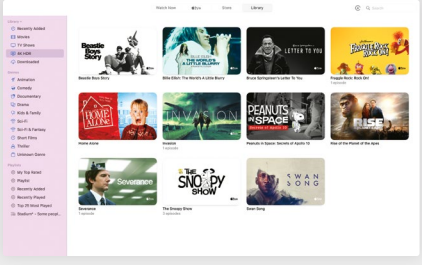
### 2 AirPlay your show

Want to watch content on the big screen? No problem. Click the AirPlay icon at the bottom left corner and you'll see a list of compatible devices you can stream to – so, in this case, we'd select Samsung Q60, which is our TV.



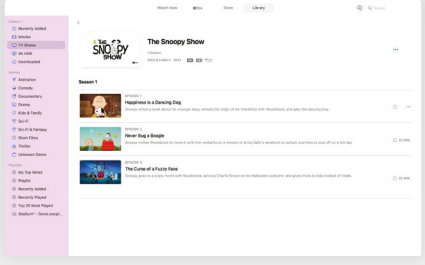
### 3 Download for later

If you're going to be travelling or going anywhere where you can't guarantee a decent internet connection, you can download shows and movies to watch them later. This will add the downloaded episodes to your library.



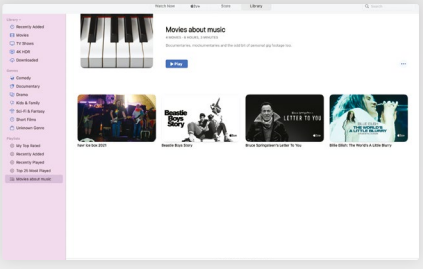
### 4 Look in the Library

The Library automatically organizes your movies and shows by genre and also creates some quick links so you can look for features such as 4K HDR content. It also tells you how much space your library is using.




### 5 Explore the episodes

For TV programmes, the Library organizes them by show and series/season. Clicking on the name of a show with more than one downloaded episode will open it up so you can see the synopsis of each individual one.



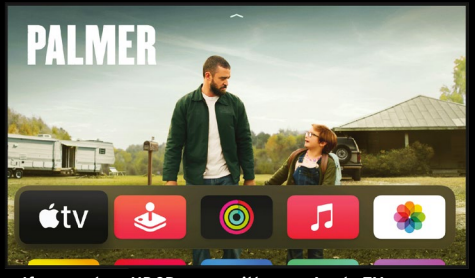

### 6 Add to playlists

Once your shows or movies have fully downloaded you can drag them to playlists just like you would with any other file in your Library. You can't edit the information about Apple TV+ or purchased downloads, though.

## HDCP, COPY PROTECTION, AND THE LAW

Broadcasters, streamers, and filmmakers don't want people pirating their content. One tool to prevent that is High-bandwidth Digital Content Protection (HDCP). HDCP is present in DVI, DisplayPort, and HDMI connections, and if all your devices and their cables are not HDCP-compliant content may not play in 4K, or at all. If you encounter an HDCP error on a new Apple TV it means that something between your Apple TV and your TV or projector isn't compliant: most likely the connecting cable.

In the UK and US it's legal to make a backup copy of lawfully purchased media for personal use, but illegal to bypass what the UK calls "technological protection measures" to make that backup.




If you get an HDCP error with your Apple TV, check the cable between it and your TV.

Image rights: Apple, Red Hour Productions; Endeavor Content.

Apple doesn't put Superdrives into its Macs any more, but it happily sells an external USB version.

# OTHER WAYS TO WATCH

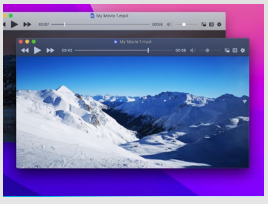
## How to view and convert old or unusual formats

**STREAMING IS GREAT,** but what about the discs and videos you already have in your collection – the home videos you shot on old cameras, or your DVDs? Third-party viewers (see right) can handle many of the formats that Apple's own apps don't, while an external DVD or Blu-ray drive with the combination of VLC and Libbluray (from the videolan.org site) will take care of disc playback.

That's fine if you just want to play media on your Mac. But what if you want to convert it for other apps or devices or for backup purposes? That's where one of our favorite apps comes in. Handbrake (handbrake.fr, for OS X 10.3 or later) makes it really easy to convert pretty much anything to pretty much anything, and it includes lots of Apple-specific presets for your iPhone, Apple TV, and more. It can also back up unprotected DVDs and Blu-rays.

## > Alternative video viewers

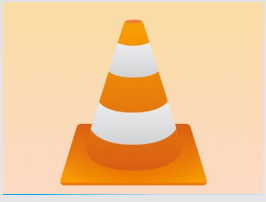
There are lots of video players, but there's no such thing as a one size fits all solution. Where IINA is minimalist, VLC is packed with power features, and 5K Player focuses on streaming. The players listed here should cover most kinds of playback.



### IINA

**From** iina.io

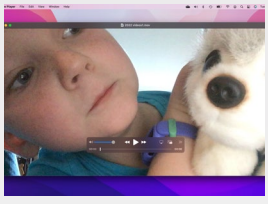
Designed specifically for the Mac and based on the mpv media player, IINA supports Dark Mode, Picture in Picture, and the Touch Bar. It can play almost anything and it's also expandable via plug-ins.



### VLC

**From** videolan.org

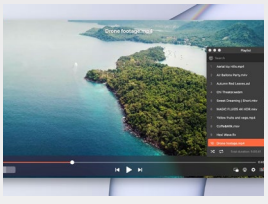
We've been using VLC for many years now and while it's not the most modern-looking app in the world, it's incredibly lightweight, versatile, and effective. It's also free and ad-free, which we think is a real bonus.



### QUICKTIME

**From** apple.com

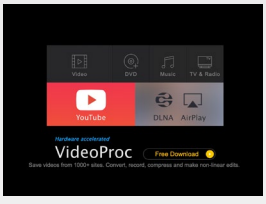
QuickTime Player comes with macOS and can do more than you might expect with it: you can carry out edits such as splitting or trimming clips and it can capture your iPhone or iPad screen too.



### ELMEDIA PLAYER

**From** elmedia-video-player.com

Elmedia is a fun, friendly video player that can handle all the key formats including MOV, MKV, and MP4. It integrates well with OpenSubtitles and has a useful bookmark feature for long clips.




### 5K PLAYER

**From** 5kplayer.com

5K Player isn't just a player. It's also a streamer with support for Apple's AirPlay and the widely supported DLNA streaming protocol too. The name's a bit misleading, though: its max resolution is 8K!

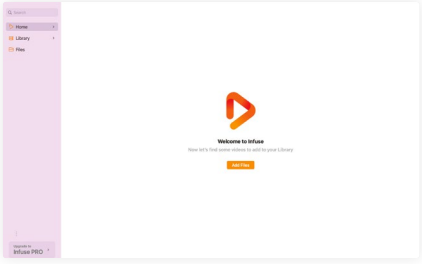
## GENIUS TIP: PLAY FROM iCLOUD DRIVE

You don't need to store all your video files on your Mac to access them; keep them in iCloud Drive and get the ones you want directly from Finder. We have an Old Videos folder in our iCloud Drive for old home movies, and access them by Ctrl-clicking a clip, selecting Download Now and then pressing the Space bar to view using macOS's Quick Look feature. This brings up a video window with basic play controls, and you can run it full screen by clicking the icon next to the "X" at the top left of the window. Esc brings you back into window mode.



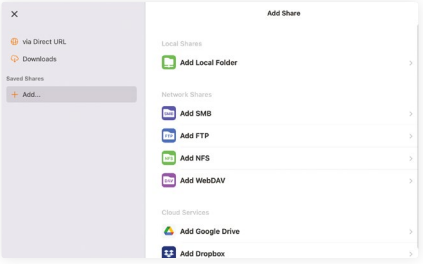
Image rights: iina.io, VideoLAN, Apple Inc, Electronic Team Inc, Digiarty Software Inc.

# **HOW TO** Watch your media with Infuse 7



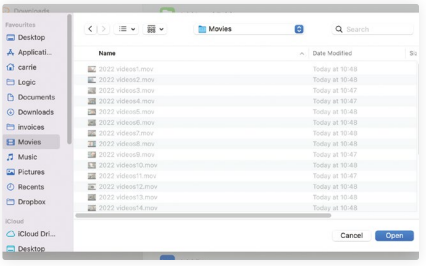

## 1 Find your files

Infuse (Free, with IAPs, firecore.com) works with a huge range of video formats including MKV, AVI, WMV, MTS, ISO, OGM, and many more. It also plays the big names: MOV, M4V, and MP4. To begin, click the Add Files button.



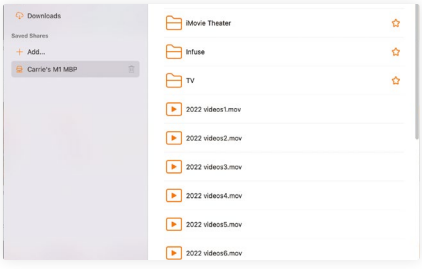

## 2 Choose your source

The basic version of Infuse works with locally stored files, but if you take out a subscription it can pull videos from a range of sources including all the big cloud services and some obscure ones too. Let's go with Add Local Folder.



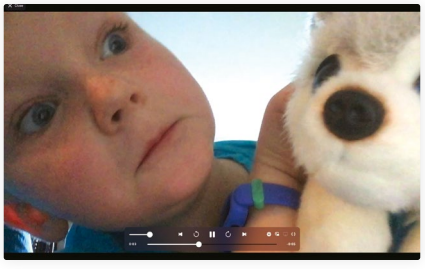

## 3 Pick the place

We store our various movie files in the Movies folder underneath our user account. Infuse is interested in folders, not individual files, so when you find the folder you want to use it's just a matter of clicking on the Open button.



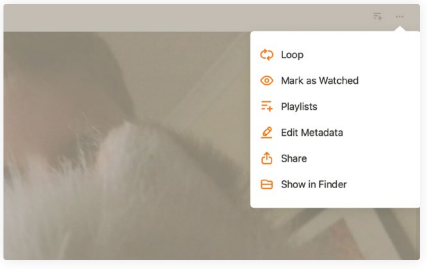

## 4 Wait a moment

Infuse will now import all the compatible files in the selected folder, displaying thumbnails of each one. It then shows you a file and folder list; the stars next to folders enable you to mark them as favorites for fast access.



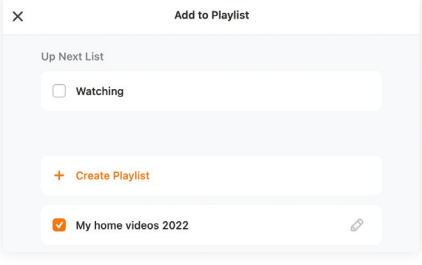
## 5 View the video

To view a video, double-click it. The bar at the bottom of the screen gives you the usual playback controls as well as the option to enable subtitles or switch audio tracks, and to move from full screen to big or small windows.



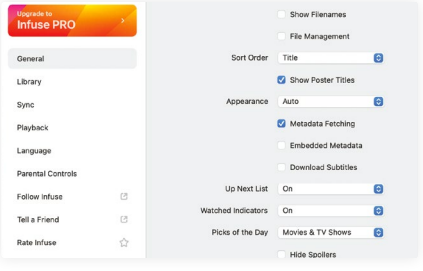

## 6 See the options

If you single-click a video you'll be taken to its information page, and if you click on the "..." at the top-right corner of the screen you'll see the additional features shown here: Loop, "Mark as Watched", Playlists, and so on.



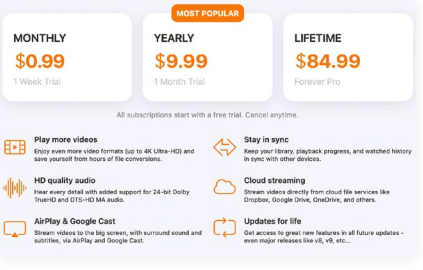

## 7 Pick a playlist

If you haven't used Infuse before, you can create a new playlist by selecting Playlists > Create Playlist and giving your new playlist a name. Once it's created you can then use the same menu to add other videos to it.




## 8 Change the settings

Infuse's preferences cover key features for advanced users, including whether it should download subtitles for online videos and how it should sort your video library. There are parental controls for files that support them.




## 9 Upgrade your app

The core, free app is very good, but if you want to unlock the power features you'll need to take out a subscription, which isn't hugely expensive. This gives you AirPlay, Google Cast, cloud streaming, and very high-resolution format support.

Image rights: Firecore LLC.

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Image rights: Sonos, Austin Mann Photography.

# GEAR FOR THE GREAT OUTDOORS

## The perfect tech to bring on your travels, whatever the weather

**WRITTEN BY ALEX BLAKE**

Chances are that if you're reading *MacLife*, you've got a home so decked out in all the latest gadgets that it could make Steve Jobs drool. One thing's for sure: we all love our devices and aren't shy about the fact, whether we're early adopters or extreme enthusiasts.

But there's no need for all that tech wizardry to be limited to the confines of your home. In fact, many devices positively sing when they're taken on a little outdoor expedition. Far from the hand-wringing worries you so often read about, tech, and nature can exist in perfect harmony — and we're out to prove it.

Whether you're looking to equip your existing devices for the great outdoors or stock up on something new and enticing for use in Mother Nature, you'll find it here in this feature. We've covered the top tech for green-fingered gardeners, devices to enhance your dream vacation (wherever it might be), and what to bring when you hit the road with your trusty gear.

So, let's take the plunge into the techtopia that awaits us over the next few pages. By the end, you'll have a good idea of everything you need to take your next alfresco adventure to another level. After all, there's a whole world out there to explore.

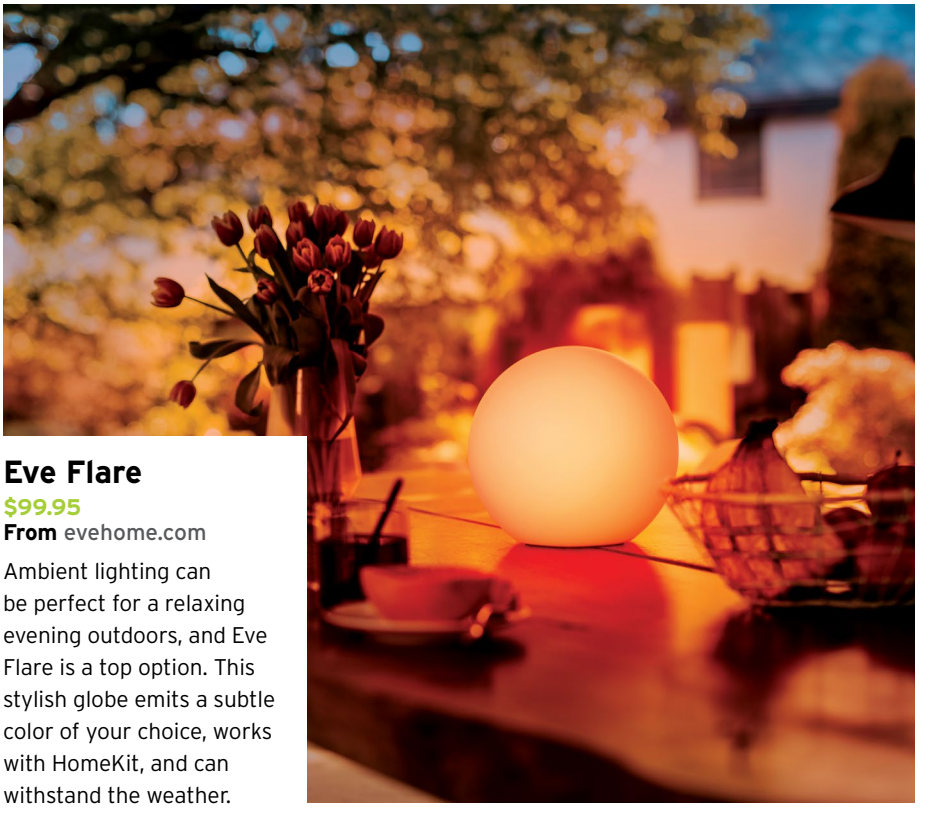
Image rights: Eve Systems.

# IN THE GARDEN

## Tech that will thrive outdoors come rain or shine

You might think the world of technology stops at your front door, but there's no reason for that to be the case. Once you get out into the garden, there are all sorts of ways your gear can enhance your green-fingered experience. Whether that's a high-tech take on your favorite outdoor tools or simply a device that can stand up to the elements, there's a lot that gadgets can do for your outdoor space.

Over the next two pages, we've put together a selection of devices that will step up your garden experience, from lights and speakers that make social gatherings more fun to cameras and weather stations that help you keep a closer eye on things.



### Eve Flare

**$99.95**

**From** evehome.com

Ambient lighting can be perfect for a relaxing evening outdoors, and Eve Flare is a top option. This stylish globe emits a subtle color of your choice, works with HomeKit, and can withstand the weather.

### Arlo Ultra 2

**$599.99**

**From** arlo.com

Keep a watch on your garden from your iPhone or iPad with the Arlo Ultra 2. This HomeKit camera produces 4K footage that can zoom in up to 12x, has powerful night vision, and even lets you speak to any of your visitors.

### Meross Smart Outdoor Plug

**$23.99**

**From** meross.com

If you've got electrical gear for the outdoors, you'll need an easy way to operate it. This smart plug has IP44 protection and is HomeKit enabled, letting you stay in control from your iPhone.

### Sonos Move

**$399**

**From** sonos.com

Why let a little water spoil your fun? The Move speaker from Sonos has IP56 water resistance to keep the party going through the weather. Its 11-hour battery and drop resistance make it long-lasting, too.

### Nebula Solar Portable

**$499.99**

**From** us.seenebula.com

The garden can be an excellent spot for movie watching, and Nebula's Solar Portable is just the ticket. Despite its small size, you get a crisp 1080p picture and three hours of battery life.



Image rights: Eve Systems, Arlo, Meross Technology Ltd, Sonos Inc, Nebula/Anker Technology (UK) Ltd.

## Netatmo Smart Home Weather Station

**From $199.99**
**From** netatmo.com/en-us

This expandable system can track anything from humidity and temperature to noise levels and air quality. Add-ons include tools to measure rainfall, wind speed, and more.

## Igloohome Padlock

**$129**
**From** igloohome.co

If you want to secure your garden valuables, try the Igloohome Padlock. This lock combines a keypad and Bluetooth functionality so it can be controlled from your iPhone. It's versatile and sturdy, as well as secure.

## Mophie Powerstation USB-C 3XL Battery

**$199.95**
**From** zagg.com

Keep devices juiced up with Mophie's handy power pack. Providing up to 45W of output from its 26,000mAh battery, it'll keep a MacBook going for up to 17 hours.

## Traeger Pro 575

**$899.99**
**From** traeger.com

Traeger's Pro 575 barbecue lets you cook in style by connecting to your iPhone, so you can monitor and maintain temperatures for perfect results every single time. It takes the tricky guesswork out of grilling.

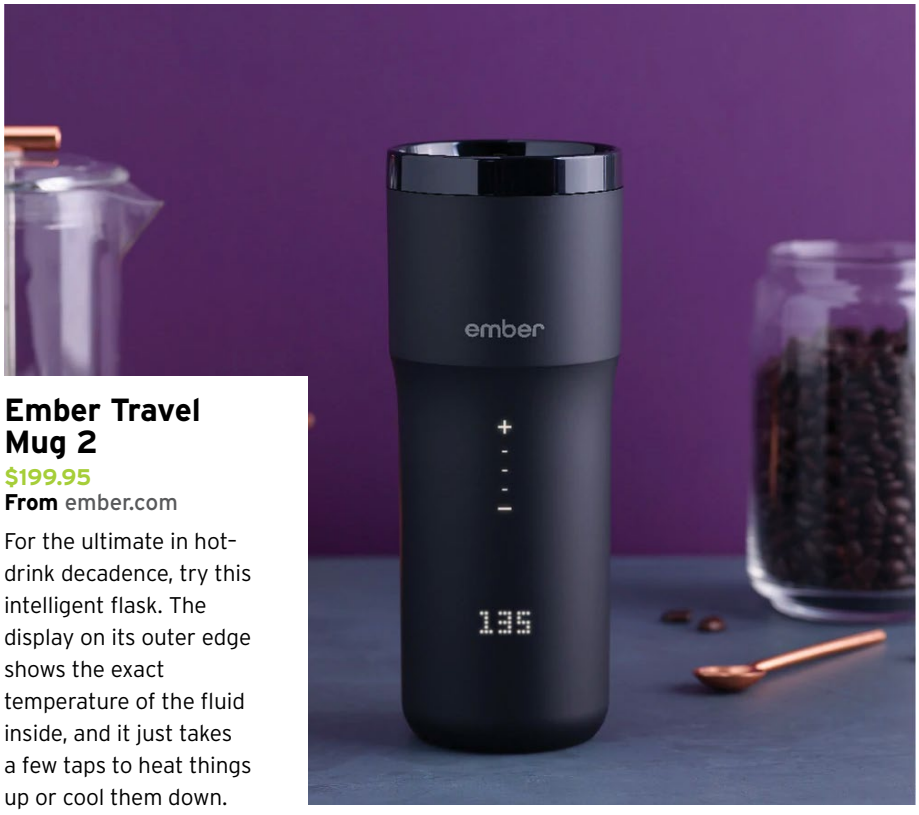
Image rights: Netatmo/Legrand, igloocompany Pte Ltd, Zagg Inc, Traeger Pellet Gril.

# OUT ON THE ROAD

Top travel tech accessories for the laptop lifestyle

When it comes to travel, chances are you're looking for equipment that can make life a little easier when you're away from home. After all, it's not like you can take your usual desk set-up wherever you go, regardless of whether it's for work or pleasure. When you have to travel light, you need to make sacrifices to your normal tech operations.

But fear not, as we've found the perfect gadgets for every road warrior. There are protective cases, battery packs, USB hubs, and portable monitors — all great for working on the go. And we're not just focusing on work. We've included a dash cam, a nifty travel mug, and more, all of which are made for the gadget lover with itchy feet.




## Ember Travel Mug 2

$199.95

**From** ember.com

For the ultimate in hot-drink decadence, try this intelligent flask. The display on its outer edge shows the exact temperature of the fluid inside, and it just takes a few taps to heat things up or cool them down.

## Eastpak Provider

$84.99

**From** eastpak.com

Eastpak's Provider may look simple, but it has everything you want in a laptop backpack. There's a padded compartment for your MacBook, comfy straps and back padding, tons of storage space, and more.

## Nextbase 622GW

$399.99

**From** nextbase.com

If your car gets in a scrape, you want to preserve the evidence. The 622GW does that superbly. Its outstanding image quality comes in 4K or 120fps, and it can pinpoint your incident with the geocode system, what3words.

## Apple MagSafe Battery Pack

$99

**From** apple.com

Heading out but need to juice up your iPhone? Slap one of Apple's MagSafe Battery Packs on and you'll get between 40% and 70% extra battery life to keep you going for longer.

## Fidlock Vacuum

$34.99

**From** fidlock-bike.com

Need directions while cycling? Fidlock's Vacuum iPhone mount is ideal. As the name suggests, it uses a vacuum lock to keep your phone in place, so there's no need to worry about any flimsy clasps that could break off.



Image rights: Ember Technologies, Inc, Eastpak, Nextbase, Apple Inc, Fidlock GMBH.

1

## ViewSonic VG1655

$229.99

**From** viewsonic.com

Working on the go doesn't have to mean doing your thing in cramped spaces. ViewSonic's external monitor gives you more screen real estate, with a 16-inch 1080p panel that's lightweight and sturdy too.

2

## Marshall Monitor II ANC headphones

$319.99

**From** marshallheadphones.com

Marshall's headphones boast excellent active noise cancellation and the sumptuous sound quality we've come to expect from its famous name.

3

## Native Union Stow Slim for MacBook

$79.99

**From** nativeunion.com

This beautiful laptop sleeve combines sublime style with plentiful protection. Additionally, there's a magnetic clasp and an extra pocket for your documents and cables.

4

## Satechi USB-C Hybrid Multiport Adapter

$89.99

**From** satechi.net

Satechi's clever accessory is more than just a USB-C hub. It also includes space for an M.2 drive, so it combines storage with port expansion. It's a great all-in-one device.

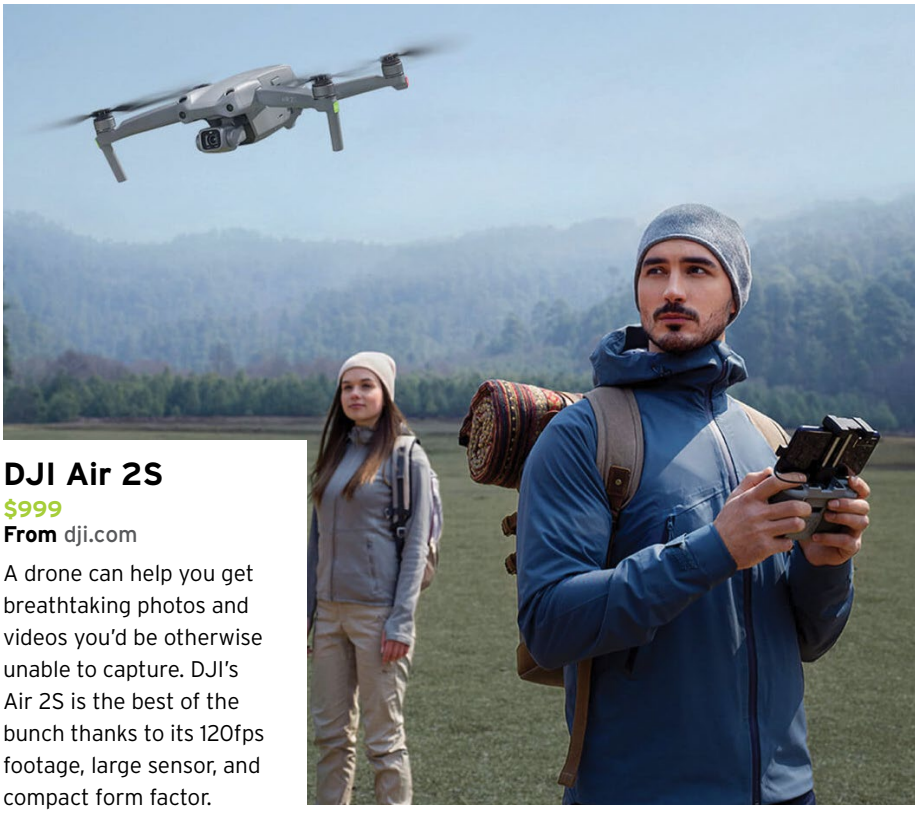
Image rights: Viewsonic Corp, Zound Industries, Native Union, Satechi.

# ON VACATION

## Make more of your explorations with these apps and gadgets

A lot of planning goes into jetting off on holiday, but there are some things you might not have thought of: how will you capture the memories you make? How will you ensure you don't lose or damage anything valuable? And how will you keep your devices powered up when you can't get to a wall plug? Luckily, there are tech products that can help.

Here, we've rounded up our favorite devices that can guarantee your trip is one to remember. Whatever you want to do, from hiking in the mountains off the beaten track to taking in the sights at a spectacular viewpoint, the products here are the perfect way to ensure your next vacation is your best yet.



### DJI Air 2S

**$999**

**From** dji.com

A drone can help you get breathtaking photos and videos you'd be otherwise unable to capture. DJI's Air 2S is the best of the bunch thanks to its 120fps footage, large sensor, and compact form factor.

### OtterBox Symmetry Series+

**$59.95**

**From** otterbox.com

OtterBox is well known for its highly protective cases. The Symmetry Series+ bucks the trend of bulky, overdesigned iPhone cases with a svelte design that's both thoroughly solid and easy on the eyes.

### Anker PowerCore 20K

**$59.99**

**From** anker.com

Ensuring your devices are powered up on holiday can be tricky. Anker's PowerCore 20K will keep you topped up with its 20,000mAh battery, which is enough to power your devices many times over.

### Apple AirTag

**$29**

**From** apple.com

There's nothing worse than losing your valuables while on holiday. Apple's AirTag can help mitigate that – just pop it in a bag or attach it to your key fob to trace your valuables wherever they go. No more panic at the airport.

### Joby GripTight GorillaPod for MagSafe

**$69.95**

**From** joby.com

Struggling for that perfect angle? Use this tripod, which can grip to surfaces using its bendable legs. And with MagSafe built in, you get a solid mounting connection.



Image rights: DJI, Otter Products EMEA Unlimited, Anker Technology (UK) Ltd, Apple Inc, Vitec Imaging Solutions Spa.

## Insta360 ONE X2

**$429.99**
**From** insta360.com

This 360° camera is the perfect way to capture footage on your travels. We love its ability to remove selfie sticks from recordings and keep horizons level even when you rotate the camera.

## HidrateSpark Pro

**$79.99**
**From** hidratespark.com

Check out this uber-useful and clever bottle. Its LED base glows to remind you to drink, while you can track your fluid intake with its companion app. If you forget to take a sip, that will help keep you hydrated while you're out exploring the world.

## GoPro Hero 10 Black

**$529.98**
**From** gopro.com

GoPro's Hero 10 Black is the most versatile action camera out there. It throws in so many top-class features, from 4K/120fps recording to HyperSmooth image stabilization, that you'll be spoiled for choice.

## THE BEST APPS FOR OUTDOORS

### AllTrails

**Free (offers IAPs)**
**From** alltrails.com

Want to take a trip to the great outdoors? AllTrails should be your go-to app. It shows you curated walks, hikes, bike rides, and running trails in your area, with routes, photos, and plenty of key info.

### Apple Fitness+

**Free (offers IAPs)**
**From** apple.com

Apple's Fitness+ service is a superb way to use your Apple Watch to get fit and active. You can choose from a huge range of guided exercises that sync your progress to your Watch in real time.

### Spyglass

**$3.99**
**From** happymagenta.com

Spyglass is your all-in-one toolbox for outdoor adventuring. It contains almost everything you could need on a trip, from maps and a GPS system to an augmented reality compass and speedometer.

### Seek by iNaturalist

**Free**
**From** inaturalist.org

We've all been on a walk and found a plant or animal we couldn't identify. Seek by iNaturalist helps out here – just point the app's camera at the mystery flora or fauna to find out what it is.

Image rights: insta360.com, GoPro Inc, Hidrate Inc, AllTrails LLC, Apple Inc, Happymagenta, iNaturalist Network.

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# REVIEWS

TOUGH TESTING, TRUSTED RATINGS

**HERE AT MAC|LIFE** we believe you should only buy the things that you really need, which is why our Reviews section is so important to us, and you. We don't want you to waste time and money on inferior products, and while we aim to include only the best hardware and apps, occasionally we like to include products that look promising, even if they don't always deliver.

We only use carefully selected experts, with specialist knowledge in their respective field, so no matter which review you're reading, you can be confident the person who's tested it knows their stuff, allowing you to make an informed purchase.

Each review is rated using a five-star system, with half stars, which is easy to understand because we give an explanation next to each one. The products that really stand out, those with a five-star rating, get a *Mac|Life* Editor's Choice award.

Mac|Life EDITOR'S CHOICE ★★★★★

## Only the best...

The products that really stand out in the mag – those that receive a five-star rating – get the *Mac|Life* Editor's Choice award. It doesn't get any better than this, so you'd be mad not to buy anything bearing this mighty accolade.

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Image rights: Skylum, The Creative Assembly Limited, Studio Obscura.

# Mac Studio

## Apple's most powerful desktop Mac is brilliant for creative pros, but it won't be for everyone

The Mac Studio is festooned with ports, including four Thunderbolt 4 ports on the rear as well as 10Gb Ethernet.

You also get two USB-A ports and an HDMI port, as well as a 3.5mm headphone jack.

Ever since Apple introduced its first Apple silicon Mac in 2020, its direction of travel has been crystal clear. First to arrive were the M1-powered MacBook Air, Mac mini, and 13-inch MacBook Pro in 2020, followed by the gorgeous 24-inch iMac in April last year. Last October, Apple moved things on again with the new 14-inch and 16-inch MacBook Pro offering up new members of the M1 family, the M1 Pro and M1 Max. Now there's this, the new Mac Studio – a Mac mini on steroids, armed with a choice of either an M1 Max or the new M1 Ultra, making it the most powerful desktop Mac ever made – or at least until the new Apple silicon-sporting Mac Pro arrives sometime in the coming months.

Thanks to the power of Apple silicon, even an M1-powered Mac mini or MacBook Air is powerful enough for most people, so it should come as no surprise to find that the Mac Studio isn't really aimed at us – instead Apple's target market is the creative pros who edit 8K videos, render graphics-heavy scenes and produce multitrack audio streams all day long. And the new Mac Studio is priced accordingly. $1,999 buys you a Mac Studio equipped with an M1 Max chip with a 10-core CPU, 24-core GPU and 16-core Neural Engine), 32GB of unified memory and 512GB of solid-state drive (SSD) storage. Spending $3,999 takes you into M1 Ultra territory, complete with a 20-core CPU, 48-core GPU and 32-core Neural Engine, 64GB of unified memory, and a 1TB SSD. The model on test here shows just how far Apple can push even that. Priced at $6,199 (via the Mac Studio's Configure To Order options), it comes with a 20-core CPU, 64-core GPU, 32-core Neural Engine M1 Ultra, plus 128GB of unified memory and 2TB of SSD storage.

Increasing the storage to 4TB will cost you another $600, while adding 8TB costs $1,800. It's not really a machine for a bit of web-surfing and the occasional email then.

No matter which build-to-order Mac Studio you buy, the rest of the specs largely remain the same. On the front, you'll find two USB-C ports (M1 Max versions) or two Thunderbolt 4 ports (M1 Ultra versions), plus an SDXC card slot, while on the rear all variants get four Thunderbolt 4 ports, a 10Gb Ethernet port, one HDMI 2.0 port and a 3.5mm headphone jack. On the underside of the unit you'll also find a security slot, enabling you to lock the Mac Studio to your desk, making it less likely someone will walk off with it.

When it comes to design, the Mac Studio really is just like an oversized Mac mini – it has the same 7.7x7.7in footprint as the mini, but stands taller at 3.7in, and its aluminium shell has cheesegrater-style vents on its rear and underside, enabling the huge twin fans inside to suck in air and draw it over the built-in power supply and logic board. Like most other Macs, these days, the Mac Studio also comes with Wi-Fi 6 (802.11ax Wi-Fi) and Bluetooth 5.0 wireless connectivity.

It's worth noting at this point that just like the Mac mini, the Mac Studio is sold without either an accompanying mouse, trackpad, or keyboard. To that end, Apple has launched special black editions of the Magic Mouse ($99), Magic Trackpad ($149), and Magic Keyboard with Touch ID and Numeric Keypad ($199). Notably, it hasn't taken the opportunity to change the way the Magic Mouse charges, though, or added backlighting to the Magic Keyboard's keys (which seems like a bit of a missed opportunity to us, given that the Mac

When it comes to design, the Mac Studio really is just like an oversized Mac mini.

Studio is likely to be used in studio environments with low lighting, especially when editing video and the like).

The Mac Studio is also decidedly non-user upgradeable, with ifixit.com awarding it 6 out of 10 for repairability, noting that while you could potentially swap out the removable storage using another SSD of the exact same specification, attempting to replace it with higher capacity storage is a no-go (for now). As for rest of the components – unfortunately, you're stuck with what you chose when placing your order.

The front of the Mac Studio gets either two USB-C ports or two Thunderbolt 4 ports, depending on configuration.

## ULTRA POWERFUL

While you could buy the Mac Studio with an M1 Max, most creative pros are likely to opt for the M1 Ultra, as that's where this machine's true power lies. As Apple pointed out during its Peek Performance event, the M1 Ultra is essentially two M1 Max die "joined" together with computing tasks distributed between them using Apple's proprietary UltraFusion architecture. This, Apple says, delivers up to 2.5TB/s of low-latency inter-processor bandwidth, which in turn helps the M1 Ultra deliver up to 3.8x faster CPU performance, 4.5x faster GPU performance and 3x faster machine learning performance than the Intel-powered Mac Pro and iMac models Apple chose to benchmark the Mac Studio against. Apple even says the Mac Studio outperforms many desktop-class PCs, and that's true to an extent, but things are more nuanced than that.

Just like all the other Apple silicon Mac's we've tried, the Mac Studio is fast to start up and super-slick to use, with almost every application we tried typically launching quickly.

Editing images in apps such as Photos or Affinity Photo is friction-free too, and even rendering 3D scenes in Blender gave us super-quick results, often taking just minutes where it can take hours on the Intel-based MacBook Pros we normally use in the *Mac|Life* office.

# Benchmarks: Our analysis explained

### > GEEKBENCH 5 SINGLE-CORE TEST

This tests the capability of a single processor core. Many more common tasks on a Mac will only use a single core at a time. Geekbench 5 is a universal app running on Monterey.

**Index score (higher is better)**

Mac Studio 3.22GHz M1 Ultra (2022)
1784

Mac mini 3.0GHz 8-core M1 (2020)
1742

iMac 27in 3.6GHz 10-core Intel Core i9 (2020)
1388

### > HANDBRAKE VIDEO ENCODING

We transcode a Blu-ray-quality video file into H.264 format using HandBrake to test the multicore processor performance. Handbrake is available as a universal binary.

**Duration (lower is better)**

Mac Studio 3.22GHz M1 Ultra (2022)
9 mins 10 secs

Mac mini 3.0GHz 8-core M1 (2020)
23 mins 38 secs

iMac 27in 3.6GHz 10-core Intel Core i9 (2020)
7 mins 33 secs

### > TOMB RAIDER (1920X1080)

For a real-world gaming test, we use the benchmarking tool in this game, with the graphics quality set to High, and the resolution set to 1920x1080. Not yet optimized for M1.

**Frames per sec (higher is better)**

Mac Studio 3.22GHz M1 Ultra (2022)
30

Mac mini 3.0GHz 8-core M1 (2020)
30

iMac 27in 3.6GHz 10-core Intel Core i9 (2020)
59

### > DAVINCI RESOLVE

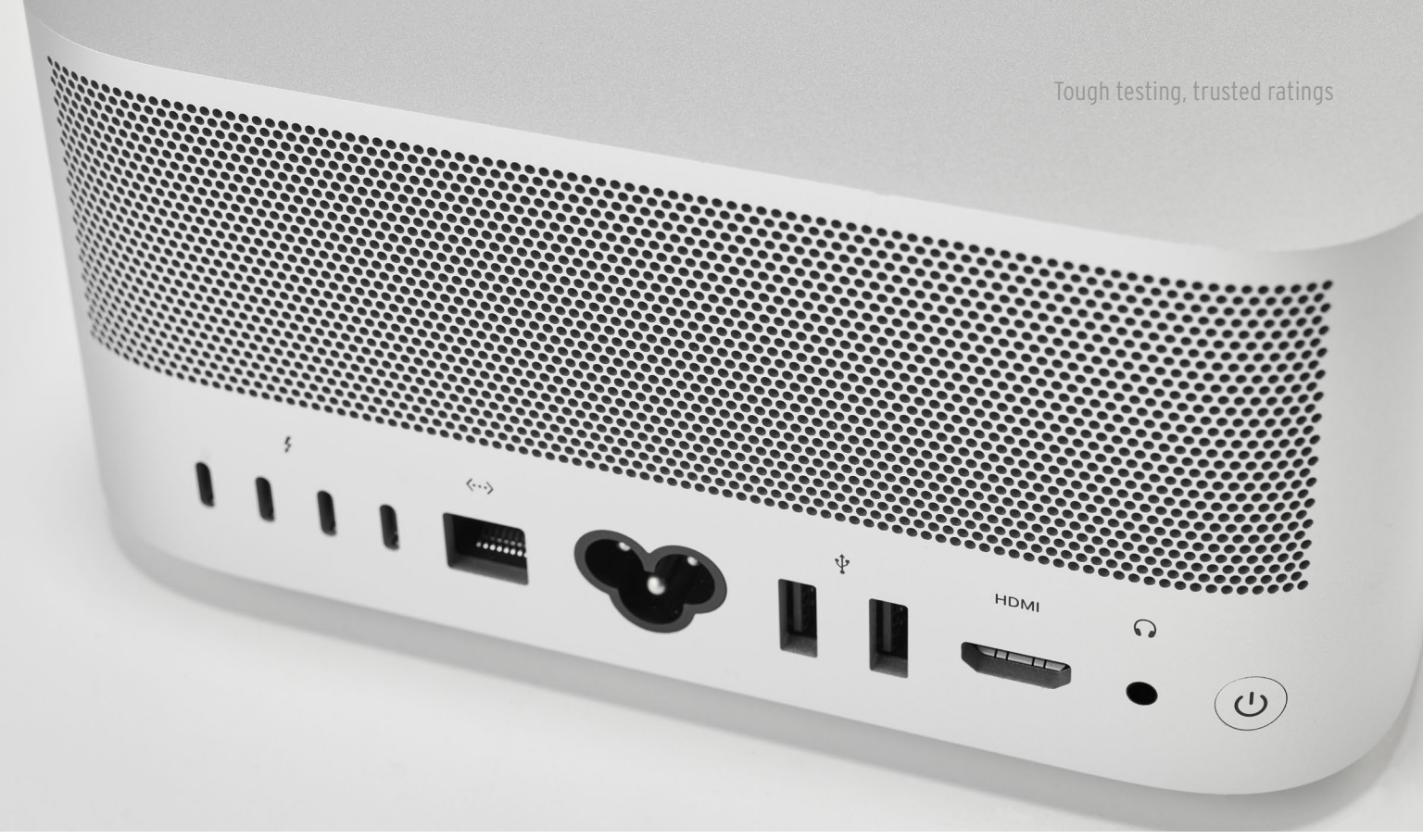
In Blackmagic Design's editing tool for video professionals, we exported an effects-laden, 2.5-minute project to the H.264 format. The latest version of the app (Version 17.1) now runs natively on M1 Macs.

**Duration (lower is better)**

Mac Studio 3.22GHz M1 Ultra (2022)
3 mins 39 secs

Mac mini 3.0GHz 8-core M1 (2020)
28 mins 42 secs

iMac 27in 3.6GHz 10-core Intel Core i9 (2020)
6 mins 30 secs




The two huge fans behind the Mac Studio's grille are mercifully quiet, even when the machine is working hard.

## THE MAC STUDIO MAY BE A GREAT RENDERING MACHINE, BUT GAMES CONSOLE IT IS NOT

In Geekbench 5's single-core processor test, the Mac Studio hit a consistent score of 1,784, putting it on a par with other M1 Macs (see the table above). This isn't too surprising as the underlying architecture is the same. Where the Mac Studio really hits it out of the ballpark is in the multicore test, where that 20-core M1 Ultra CPU achieved 23,944 – or over twice that of a 27-inch iMac with a 3.6GHz 10-core Intel Core i9, which averaged 10,002.

The Mac Studio aced our DaVinci Resolve benchmark test too (rendering an effects-laden 2.5-minute video), taking just 3 minutes, 39 seconds to produce the finished clip, compared to 6 minutes, 30 seconds on the 27-inch Intel iMac, and 28 minutes, 42 seconds on a Mac mini equipped with a standard M1.

However the Mac Studio delivered mixed results in our next two tests. In Handbrake, the Mac Studio managed to transcode a one-hour long 4K video into MP4 in 9 minutes, 10 seconds; 2 minutes, 13 seconds slower than an Intel Core i9 iMac. Gaming performance in Rise of the Tomb Raider was also sub-par, averaging 30 frames per second (fps), compared to the Intel Core i9 iMac's 59fps. That could be because the game isn't optimized for the M1, but the Mac Studio also performed surprisingly poorly during our Shadow of the Tomb Raider test. While there it managed to clock up 117fps – it did so only by frequently dropping frames using the in-game benchmark setting at 1980x1080 resolution, while actual use in-game resulted in the same jerky performance. The Mac Studio may be a great rendering machine, but games console or even gaming PC replacement it is not.

So should you buy the Mac Studio? If you're a creative pro who edits 8K video all day, the answer is yes. But for the rest of us? You could justify buying the $1,999 M1 Max version as an ageing iMac replacement. But the M1 Ultra? No. As interesting and as powerful as it is, it's overkill for the day-to-day tasks you're most likely to want to do.

**THE BOTTOM LINE.** Super-quick and powerful, the M1 Ultra Mac Studio is overkill for the most of us. **ROB MEAD-GREEN**

**MAC STUDIO**

**$6,199 (model on test)**

apple.com

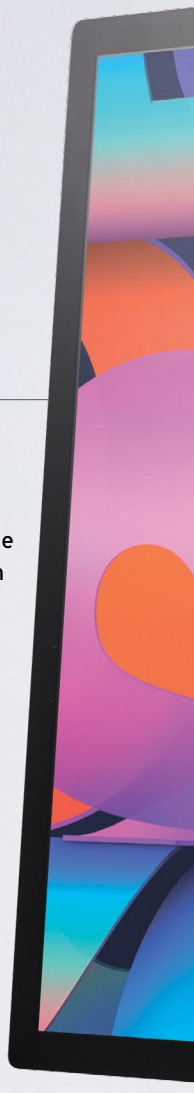
**Features** Apple M1 Ultra chip (20-core CPU, 64-core GPU, 32-core Neural Engine), 2TB storage, 128GB of unified memory, Wi-Fi 6 (802.11ax), Bluetooth 5.0, 6x Thunderbolt 4 ports (2x front, 4x rear), 2x USB-A ports, 1x 10Gb Ethernet port, 1x HDMI 2.0 port, 1x 3.5mm headphone jack, 1x SDXC card slot, 7.7x7.7x3.7in, 7.9 pounds

- ⊕ Ultra-fast CPU performance
- ⊕ Good port selection
- ⊖ Very expensive
- ⊖ M1 Ultra is overkill

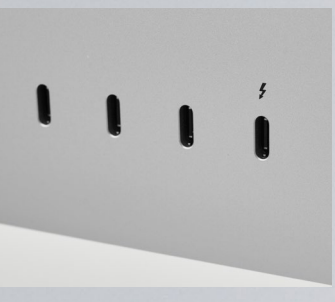
**GOOD**

# Studio Display

## The 27-inch 5K Retina display has some surprise hits – and misses



The Studio Display only has a single Thunderbolt 3 input, but at least it can charge your MacBook at the same time.



Now that the 27-inch iMac has joined the Power Mac G4 Cube and the original MacBook in the great big Apple resting place in the sky, the new Studio Display could be the next best thing. Maybe. Released alongside the new Mac Studio, the Studio Display sports a 27-inch 5K Retina display and even bears a passing resemblance to the 24-inch iMac. It is also only Apple's second display of the modern era, joining the 32-inch Pro Display XDR ($4,999), but at a more reasonable $1,599.

We say "reasonable", but there's a catch. The $1,599 price either gets you a Studio Display with a fixed height but tilt-adjustable stand or a VESA mount. For a height-adjustable stand you'll need to spend an extra $400. Where rival monitors often include a height-adjustable stand and a VESA mount option as standard, Apple forces you to choose the one you want at buying time. You can, however, change your mind later and take the Studio Display to your local Apple Store and get the stand swapped out for another. And if you want non-reflective nano-texture glass? That'll be an extra $300.

Also controversial is the use of a braided power cable that comes pre-attached to the display and can only be removed using a proprietary tool. The Studio Display also comes with a single Thunderbolt 3 input. While this means you only need to connect one cable to your Mac (and have it charge at the same time if it's a MacBook Air or MacBook Pro), anyone needing HDMI or DisplayPort connections will need to buy an adaptor (there are none included).

### MISSING IN ACTION

While the Studio Display's 5K Retina screen looks great, it's also missing the kind of features you'd expect to find in a monitor at this price – such as High Dynamic Range (HDR) support or a 100Hz or higher refresh rate. The lack of the former seems particularly egregious when the Studio Display is supposedly aimed at creative pros (or anyone who wants to watch HDR videos they've bought on iTunes), and also odd given that the Mac, iPhone and iPad all support HDR, with some (the iPad Air and iPad Pro) supporting 120Hz refresh rates too.

Things get stranger when you discover that the Studio Display is powered by the same A13 Bionic chip used on the ninth-gen iPad and runs iOS 15.4. Still, there's always the 12MP Ultra Wide webcam and Center Stage – only the jury's still out on that, as Apple's promised update to fix a webcam quality issue was still to materialize as we went to press.

At least the Studio Display sounds as good as it looks – with six speakers and support for Spatial Audio as well as three studio-quality microphones. It also comes with a three-port USB-C hub, enabling you to hook up peripherals directly to the display rather than your Mac.

**THE BOTTOM LINE.** While it's great to have another monitor option from Apple, we believe the Studio Display has limited appeal.
**ROB MEAD-GREEN**

**STUDIO DISPLAY**

**From $1,599**
apple.com

**Features** 27-inch 5K Retina display (5120x2880 pixels), 600 nits brightness, True Tone, 1x Thunderbolt 3 port, 3x USB-C ports

- ✚ Bright, colorful 5K Retina display
- ✚ Built-in USB-C hub
- ▬ Costly options
- ▬ No HDR or high refresh rate support

**SOLID**

You can choose from two anti-reflective glass options.

The G2H Pro provides 1080p resolution, wide-angle lens, and HomeKit support.

# Aqara Camera Hub G2H Pro

## An affordable, 1080p security camera with HomeKit support

There aren't a lot of security cameras that support HomeKit, but Aqara's new indoor camera, the G2H Pro, does, and it costs just $69.99. The compact camera is neatly designed, standing just 3.26 inches high, with a magnetic tilt–and–swivel base, and there's a wall–mount kit included as well, so it's easy to set the camera up.

Despite the low cost, the G2H Pro provides 1080p resolution, and produces a clear, sharp image with an impressive 146–degree viewing angle. There's a bit of "fish–eye" distortion in the image, but many people will accept that in order to get that wide viewing angle. The low–light mode isn't perfect — making out facial features at night is still a bit tricky — but it's clearer and sharper than we've seen on several more expensive cameras. The camera provides a micro–SD card slot for storing your video recordings, but the HomeKit support means that you can also use an iCloud+ subscription (from $1 per month) to store video online too. The G2H Pro even acts as a hub that can control other Aqara accessories, such as door sensors.

The Aqara app is a little fiddly to set up. It took a few attempts to create a password and scan the QR code required to connect the camera to Wi–Fi — but once that's done it's quick and easy to use, and provides instructions. The low cost does involve some compromises, though. The camera doesn't have a battery, so it has to be powered through a micro–USB port. However, Aqara doesn't include a mains power adaptor — all you get is a 6.5 ft USB cable, so you have to provide a USB power adaptor yourself, or connect the camera to a Mac or other device that can provide power via USB. It only supports 2.4GHz Wi–Fi too, although other Aqara cameras do support 5GHz if required.

**THE BOTTOM LINE.** The lack of a rechargeable battery is a little disappointing, but the G2H Pro provides a high–quality security camera and HomeKit support at a bargain price. **CLIFF JOSEPH**

**AQARA CAMERA HUB G2H PRO**

**$69.99**

aqara.com

**Features** 1080p security camera, 146-degree wide-angle lens, night-vision mode, magnetic tilt-and-swivel stand, micro-SD slot, HomeKit support

- ✚ HomeKit ready
- ✚ Competitive price
- ✚ 1080p, wide-angle lens
- ▬ Requires mains or USB power

**GREAT**



Image rights: Aqara.

# HYPERDRIVE 6-in-1 USB-C Media Hub

## Connectivity for USB-C iPads

**$99.99** **From** hypershop.com

**Features** 6 essential ports, media shortcut keys **Needs** USB-C

Compatible with any iPad that has a USB–C port, this hub fits snugly to the body and is sturdy when attached. To the iPad's meagre single port it adds six extra interfaces plus media control buttons for music and movies on the device. There's a USB–C port with 5Gbps data and 60W of power delivery for charging, and even though the largest iPad can only accept around 20W of power for charging, this is handy when using the hub via its extension cable with a Mac.

There's a USB–A port also rated at 5Gbps which is the same as the smaller iPads, though the Pro's USB–C allows 10Gbps data transfer and more for the M1 model. An HDMI port allows 4K output at 60Hz, which is impressive. SD and MicroSD UHS–I card readers are available at 104MB/s — not as fast as UHS–II but still fairly speedy. A 3.5mm audio out jack rounds out the ports.

The media buttons are a great feature if you like to listen to podcasts or music in split view while working on your iPad. The ports are similar speeds to other self–powered USB–C hubs, though this one takes up little space.

**THE BOTTOM LINE.** A solid hub for iPads with USB–C, if a little expensive. **HOLLIN JONES**

**HYPERDRIVE 6-IN-1 USB-C MEDIA HUB**

- ⊕ Good port selection
- ⊕ Extender cable for Macs
- ⊕ Media buttons are useful
- ⊖ Pricier than similar models

**GREAT**

# PowerPic mod

## Unique wireless charging stand with some quirks

**$59.99** **From** twelvesouth.com

**Features** Wireless charging, photo frame

Twelve South's wireless charging stand is ideal for your office space or bedside table. It features a wireless charging pad embedded within a clear Lucite frame. This frame slots neatly inside a chunky white stand – horizontally or vertically. Just place your iPhone (or AirPods with a wireless charging case) on the stand and it'll start charging; a rubber strip keeps the device in place. Due to the iPhone 13 Pro's large camera bump, it doesn't quite sit flush, which is a little annoying. It also doesn't work with MagSafe cases... bummer.

The mod's USP is a removable clear front plate allowing you to display a 4x6 photo or print. The plate attaches magnetically, so once your chosen 4x6 is in place, the plate snaps on. This is tricky initially, as the print tends to move out of place. The stand can also be used in its "naked" form.

At the back there's a port for connecting the included USB-C to USB-C cable, which is just long enough to work with. You'll need at least a 20W adapter to charge your chosen device with.

As is the norm, wireless charging is limited to 7.5W on iPhone, so don't expect speedy results.

**THE BOTTOM LINE.** A clever idea, but this attractive stand has foibles. **NICK ODANTZIS**

**TWELVE SOUTH POWERPIC MOD**

- ⊕ A neat way to present your photos or artwork
- ⊕ Can charge a variety of devices
- ⊖ Only 7.5W wireless charging
- ⊖ Doesn't work with MagSafe cases

**GOOD**

Image rights from left: HYPER, Twelve South LLC.

# The best protective cases for Apple Watch S7

These watch/strap combinations will keep that pretty face scratch free

## Spigen Rugged Armor Pro

**$29.99** **From** spigen.com

**Features** Suitable for 44/45mm sizes (works with Series 4, 5, 6, 7, and SE), raised bezels, shock-absorbent layer

Spigen's protective case is the least expensive on test, though it looks and feels like a quality product. Attaching the Apple Watch inside the case is easy – just push it in from underneath and it pops into place. The thermoplastic polyurethane is substantial, and offers protection all the way around with raised bezels to keep the screen safe. Our only gripe is that the raised section above the digital crown makes operating the dial tricky.

That aside, there's lots to like. It's comfortable to wear and has the most traditional watch feel here. There's plenty of adjustability in the strap to get a good fit, whatever your wrist size, a decent metal clasp, and a chunky housing to slot the strap in to. The case is available in lots of great colors to suit, including Military Green, Black, and Charcoal Gray.

Value-for-money protection  Digital crown access **GREAT**

## Element Case Special Ops

**$49.95** **From** elementcase.com

**Features** Available in 41 or 45mm sizes, black/olive or black/red, Watch Screen Barricade, Shock Deflection Armor Tech

Element Case's offering looks more at home on a battlefield than a coffee shop, and offers military style protection, with a double reinforced construction which is said to "suspend and absorb G-Forces for superior impact protection". To install a Series 7, seperate the two halves of the case. The inner cradle is the first line of defence, while the outer adds an extra barrier.

This outer layer features Watch Screen Barricade, consisting of raised edges around the screen, and an integrated protective strap. This is tucked away in the body of the watch strap when not in use; when you want extra screen protection just unfasten it and hook it over the case. Couple of downsides: first, in everyday use the strap often detaches from the main watch strap. Second, once it's hooked on, it's tricky to remove.

Amazing protection  Protective strap isn't great **GOOD**



Image rights: Spigen, Inc, Element Case 2022.

Of all the Apple devices out there, one could argue that the Apple Watch is the most susceptible to damage. That's not surprising given that you wear one nearly all day, every day, and because of its location it's likely to come into contact with surfaces – more so if you are either a bit clumsy, or you do a lot of physical work.

So, if you want to avoid scratches (or worse) to the screen or case, getting a protective case for your Apple Watch is a no-brainer really. Here, we've got four of the best specifically for the Series 7, for both screen sizes. It's worth nothing that the majority of the products are a case with integrated strap, replacing your current strap. **NICK ODANTZIS**

## Otterbox Watch Bumper

**$24.95** **From** otterbox.com

**Features** Available in 41mm or 45mm sizes, case-only (no strap), four colors, antimicrobial case, 90% recycled plastic

The Otterbox Watch Bumper Case is a standalone case, so no watch strap. That's either a good or bad thing, depending on your needs. If you have a strap you already like, it's a boon, providing it matches your strap (four color cases are available). If you don't, Otterbox offers matching straps to suit. The case itself is $24.95, while straps retail for $29.95, so if you're going all in, then the Otterbox duo is the most expensive option here.

As for protection, the Watch Bumper has a minimalist profile, but does cover all exposed areas, and the raised face edges offer a barrier against knocks or scuffs. It also features antimicrobial technology, which Otterbox says helps protect the exterior from bacteria. All controls are easily accessible, and overall it's an attractive, discreet case that wont draw attention.

Minimalist profile  Duo is expensive  **GREAT**

## Catalyst Active Defense Case

**$49.99** **From** catalystcase.com

**Features** Available in 41mm or 45mm sizes, 10ft drop protection, aqua drainage system, breathable strap

Catalyst's Active Defense Case is more minimalist than others here, yet it offers lots of protection, including 10ft drop protection (MIL-STD-810G). The case allows for undhindered access to all the Watch S7 functions, including wireless charging, and Catalyst's Aqua Drainage System allows water to easily drain out of the case.

The strap is designed for a wrist circumference of 4.9 – 6.9 inches. It feels lightweight and rests comfortably on the wrist, aided by its breathable design which helps to prevent a build up of sweat underneath. Catalyst has incorprated a toggle into the underside of the strap housing, which allows it to slot in place. This prevents the strap from coming out over time, which is a very neat addition. The case only comes in black, sadly.

Subtle, yet protective  Comfortable to wear  **AWESOME**

Image rights: 2022 Otter Products LLC, Catalyst Case US 2022.

Extremely lightweight at just 2.4 oz, the mouse powers over USB-C and is a wired-only model.

# Keychron M1 Mouse

## A lightweight mouse with plenty of options

Not everyone wants or needs a wireless mouse — for some, the convenience of never having to recharge and also the weight saving from not having a battery are preferable. Keychron's M1 is a stylish and ultra-lightweight wired mouse that uses the supplied 6 ft USB-C cable for data and power. It also comes with a USB-A adapter and you can use a longer cable should you wish. The body itself is incredibly lightweight at just 2.4 oz and is semi-open, with its internal circuitry partly visible. This also reveals the animated RGB lights.

Its sensitivity, important for gamers who wish to customize behavior, can be set from 1200–5000 in steps of 100 via a button underneath or the MacOS app which also lets you customize its seven top buttons. These comprise left and right, a clickable central scroll wheel and two smaller buttons on either side. A range of commands can be assigned to each, with some Mac-specific options available too. There's also the option in the app to record macro commands and assign those to specific keys.

The light scheme can be cycled using a button on the base, and internally there's an ARM Cortex chip powering things. The polling rate — the accuracy with which the mouse reports its position — can be set as high as 1000Hz which makes it extremely responsive. Keychron claims a lifespan of up to 70 million clicks, too.

In extended use the lightness of this mouse is a definite bonus, and it's much less likely to tire your hands and arms than using a heavier model. Even if you don't bother with macros, being able to assign custom functions to buttons is helpful, as are the various sensitivity settings you can choose. None of this is particularly hard to do and should be perfectly accessible, even to less technical users.

**THE BOTTOM LINE.** A comfortable, customizable mouse with adjustable settings, ideal for any user. **HOLLIN JONES**

**KEYCHRON M1 MOUSE**

**$39**
keychron.com

**Features** RGB effects, up to 70 million clicks lifespan, type-C interface

**Needs** USB-C, USB-A, macOS 11 or later

- ✚ Nicely configurable
- ✚ Comfortable to use
- ✚ Unique design
- ▬ Could be sturdier

**GREAT** ■■■■□



Image rights: Keychron.

The unit is the same shape as a Mac Mini and contains an expansion hub and two drives.

# OWC miniStack STX

## Add up to 26TB of storage to your Mac Mini

The Mac Mini is pretty powerful considering it's Apple's most affordable Mac, but it is limited in terms of its ports and storage upgrade options, topping out at 2TB, an upgrade that adds significantly to the cost. OWC's miniStack STX is an external drive and Thunderbolt expansion hub that's the same size as the Mini and designed to sit underneath it. It has one 2.5 / 3.5 inch SATA and one NVMe M.2 SSD slot inside and you can supply your own drives or choose from one of the many available pre-filled configurations. These go as high as a massive 26TB for $1959.

Powering from the mains and connecting to your Mac Mini or indeed other USB-C-capable device like an iPad Pro via a dedicated Thunderbolt port, the three additional Thunderbolt ports let you connect up to five devices each in independent chains, supply up to 60W of power to a laptop and connect one 8K display at 30Hz or two 4K displays at up to 60Hz via a Thunderbolt display or a USB-C display adapter. Thunderbolt 4 speeds and features are supported where your Mac allows, or lower but still impressive speeds where your hardware has Thunderbolt 3 or USB-C.

OWC's claim of up to 770MB/sec of data transfer using the SSD drive proved to be accurate in tests, and it makes sense to store high-data-rate files like 8K video on the SSD drive while offloading less demanding data onto the more capacious HDD, which is still plenty fast enough for everyday operations. This is a solid and well-designed way to upgrade your Mac Mini, especially for content creators, with a good range of storage options as well as the ability to use your own drives.

**THE BOTTOM LINE.** A compact and flexible way to power up your Mac Mini.

**HOLLIN JONES**

**OWC MINISTACK STX**

**DIY enclosure $279, 2TB HDD $349, 2TB SSD $599**

owcdigital.com

**Features** 1x SATA bay, 1x SSD bay, 3x Thunderbolt 4 ports, 1x Thunderbolt 4 host port with 60W PD

**Needs** macOS 11.1 or later for Thunderbolt hosts, macOS 10.14.6 or later for USB hosts, iPadOS 14.1 or later, USB-C, Thunderbolt 3 or 4

- ✚ Elegant upgrade for Mac Mini
- ✚ Add lots of storage
- ✚ Chain many USB devices
- ▬ Pre-built is pricier than doing it yourself

**GREAT**

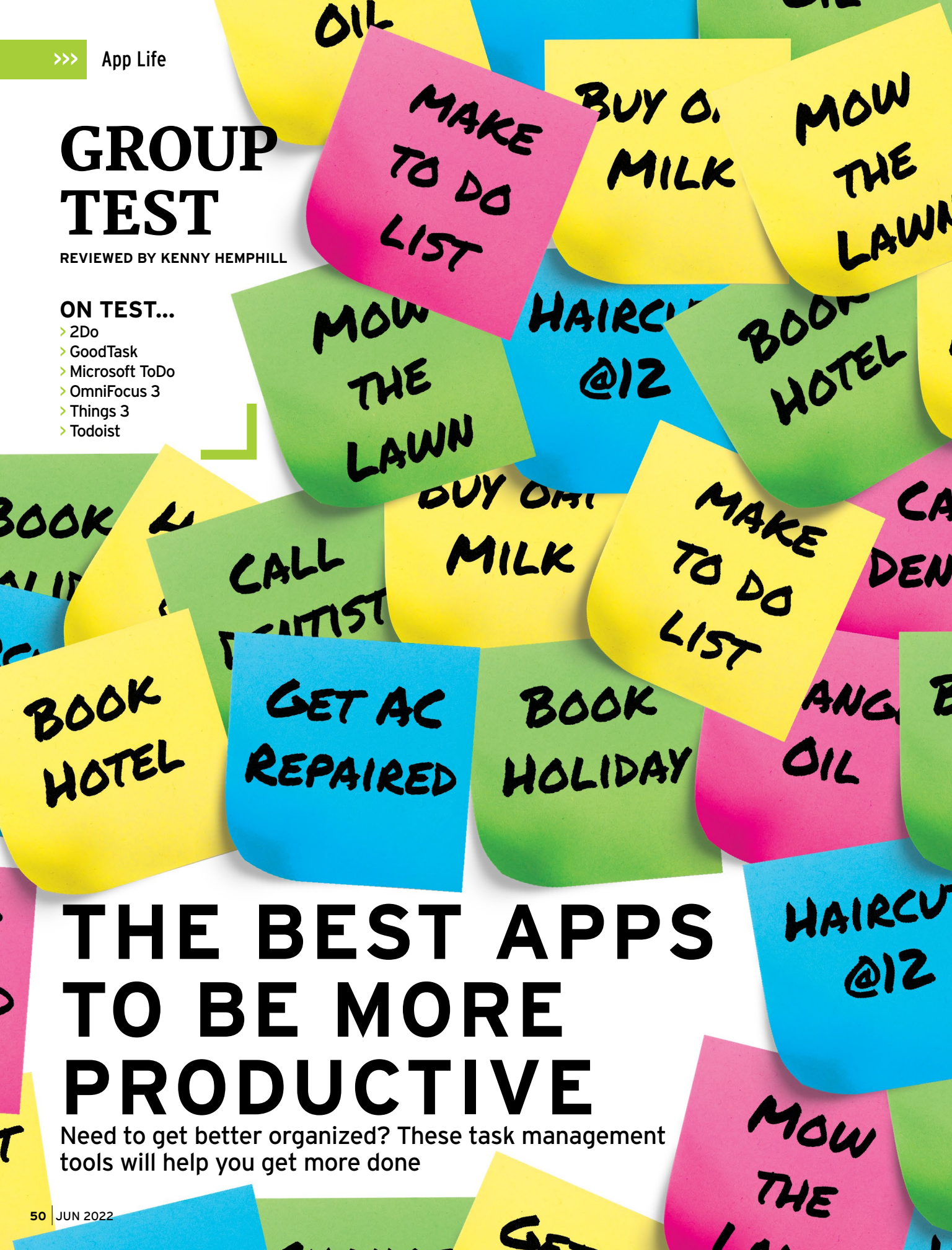
Image rights: Other World Computing, Inc.

# GROUP TEST

REVIEWED BY KENNY HEMPHILL

**ON TEST...**

- 2Do
- GoodTask
- Microsoft ToDo
- OmniFocus 3
- Things 3
- Todoist




# THE BEST APPS TO BE MORE PRODUCTIVE

Need to get better organized? These task management tools will help you get more done

**THERE'S NO SHORTAGE** of productivity apps on the Mac. But that can make choosing the best one all the more difficult. They range in complexity from the simplest, text-based to do list apps, to full-blown "getting things done" (GTD) task managers that while extremely powerful, require an investment of time in learning how to use them and a commitment to use them regularly. So, the first question to ask yourself when you're trying decide which is right for you, is "what do you want to do with it?" Do you want an app where you can make the occasional to-do list and check things off when they are done, or do you want a tool you will use daily that will manage everything you have to do and allow you to delegate and share tasks?

We've covered both ends of the spectrum here. In considering which apps to include, we've stuck rigidly to those apps whose primary purpose is managing tasks. So, while the likes of Evernote and Reminders, and several calendar apps have to-do list features, we've ignored them for this round-up.

## How we tested

We used each app to create and manage a range of tasks and examined whether we could share or delegate them, sync them with other devices, and share to them from other apps.

We took note of how quickly they synced, and whether they intelligently surfaced tasks based on their start or due dates. We also considered the user interface and how easy or difficult it made utilizing the app.

Finally, we looked for unique features that made each app stand out from its competitors in the crowd.

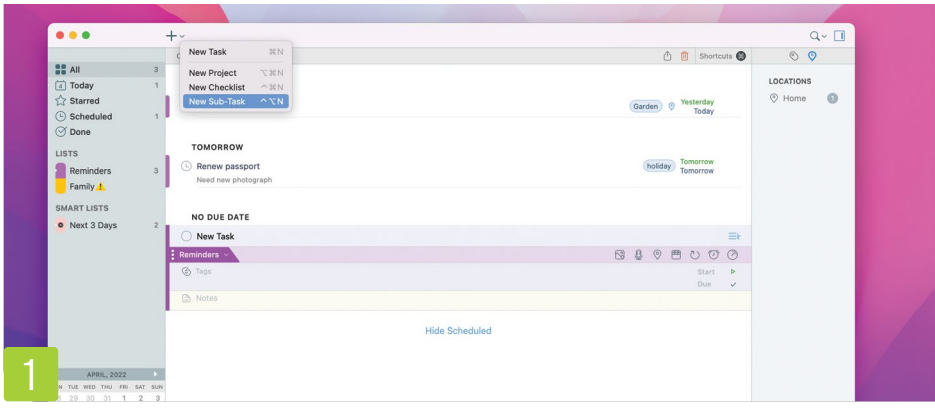
## Things to consider...

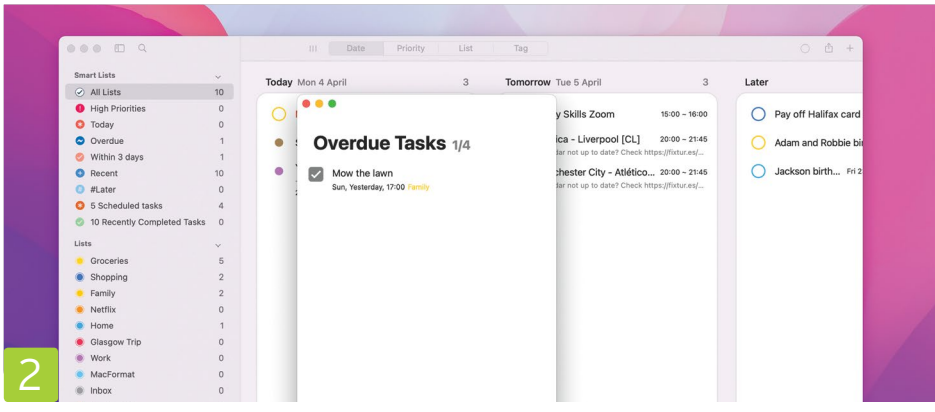
### Does it sync?
Is there an iOS or iPad OS version of the app. How do they sync? Some apps use their own servers to sync, while others use iCloud. Consider if you even need a mobile version of the app.

### Single- or multi-user?
If you want to use the productivity app as part of a team, you'll need features that allow you to share and delegate tasks.

### Does it work with other apps?
Some of the tools here allow you, via share sheets, to add tasks from other apps, like email clients. That can be useful if you regularly create tasks from email messages or calendar events.

### How does it show upcoming tasks?
A good task manager will highlight tasks that are due on the current day or that are overdue.




## 2Do

**$49.99 (Mac); $19.99 (iOS)** **From** 2doapp.com

1 You can use 2Do as a basic task manager and create lists, add tasks to them, and schedule tasks. And it does a good job of alerting you when tasks are due and highlighting them in the app, including location-based notifications. However, it's also a pretty powerful project management tool. You can create projects and tasks can be broken down into sub-tasks. There's a quick entry feature that allows you to add tasks from anywhere using a global shortcut. And it has a highly customizable search tool that allows you to slice the data 2Do holds any way you want.

2Do offers several options for syncing, including iCloud and Dropbox. However, it won't pull in reminders from the Reminders app. It has share and actions extensions, but there's no Today widget or Shortcuts actions. And there are no tools for sharing tasks with other users. You'll also need to spend time learning how to use some of its more advanced features to get the most from it.

- Excellent search
- Location-based notifications
- Doesn't import from Reminders
- Can't share tasks

**GOOD**

## GoodTask

**$39.99 (Mac); $9.99 (iOS)** **From** goodtaskapp.com

2 GoodTask's primary aim is to allow you to filter, view, and manage tasks synced with Apple's Reminders and Calendar apps as easily as possible. So, if integration with those stock apps is important, it should be near the top of your list.

Task lists are imported from, and synced with, Reminders but that's just the start. Each list can be filtered so that you only see tasks that meet certain conditions or contain tags you specify. Quick Tasks allow you, at the click of a mouse or press of a keyboard shortcut, to apply parameters to tasks such as adding it to a list or applying a tag, or even pushing its due date back by a day.

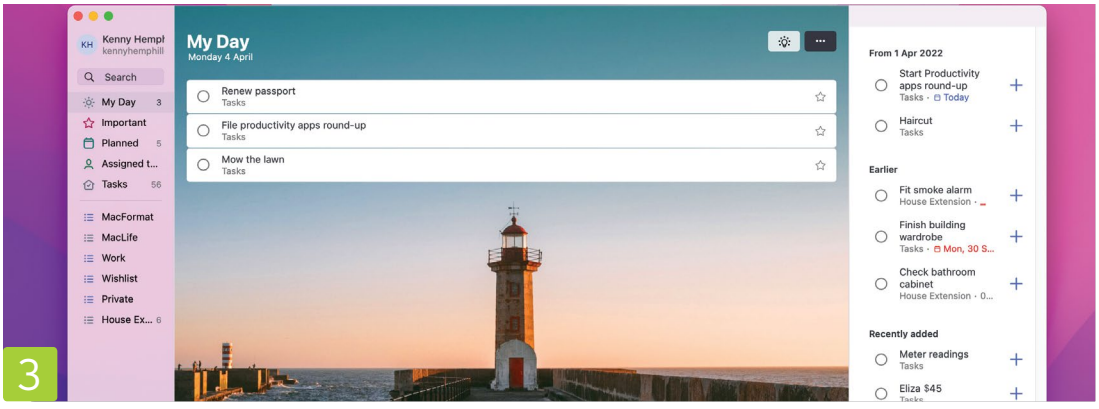
A new Board view allows you to see tasks due today, tomorrow, and further out in lists side by side, or to do the same with tasks sliced by priority, tag, or list. GoodTask can also suggest what you should focus on now. There's a Today widget and share extensions, but sadly no Shortcuts actions.

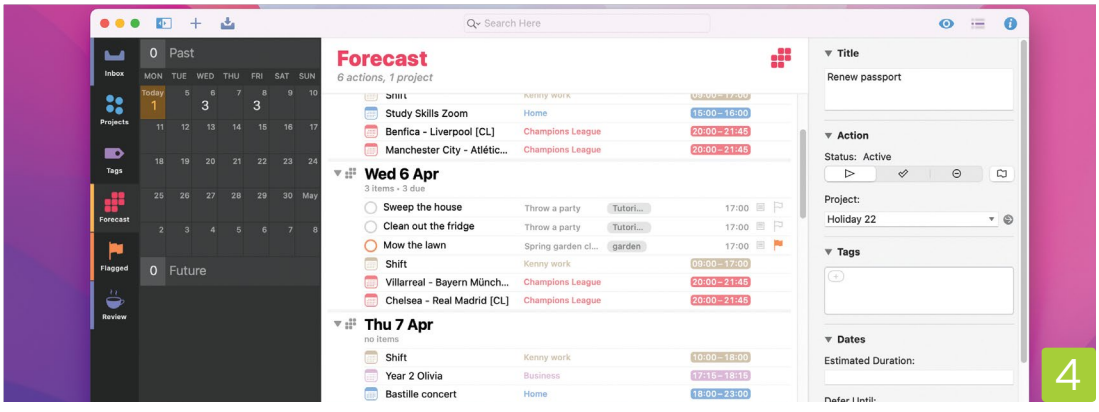
- Lots of ways to filter tasks
- Can manage tasks quickly
- Quick Tasks is powerful
- Takes time to learn

**GREAT**



Image rights: Beehive Innovations, haha Interactive.




# Microsoft To Do

**Free** **From** microsoft.com

3 Microsoft To Do is an evolution of Wunderlist, which the company acquired a few years ago. Luckily, To Do will be familiar if you ever used Wunderlist. It retains the fast syncing that was a key feature of its predecessor, as well as the option to choose an image as a background to lists, rather than a flat color.

Tasks can be delegated to others, and you can create projects and place tasks in them. Scheduling tasks is easy. However, we weren't as impressed with the My Day view. The app suggests tasks to place in this view, but to see suggestions you must click on the lightbulb button and then select from what often looks like a random collection of tasks. It doesn't automatically place tasks with a due date of the current date in My Day. However, the Planned view allows you to see which tasks are overdue, and which are due soon.

There are no sharing extensions, Today widgets, or Shortcuts actions.

- Can delegate tasks
- Planned view
- Free
- My Day could be better

**GOOD**

# OmniFocus 3

**Standard $49.99; Pro $74.99** **From** omnigroup.com

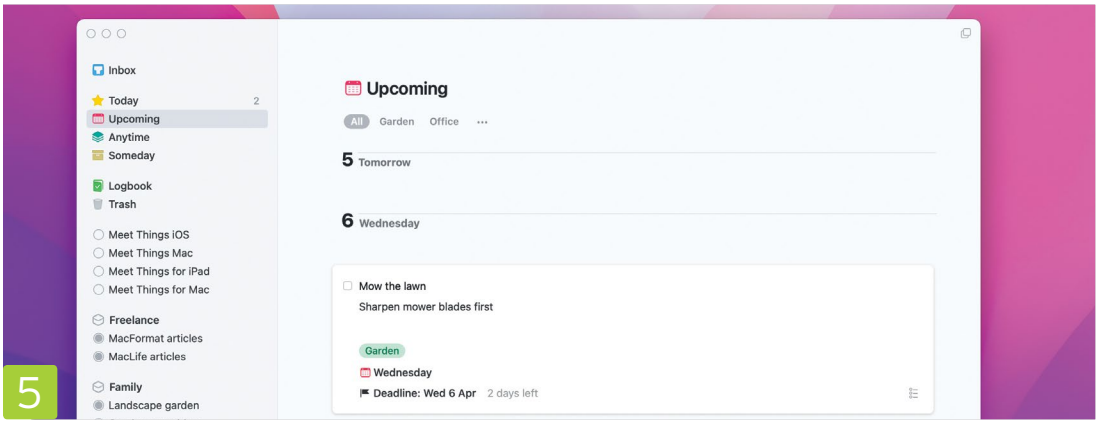
4 OmniFocus is based around the Getting Things Done (GTD) methodology and whether it's right for you or not is likely to come down to how invested you are in that way of doing things. It has all the features you would expect of a powerful task manager, including Custom Perspectives that allow you to view tasks that meet specific criteria, such as those you can do sitting at your desk, or in under 15 minutes. You can use tabs to view only the projects that are relevant to you at that moment. And there's a Forecast view that allows you to see tasks that you need to work on in the near future.

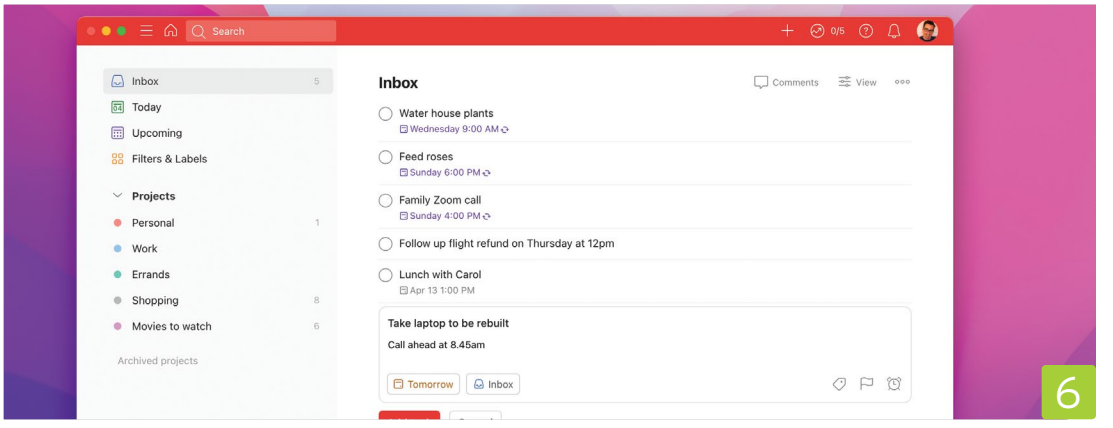
You can sync with the iOS and iPad OS app, and with the web version (extra on top of the subscription fee). But it doesn't pull in reminders from Reminders. There's no support for sharing tasks. However, there are Today widgets, sharing extensions, and several Shortcuts actions, and it feels like a Mac app.

- Custom perspectives
- Excellent OS integration
- Forecast view
- No task sharing

**GREAT**

Image rights: Microsoft, The Omni Group.




## Things 3

**$49.99 (Mac); $9.99 (iOS) From** culturedcode.com

5 Things might be one of the more expensive apps here, especially once you factor in paying for the iPhone and iPad versions, but it offers plenty to justify the cost. Its developers have been quick to add support for new OS features such as Today widgets, Shortcuts, extensions, and Quick Notes.

You can set reminders for scheduled tasks and the Today View displays any task that has a start date or deadline today or is overdue. And reminders you add in the Reminders app can be added to your Things inbox with a click. Additionally, it also syncs with iCloud Calendar.

One of our favorite features is Quick Find. Start typing anywhere in the app and a search box displays results that update as you type. For example, start typing "deadline" and click the filter to see tasks with deadlines today.

You can create projects, move tasks using keyboard shortcuts, and sync with iPhone, iPad, and Watch.

- ✚ Excellent integration with OS features
- ✚ Quick Find
- ✚ Extensions
- ▬ Expensive for all versions

**EXCELLENT**

## Todoist

**Free; $3.99/m or $35.99/yr for Pro Plan From** todoist.com

6 Todoist allows you to add tasks quickly from anywhere by using a keyboard shortcut. And its natural language support makes typing new tasks easy. There's a Safari extension that allows you to create a task from the currently open web page, as well as a share extension, Today widget, and Shortcuts action.

You can share projects and delegate tasks with anyone, whether they use an Apple device or not, thanks to its Windows, Linux, Android, and web versions. And there is a feature that monitors your completed tasks and builds streaks, allowing you to see them as a graph. It's a useful motivational tool.

You can't import tasks from Reminders. And you'll have to create an account to use the app and sync with its cloud service.

Todoist's basic version is free but if you want access to streaks, reminders, automatic backup, or want to be able to email tasks, you will need to pay a subscription for the premium version.

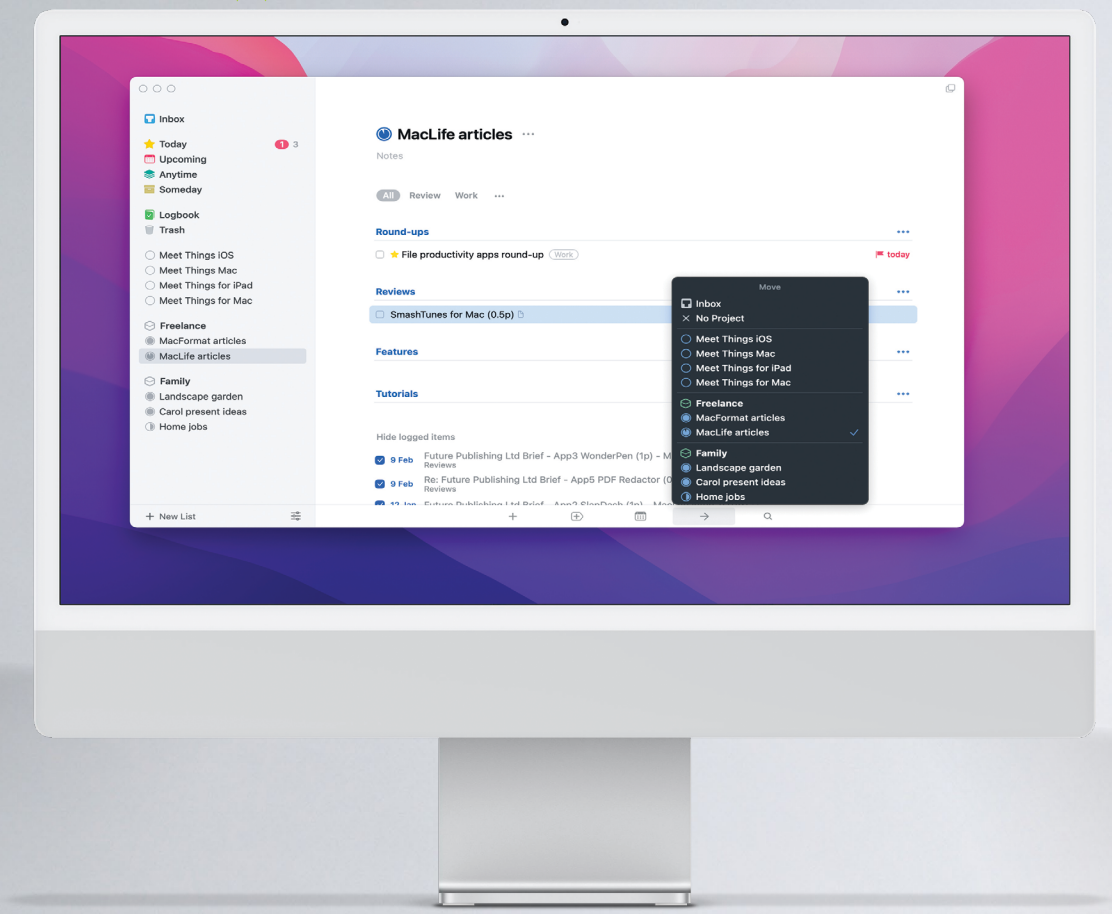
- ✚ Basic version is free
- ✚ Keyboard shortcuts galore
- ✚ Safari extension
- ▬ Can't import from Reminders

**GREAT**



Image rights: Cultured Code, Doist.

# THE WINNER




# THINGS 3

## It checks all the boxes for syncing and integrating with macOS, and allows you to focus on important tasks

**THINGS 3 CHECKS** all the boxes when it comes to playing nicely with macOS. It pulls in Reminders and Calendar events and it has extensions, a Today widget, and Shortcuts actions. It makes it easy to see what you need to do today, while allowing you to share tasks (albeit not as elegantly as Microsoft ToDo). It appears expensive, partly because it charges separately for iPhone and iPad apps, but when you add up the prices of the other apps here that charge a subscription or have in-app purchases, it compares favorably.

In a nutshell, Todoist is a great option if you need to work on non-Apple devices or work with others who do. And if budget is an issue, GoodTask is the one for you because it provides great features and we really like it's board view. We found that 2Do is great for working with hundreds of different tasks, while OmniFocus is ideal for those invested in the GTD method. And finally, if you want a free task manager that's zippy and allows you to delegate, Microsoft To Do will more than cover the bases.

Image rights: Cultured Code.

Mac|Life EDITOR'S CHOICE ★★★★★

Choose to replace a sky and it will even be updated in any reflections.

# Luminar Neo

## AI-powered image enhancement

**One-off purchase $79, One-year subscription $59** **From** skylum.com

**Needs** Intel Core i5 or better, 8 GB RAM or more (16+ GB RAM is recommended), macOS 10.14.6 or higher

Luminar Neo is the latest and most fully featured member of Skylum's image editing family to date. Making extensive use of AI, it aims to simplify the process of removing or adding elements in an image, editing the look and feel of pictures and advanced things like relighting scenes or adding different skies. Though a lot of this is available in one-click modes, there's also a good depth of fine tuning and manual control available as well.

It's not a photo management app in the same way as Lightroom is, but fortunately you can work with catalogs, folders, and albums. Load up an image and go into Edit mode and you can access a number of themed presets, all of which provide one-shot enhancements with an easily adjustable amount slider.

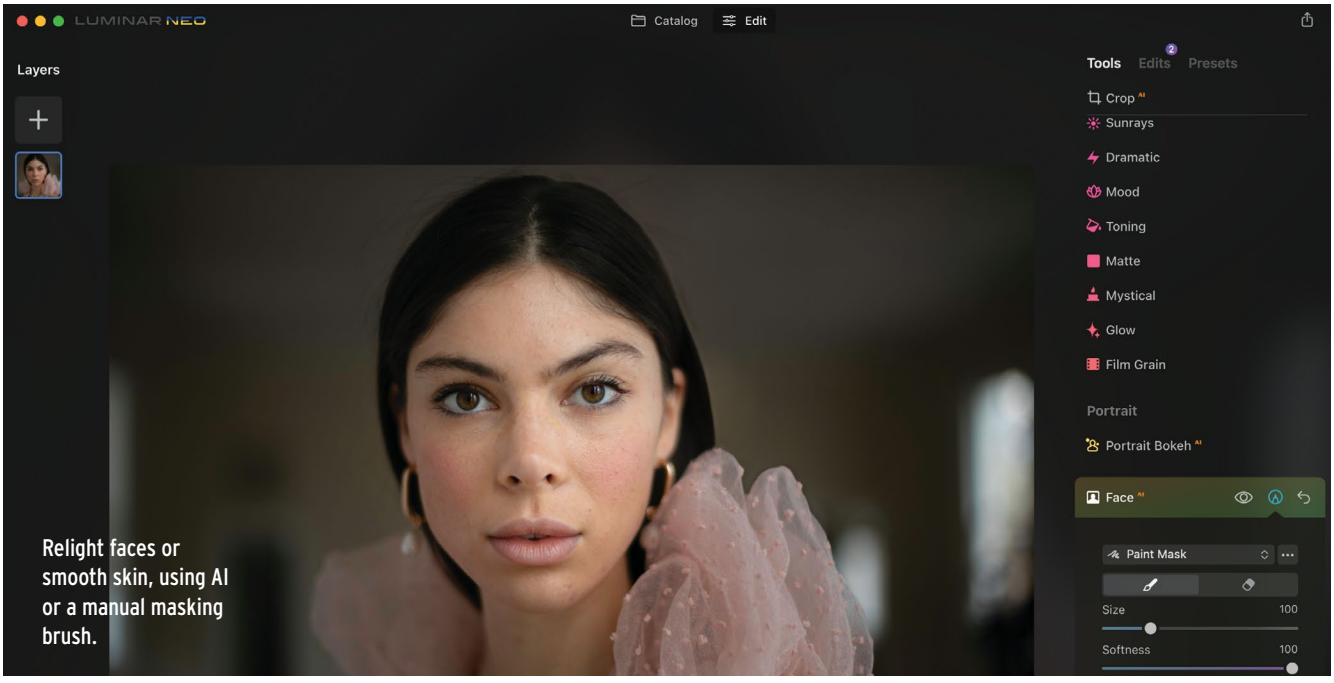
More interesting, however, is the extensive Tools section, with over 25 edit tools grouped by type. Essentials covers more conventional things like enhancement, details, denoising, and also core Develop tools like curves, color, optics, sharpness, crop, and more. There's also a remarkably accurate Erase tool with brush settings and presets for power lines and dust spots. We found it to be incredibly good at removing all kinds of elements from an image.

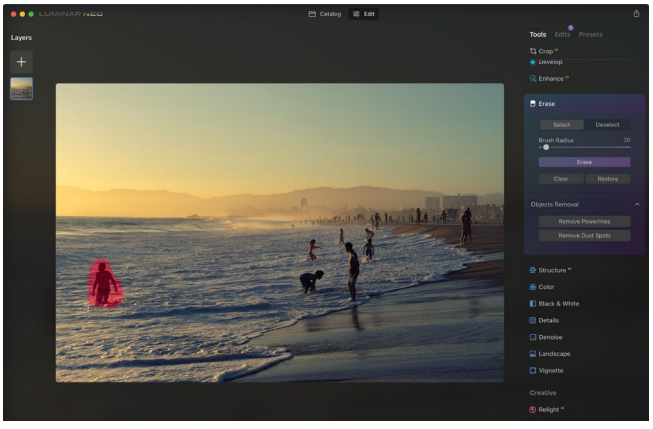
### THE BEST TOOLS AVAILABLE

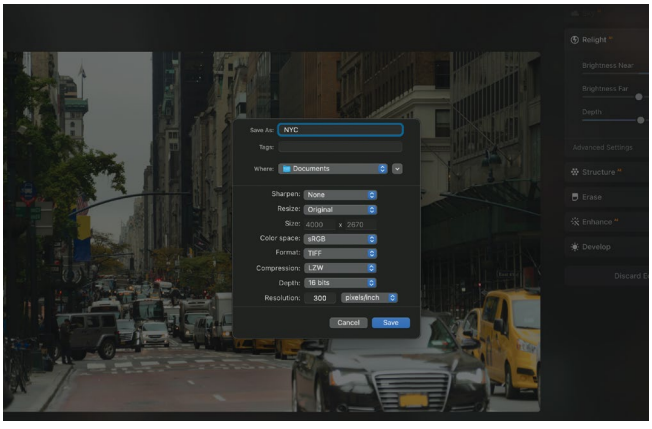
Then comes the Creative section, with tools for relighting different parts of a picture, changing skies, adding atmosphere and sun rays, film grain, and more. There's layer support with Photoshop-style layer modes so you can bring in other pictures or graphics and layer them up, with all tools available independently to each layer. Many tools also support masking with configurable brushes and there's accurate subject detection, which comes in handy for the Portrait tools. Here, you can edit body shape, face lighting, skin smoothness, and the like. An Edits list lets you view all the



Image rights: Skylum.





changes you've made and tweak or remove any of them, regardless of how many steps back they are. Pictures can be exported in a range of formats.

Although Photoshop has begun to embrace AI for things like subject detection, Luminar Neo feels both more advanced in what it can do and also friendlier in the way it does it, especially for amateur or intermediate users. The vast majority of the tools are things you really need, rather than anything gimmicky, and the app's performance is snappy, its results accurate and professional-looking.

Luminar Neo is incredibly powerful but also much easier to use than similar apps, giving you quick access to useful and accurate editing tools – whether you're just sprucing up a dark snap or altering the sky and lighting of a scene, while blurring your subject's background. Both subtle and sweeping changes are possible and you'll find yourself taken with the joy of enhancing your images, all for a remarkably affordable price. Skylum's roadmap promises new features will be added on a rolling basis, which can only be a good thing.

**THE BOTTOM LINE.** Luminar Neo is a superb image enhancer with excellent tools – at a brilliant price too.
**HOLLIN JONES**

**LUMINAR NEO**

- Powerful, usable tools
- Incredible AI detection
- Competitively priced
- Excellent results

**AWESOME**

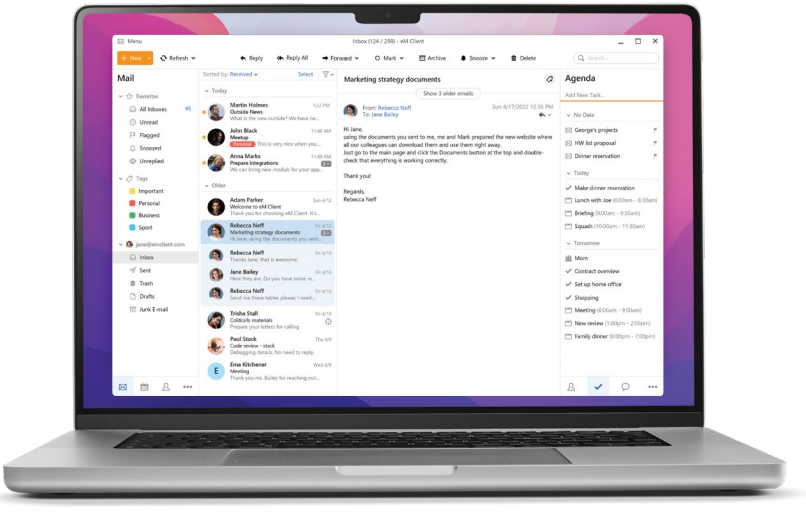
Image rights: Skylum.

# eM Client 9.0

## Switch up your email routine

**Free (Personal); $49.95 (Pro)** **From** emclient.com

**Needs** macOS 10.14 or later



It's a powerful email app, but eM Client's interface can get a bit cluttered at times.

It's not the most well-known email program, but eM Client has been around for 15 years, and was recently updated to version 9.0 for both Mac and Windows. The program has quite a dense interface, so it's possibly not the best email app for complete beginners, but its all-in-one approach makes it a good option for people who want to organize their email, calendar, and notes.

After installing eM Client, it runs its New Account assistant, which works with several different types of email account, including Microsoft Exchange and Outlook, GMail, and POP and IMAP. We had no trouble setting up a couple of old non-Apple email accounts but, oddly, there's no option in the New Account assistant for iCloud, so we had to search around on the eM Client web site before accidentally stumbling across instructions for iCloud. To be fair, this is mainly due to the way that iCloud mail works, but a little more help for Mac users wouldn't go amiss here.

Thankfully, eM Client was very straightforward to use once that was sorted out, and the app also supports iCloud and GMail calendars and contacts, along with a number of other formats. The app's interface is quite similar to that of Apple Mail, with three panels that show a list of your mailboxes, emails, and conversations, and the email that you're currently reading. However, there's also a useful option to display an additional right-hand sidebar that provides quick access to your calendar and contacts info. This latest version of the app also includes features such as the ability to create notes, block tracking pixels, and new search filters.

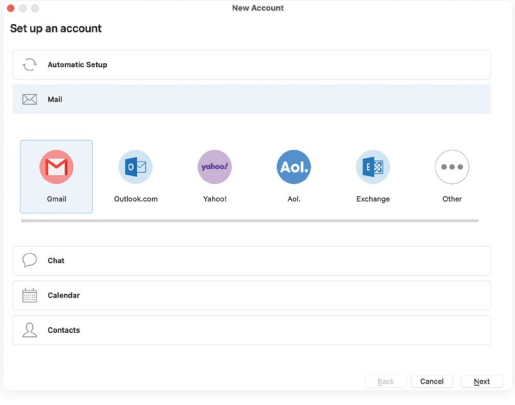
All those features come at a cost, though. There is a free version for personal use, which has a more limited feature set and only lets you use two email accounts. However, the full version of the app requires a Pro account, which costs $119.95 and includes all future upgrades, or $49.95 with additional paid upgrades. There are also discounts for business users that buy multiple licenses. That makes eM Client one of the more expensive email programs currently available, so it will probably appeal mainly to business users, but there's also a trial version of the Pro app available.

**THE BOTTOM LINE.** A powerful app for email, calendars, and notes, but more suited to business users. **CLIFF JOSEPH**

**EM CLIENT 9.0**

- Includes email, calendars, and notes
- Works with many email systems
- Very expensive
- Dense interface

**GOOD**




The New Account Assistant can help you to get started and works with a variety of email systems.



Image rights: eM Client.

# Total War: Medieval II

## Once more into the breach, dear iPad

**$14.99** **From** feralinteractive.com

**Made for** iPhone, iPad, iPod touch **Needs** iOS 14/iPadOS 14 or later

Sieges mean bringing out the big guns.

Taking over Europe was a common pastime among royalty in the Middle Ages, it seems. They're at it again in Medieval II, which takes you from Merrie England to North Africa and Constantinople.

Total War games, with their combination of turn-based strategy and real time tactics, suit the touchscreen nicely, though they're arguably a better fit for the larger iPads. Essentially, you send armies out into an abstract map to capture territory. When they meet another army, they fight, and the game changes to a view of your army, in which you deploy units, set behavior, and take direct control to take the fight to the enemy.

It's a big game in terms of both size — 4.5GB of storage is required — and scope. It's a complete port of the Mac game minus the multiplayer, and we're promised an expansion pack down the road too. Some of the battles, particularly those in which more than two armies clash, can feel enormous, and while you can click the lock button at any time, it's not a game for a coach journey. Total War requires you to focus, and battles can go on for quite a long time.

It's not all fighting, however, with diplomacy, alliances, secret agents, and trade agreements all key to dominating the map.

A mere 15 years old, Medieval II will work on hardware going back to the iPhone 6S, and iPads as archaic as the 2014 Air and Mini. We'd recommend playing it on newer equipment — the M1 iPad Pro we played it on munching through the graphics smoothly, with occasional freezes at the end of turns when processing all the AI factions' moves. You can use a keyboard and mouse on iPad, though it cuts down on the game's portability. The streamlining tweaks made to the interface this time give it the edge over the previous release, Rome: Total War.

**THE BOTTOM LINE.** The biggest Total War yet mixes strategic scheming and bloody melee. **IAN EVENDEN**

**TOTAL WAR: MEDIEVAL II**

- Looks and sounds amazing
- Enormous tactical depth
- Few graphics options
- May struggle on lower-end hardware

**EXCELLENT**

The minimal interface is designed to be used one-handed, with controls via your thumb.

# Obscura 3

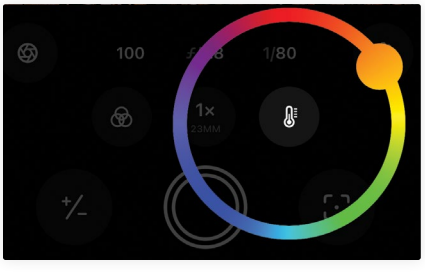
## A pro camera app with slick controls

**$9.99** **From** Ben McCarthy, obscura.camera

**Made for** iPhone or iPod touch **Needs** iOS 14.1 or later

Obscura 3 has had a major overhaul from version 2, to account for the larger and more powerful phones that most of us now use. The most obvious change is the new interface that has been designed to be easily usable with one thumb. The app now has five capture modes — photo, portrait, video, live, and manual — each with its own set of controls so depending on which mode you're in, you'll see the relevant features.

You can tap to focus anywhere on the screen and use grids and histograms for framing and level feedback, and both exposure and white balance controls now use press-and-slide to change, which is nice and intuitive. Video capture is now supported and this also has a manual mode, as well as shooting with color effects just like stills. These are useful rather than garish effects, with a range of subtle film-style color simulations.




Some controls now support tap and slide to alter settings.

RAW and ProRAW shooting are supported where your hardware allows, and there's focus peaking as well as seamless zoom lens switching when using phones with more than one physical lens. There are more options for framing, with multiple aspect ratios supported, and a new Apple Watch app that can be used as a remote trigger.

The library interface has also been revamped and you can swipe directly into it from the camera screen, sort images using flags or star ratings and also edit images using cinema-style filters, though there are no fine-grained controls like exposure or vibrance at present. You can also see detailed EXIF information about your images and you have some flexibility with saving and sharing edited images.

Despite the claims, there is still something of an initial learning curve with this app, because its interface is possibly a little too minimal for its own good in some ways. With virtually every interface element in black or white and icons usually lacking labels, it can be confusing exactly what each button does until you've been around it a few times. Once you've figured it out, it's powerful and does allow pretty easy one-handed operation, with plenty of shooting options. The developers have gone for a one-off purchase system rather than in-app purchases, which is a better route and at $9.99 it certainly offers a more professional feature set than Apple's Camera app.

**THE BOTTOM LINE.** Obscura 3 is a feature-packed camera app for an appealing price. **HOLLIN JONES**

**OBSCURA 3**

- ✚ Use with one hand
- ✚ Good manual control
- ✚ Graded video capture
- ▬ A moderate learning curve

**GREAT**



Image rights: Studio Obscura.

# Schooly

## Take control of your timetable

**Free (Pro from $0.49/m, or $12.99 lifetime)** **From** schoolyapp.school/

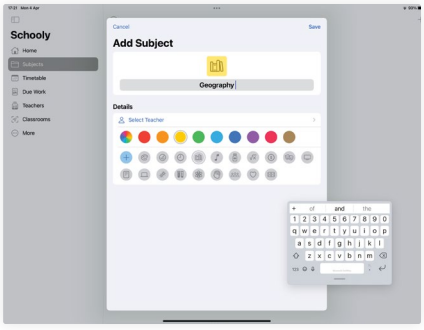
**Made for** iPhone, iPod touch, Mac **Needs** iOS 12.2 or later, macOS 11 or later

Now that every schoolchild in the country has the latest iPhone, or at least it seems that way, there's no excuse for them to be late to class. Should traditional calendar apps prove insufficient, Schooly has them covered.

An organization app shaped around the ebb and flow of the school day, Schooly syncs across iPhone, iPad, Mac, and even Apple Watch using iCloud. There's a contact list for important numbers, plans for lessons (including which classroom you need to be in) and assignments, metadata so you can attach images, notes and more to your homework reminders, and a home screen widget that nudges you about what's coming up next.

IAPs are a bit brazen, consisting mainly of ways to tip the developer (who claims to be a student himself), but a subscription to Schooly Pro comes in monthly and annual flavors and adds Siri shortcuts, the ability to export your work, and to customize the app icon. The most useful additional feature is probably the ability to add due work via an Apple Watch, but we think that a subscription is far from a necessity.

If you're struggling to stay on top of a workload with just a calendar app,




You need to input your timetable, including subjects, teachers, and classrooms.

Schooly might be worth a download. It has myriad uses not just for students, but for anyone who relies on being in the right place at the right time, and knowing which piece of work to tackle next.

**THE BOTTOM LINE.** A really useful organization app for students, to assist with time management. **IAN EVENDEN**

**GREAT**

# Unpacking

## Life told through simple objects

Mac|Life EDITOR'S CHOICE

**$19.99** **From** unpackinggame.com

**Made for** Mac **Needs** macOS 10.13 or later

Unpacking is an outwardly simple game about moving house that is brimming with delightful surprises. You remove items from boxes and place them around a new home, and in doing so learn about the occupant's life.

There are no spoken words or visible characters; instead Unpacking tells fascinating stories through objects. As you unpack, the protagonist's life unfolds through their belongings. The game also reflects on love and compromise – in one house the protagonist shares with a partner, the only wall space for your diploma is above the toilet.

Despite the fact that there are no timers or scores, Unpacking is pretty challenging. Many of the rooms are short on space and you soon go from making everything look pretty to simply trying to make everything fit. Clicking the packing boxes to reveal the next item often results in groans as you wonder where you'll put the giant stuffed toy that emerges, yet you find yourself relishing the challenge and laughing, too.

The game injects humor in other ways, like when you're working on the bathroom and find a boot packed in with the toothbrushes and towels. That ability to make you smile is a key strength of

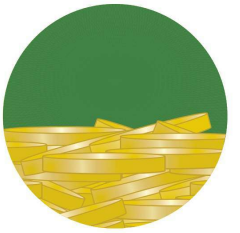
Each room is rendered in gorgeous pixel art and full of nostalgic details.

Unpacking, yet it also makes you reflect on how the ways we live – alone or with other people – change over time, and how these tales can be told through the simple objects we possess.

**THE BOTTOM LINE.** A superb game full of nostalgia, love, and poignancy. **ALEX BLAKE**

**AWESOME**

Image rights: Oscar Gorog, Witch Beam.



# Six apps to track your finances

## Demystify your money with these frugal apps

BY ALEX BLAKE

These days, there's a huge range of places we end up spending money, from essentials like food and rent to socializing and ongoing subscriptions. But fear not, because we've found six of the best apps that'll bring order to your checkbook in just a few taps. It's your *Mac|Life* money makeover.

When it comes to personal finance apps, **MINT** ***(free with in-app purchases from Intuit, mint.intuit.com)*** is one of the most popular options in the world. It's simple to see why. This app lets you track and understand almost any aspect of your personal financial world, from creating budgets and tracking your spending to managing your investments and keeping tabs on your regular subscriptions. If you want to get your money in order, chances are you can do it easily with Mint.

**EMMA** ***(free with in-app purchases from Emma Technologies, emma-app.com)*** is like a personal assistant in your pocket. The app brings all your accounts together and makes sense of what it finds. In practice, that means it can help you avoid overdraft fees, set budgets and save money, plan debt repayments, and keep subscriptions under control. It's all wrapped up in a beautiful interface that is intuitive to use and pleasing on the eye. And if you want more, there's a paid-for subscription with extra features that add even more control and flexibility to your personal finances.

Like Emma, **CLEO** ***(free from Cleo AI, meetcleo.com)*** is a finance assistant app, but this time its schtick is its chatbot-like interface. Cleo works in the background to crunch all the data in your accounts, creating AI-based smart budgets based on your spending. You can then view them in the app, or talk to the chatbot to find out where you've been spending your money. And if you need to borrow a little bit of cash or boost your credit score, Cleo can help you out there.

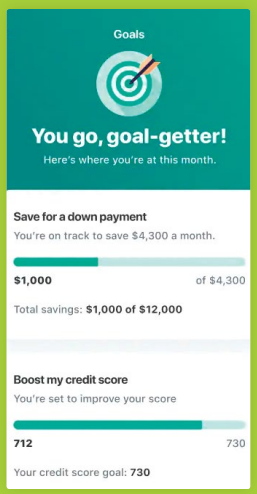
**KEEPING TRACK OF ALL OUR RECEIPTS CAN QUICKLY BECOME A MESSY BUSINESS**

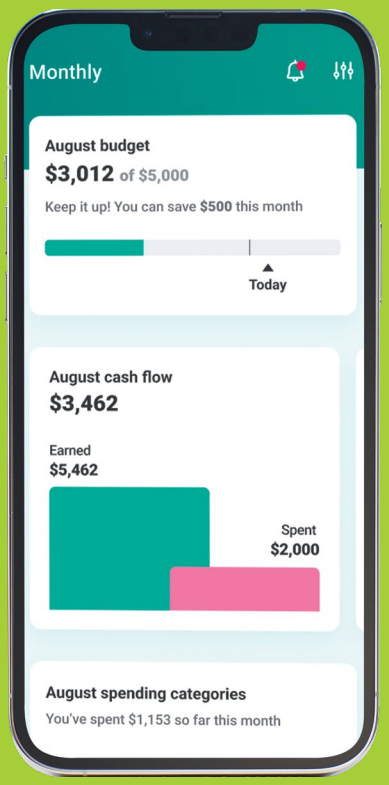
Shopping excursions can quickly get out of hand if you don't track what you spend. **GET SUM** ***($1.99 from Shihab Mehboob, pnguin.app)*** is a handy way to rein things in. Get Sum offers a detailed, nuanced way to monitor your spending by letting you assign prices to items, with a running total at the bottom. You can add spending limits, create custom categories and store info, collaborate with other people, and more. It brings the humble shopping list right up to date.

Whenever we spend money, we generate receipts, but keeping track of them all — and what they mean for our finances — can quickly become a messy business. If that sounds familiar, try **EXPENSIFY** ***(free with in-app purchases from Expensify, expensify.com)***. Just scan your receipts and the app captures all the details, then categorizes the results. It can create business expense reports for you, help track your taxes, and offers a credit card that integrates with the app. Whether you need it for business or personal expenses, Expensify is a great choice.

While Expensify is perfect for expenses, **QUICKBOOKS** ***(free with in-app purchases from Intuit, quickbooks.com)*** can handle the rest of your small business finances. It'll help you create customer invoices, track your mileage, and sort out your cash flow. It's all brought together through an easy-to-use dashboard, so you're always able to stay on top of your business funds. It's time (now more than ever) to start saving!

# 1
## MINT

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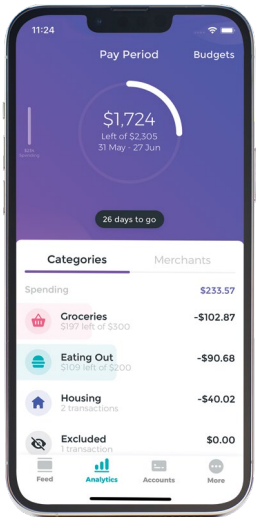
## EMMA

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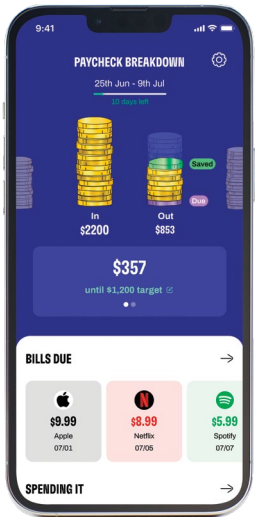
## CLEO

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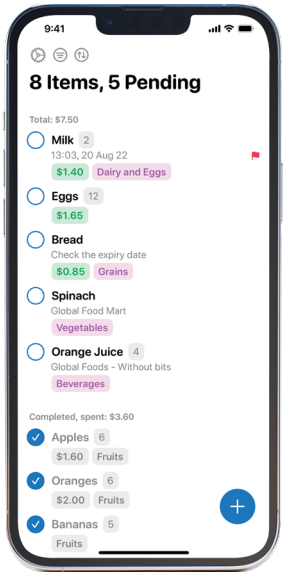
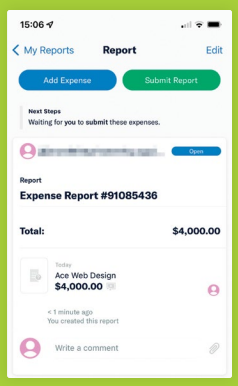
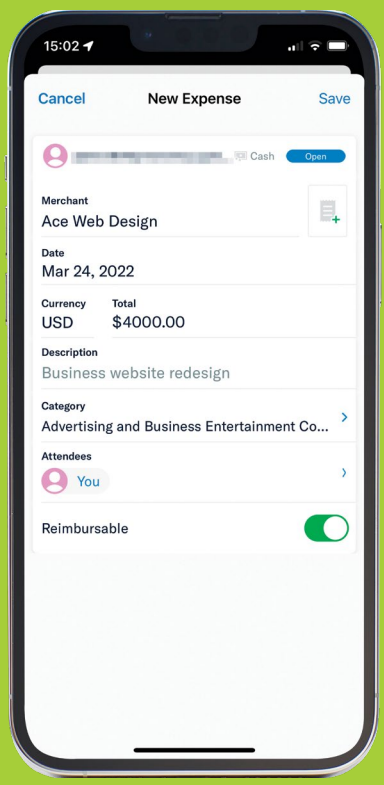
## GET SUM




# 5
## EXPENSIFY




# 6
## QUICKBOOKS

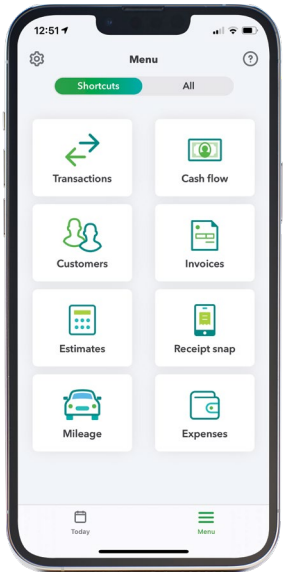



Image rights: Intuit, Emma Technologies, Cleo AI, Shihab Mehboob, Expensify, Intuit.

# Best of the best

Can't find the hardware or app you're looking for in our reviews section? Then check in here – we've highlighted the best in every major category, as voted for by us

## > HARDWARE

| CATEGORY | PRODUCT | WEB | PRICE | ISSUE |
|---|---|---|---|---|
| MESH ROUTER | Zyxel Multy U | zyxel.com | $269.99 | #163 |
| 4K USB-C MONITOR | BenQ EW3280U | benq.com | $799.99 | #169 |
| THUNDERBOLT DOCK | Brydge Stone Pro | brydge.com | $239.99 | #188 |
| KEYBOARD | NuPhy Air75 Wireless Mechanical | nuphy.com | $109.95 | #189 |
| PORTABLE PRINTER | Epson WorkForce WF-110W | epson.com | $299.99 | #185 |
| EXTERNAL HDD | iStorage diskAshur M2 | istorage-uk.com | $169 | #178 |
| NAS DEVICE | Asustor Drivestor 2 Pro AS3302T | asustor.com | $249 | #190 |
| Qi CHARGER | Belkin BOOSTCHARGE TrueFreedom Pro | belkin.com | $129.99 | #179 |
| DESKTOP SPEAKERS | Audioengine A2+ | audioengineusa.com | $269 | #189 |
| IN-EAR HEADPHONES | Beats Fit Pro | beatsbydre.com | $199.99 | #190 |
| SECURITY CAMERA | EufyCam 2C (two-pack kit) | eufylife.com | $239.99 | #171 |
| SMART SPEAKER | HomePod mini | apple.com | $99 | #176 |
| OVER-EAR HEADPHONES | Sony WH-10000XM4 | sony.com | $278 | #193 |
| AIRPLAY SOUNDBAR | Sonos Beam | sonos.com | $449 | #187 |
| WEBCAM | AnkerWork B600 Video Bar | ankerwork.com | $219.99 | #191 |
| PHOTO PRINTER | Liene 4x6 photo printer | amazon.com | $136.99 | #190 |
| PORTABLE BATTERY PACK | Zendure SuperMini Lightning | zendure.com | $64.99 | #186 |
| MOBILE DOCK | Kensington 8-in-1 USB-C Mobile Hub | kensington.com | $77.55 | #190 |
| OFFICE CHAIR | Branch Ergonomic Chair | branchfurniture.com | $299 | #190 |
| iPAD STYLUS | SwitchEasy EasyPencil Pro 3 | switcheasy.com | $59.99 | #190 |
| ACTION CAMERA | Insta360 Go 2 | insta360.com | $299 | #190 |
| SMART TV PLAYER | Roku Streaming Stick 4K | roku.com | $49.99 | #190 |
| PORTABLE DAC | iFi Go Blu | ifi-audio.com | $199 | #189 |
| DIGITAL CAMERA | Nikon Z fc | nikon.com | $969.95 | #186 |

## > iOS/iPadOS APPS

| | CATEGORY | PRODUCT | WEB | PRICE | ISSUE |
|---|---|---|---|---|---|
| NEW! | TO DO (PRODUCTIVITY) | Things 3 | culturedcode.com | $9.99 | #194 |
| | WRITING | Scrivener | literatureandlatte.com | $19.99 | #138 |
| | EMAIL | Spark | sparkmailapp.com | Free | #190 |
| | PHOTO EDITOR | Pixelmator for iPad | pixelmator.com | $4.99 | #193 |
| | VIDEO EDITOR | LumaFusion 3.0 | luma-touch.com | $29.99 (IAPs) | #186 |
| | CAMERA | FiLMiC Firstlight | filmicpro.com | $7.99 | #164 |
| | RSS READER | Reeder 5 | reeder.app | $4.99 | #176 |
| | IDEAS ORGANIZER | OmniOutliner3 | omnigroup.com | Free (IAPs) | #141 |
| | NOTE-TAKING | Notability 10 | gingerlabs.com | $8.99 | #174 |
| | MIND-MAPPING | MindNode 7 | mindnode.com | $14.99 | #184 |
| | DOCUMENT SCANNER | Genius Scan 6.0 | thegrizzlylabs.com | Free (IAPs) | #182 |
| | CALENDAR | Fantastical 3 | flexibits.com | $4.99/month | #166 |
| | WEATHER | Carrot Weather 5 | meetcarrot.com | $0.99/month | #180 |

## > macOS APPS

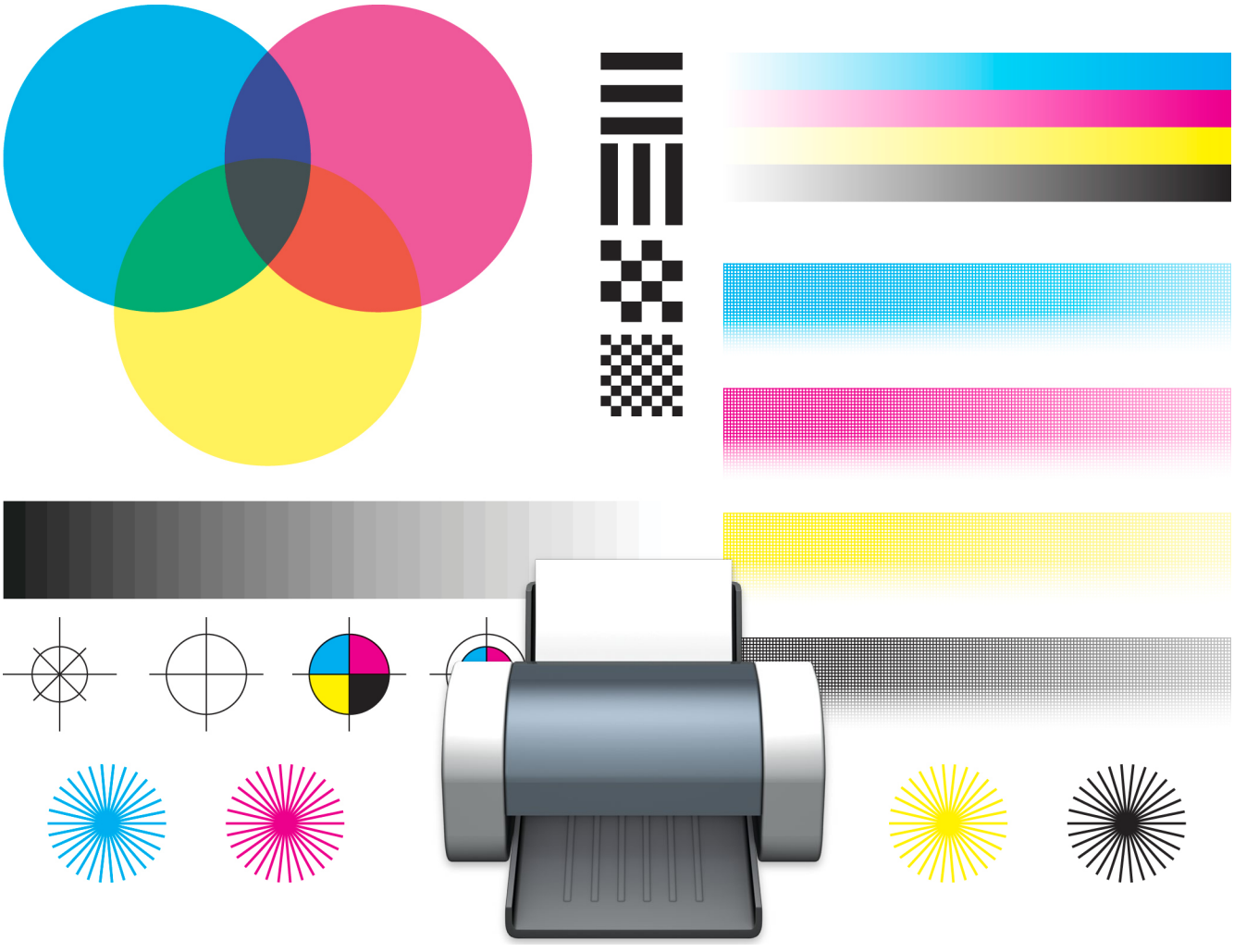
| | CATEGORY | PRODUCT | WEB | PRICE | ISSUE |
|---|---|---|---|---|---|
| NEW! | TO DO (PRODUCTIVITY) | Things 3 | culturedcode.com | $49.99 | #194 |
| | WRITING | Ulysses 21 | ulysses.app | $49.99/year | #177 |
| | EMAIL | Spark | sparkmailapp.com | Free | #190 |
| NEW! | PHOTO EDITOR | Luminar Neo | skylum.com | $79 | #194 |
| | VIDEO EDITOR | Final Cut Pro | apple.com | $299.99 | #124 |
| | SCREEN CAPTURE | ScreenFlow 9 | telestream.net | $129.00 | #164 |
| | MUSIC CREATION | Logic Pro X | apple.com | $199.99 | #141 |
| | PASSWORD MANAGER | LastPass | lastpass.com | From $3/month | #188 |
| | DESKTOP PUBLISHING | Adobe InDesign | adobe.com | $20.99/month | #162 |
| | BACKUP | Carbon Copy Cloner | bombich.com | $39.99 | #136 |
| | VIRTUALIZATION | Parallels Desktop 17 | parellels.com | $79.99 | #187 |
| | TIME-TRACKING | Tyme 3 | tyme-app.com | $3.99/month | #169 |
| | VIRTUAL PRIVATE NETWORK | NordVPN | nordvpn.com | $11.95/month | #186 |

# Beginner's Guides

## Master Printing



Image rights: Apple.



# Master printing on your Mac, iPhone, or iPad

## Setting up a printer is a whole lot more straightforward these days. Here's how...

WRITTEN BY **KENNY HEMPHILL**

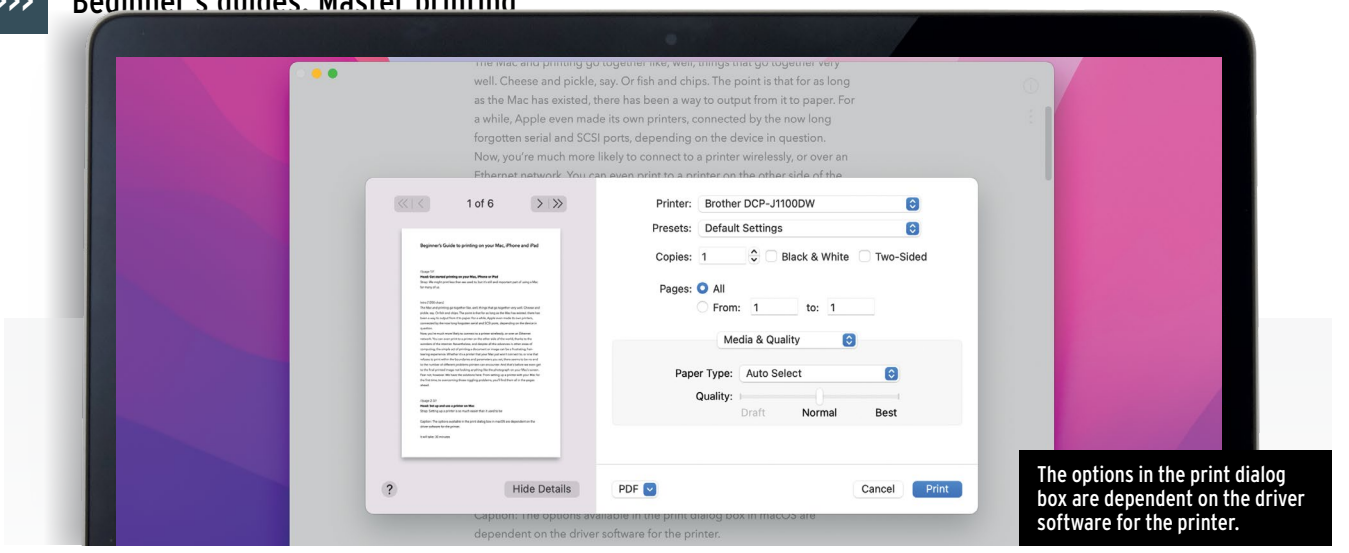
**FOR AS LONG** as the Mac has existed, there has been a way to output from it to paper. For a while, Apple even made its own printers, connected by the now long–forgotten serial and SCSI ports, depending on the device in question.

Now, you're much more likely to connect to a printer wirelessly, or over an Ethernet network. You can even print to a printer on the other side of the world, thanks to the internet. Nevertheless, and despite all the advances in other areas of computing, the simple act of printing a document or image can be a frustrating, hair–tearing experience.

Whether it's a printer that your Mac just won't connect to, or one that refuses to print within the boundaries and parameters you set, there seems to be no end to the number of different problems printers can encounter. And that's before we even get to the final printed image not looking anything like the photograph on your Mac.

Fear not, however. We have the solutions here. From setting up a printer with your Mac for the very first time, to doing more demanding printing, you'll find all the answers you need in the pages ahead.

Image rights: Apple.




The options in the print dialog box are dependent on the driver software for the printer.

# Set up a printer on Mac

## Setting up a printer is so much easier than it used to be...

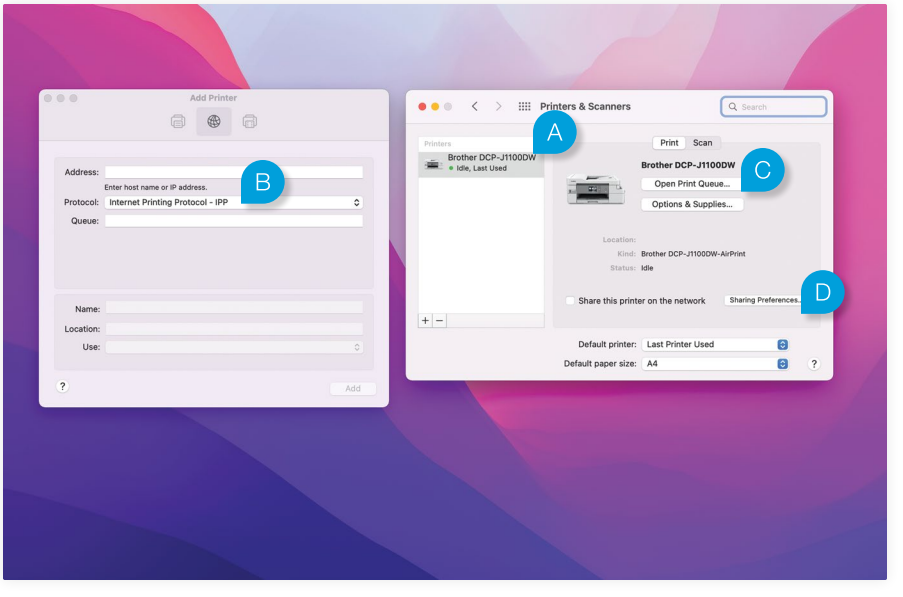
**SETTING UP A** printer is so much easier than it used to be... not so long ago, connecting a printer to your Mac for the first time was a pain.

You had to install drivers from a disk or download them from the web and then hope that your Mac recognized the printer. Nowadays, thanks partly to the wonders of AirPrint, it's simple. Once you've connected your printer to your wireless network, which often means no more than pushing a button labelled "WPS" on the printer and your router, your Mac will recognize its presence then download and install the drivers.

Of course, you can still connect a USB printer to your Mac and use that, and your Mac will install the correct drivers. And you can use a wired network with a printer connected, too.

The process is pretty much the same, whether you are hooking up a regular A4 inkjet, a specialist label printer, or a large photo printer. It should, to coin a well-worn phrase, just work.

## EXPLAINED... The Printers & Scanners interface




**A PRINTER LIST**
Printers connected to your Mac are listed here. The one at the top of the list is the default.

**B IP ADDRESS**
You can easily connect to a printer anywhere on the internet by adding its IP address right here.

**C QUEUE ORDER**
Clicking Open Print Queue displays the print jobs currently in the queue in order.

**D SHARING**
Printer sharing allows other computers on your network to share a printer that's directly connected to your Mac.



Image rights: Apple.

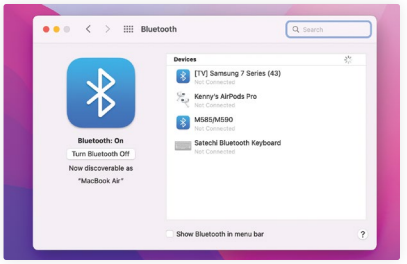
# **HOW TO** Set up and use a printer with your Mac

## 1 AirPrint printer

If your printer has a display panel, use that to locate settings and choose your Wi-Fi network, then enter the password. On a WPS printer, press the WPS button and then do the same on your router to connect the printer.

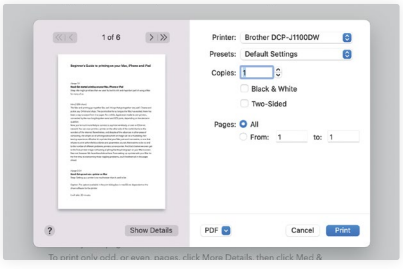
## 2 USB printer

Plug one end of a USB cable into the printer and the other end into your Mac or hub. Once it's connected, switch the printer on. Your Mac should recognize the printer and, if it needs to, download the correct drivers.



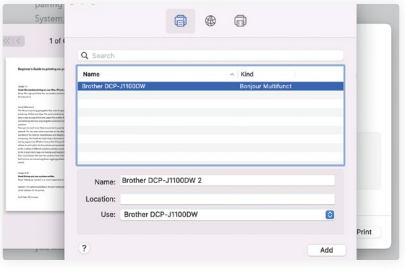

## 3 Bluetooth printer

Follow the instructions in your printer's manual to put the printer into pairing mode. Once it's in pairing mode and close to your Mac, launch System Preferences > Bluetooth, click on the printer and click Connect.



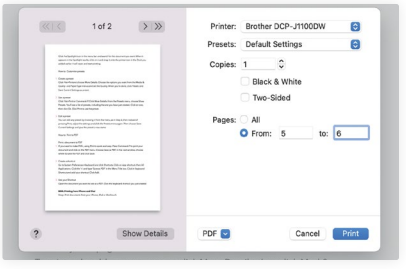

## 4 Print in application

Open the document you want to print in the application you used to create it. Go to File > Print, or press Cmd+P. To print every page on your default printer with its default settings, just click Print.



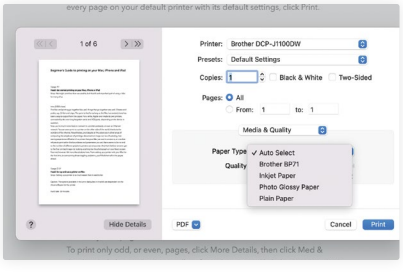

## 5 Configure printing

To print to a different printer, click the Printer menu and choose one or Add Printer to add a new one. To change preset, click the Presets menu and choose one. Type a number in the Copies box if you want more than one.



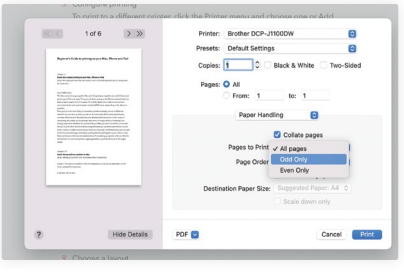

## 6 Print specific pages

If you don't want to print every page, you can view different pages by clicking the arrow above the preview. When you know the page numbers you want to print, click From and input the page range to be printed.



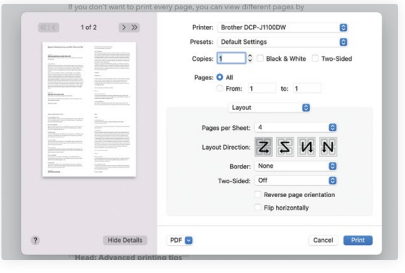

## 7 View more settings

To change the paper type or the print quality, click More Details under the Preview. Click Paper Quality and choose the type of paper that is in your printer. Use the Quality slider to specify the quality of the print you want.




## 8 Print odd pages

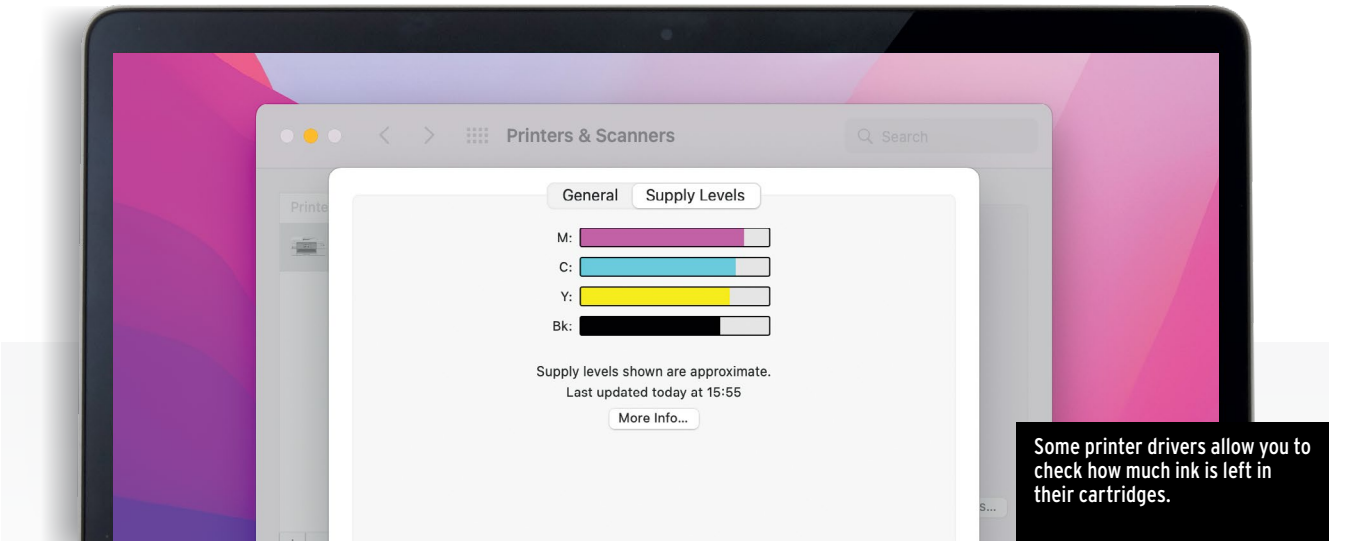
To print only odd, or even, pages, click More Details > Media & Quality and choose Paper Handling from the menu. Click the Pages to Print menu and choose either Odd, to print odd-numbered pages, or Even.




## 9 Choose a layout

If you're printing a folded document, click More Details then Layout from the Media & Quality menu. Choose the number of pages per sheet and then select a layout. Choose other options as required.

Image rights: Apple.




Some printer drivers allow you to check how much ink is left in their cartridges.

# Advanced printing tips

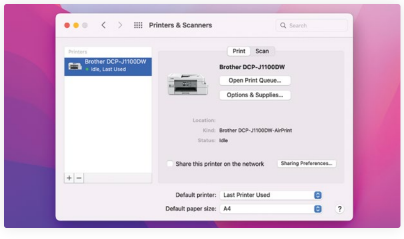
## Print more quickly and more productively with these advanced techniques

**ONCE YOU'VE MASTERED** the basics of printing from your Mac, there is plenty more you can do. From printing lots of documents from lots of applications without having to manually open each one, to customizing presets so that you don't have to configure each print every time.

Depending on the printer you're using, there are plenty of tools and options for getting more out of it. For example, most printers these days allow you to check how much ink is left from the Printers & Scanners pane in System Prefs. Just choose your printer and then click on a button labelled Options & Supplies. And most have a built–in web page you can visit to find out more information about their status.

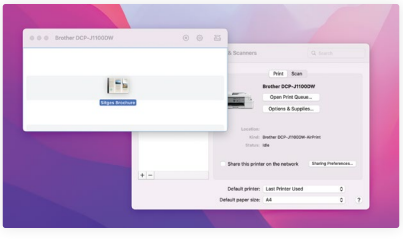
In this section, we'll show you how to get more from your printer, and how to print from an iPhone or iPad. And you don't even have to print to a printer, macOS has long allowed you to save any document to PDF, which can be handy for sharing it later.

## HOW TO Print documents quickly



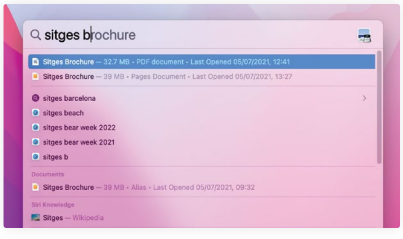

### 1 Print from the Dock

Go to System Prefs > Printers & Scanners. Drag a printer from the sidebar to the Dock. Now, when you print a document using the default settings, just drag it onto the printer icon in the Dock and it will print.



### 2 Print multiple items

In Printers & Scanners, choose a printer and click Open Print Queue. Drag and drop the documents you want to print onto the Print Queue window. Your Mac will open each in the correct application and print it.



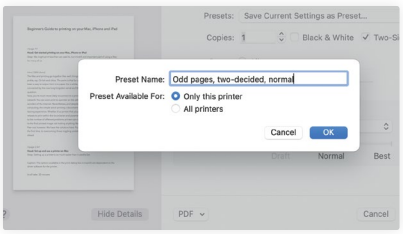

### 3 Print from Spotlight

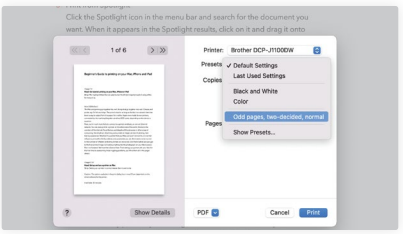
Click the Spotlight icon in the menu bar and search for the document. When it appears in the Spotlight results, click on it and drag it onto the printer icon in the Dock you added. It will open and start printing.

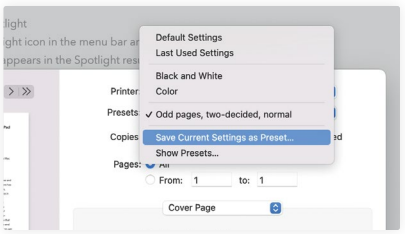


Image rights: Apple.

## HOW TO Customize presets




### 1 Create a preset

Click File > Print and choose More Details. Choose the options you want from the Media & Quality and Paper Type menus and set the Quality. When you're done, click Presets and Save Current Settings as a preset.

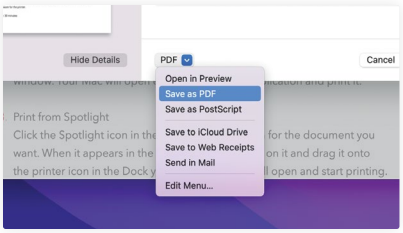
### 2 Use a preset

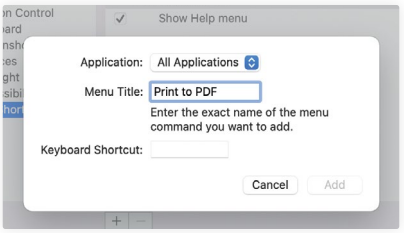
Click File > Print or Cmd+P. Click More Details. From the Presets menu, choose Show Presets. You'll see a list of presets, including the one you have just created. Click on one, then click OK. Click Print to use the preset.

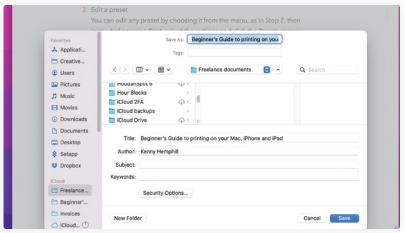
### 3 Edit a preset

Edit any preset by choosing it from the menu, then instead of pressing Print, adjust the settings and click the Presets menu again. Then choose Save Current Settings and give the preset a new name.

## HOW TO Save to PDF



### 1 Save as PDF

If you need to make PDFs, using Print is quick and easy. Press Cmd+P to print your document and click on the PDF menu. Choose "Save as PDF". In the next window, choose where to save the PDF and click Save.

### 2 Create a shortcut

Go to System Prefs > Keyboard and click Shortcuts. Click on App Shortcuts > All Applications. Click the "+" and type "Save as PDF" in the Menu Title. Click in Keyboard Shortcut and add your shortcut. Click Add.

### 3 Use your Shortcut

Open the document you want to see as a PDF. Click the keyboard shortcut you created. Choose where you want to save the PDF and click Save. It'll save you a couple of mouse clicks and speed up PDF creation.

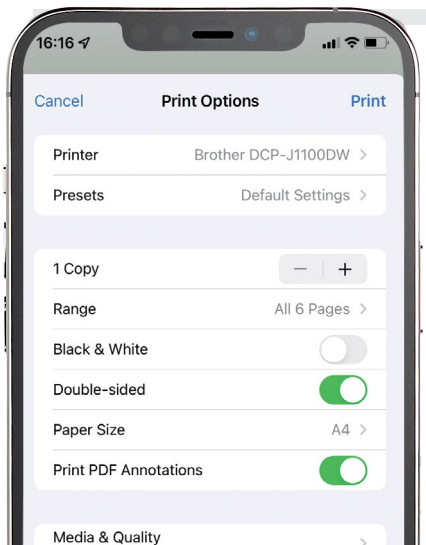



Image rights: Apple.

## > PRINTING FROM iPHONE AND iPAD

### Easy printing on your other Apple devices

AirPrint didn't just change printing on the Mac for the better, it made it possible to print from your iOS device without any additional apps or workarounds. All you have to do to print from an iPhone, iPad, or iPod touch app is tap the Share button and choose Print. You'll see a print window on-screen from which you can choose options, such as the number of copies and which pages to print, and then tap Print. And you can even cancel a print job. Just swipe up to see the App Switcher, tap the Print Center, and then tap Cancel.

# ASK

TECH SUPPORT & TECHSPLANATIONS

**EXPERT ADVICE**

Our resident genius solves your Mac and iOS problems

Email Mac|Life at **ask@maclife.com**

## Unruly snapshot

**SOMETIMES SNAPSHOTS TURN** out to be larger than expected and free space shown in the Finder falls worryingly. Although this should be managed automatically, it can cause alarm and block necessary installations and updates. The Storage view of About This Mac may not be helpful, as this gets lumped into System Data, and only Disk Utility gives an accurate picture.

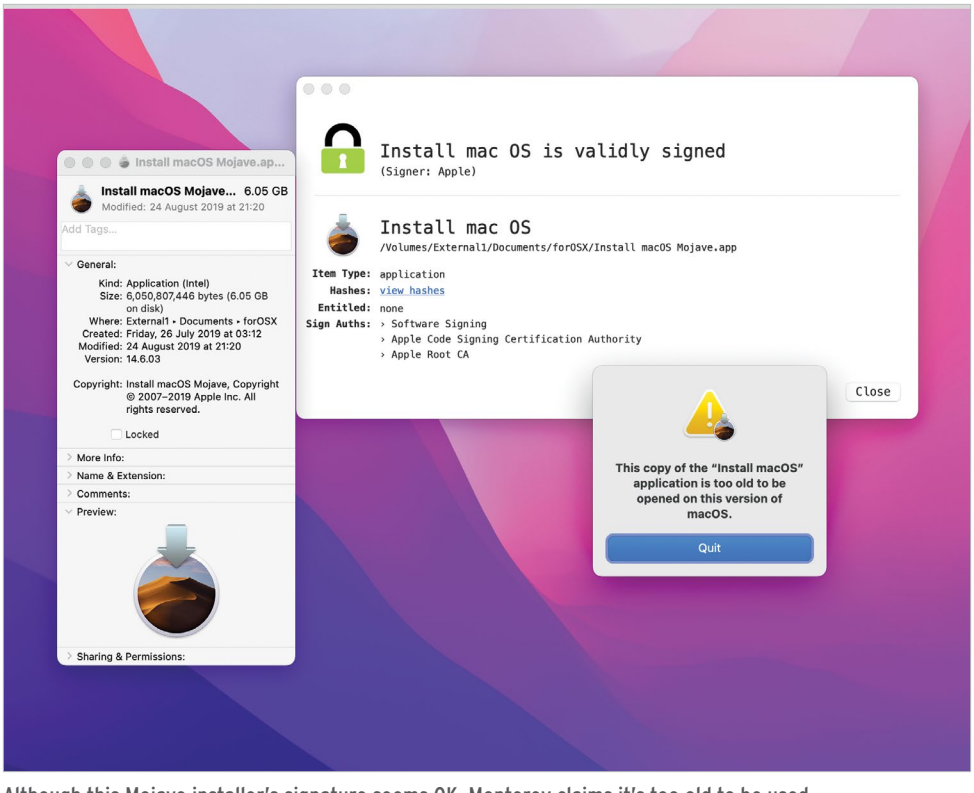
While we can save space in backups by excluding large files like virtual machines, a snapshot copies the file system for the whole volume, including everything we don't want backed up. It grows larger the longer you leave it, so forgetting to hook up your notebook's backup disk for a couple of days can soon steal tens of gigabytes. So, moving those files to a separate excluded volume spares you that overhead, and in APFS comes almost cost-free. Phew!

## Safe install of macOS 10.14

**I want to install macOS Mojave on an external drive, but can't run its installer in Monterey, as it's supposedly damaged. Where can I get an intact copy?**

If you see this or a similar error when trying to install an older version of macOS, it means one or both of two things. If you downloaded the installer before the end of October 2019, its Intermediate security certificate will have expired, making it unusable. You'll need to download a newer copy from Apple. In any case, recent versions of macOS take exception to you wanting to install most older versions, and the only way to do that is when started up from an external bootable installer, such as a USB flash drive or a partition on an SSD.

In Disk Utility, format it in HFS+, which is essential if it's to work. Follow the instructions given by Apple at bit.ly/ml194macosinstall to turn that into a bootable installer disk. To start a T2 Mac from that, first restart it in Recovery mode and enable it to boot from external disks in Startup Security Utility, then restart your Mac holding the Opt key to select the external drive. None of this can work on M1 Macs, of course, as they can't run any version of macOS before Big Sur, even as a virtual machine.




Although this Mojave installer's signature seems OK, Monterey claims it's too old to be used.



Image rights: Apple.

# Faster iCloud syncing

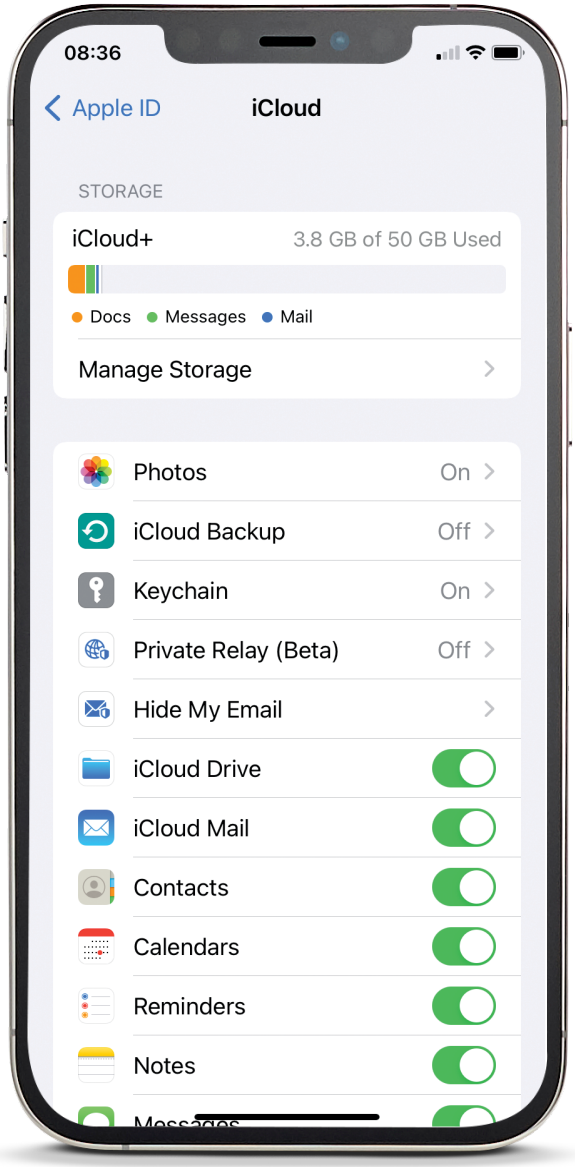
**Sometimes working documents take an hour or two to sync across my devices. How can I speed up iCloud syncing from my iPad?**

Over the last few months this has troubled many using iCloud and may have been caused in part by server problems. Check that status is green for the iCloud services you're using at bit.ly/ml194sysstat. If any of your devices have system updates awaiting installation, do that next.

Check your iPad and other devices have accurate times set in Settings > General > Date & Time, which should set them for the correct time zone. While you're in Settings, check all are signed into the same iCloud account, that you haven't exceeded its storage limit, and that each service you want to sync is enabled.

Although you can sign out of iCloud, it's simpler to shut each device down, wait a couple of minutes, then start them up one at a time, allowing time for each to sync before moving onto the next. If Contacts or Calendars are affected, you can refresh them: for Contacts, open the app and swipe down on its list; in Calendars tap the Calendars tab then swipe down on the list.

If you have a Mac which is left running all the time, there's a more permanent solution for when devices are connected to the same network; run a Content Caching Service on that Mac, by going to System Prefs > Sharing and check marking Content Caching. If that caches All Content, that includes system and app updates and much of the data shared using iCloud.




Check you haven't exceeded your iCloud storage limit, and the services you want to sync are enabled.

# Quick-fire questions & answers

### WHY IS MY iPHONE 13 PERSONAL HOTSPOT UNRELIABLE?

Older devices may not support its 5GHz Wi-Fi frequency, or there could be interference. iPhone 12 and later models offer optional 2.4GHz Wi-Fi compatibility in Settings > Personal Hotspot, although Apple warns internet performance and Wi-Fi security may not be as good.

### KEEP GLASSES ON FOR FACE ID?

That depends on whether their glass blocks infra-red, required by Face ID cameras for recognition to work. If they do, remove your glasses before setting up your appearance, or add an alternative appearance if you prefer. Otherwise they should make little difference, so use whichever is more likely when you're unlocking your device.

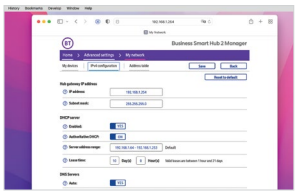
Image rights: Apple.

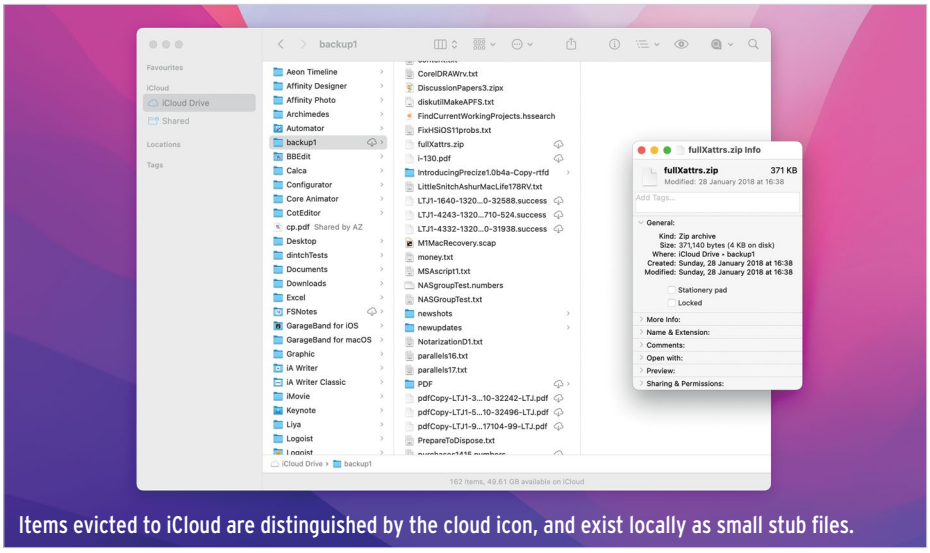
### WHY DO I NEED WI-FI WHEN MY MAC HAS ETHERNET?

Macs use Wi-Fi and Bluetooth for connections with Handoff and Continuity. These include AirDrop, Universal Clipboard, unlocking with an Apple Watch, and iCloud Tabs in Safari. When you want Ethernet used in preference, drag it to the top of the list in the Network pane.

### SHOULD MACS USE DHCP ADDRESSES FROM MY ROUTER?

DHCP works best for visitors such as laptops and iPhones rather than more static systems. Fixed devices like printers are best assigned a fixed IP address, saving them having to renew leases. Configure this in the DHCP section of your router's set-up page.






Items evicted to iCloud are distinguished by the cloud icon, and exist locally as small stub files.

## > iCloud for off-site copies

**Every month I copy my important folders to an external drive. If I were to do this using iCloud, would I also need to keep local copies?**

iCloud isn't suitable for making proper backups of your Mac, but is valuable for keeping off-site copies of files provided you don't rely on always having instant access. It isn't guaranteed to be available.

When you put files in iCloud Drive, they're copied up to the iCloud servers, but the original also remains on your Mac. If the copy in iCloud changes, by editing it using a different Mac or device, that's synced back to your Mac, keeping it up to date.

Behavior changes if you enable Optimize Mac Storage in System Preferences > Apple ID. That lets macOS decide when to "evict" files from local storage, leaving only a stub on your Mac.

The Finder then marks those with a cloud and downward arrow icon. So long as there's ample free space on your Mac's storage, that process normally only happens with files you haven't accessed recently, but if local storage gets tight, macOS can evict more. Once evicted, you can still use the file, but it has to be downloaded from iCloud first.

If that method doesn't meet your requirements, you can keep additional local copies, but you'll then have to work out how to keep them in sync with those in iCloud Drive. Obviously, you don't have to enable optimization, but macOS seems only too keen that you do.

## > Missing Network Utility

**What has happened to Network Utility in Monterey?**

Network Utility, which has been tucked away in the CoreServices folder of the macOS System volume, is now a shadow of its former self. When you run the app it just tells you that Apple has removed its functionality in Monterey. To "ping" other sites, use the ping command in Terminal, or a substitute app.

Commands like *ping* aren't hard to use: to ping Apple's main web servers, use the command

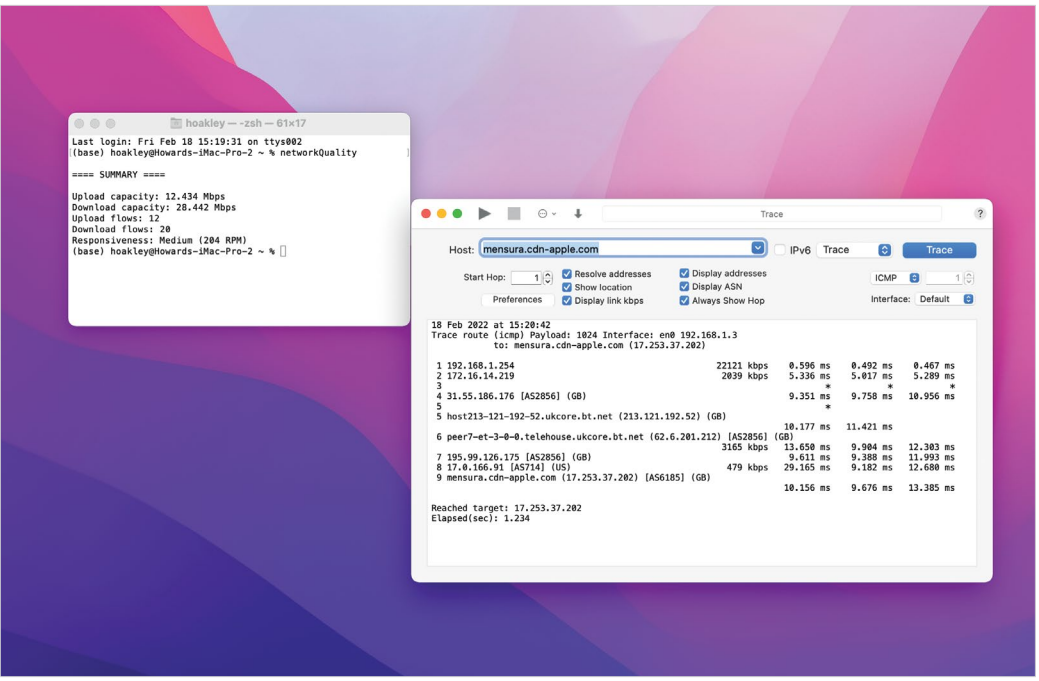
*ping apple.com*

for example. Other easily used commands include *netstat*, *whois* and *traceroute*, each of which has many options. Those are fine if you're happy using Terminal, but most will want a proper app, like the donationware WhatRoute from whatroute.net. Its latest version now incorporates ready access to the networkQuality command, saving you from having to use Terminal.

Even though your Mac may connect primarily over a wired Ethernet connection, it's likely to have its Wi-Fi turned on to support Handoff and Continuity features. In that case you can hold the Option key down, click on the Wi-Fi item in the menu bar and Open Wireless Diagnostics to test its Wi-Fi connection, and provide an expert opinion. But it's no substitute for Network Utility.



Image rights: Apple.




Tracing the route to a server using WhatRoute can also show speed bottlenecks affecting performance.

# › Network quality zero

**Twice today I ran networkQuality and it returned all zeroes. How can I tell what's wrong?**

NetworkQuality is a new command tool in Monterey which measures the speed and quality of transfers with Apple's test service at apple.com. If your Mac can't upload to or download from that server, its results will be zeroes, but you then have the troublesome and confusing task of discovering where exactly that failure has occurred.

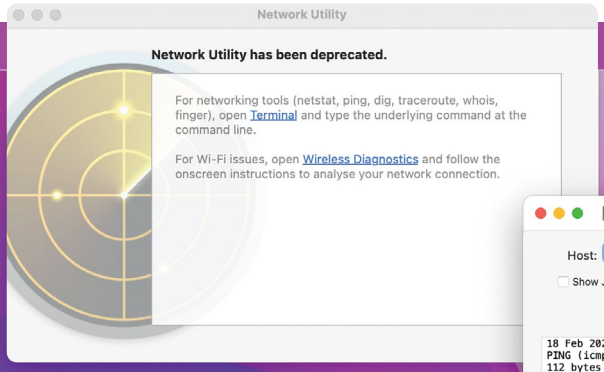
If you can reach other sites such as apple.com/us, it's likely Apple's test server is down; try again later. If other sites are unreachable, use troubleshooting drills such as checking your router's configuration and restarting it. One quick fix that sometimes works is simply restarting your Mac, which initializes network hardware and loads the drivers afresh.

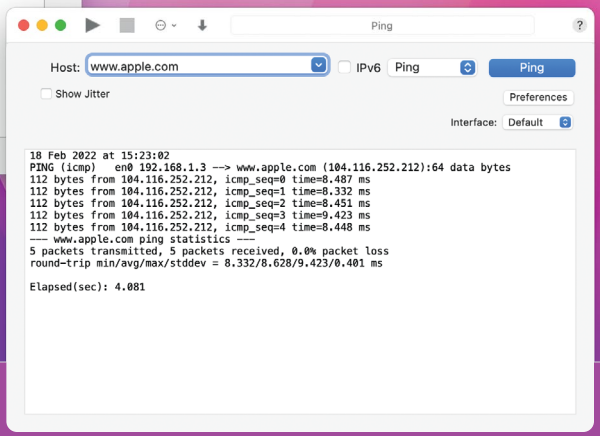
## WHICH ETHERNET ADAPTOR FOR MY M1 MACBOOK PRO?

There's no difference in network speeds achieved by plain USB-C and more costly Thunderbolt models. If your Mac has only two Thunderbolt ports, look for an Ethernet adaptor with USB-C charging pass-through, additional ports such as USB, or a buy a smaller mini-hub, for greater flexibility.

## HOW TO TELL IF MY OLD MAC MINI SUPPORTS AIRDROP?

Opt-click the Apple menu and select System Information.... Then, select Wi-Fi in the Network section, where it should tell you clearly whether AirDrop is supported, and its current channel number.




Network Utility just tells you it has been "deprecated", so use WhatRoute to "ping" internet servers and more.

Image rights: Apple.

# Huge snapshots for small backups

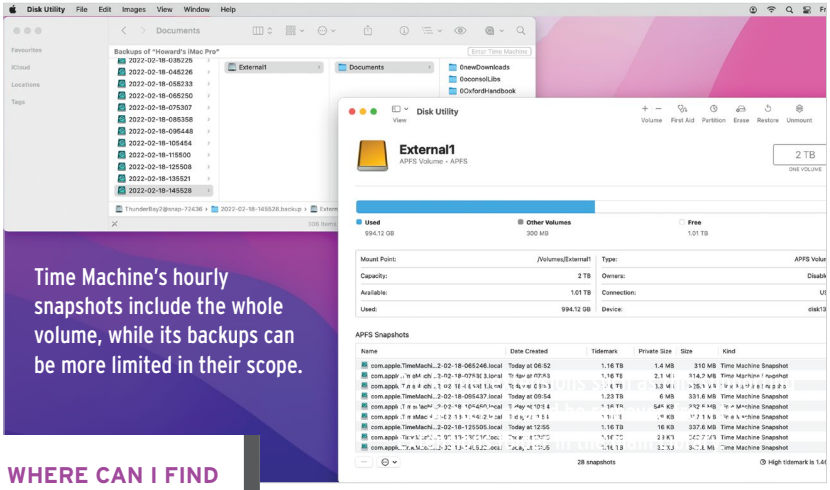
**Why are Time Machine's hourly snapshots so huge when it's only backing up my Documents folder, and those backups are far smaller?**

Local snapshots made by Time Machine as part of backing up are different from its backups. That's because snapshots include every file and folder on the volume, thus can't and don't exclude those items which you or macOS exclude from backups.

A snapshot consists of a complete copy of the file system for an APFS volume at an instant in time. That includes many files which Time Machine's defaults don't include in its backups, such as the hidden database of document versions and what's in the Trash. After that snapshot is made, when the data for any of those files changes, or a file is deleted, the old data is kept so that you can restore the whole volume or any file from it. Snapshots therefore grow over time, as they collect all that changed data.

Time Machine backups only contain what you want backed up. So you could build an exclusion list which results in just one folder on a volume being backed up each time, but the whole of that volume will still be retained in local snapshots.

If you've got large files which change a lot, like virtual machines, you could store them in separate volumes on the same storage and add the whole volume to Time Machine's exclusions. Then that volume won't have snapshots made, although that means you'll have to use a different way to back them up instead of Time Machine.




Time Machine's hourly snapshots include the whole volume, while its backups can be more limited in their scope.

## WHERE CAN I FIND PYTHON IN MONTEREY?

Before macOS 12.3, Python 2.7 has been included in the normal macOS distribution. That changes in 12.3, where it has been removed, and Python 3 has to be installed. Universal installers are available from bit.ly/ml194python and elsewhere.

## HOW TO STOP LID OPENING BOOTING AN M1 MACBOOK PRO?

Unless Apple provides an option to allow you to open an M1 notebook without it starting up, there's no way to do that. So, don't put anything thicker than the paper used by Apple to cover the keyboard between that and the display.

# Can't find any file

**After recent macOS updates, using the Finder's Find command has failed to locate files on the external disk containing my archives. How can I get it working?**

Try rebuilding the Spotlight indexes on that drive. With the disk connected and mounted, go to System Prefs > Spotlight > Privacy. Using the "+" tool add the whole drive to the list and close the pane. After a few moments, open System Prefs' Spotlight pane again, select the disk or volumes and use the "–" tool to remove them. Leave the drive connected for two hours at least, during which you can observe the reindexing taking place in the CPU tab of Activity Monitor.

Processes whose names start with md like mds_stores and mdsworker should then use plenty of CPU until their task is complete and the new indexes are ready to use. In versions of Monterey prior to 12.3, the Finder's Find command, but not Spotlight itself, also has a serious memory leak which you'll want to work around. As you search for different terms, the Finder will use more memory, which it only returns when you restart it. If you want to look for files, Find Any File from the App Store is much better, and HoudahSpot is best for general content.

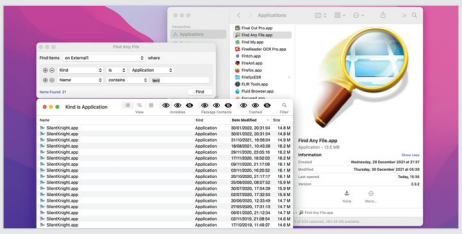




Image rights: Apple.

# Backup exclusions

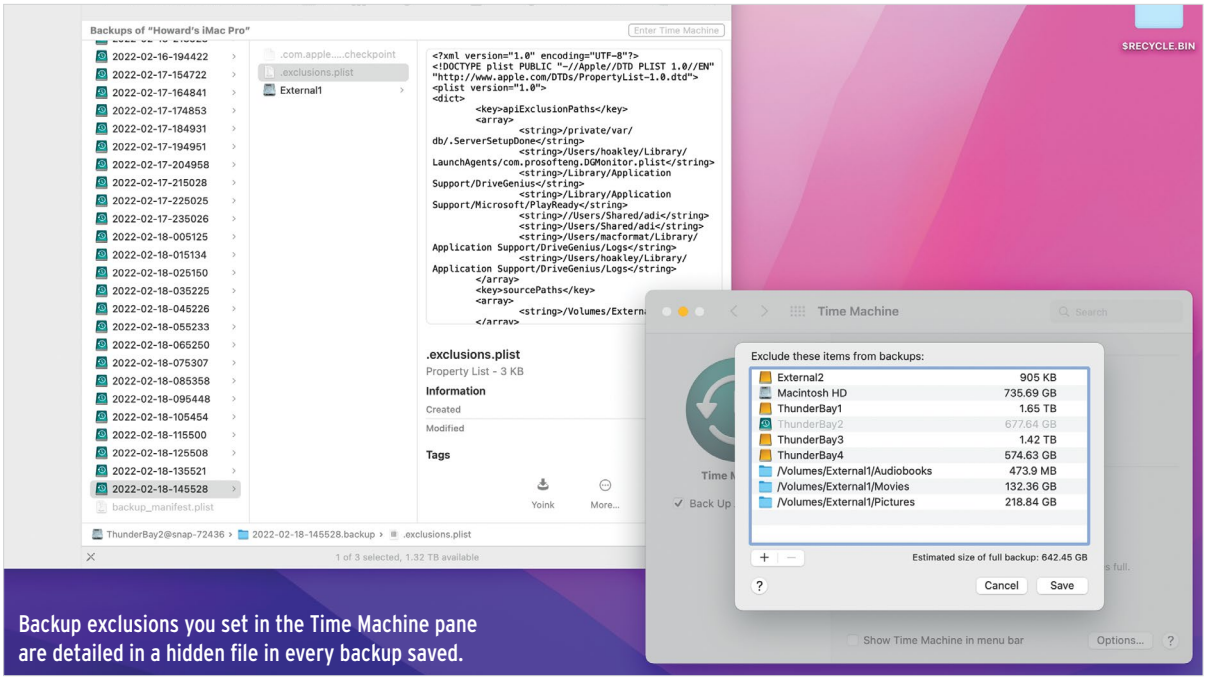
**Is there a better way to exclude individual files from Time Machine backups? To Monterey?**

If you don't want to move files to volumes which aren't backed up at all, it's simplest to add them or their enclosing folders to the exclusion list accessed using the Options button in the Time Machine pane. There's another method available in Terminal using the command

*tmutil addexclusion*

That has three variations: *option –v* excludes whole volumes referenced by their UUID; *option –p* excludes folders and files by their path, and no option (the default) excludes individual files and folders by marking them with an extended attribute. macOS also has its own standard list containing mostly hidden folders such as Spotlight indexes and Trash folders, but you can't alter that.

Those are now listed in the hidden file .exclusions.plist in each backup.




Backup exclusions you set in the Time Machine pane are detailed in a hidden file in every backup saved.

## WHERE TO GET A STANDALONE UPDATER FOR 12.2.1?

Apple doesn't provide downloadable standalone updaters for Big Sur and Monterey. Updates are now installed differently, and can't use Installer packages. You can download and install the update using System Prefs' Software Update pane, or download the installer app from the App Store.

## HOW TO START UP AN M1 MAC IN SAFE MODE?

Do this through Recovery. Shut your Mac down, leave it, then start it up and keep the Power button pressed until it says it's loading Options. Select the disk you want it to boot from in Safe mode, press and hold Shift and click Continue in Safe Mode. Then, the Mac restarts in Safe mode.

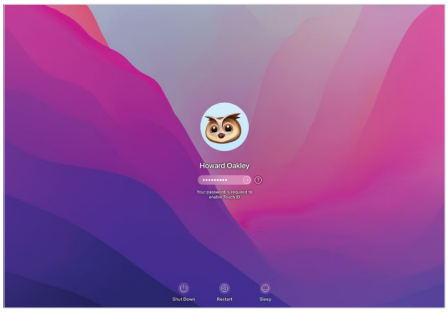



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Image rights: Apple.

# CREATE

HOW TO DO ANYTHING ON YOUR MAC, iPHONE & iPAD

# Master Universal Control

## Control everything on your iPad with your Mac

**REQUIRES**
macOS 12.3 and iPadOS 15.4

**YOU WILL LEARN**
How to control your iPad with your Mac

**IT WILL TAKE**
5 minutes

**IT'S VERY EASY TO SET UP UNIVERSAL CONTROL AND IT WORKS BRILLIANTLY**

**THE MUCH-DELAYED** Universal Control finally rocked up in March 2022. It builds on Sidecar, which can turn your iPad into an extra Mac display, but this time it keeps the iPad as an iPad: it enables you to connect an iPad or Mac and control them with the same keyboard and mouse, and you can also drag and drop between them. It feels a bit like magic.

Universal Control enables you to work your iPad just as though it was a Mac, so here we're Ctrl-clicking on the Safari icon to see all its options.

In order to use Universal Control, you'll need to take care of a few things first. The iPad or Mac you're adding must be running the latest iPadOS or macOS, which at the time of writing is iPadOS 15.4 or macOS 12.3. Your devices all need to be logged into the same iCloud account. And unless you're connecting an iPad via USB you need to have Bluetooth, Wi-Fi, and Handoff enabled; those things are all on by default but you can check on your iPad in Settings > General > AirPlay & Handoff.

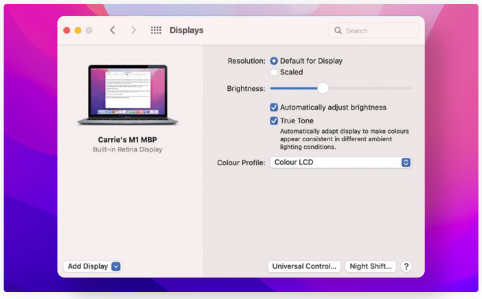
As we'll discover, it's a very easy process to set up Universal Control and it works brilliantly. But it's also important to know that there are a few limitations too. Mac trackpad gestures don't currently work on iPad over Universal Control, and if you're dragging things to your iPad you need to be dragging them into an open app — so for example if you're dragging an image across you'd need to drag it and drop it onto Photos, not on the Home Screen.

**CARRIE MARSHALL**



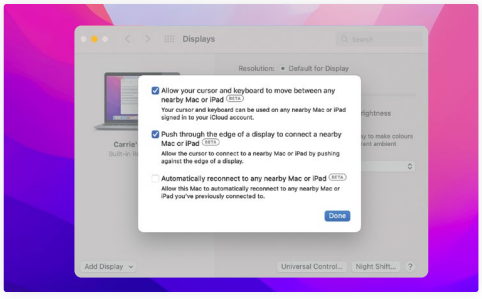
Image rights: Apple.

# HOW TO Set up Universal Control



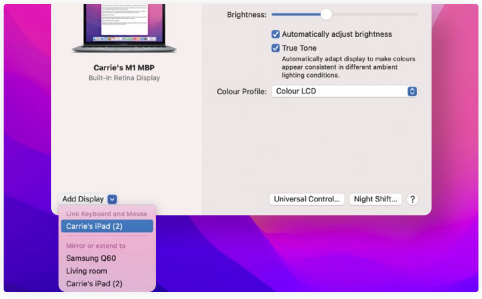

## 1 Select the device

With macOS 12.3 installed on your Mac, go to the Apple menu > System Preferences > Displays. In this tutorial we'll work with a solo MacBook Pro, but Universal Control is still available if you also have an external display.



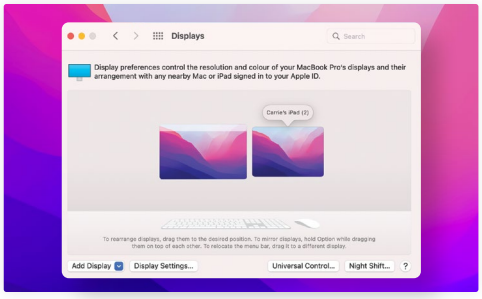

## 2 Choose your control

Click on Universal Control to see these options. For best results, you'll want to ensure that the first two are both checked. This enables you to move seamlessly between devices that share the same iCloud account.



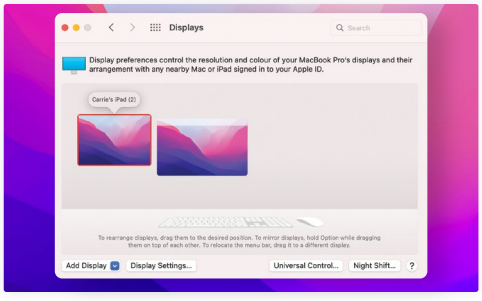

## 3 Add your device

Click on the Add Display drop-down at the lower left of the Displays window. This will give you a list of available devices, and it's in two sections: "Link Keyboard and Mouse" is the one we want here.



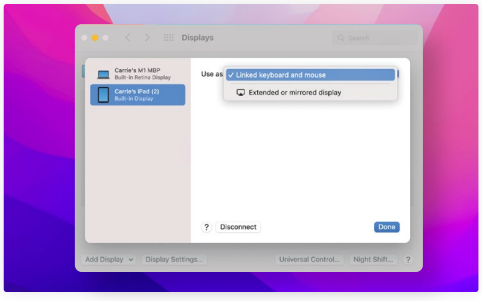

## 4 Move it around

The Displays window will now show two screens: your Mac's, and the iPad or Mac you've added. By default the new arrival sits to the right of the main display so to move your cursor across just keep moving to the right.




## 5 Relocate the device

If you'd rather have your iPad or second Mac in a different position, no problem: you can simply drag the screen position to whatever location you prefer. Here, we've put our iPad to the left of our Mac.




## 6 Change the role

If you'd rather use your iPad as an extended display, where it acts as an extra bit of your Mac desktop instead of a remote controlled iPad, you can change its role in the same window: just click Display Settings.

### JARGON BUSTER

Handoff is Apple's technology for moving seamlessly from device to device, so you might start on your phone or iPad and continue on your Mac.

### GENIUS TIP

In Universal Control settings, check mark the "Automatically Reconnect to Any Nearby Mac or iPad" box so you don't need to set up your device every time.

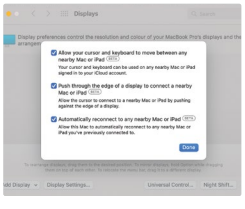
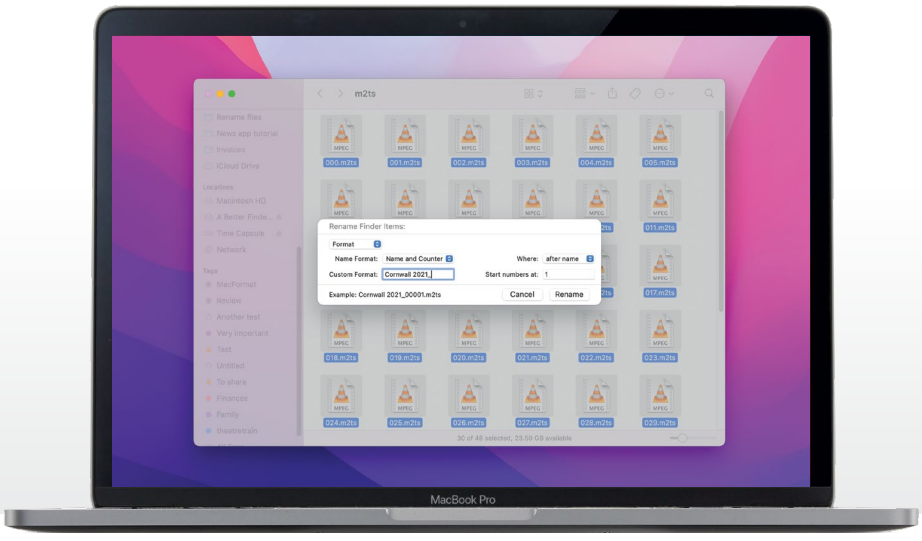


Image rights: Apple.




# Rename multiple files

## The Finder in macOS allows you to rename files in batches. Here's how...

**REQUIRES**
OS X 10.10 or later

**YOU WILL LEARN**
How to rename lots of files at once in Finder

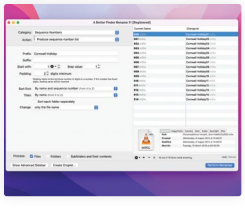
**IT WILL TAKE**
30 minutes

**THERE ARE MANY** reasons why you might find yourself needing to rename lots of files at the same time. Perhaps you've transferred photographs or videos from a memory card and want to be able to identify them better, or organize them by date, location, or occasion. Or perhaps you've used a disk recovery tool to retrieve data from a failed drive and want to quickly organize the files that you've saved from permanent deletion. Whatever the reason, until a few years ago, there was no way to do it without using a third-party tool or writing your own script or Automator action.

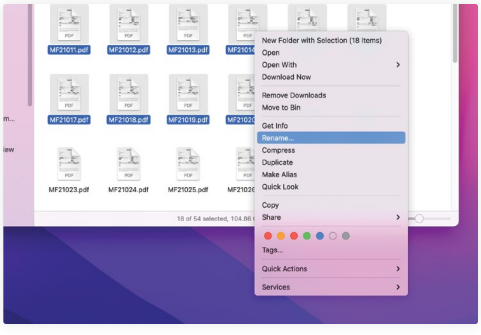
In OS X Yosemite, however, that changed with the introduction of a renaming tool in the Finder. But it's one of those features that gets little attention, so many Mac fans don't even realize it exists. You can use it to replace text in a file name, append text to a filename, or replace a whole filename. We'll show you how to use it to rename groups of files in different ways. **KENNY HEMPHILL**

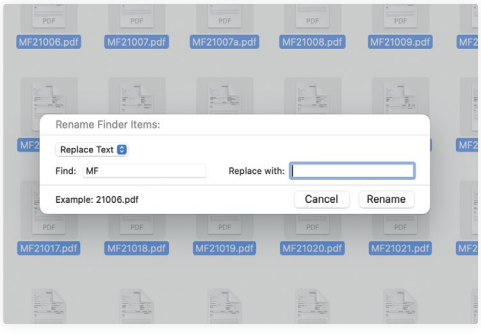
**GENIUS TIP**

If you need more options than the Finder offers, there are third-party tools. One of those is the venerable A Better Finder Rename.



## HOW TO Batch rename files in the Finder




### 1 Select the files

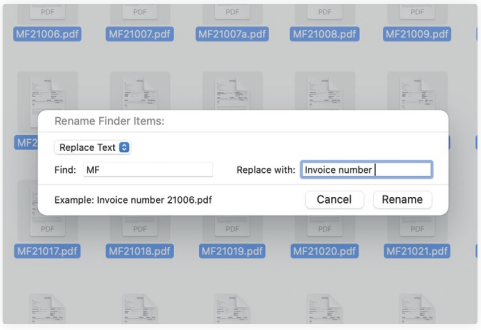
Locate the files you want to rename in Finder. Cmd-click on each file. Then, when you've selected all the files you want to rename, Ctrl-click on them and choose Rename, or click File > Rename.

### 2 Replace Text

In the dialog that appears, choose Replace from the menu. In the left-hand box next to Find, type the text you want to replace in the name of the file. For example, "DSC" in the name of a photo.

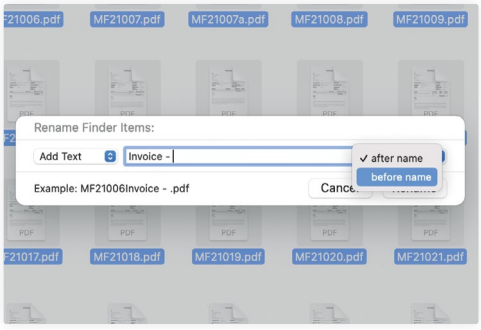


Image rights: Apple.



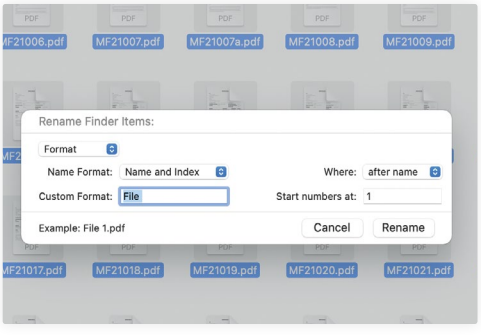

## 3 Finish replacing text

In the "Replace with" field, type the text you want to replace the text typed in the Find entry. Note that it will be used in multiple files, so shouldn't be too specific. Click Rename to replace the text in the filenames.



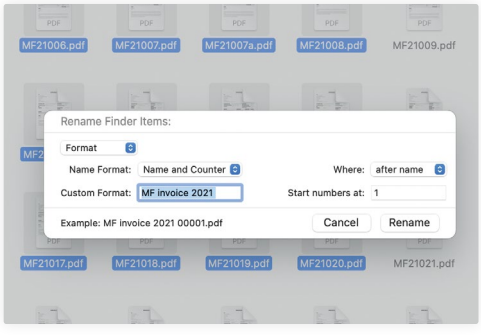

## 4 Add Text

If you want to add text to the filename, rather than replace existing text, choose Add Text from the menu. Type the text you want to add, then choose "before name" or "after name" from the menu and click Rename.



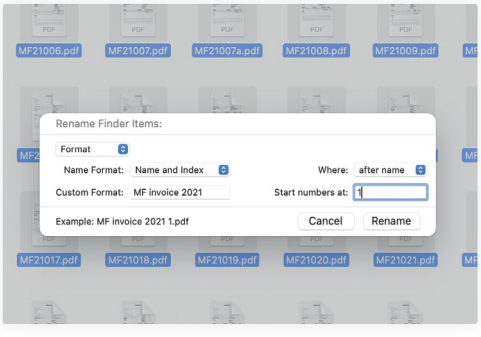

## 5 Format the name

The Format option enables you to replace all the text in a filename with new text and a number. The text is the same for all files, while the number increases by one for each file. Choose Format from the menu to use it.



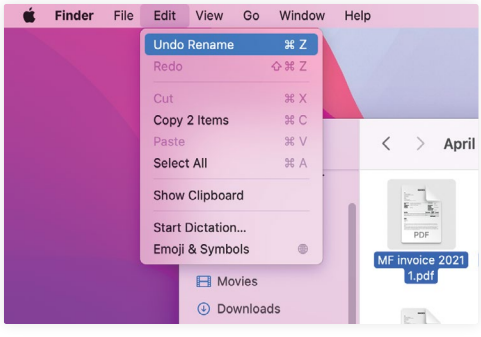

## 6 Choose an option

Choose one of the options from the Name Format menu. Name and Index, which adds an integer, Name and Counter which adds "0000" before the integer, or Name and Date which adds the date and time after the name.



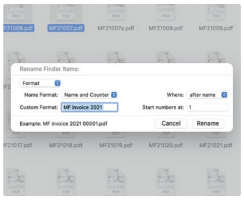

## 7 Finish formatting

Choose where the index, date, or counter should go, type the name into Custom Format, and type a number in the "Start Numbers at" box if you've selected Name and Index or Name and Counter. Click Rename.




## 8 Undo the rename

If you realize that you've made a mistake after you click Rename, or if you change your mind when you see the results, choose Finder > Edit > Undo Rename. Or press Cmd+Z to undo the most recent change.



### JARGON BUSTER

The benefit of using Counter rather than Index is that the option ensures files are sorted in numerical order by all apps.

### GENIUS TIP

If you want to remove text from file names rather than replace or add to it, use the Replace Text option and leave the Replace box blank.

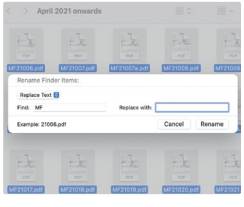


Image rights: Apple.

# Work fast with Hot Corners

## Hot Corners in macOS can make your everyday tasks quicker

**REQUIRES**
macOS

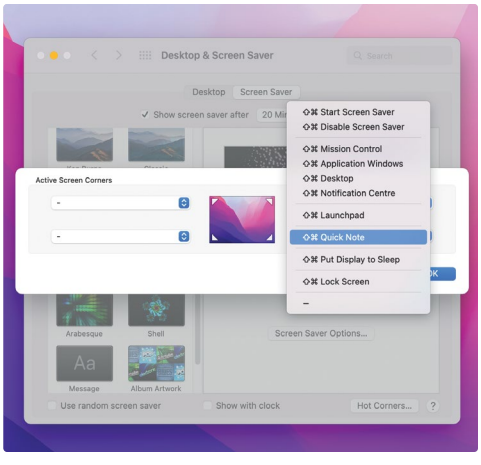
**YOU WILL LEARN**
How to set up mouse-enabled shortcuts in the corners of your screen

**IT WILL TAKE**
5 minutes

**AS CONVENIENT AS** macOS is, sometimes it could be a bit more convenient: who wants to look down at the keyboard to remember which key fires up Launchpad or shows the Desktop or app windows? And what if you'd rather activate the Notification Center from the top left of your screen rather than the top right? Luckily, Hot Corners is here to help by making it even faster to access useful system features. In this tutorial we're using macOS Monterey, but Hot Corners is available in older versions of macOS too; the feature was introduced more than 10 years ago and it's been a staple of macOS ever since.

Hot Corners lives in System Preferences > Desktop & Screen Saver > Screen Saver or in System Preferences > Mission Control and it enables you to set specific actions that will run when your mouse or trackpad reaches the appropriate corner. On Monterey one of them is already set up; if you move your mouse or trackpad cursor to the very lower right, the Quick Note will then appear in the corner. In addition, you can change this to something else, such as displaying the desktop, putting the display to sleep, showing the available app windows or bringing up the Lock Screen.

Hot Corners works on multiple displays, but it works as if your MacBook and external display are one huge monitor, so that means the top corners are on the monitor and the bottom on the MacBook. **CARRIE MARSHALL**




You can add modifier keys so Hot Corners don't activate when you don't want them to.

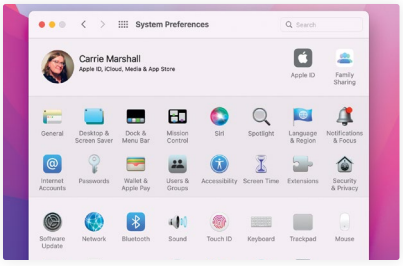
**GENIUS TIP**

When you create a hot corner, you can press a key such as Shift as you select its action. The corner won't activate if that key isn't pressed.



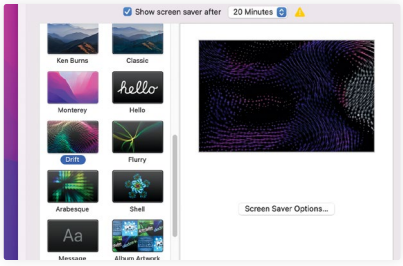
Image rights: Apple.

# HOW TO Use Hot Corners on your Mac



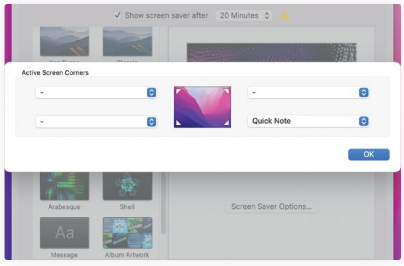

## 1 Open Preferences

Hot Corners is in System Preferences > Desktop & Screen Saver, and it's also in System Prefs > Mission Control, too. It doesn't matter which one you choose: they'll both take you to the same options.



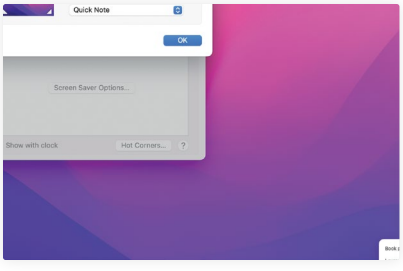

## 2 Find the button

If you went for the Screen Saver option, you'll need to click the Screen Saver button. You should now see the Hot Corners button at the bottom right. If you went the Mission Control route, it's at the bottom left.



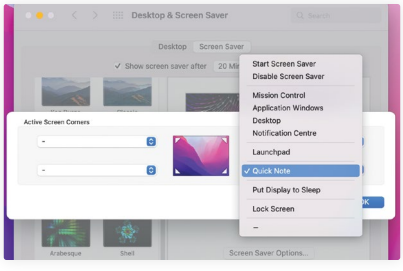

## 3 See what's set up

When you click the Hot Corners button you'll see a pop-up window with four menu selections. On Monterey, the bottom right one may already be filled in with the Quick Note feature, which is allocated to the bottom right.



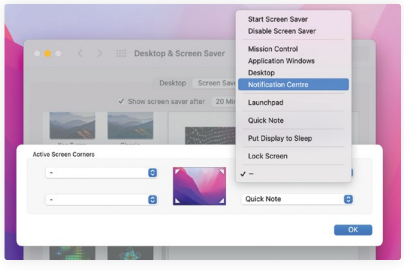

## 4 Test the corner

Let's try that one first. Move your mouse or trackpad cursor to the lower right of your screen and you should see a Quick Note corner appear. If you keep the cursor there or click, the note will open up for you to edit.



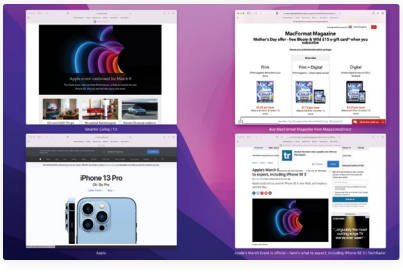

## 5 Change the corner

You don't have to stick with Quick Note here. Click the menu for the lower-right corner to see more options including screen saver options, Mission Control and Launchpad, and some display options too.



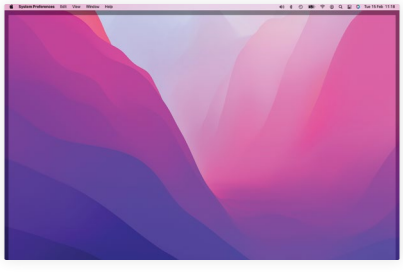

## 6 Add some more

Now make your way around the other corners to add more Hot Corners. If the menu shows a dash ("–") it means that corner isn't active as a Hot Corner. You can disable any Hot Corner by choosing that option.



## 7 Test it out

Here, we've made the top-left corner show current application windows, in this case for Safari; moving the cursor into the top left temporarily hides everything but the currently selected app's windows.



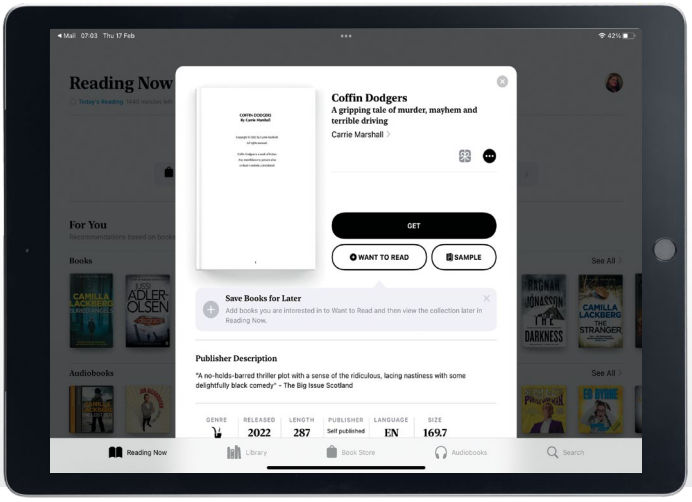
## 8 Disappear desktop

Now, we've assigned Desktop to a Hot Corner; moving over the corner hides the apps so that we can see what is currently on our desktop. With dual displays this shows the desktop for the display with the Hot Corner.

## 9 Launch Launchpad

In this example, we've chosen to activate Launchpad from our Hot Corner, providing quick access to all our apps and to the Dock too. It's a great example of how Hot Corners can make your Mac more you.

Image rights: Apple.




# Publish your own ebook

## Want to publish to Apple Books? All you need is Pages (and a book)

**REQUIRES**
An Apple ID, Pages, your own transcript

**YOU WILL LEARN**
How you can publish to Apple Books

**IT WILL TAKE**
20 minutes

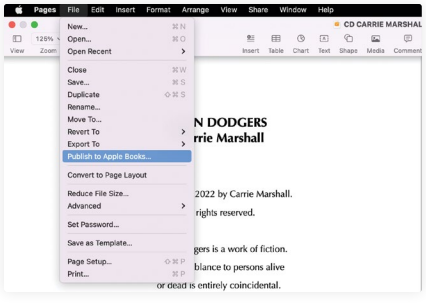
**APPLE DOESN'T JUST** give you great tools to make creative masterpieces. It gives you lots of ways to share your creations too, and in the case of ebooks you can also sell them on Apple Books. All you need is a copy of Pages. It'll take care of the publishing so you can concentrate on making your book as great as it can possibly be.

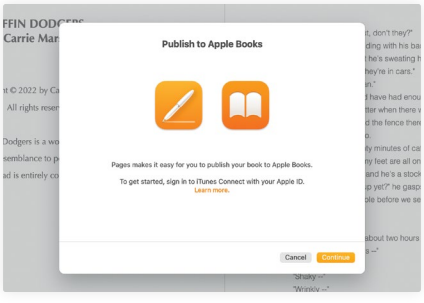
In this tutorial we'll show you how to publish your own novel, but Apple Books is open to all kinds of genres — educational books, children's books, history books… if you can imagine it, there's a place for it in Apple Books.

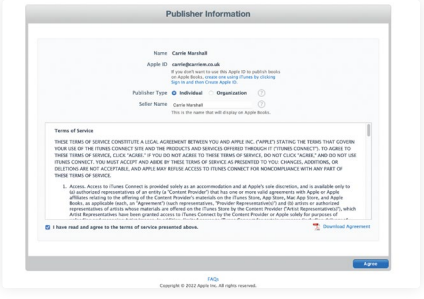
We're going to show you how to publish a book that you want to give away for free. The process for selling books is much the same, but there are a few extra hurdles to overcome; because Apple Books is US-based you need to fill out some Internal Revenue Service (IRS) forms. Don't worry though, because Apple will take you step by step through this process.

**CARRIE MARSHALL**

## HOW TO Publish to Apple Books




### 1 Do it in Pages

There are many brilliant writing apps for Mac — Ulysses, Scrivener, and so on — but when it comes to publishing to Apple Books, Pages is hard to beat. Create or open your work in Pages and select File > Publish to Apple Books.

### 2 Prepare to publish

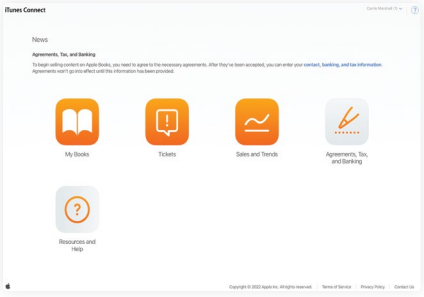
Apple accepts book submissions through iTunes Connect, which is also used by app developers and it enables you to track all your Apple Books titles. Pages will launch iTunes Connect, which you access using your Apple ID.

### 3 Enter your info

iTunes Connect will ask you to log in and then it should display this page of legalese. Unless you're publishing books on behalf of a company, select Individual and enter your name or your pen name in the Seller Name section.

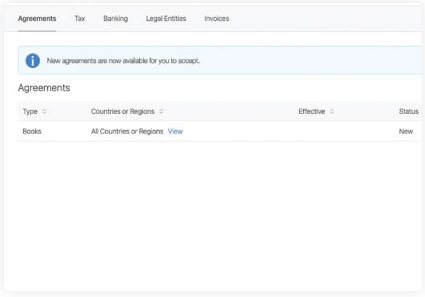


Image rights: Apple.



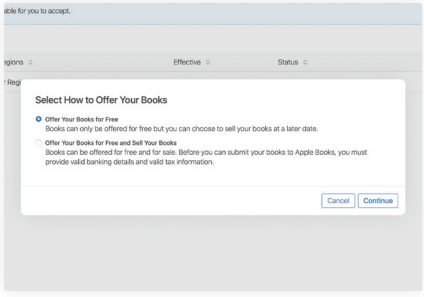

## 4 Use the Dashboard

This is the iTunes Connect dashboard, and as you can see there are multiple icons to access different parts of the service. My Books is currently empty; before you add anything, go to Agreements, Tax, and Banking.



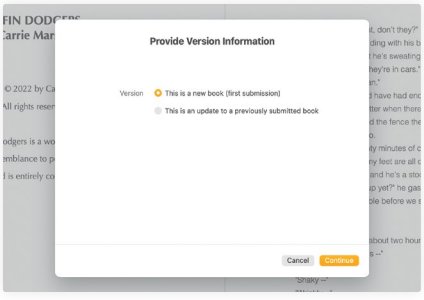

## 5 Decide what to do

In this tutorial we're going to publish a free book, so we can just click View and "Agree to Terms" here. If you want to sell books for money you'll need to provide bank details and fill out some tax forms to keep the IRS happy.



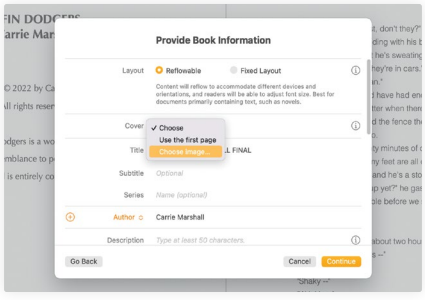

## 6 Pick your pricing

You have two options here: "Offer Your Books for Free", which is the simplest option and the one we're going to use here, or "Offer Your Books For Free and Sell Your Books", which enables you to give away books or sell them.



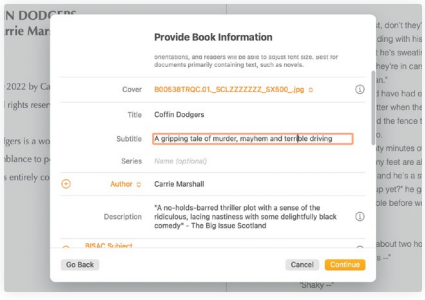

## 7 Add book info

iTunes Connect will return you to Pages and you should see a message asking whether this is a new book or an update. The latter enables you to upload new versions of books you already have in Apple Books, but our book is new.



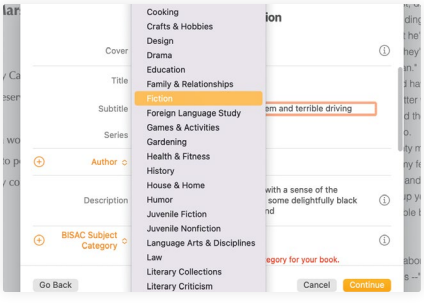

## 8 Add essentials

This next screen dictates how people will find your book and what they'll see. You can add a cover image – we'd definitely recommend it – as well as specify genres and add your book description details of any series.



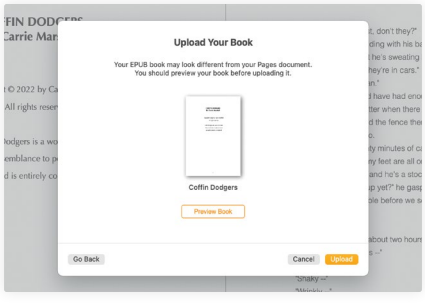

## 9 Add a subtitle

The subtitle is important; it's the text that appears in big letters along with your book title, so it's a useful selling tool. If this is the first book in a series, such as a detective or fantasy series, you can include those details for display too.



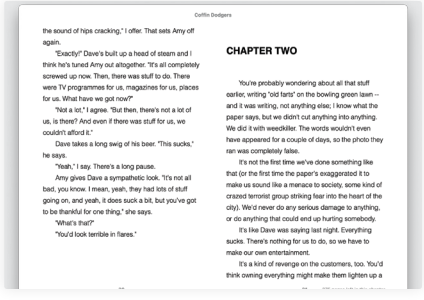

## 10 Set the genre

You need to specify genre and sub-genre, such as Fiction and then Crime, but your book might be educational, a how-to about pets, a music book, etc. This affects visibility, search results, and any chart placings.




## 11 Check your work

It's important to check your work. If you click on the Preview Book link, you'll see a preview of your book exactly as it'll appear in Apple Books; check it for mistakes and layout problems because reviewers aren't forgiving.




## 12 Wait to go live

Once you submit your book it'll take a while to be approved – in this case, it happened overnight. You'll then get an email from Apple telling you that your book is live and giving you a link so you can see it in Apple Books.

Image rights: Apple.

# Measure almost anything

## It may be unheralded, but the humble Measure app can be very useful

**REQUIRES**
iPhone or iPad

**YOU WILL LEARN**
How to measure real-life objects in the Measure app

**IT WILL TAKE**
30 minutes

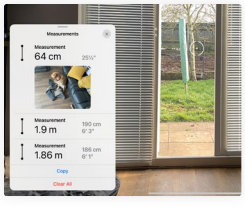
**OF ALL THE** built-in apps on iPhone, Measure is the one that gets the least attention. And yet, it's one of the most impressive. It's also a good illustration of how augmented reality (AR) can be put to practical use on a mobile device.

The Measure app enables you to measure real-life objects around you using the iPhone or iPad's camera sensors to detect edges and corners and then do some clever maths to determine the distance between them. On more recent iPads and iPhones, Measure also uses the built-in LiDAR scanner to more quickly and accurately determine distances.

As well as measuring the distance between two points, Measure can take multiple measurements and even calculate the area of a rectangle. You can use it to work out someone's height and save photos of the measurements to your Photos Library. It even has a built-in spirit level which, while no substitute for a real one, can come in handy for, say, hanging a picture. **KENNY HEMPHILL**

**GENIUS TIP**

On devices with a LiDAR scanner, tap the three lines at the top of the screen to see measurements you've taken in the current session, including any photos taken.




## HOW TO Measure objects in iOS

### 1 Your first measurement

Open Measure and move the device around, following the on-screen instructions. Keep moving the device until you see a circle with a dot in the center appear on the screen. Your device now has its frame of reference.

### 2 Take the measurement

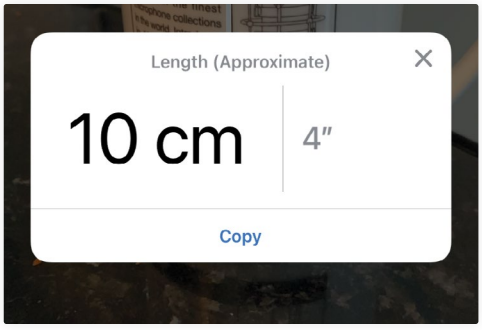
Move your iPhone or iPad until the dot is over the point where you want to start your measurement. Tap the "+" on screen to lock it in position. Move your device again until the dot is over the end point, then tap "+" again.



Image rights: Apple.

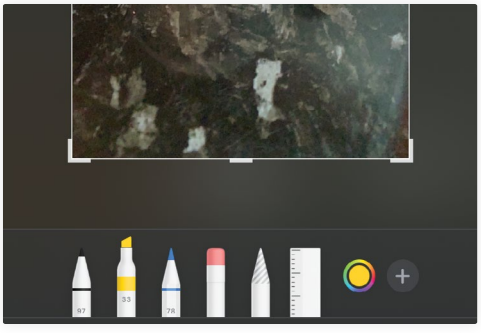
## 3 Adjust the points

To adjust your measurement, or measure another part of an object, tap and hold one of the points and drag it to where you want it to go. Do the same with the other one, if required. The measurement will change.




## 4 Save the measurement

Once you've taken the measurement you want and are happy with it, tap the number and you'll see it appear on the screen in centimeters and inches. Tap Copy to copy it to the clipboard and "X" to dismiss the box.



## 5 Save a photo

Once you've taken the measurement, you can tap the shutter button on screen to take a photo of it. You can then tap the thumbnail to mark it up, or just wait a moment for it to save to your Photos Library.

## 6 Multiple measurements

After you've taken one measurement, move the device so the white dot is at the point you want to start the next one. Tap "+", then move the device so the white dot is over the end point and tap "+" again.

## 7 Undo a measurement

If you make a mistake while taking multiple measurements, tap the Undo button (top left of the screen) to move back a step. If you want to get rid of all the measurements on screen and start again, tap Clear.

## 8 Measure a rectangle

Move your device so the whole rectangle is on the screen. Measure should recognize it and display its edges, along with their measurements. Tap inside it to display the area and length of the diagonal.

### JARGON BUSTER

Light Detection and Ranging (LiDAR) uses lasers to measure distance and depth to improve augmented reality, among other technologies.

### GENIUS TIP

On devices with a LiDAR scanner, when the Measure app detects a person in the viewfinder, it automatically displays their height on the screen.

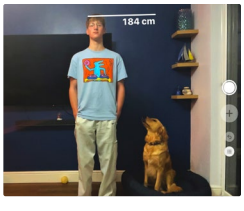
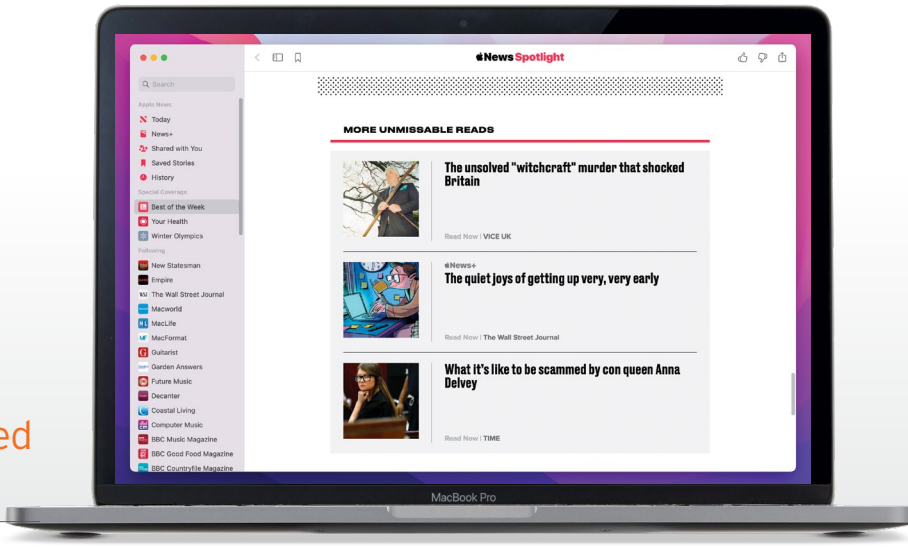



Image rights: Apple.

# Discover Apple News

Apple's News app provides access to hundreds of publications that can be tailored to suit you




**REQUIRES**
iPhone, iPad or Mac; Apple News app

**YOU WILL LEARN**
How to use the Apple News app

**IT WILL TAKE**
30 minutes

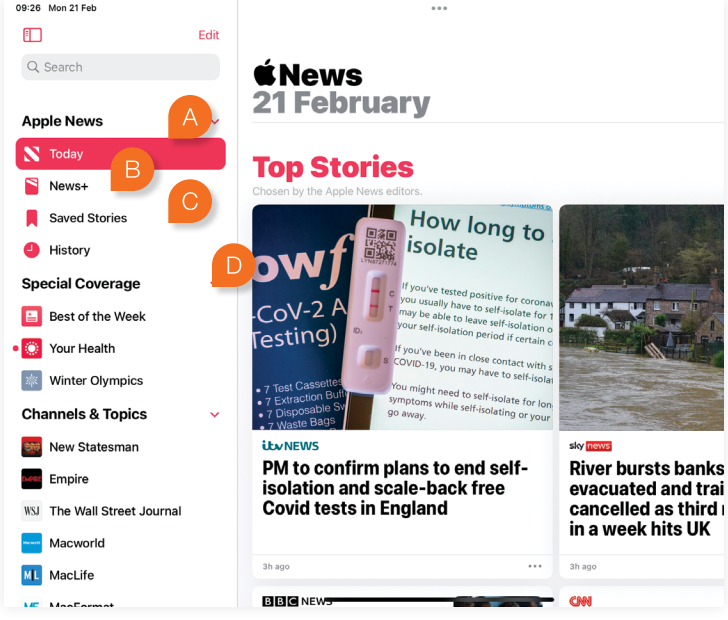
**APPLE NEWS ON** iPhone, iPad, and Mac is designed to be a one-stop shop for news and magazine-style content. It has two elements to it: the standard News service which is free and enables you access to content from publishers like the The New Yorker, who allow content to be distributed at no cost, and the News+ services which costs $9.99/month and provides access to absolutely everything.

Aside from a greater choice of publications, Apple News+ enables you to read magazines cover to cover and download them for offline reading. You can share an Apple News+ subscription with up to six family members.

Both the standard News service and News+ offer stories that are hand-picked by Apple's editors and pushed to your feed based on your reading habits and preferences you've set. You can, for example, choose to follow specific channels, in which case their content will be more prominent in your feed. If you're not happy with the type of content in your feed, you can make adjustments so that it's tailored to your personal taste. We'll show you how to do all of that here.

**KENNY HEMPHILL**

## QUICK LOOK The Apple News interface




**A TODAY VIEW**
The Today view displays stories from subscribed channels, and those the News algorithm thinks you might like.

**B NEWS+**
News+ is a subscription service that provides access to a selection of hundreds of newspapers and magazines.

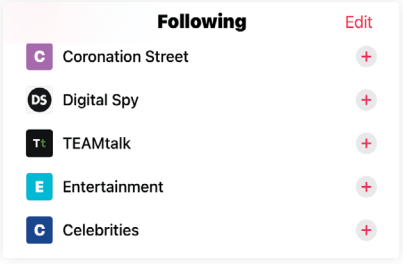
**C SAVED STORIES**
You can save stories to read later; when you do, they are added to Saved Stories.

**D CHANNELS**
Channels and topics are displayed in the sidebar on iPad and Mac, and you'll find them in the Following tab on iPhone.



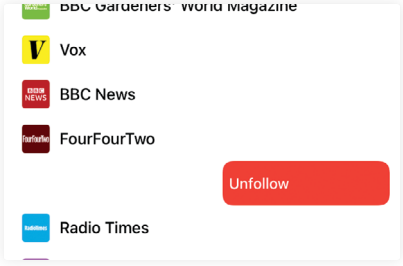
Image rights: Apple.

# HOW TO See the content you want on Apple News



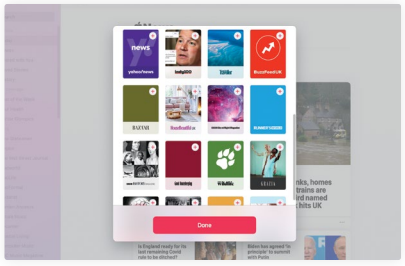

## 1 Channels on iOS

Tap News, then tap Following at the bottom. Tap the "+" next to the channels you want to follow. To see more channels, swipe to the bottom and tap Discover Channels then again tap the "+" on any you want to follow.



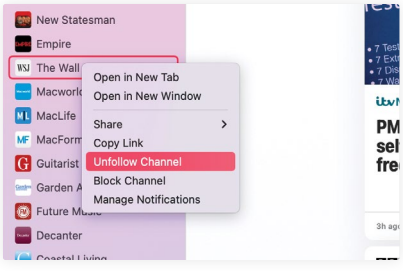

## 2 Unfollow a channel

Tap Following at the bottom of the main screen and then swipe left over the channel you no longer want to follow and tap Unfollow. You can also tap and hold on it and select Block Channel to block it from your feed.



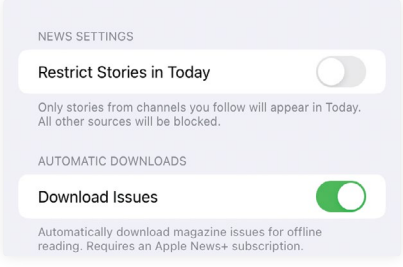
## 3 Channels on Mac

On the Mac version of News, click File, then choose Discover Channels. Click the "+" next to a channel. You can also search for topics in the search bar, and click the "+" next to channels in the search results.



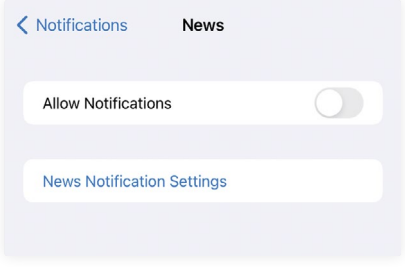

## 4 Manage on Mac

To unfollow or block a channel on Mac, Ctrl-click on it in the sidebar and choose Unfollow Channel or Block Channel. You can also manage blocked channels by clicking File > Manage Blocked Channels & Topics.



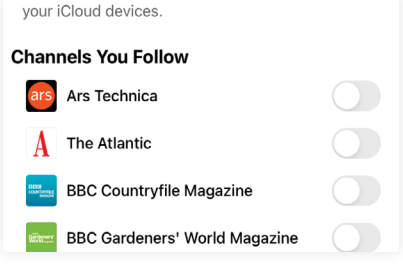

## 5 Restrict stories

On iOS, to restrict what appears in your feed to the channels you follow, launch the Settings app and tap News. Toggle the Restrict stories in Today switch to on. On Mac, it's News > Preferences > Restrict Stories in Today.



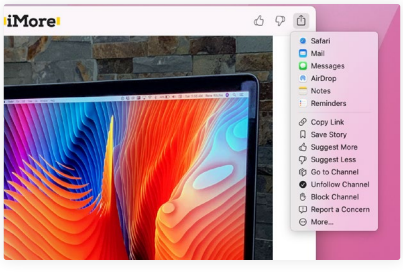

## 6 Custom notifications

Enable notifications. On iOS, go to Settings > Notifications > News > Allow Notifications. Select other options as required. On Mac, it's System Prefs > Notifications & Focus > News.




## 7 Customise Notifications

On iOS, tap News > Following, then scroll to the bottom. Tap Notifications & Email. Toggle channels you want to be notified about to on. On the Mac, it's File > Manage Notifications & Email.




## 8 Share a story

On iOS, tap on the story you want to share and tap the More button ("..."). Tap Share Story, then choose how you want to share it and with whom. On the Mac, click on the story and click the Share icon at the top.

## 9 Sign up for News+

On iPhone or iPad, tap the News+ button at the bottom of the screen, then tap Get Started and follow the instructions on screen. On your Mac, click File > Manage Subscriptions, then tap Subscribe.

Image rights: Apple.

A
**BOKEH**
A bokeh blur reduces background distractions and creates a mix of colors to flatter your subjects.

B
**DEPTH**
In Portrait mode, you can adjust the bokeh strength before you shoot, or change it afterwards in the Photos app.

C
**LIGHTING**
The bonus of shooting in Portrait mode is its ability to add studio lighting effects to your subject.

D
**INFO**
Click here to access info such as the aperture value. A wider f-stop such as f1.8 will indicate a blurrier background.

# Better bokeh on iPhone

## How to add a flattering background blur to your portraits

**REQUIRES**
iPhone 7 Plus or later

**YOU WILL LEARN**
How to add computer-generated blur, and natural in-camera bokeh

**IT WILL TAKE**
10 minutes

**TO CREATE A** more flattering portrait, professional photographers can manually set their Digital SLR camera to use a wide aperture. The wider the aperture's f-stop (such as f2.0), the blurrier the background will be. This background blur is referred to as bokeh.

A blurry background removes distractions and helps focuses the eye on the person in the foreground. The iPhone's native Camera app doesn't allow you to manually adjust the aperture setting used when shooting, but it does offer a software solution to creating a bokeh courtesy of its Portrait shooting mode. As a bonus this bokeh can be adjusted in Photos to make it blurrier or sharper, which is something you can't do if you capture bokeh with a traditional camera. We'll show you how to put Portrait mode through its paces and adjust the bokeh of the picture.

Portrait mode produces striking results but the iPhone's software solution to creating bokeh doesn't always work. You may notice sharply focused bits of background hiding amongst a person's hair. With a natural in-camera bokeh all background areas are blurred equally.

We'll also show you some classic shooting techniques to help you capture natural in-camera bokeh using the iPhone's standard Photo mode. These examples of bokeh won't be adjustable in Photos but they will be as natural as those produced by a DSLR camera.

**GEORGE CAIRNS**

**WITH A NATURAL IN-CAMERA BOKEH, ALL BACKGROUND AREAS WILL BE BLURRED EQUALLY**

By shooting close to a subject using a telephoto lens you can create a natural "baked in" bokeh.



Image rights: Apple.

# HOW TO Capture a bokeh effect

## 1 Shoot Portrait mode

In the Camera app, swipe to Portrait. Compose the shot. Rectangular yellow selection markers indicate people and pets. The selected subjects will stay sharp while the background will be blurred.

## 2 Adjust f-stop

To adjust the background blur before you snap a shot, tap the "f" (f-stop) icon. Use the Depth slider to choose a narrow aperture such as f14 where everything is sharp. Or a wide blur-inducing aperture such as f1.4.

## 3 Post-production

As the Camera app's bokeh is computer-generated, adjust it in the Photos app in iOS or macOS. Go to Edit and adjust the Depth slider. A value of f2.0 creates an effective bokeh to complement our subjects.

## 4 Shooting objects

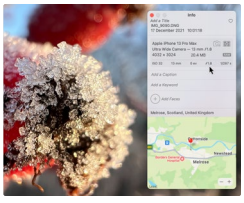
Earlier versions of Portrait mode on older iPhones could only recognize faces. Now you can tap on a face or an object to select which subject stays sharp. This gives you more creative control over where the blur appears.

## 5 Real bokeh

To capture a natural bokeh, get your iPhone close to the subject. Choose Photo mode. Use the Telephoto lens. Tap to focus on the subject. The camera's close proximity will ensure a natural background bokeh.

## 6 Macro

By placing your iPhone in very close proximity to a subject, you'll automatically trigger the Macro shooting mode. This enables you to capture a Raw format file that will have a natural blurred bokeh background.



### JARGON BUSTER

The f-stop is the width of the camera's aperture (or its aperture value). A narrow aperture value of f14 ensures that everything is in focus. A wide f-stop of f1.8 will produce a strong background blur.

### GENIUS TIP

RAW v JPEG
By shooting bokeh naturally using the Photo shooting mode, you can capture images in raw DNG format. Portrait mode only lets you capture lower-quality JPEG files.

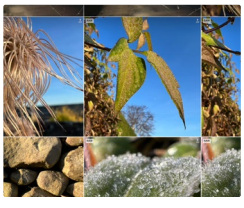


Image rights: Apple.

# Send messages on Watch

## Staying in touch has never been easier, even when you're out and about

**REQUIRES**
Apple Watch, watchOS 8

**YOU WILL LEARN**
The best ways to send messages

**IT WILL TAKE**
5 minutes

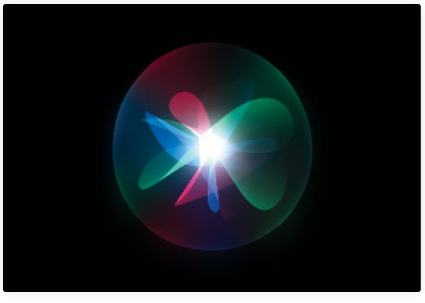
**IT'S GOOD TO** talk, and it's particularly good when you do it with your Watch. Whether you're sending a quick update, a heartfelt apology or even your actual heartbeat, there are lots of ways to communicate.

And with the Watch Series 7 it's even more useful than before; the new Keyboard makes it easy to type letters or swipe entire words. Sadly it's not available for older watches because their screens don't have enough room. Don't worry, though — the standard Scribble input method works really well too.

In this tutorial we'll look at three key ways to create messages on your Watch: text-only messages, messages with additional fun options and quick replies to incoming messages too. We'll also include dictating to Siri for those occasions when you need to reply but it's not safe to type, such as when you're driving or cycling.

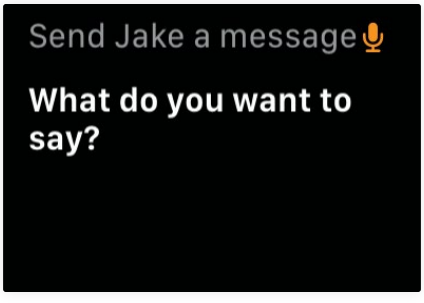
**CARRIE MARSHALL**

## HOW TO Send a message on Watch



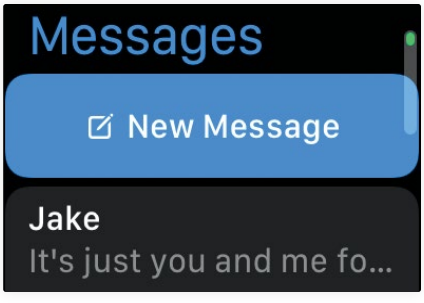
### 1 Say it to Siri

It's not always convenient to type or scribble on your Watch screen, but you can dictate to Siri instead. Simply raise your wrist (or press the Digital Crown if "Hey Siri" is disabled) and say "Send [person's name] a message".




### 2 Say what you want

If the person's name is recognized Siri will ask what you want to say. Dictate your message, including any punctuation, and it'll appear on your Watch as you say it. When you're done you can choose to cancel or let Siri send it.

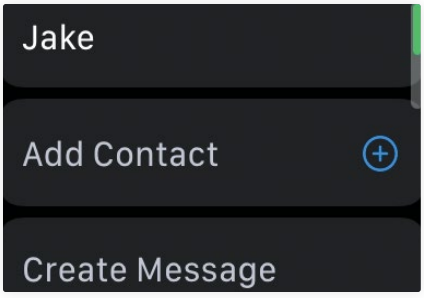



### 3 Open Messages

If it's okay to use your Watch, you can create a new message by pressing the Digital Crown to go into the app view and then tapping Messages. You should now see a big blue New Message button at the top of the screen.

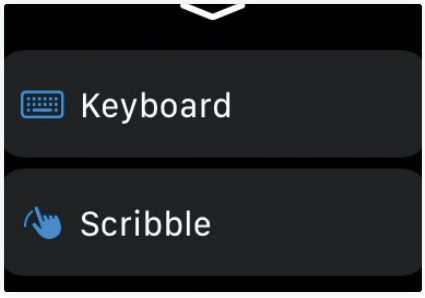


Image rights: Apple.



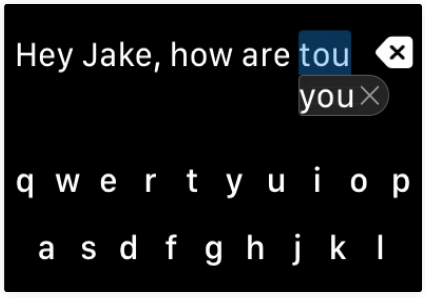

## 4 Pick the person

Tap on the "+" sign next to Add Contact to pick a name from your contacts. In this example, we're sending to a single person but you can send the same message to multiple people too. Tap Create Message.



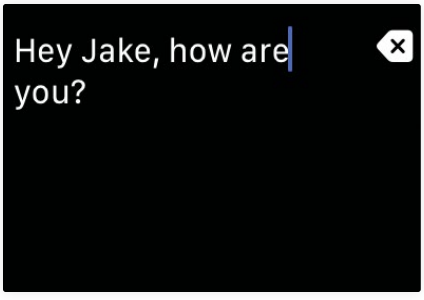

## 5 Pick your method

If you have the Watch Series 7, you'll see a little up arrow at the bottom of your screen. Swipe up and you can choose between Scribble, the standard way to input Watch text, and Keyboard. Earlier models don't have this option.



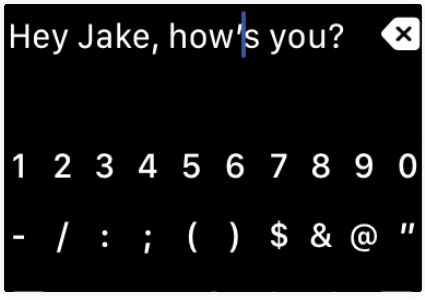

## 6 Enter your text

In Scribble, you draw the letters on screen but, with Keyboard, draw the shapes of the words, so for example to type "hey" you'd tap on "h", slide to "e" and then slide to "y", in one movement. It takes getting used to but it's fast.



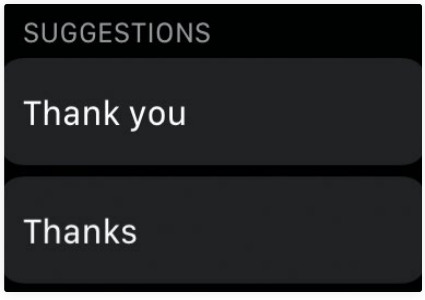

## 7 Change your mind

To edit your text, you can tap on the Delete icon, the little arrowed box with an "X" in it, or you can use the Digital Crown. Roll the Digital Crown anti-clockwise to move the cursor backwards; clockwise moves it forwards.



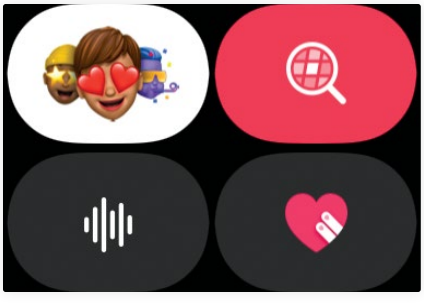

## 8 Make your edit

Tapping the up arrow switches between upper and lower case. You can also add numbers or punctuation by tapping the 123 icon and using the Digital Crown to scroll the cursor to where you want to put it. Tap ABC to return.



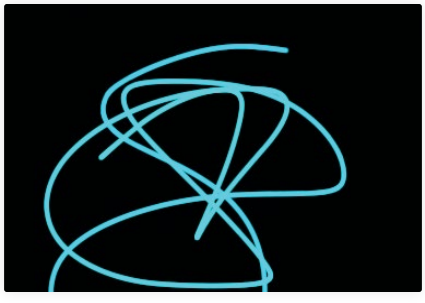

## 9 Reply really fast

If you're replying to a message, you don't need to type anything! Scroll down to see a collection of predefined replies that you can send with a single tap. If you'd rather do things manually, just tap on the iMessage field.



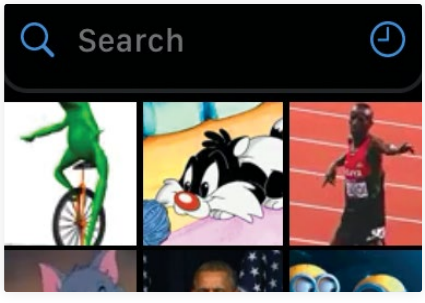
## 10 Add some fun

Tap the App Store icon next to the iMessage field to see additional options; the faces are Memoji, the soundwave is for an audio clip and the heart is for sending a drawing or heartbeat. We'll tap the heart...



## 11 Show, don't say

You can now draw on the screen and add your drawing to your message. If you'd rather send your heartbeat, tap and hold two fingers on the display. You should now feel haptic feedback and see the screen red under your fingertips.




## 12 Grab a GIF

The looking glass enables you to send a GIF animation from a large collection. Just tap the image you'd like to see properly and then select OK to add it to your message or Cancel if it's not quite what you're looking for.

Image rights: Apple.

# Go dark with Noir

## Add a dark mode to every website in Safari without lifting a finger

**REQUIRES**
Noir $2.99, iOS 15 or later

**YOU WILL LEARN**
How to use Noir to automatically turn websites dark in Safari

**IT WILL TAKE**
5 minutes

**MANY WEBSITES HAVE** dark modes on iOS to shield your eyes when you use Safari in the evening. Yet even big sites like Wikipedia fall short here — open a site that lacks a dark mode and you'll blast your eyes with shining white light. Luckily, Noir can help.

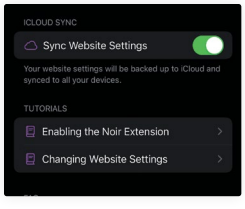
This app automatically adds a dark mode to any website that lacks it — preserving the site's aesthetic while it does so — making evening browsing a much more pleasant experience. Noir is not just a one-trick pony. It is highly customizable, letting you change the color scheme it uses, whether it dims images, and more. You can exclude certain websites and integrate it into the Shortcuts app. That makes it a handy tool that can be tweaked however you like.

Additionally, there are no recurring subscriptions or in-app purchases to pay, just a very reasonable one-off price of $2.99. Setup is easy too; just enable the Safari extension and you're good to go. Once that's done, you'll forget you're even using Noir — it's that seamless.

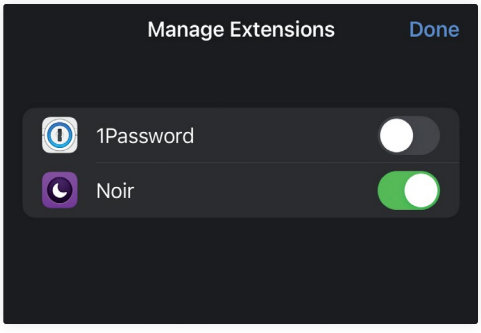
**ALEX BLAKE**

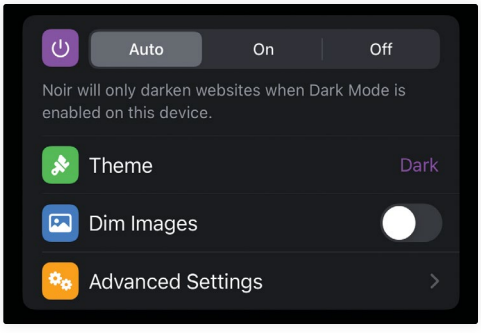
### GENIUS TIP

Under Noir's More tab, you can enable Sync Website Settings using iCloud. This means there's no need to repeat yourself on each individual device.




## HOW TO Save your eyes with Noir




### 1 First-time setup

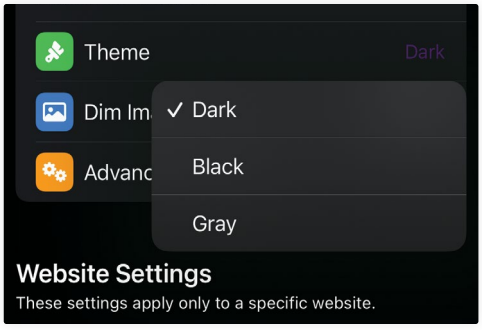
Once Noir is installed, open Safari and tap the puzzle icon on a new tab, then Manage Extensions. Enable Noir and tap Done. Tap the puzzle icon again, tap Noir, then Always Allow and "Always Allow on Every Website".

### 2 When should Noir run?

Open the Noir app and tap Settings. At the top of the window, you can decide if Noir is either always enabled or always disabled (regardless of iOS Dark Mode), or whether it only runs when iOS's Dark Mode is active.

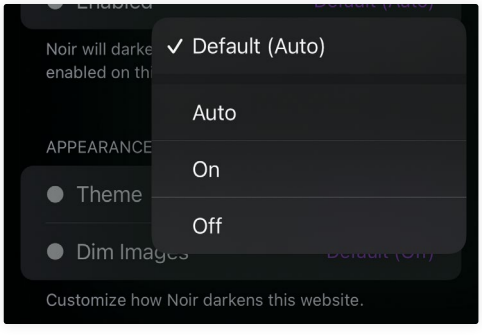


Image rights: Jeffrey Kulken.



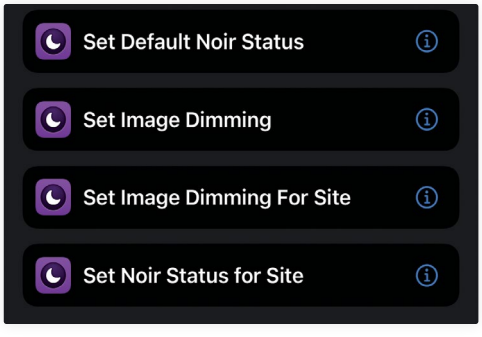

## 3 Change color scheme

Below this, tap Dark next to Theme to change Noir's active color scheme. There are three options to choose from: Dark, Black or Gray. Open Safari to see the results (you might need to refresh the page each time).



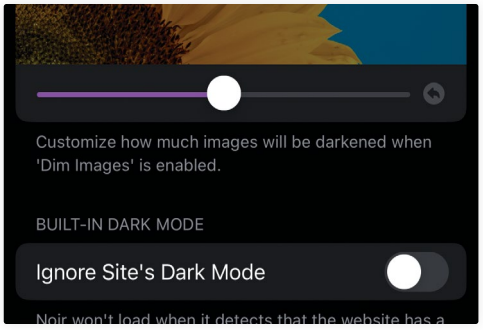

## 5 Site-specific rules

To configure settings for the current website, tap the puzzle icon in Safari, then tap Noir. Under Enabled, you can switch between Default, Auto (which syncs with the iOS Dark Mode setting), always on or always off.



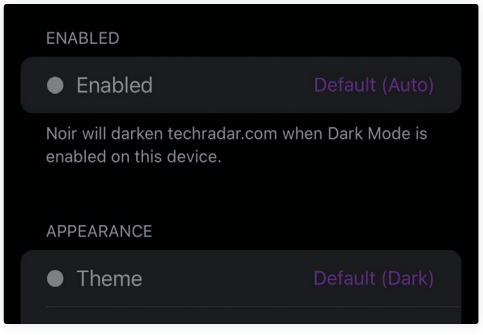

## 7 Noir shortcuts

Noir works well with the Shortcuts app. You can toggle the default Noir status, define the Noir status for the website you're on, enable or disable image dimming, and set image dimming for the current website.



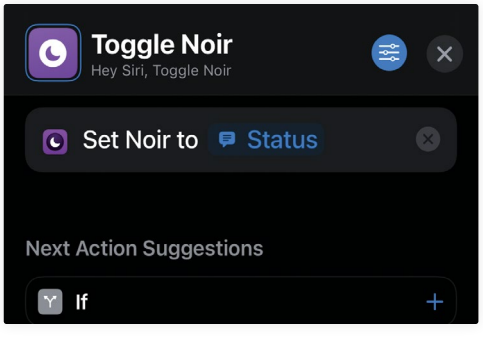

## 4 Dim images

Next on the Settings tab is a toggle to dim images when Noir is running. This prevents nasty surprises when you come across a bright picture. Tap Advanced Settings to adjust the amount Noir dims each image.



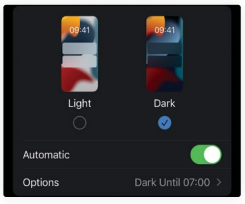

## 6 Temporarily disable

Open Safari's Extensions menu and tap Disable Until Tomorrow to temporarily turn Noir off for the website you are browsing. If you change your mind, open the Safari menu again and tap Re-Enable Now to go back.




## 8 Create a shortcut

Add a new shortcut in the Shortcuts app, tap Add Action, then search for Noir. Tap Set Default Noir Status and change Status to Ask Each Time. Now you can trigger this shortcut to toggle Noir on or off using Siri.




### JARGON BUSTER

Dark Mode is an iOS feature that darkens system windows, menus, and more. It can do this automatically at certain times or you can manually toggle it.

### GENIUS TIP

For more consistency, open Noir and tap Advanced Settings > Ignore Site's Dark Mode to use Noir's theme instead of a website's own dark mode version.

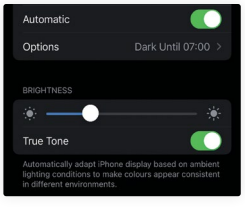



Image rights: Jeffrey Kuiken.

# Mixed reality and Apple Glasses

## It will be Apple's biggest launch in years. What's behind the Apple headset?

HOW IT WORKS

**YOU WILL LEARN**
About the technology behind Apple's MR headset, and its future applications

**THE MOST IMPORTANT FACTOR IS REALLY APPLE'S VISION FOR HOW THIS HEADSET COULD BE USED**

**KEY FACT**

There are two types of VR headset currently available. Some headsets have good displays, but they don't have their own CPU to control them. This means that the headset has to be connected to a PC or games console at all times. However, the use of Apple's M1 chip could allow its headset to work on its own, without needing a Mac, iPhone or iPad.

**THE RUMOURS SURROUNDING** Apple's launch of a virtual reality headset are going crazy at the moment — and, right in the middle of writing this, news broke that references to a new "realityOS" had been found hidden in the depths of the App Store.

There are now so many rumours swirling around that it's worth pointing out that there are actually two virtual reality devices thought to be in development at Apple. The one that's getting everyone in a complete frenzy at the moment is a proper headset — something along the lines of Facebook's Oculus headset — that wraps right around the wearer's head, completely covering your eyes with a pair of built-in screens. This headset is making headlines at the moment as it's expected to launch either this year or early in 2023. And, with the launch date so near, the cloud of rumours is starting to focus on some common factors that indicate the new headset will pack some serious high-end technology.

It now seems likely that the Apple headset will include a pair of 8K displays (one for each eye) with a resolution of 7680x4320. These displays will also be powered by the same M1 chip used in the 24-inch iMac, Mac mini, and MacBook Air. However, the industry analyst Ming-Chi Kuo — who has a pretty good record with Apple predictions — has predicted that the headset might actually use two M1 processors for extra power, while others have suggested that it could use the even more powerful M1 Pro or Max (which would be kind of awesome). It's likely that the headset will include a variety of sensors for tracking the movement of your head and your eyes while wearing it, but it's also been suggested that the headset may be able to track the movement of hands and fingers as well, so that you can interact with the virtual world that you see on the display.

Estimates about the price of the headset are less clear, though. Some rumours put it as high as $3,000, which would very much position the headset as a tool for power users in fields such as 3D graphics or engineering, who can also afford the high-end Mac Studio. Other estimates say that the price could be as low as $1,000, which would make it much more of a consumer-oriented device, for

A headset is sometimes called an HMD – head mounted device – as it covers the user's entire head.

Image rights: Hewlett Parkard.

## THROUGH THE LOOKING GLASS

And then there's the other VR product... The MR headset we've focused on here is likely to arrive towards the end of 2022 but, looking further ahead, it's also thought that Apple is developing a set of Apple Glasses as well. The Apple Glasses are expected to be more like the ill-fated Google Glass, which had a brief moment of fame – or infamy – almost a decade ago (and resulted in the wearers being dubbed "Glassholes").

The Apple Glasses will be more like a conventional pair of sunglasses or reading glasses, allowing you to see through the lenses, and also to retain full peripheral vision so that you can still see what's going on. However, the lenses will also be able to display computer graphics and other information, in order to create an "augmented reality" that enhances the world you can see around you. But shrinking a full-size headset down to the size of a small set of glasses is no easy task, and it's unlikely that the Apple Glasses will be launched before 2025 or even later.

Apple's VR device should look more like a conventional pair of glasses, like these Spectacles by Snap.

games, video and other forms of entertainment. However, it's hard to see how a headset that contains two 8K displays and two M1 chips could be produced for that kind of price, let alone sold at a profit.

### THE VISION THING

So what is Apple's vision for how this headset could be used? Sometimes referred to as an "AR headset" (augmented reality) or a "VR headset" (virtual reality), it now seems that the rumour mill is settling on the term "MR" or "mixed reality", which really just means that the headset will be able to switch between AR and VR for tasks.

Apple has long been interested in AR, which combines the real world that we see around us with digital info of some kind. The cameras used in early iPhone models helped to create an interest in AR, with some early AR apps that could examine the buildings or location around you, and then superimpose helpful information on the screen about restaurants, hotels, or tourist spots.

However, it was the arrival of Pokémon Go in 2016 that really put AR on the map, displaying the real-world scene around you with the addition of a cute computer-generated Pokémon that you could go chasing after. Apple launched its ARKit programming system the following year as part of iOS 11, and there are now many AR apps that enable you to experiment with decorating your home by placing computer-generated images of furniture on the screen of your iPhone or iPad, or checking out a new pair of glasses superimposed over your face. Engineering and design is an important area for AR too, enabling engineers and architects to add computer-generated imagery of new buildings and structures to the scene around them. And, of course, there are AR games aplenty, with Pokémon still going strong and an updated version of Angry Birds that lets you chuck the little feathered critters around your own home.

Virtual reality is different. Most modern computer games with 3D graphics, such as World Of Warcraft, exist in their own VR world that is self-contained and entirely separate from the "real" world. Apple has never shown much interest in VR — it's never been very interested in gaming, and VR was often simply thought of as a form of gaming tech. Of course, the headlines these days are full of the "metaverse", which goes beyond gaming to create a wider digital universe that encompasses business, entertainment, and social media. That's why Facebook is so interested in the metaverse, and also the reason why Apple needs to show that it has its own vision for AR/VR, in order to prevent Mark Zuckerberg from crowning himself King Of The Metaverse.

**CLIFF JOSEPH**

### KEY FACT

Facebook's current Oculus Quest 2 is relatively affordable, with prices starting at just $299. However, its twin displays only have a resolution of 1832x1920 for each eye. That's far lower than the 8K displays (7680x4320) we expect to see in Apple's headset, and Apple's M1 processor should give it a bit more horsepower for high-end graphics too.

Image rights: Snap Inc.

ISSUE 195
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21 JUN
2022

# Amazing projects

## for your Mac, iPhone and iPad

**› Your Apple devices can do incredible things – here's how to make the most of them**

## ALSO INSIDE...

## The ultimate iPad buyer's guide

How to choose the right Apple tablet for your needs: from the entry-level iPad to the powerhouse iPad Pro

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Discover some great ways to use Shortcuts on your Mac

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*Contents subject to change*


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