



REVIEWED: iPhone SE

BEST PHONE OF 2013, UPDATED FOR TODAY

Macworld

MAY 2016

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iPAD PRO REVIEW

How does the 9.7-inch Pro stack up to the big version?

I was one of the **1** in **5**
Children in America who
STRUGGLE WITH HUNGER
join me and help put an
End to childhood hunger.

Viola Davis



**HUNGER IS
ALL OF US**

HELP UNDO CHILDHOOD HUNGER. GO TO HUNGERIS.ORG

THE
SAFeway
FOUNDATION

The *Hunger Is* campaign is a collaboration between The Safeway Foundation and the Entertainment Industry Foundation to raise awareness and improve the health of hungry children.

EIF
ENTERTAINMENT
INDUSTRY FOUNDATION

The Safeway Foundation and the Entertainment Industry Foundation are 501(c)(3) tax-exempt organizations. Photo by: Nigel Parry



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Siri for Mac reportedly coming this fall, at long last

Apple might make its virtual assistant one of the flagship features in OS X 10.12.

BY CAITLIN MCGARRY

Apple put Siri, its voice-activated personal assistant, in the iPhone, iPad, Apple Watch, and Apple TV, but not the Mac. I assumed the company realized that people talking to their computers would be rage-inducing to those around them, but OS X has had dictation features for a while, and Apple has actually been testing Siri on the Mac for the last four years.

The feature is almost ready to go, 9to5Mac reported recently (go.macworld.com/9to5siriosx), and will be announced at the annual Worldwide Developers Conference as part of OS X 10.12 in June. The next version of the Mac operating system is likely to get a public release this fall.

So how will Siri on the Mac work? Kind of like Spotlight search, in that a

Siri icon will sit in your menu bar until you need to use it. Click it, and a transparent overlay will pop up in the top right of your screen with the same colorful waves you see on your iPhone screen, which indicates that Siri can hear you speaking. If your Mac is plugged in, you'll be able to say "Hey, Siri" and get a response without clicking.

It's unclear exactly why Apple waited so long to bring Siri to OS X, but according to 9to5Mac, the company may not have had a good idea of what it would be useful for (I'm still skeptical, to be honest), or what the interface should look like. Those problems have reportedly been resolved.

Why this matters: Some Mac users have been waiting for years—since Mountain Lion (go.macworld.com/mountainlion)—for Apple to put Siri in OS X. I don't get the appeal, but I'm open to the idea if Siri proves to be incredibly useful on the Mac. ■



Apple shuts down first-ever ransomware attack against Mac users

The ransomware was seeded inside a legitimate BitTorrent application called Transmission.

BY JEREMY KIRK



With the help of security researchers, Apple recently quickly blocked a cyberattack aimed at infecting Mac users with file-encrypting malware known as ransomware.

The incident is believed to be the first Apple-focused attack using ransomware (go.macworld.com/5ransomware), which typically targets computers running Windows.

Victims of ransomware are asked to pay a fee, usually in bitcoin, to get access to the decryption key to recover their files.

Security company Palo Alto Networks wrote that it found the “KeRanger” ransomware wrapped into Transmission, which is a free Mac BitTorrent client.

Transmission warned on its website (transmissionbt.com) that people who downloaded the 2.90 version of the client “should immediately upgrade to 2.92.”

SNEAKING PAST THE GATEKEEPER

It was unclear how the attackers managed to upload a tampered version of Transmission to the application’s website. But compromising legitimate applications is a commonly used method.

“It’s possible that Transmission’s official website was compromised and the files were replaced by

re-compiled malicious versions, but we can’t confirm how this infection occurred,” Palo Alto Networks wrote on its blog (go.macworld.com/transmissioninfected).

The tainted Transmission version was signed with a legitimate Apple developer’s certificate. If a Mac user’s security settings are set to allow

downloads from identified Apple developers, the person may not see a warning from Apple’s Gatekeeper (support.apple.com/en-au/HT202491) that the application could be dangerous. Security researcher Patrick Wardle of Synack has previously disclosed flaws in Gatekeeper (go.macworld.com/gatekflaws) that can lead to malicious code being installed from seemingly legitimate sources.

Apple revoked the certificate after being notified, Palo Alto wrote. The

THE INCIDENT IS BELIEVED TO BE THE FIRST APPLE-FOCUSED ATTACK USING RANSOMWARE, WHICH TYPICALLY TARGETS COMPUTERS RUNNING WINDOWS.

company has also updated its XProtect antivirus engine.

After it is installed on a system, KeRanger waits three days before connecting to a remote command-and-control server using the Tor system. It is coded to encrypt more than 300 types of files.

The ransom is 1 bitcoin, or about \$404.

RANSOMWARE IS HARD TO CATCH

There are few defenses against ransomware. Antivirus programs often do not catch it since the attackers frequently make modifications to fool security software. The best method is to ensure files are regularly backed up (go.macworld.com/macbackup) and that the backup system is isolated (go.macworld.com/whycrashplan) in a way to protect it from being infected as well.

Disturbingly, KeRanger appears to also try to encrypt files on Apple's Time Machine, its consumer backup drive, Palo Alto wrote.

Ransomware schemes have been around for more than a decade, but over the last few years have spiked.

At first the attacks struck consumer computers, with the aim of extracting a few hundred dollars. But it appears attackers are targeting companies and organizations that may pay a much larger ransom to avoid disruption.

Recently, a Los Angeles hospital said it paid (go.macworld.com/hospital-pays17k) a \$17,000 ransom after saying it was the quickest, most effective way to restore its systems. The ransomware had affected its electronic medical records.

Although OS X's share of the desktop computing market is much lower than Microsoft's, cyberattackers have been showing increasing interest in it. But so far, ransomware hasn't been a problem, although some researchers have created proof-of-concept file-encrypting malware for Macs.

RANSOMWARE SCHEMES HAVE BEEN AROUND FOR MORE THAN A DECADE, BUT OVER THE LAST FEW YEARS HAVE SPIKED.

Last November, Brazilian security researcher Rafael Salema Marques published a video (youtu.be/9nJv_PN2m1Y) showing how he coded ransomware for the Mac in a couple of days. He didn't release the source code.

Also, OS X security expert Pedro Vilaca posted proof-of-concept code on GitHub (github.com/gdbinit/gopher) for Mac ransomware he wrote, another experiment showing how simple it would be for attackers to target the platform. ■

This is **Richard**. He knows it's his job to teach his son **Scotty** what this whole gaming thing is about. The age rating helps him **pick the right games**, but being a good dad means he always wants to know more.

That's exactly what the **ESRB's rating summaries** are for.

Search for a game's rating summary at **ESRB.org**.

Rich H.
Lafayette, IN



ENTERTAINMENT SOFTWARE
RATING BOARD





12 Apple TV games worth buying a gamepad for

BY ANDREW HAYWARD

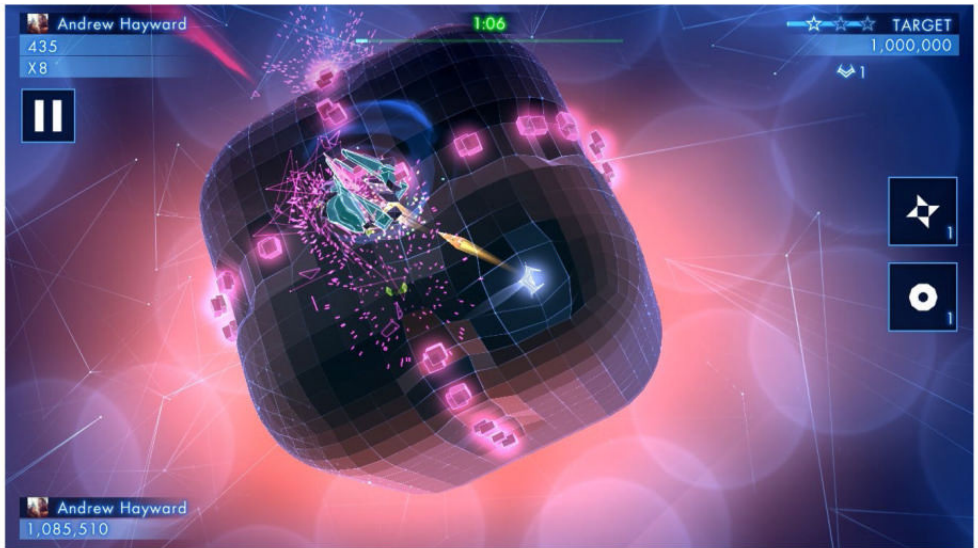
New games come out pretty frequently for the Apple TV, and while there are thankfully more games that work well with the Siri Remote, there are also many that just cry out for a dedicated gamepad. Many of these are console favorites—or console-inspired games—that just aren't meant for a small touchpad, and a gamepad goes a long way toward making your Apple TV feel like a proper gaming machine.

Included here are 12 of our favorite Apple TV games that are best experienced with a gamepad, but we're not claiming that each individual game warrants an investment in extra hardware. Rather, collectively, they show how much widespread benefit you'll get from a controller,

and why it's a crucial pickup if you have plenty of Apple TV couch gaming in your future. And if you're looking for MFi (Made for iOS) gamepad recommendations, we have those as well (go.macworld.com/gamepads).



XENOWERK is an arcade-style game built for analog sticks



1 Geometry Wars 3: Dimensions Evolved

Activision's Geometry Wars is one of the greatest dual analog stick showcases ever created, delivering effortlessly (and endlessly) amusing arcade shooting with one stick for movement and the other for firing. Sadly, it doesn't convert too well to the Siri Remote: Automating firing makes it more manageable, but the tiny touchpad makes movement feel too fidgety.

Add in a gamepad, however, and Geometry Wars 3: Dimensions Evolved (\$10; go.macworld.com/GeometryWars3) is every bit as brilliant as it is on Xbox and other consoles, with precise and challenging combat that will keep you coming back to improve your high scores. And Dimensions Evolved is absolutely packed with content, including a campaign and the classic arcade modes of earlier entries.

2 Zen Pinball

Why would video game pinball need a full gamepad? Zen Pinball (free; go.macworld.com/zenpinball) is worth experiencing either way, but swiping the Siri Remote's touchpad just doesn't give you that satisfying click of frantically jamming a paddle button. Grab a gamepad and you can flick the triggers to bat the digital ball around the dozens of available boards.

Zen Pinball is excellent on the iPhone and iPad, and it's even better on the Apple TV, with the same large library of original and licensed tables available to purchase. You get one table free, with others—including many Marvel, Star Wars, and South Park ones—sold for \$2 apiece with unlimited play. Buttons just feel a lot more responsive here than Siri Remote swipes.





3 Octodad: Dadliest Catch

Octodad: Dadliest Catch (\$5; go.macworld.com/octodad) is like nothing you've ever played before, in part because it's a game about hiding out in suburbia as an octopus amidst an unaware human family. It's also unique because to nail that "simulation," the developers made the game intentionally cumbersome, which is a very tricky approach for a game you're meant to enjoy.

While solidly playable with the Siri Remote, Octodad is a lot more fun with a gamepad, as it removes the frustration of needing to switch between upper tentacles (for grabbing things) and lower ones (for walking). Octodad is worth experiencing on any device you have, including an iPhone or iPad, but this former console game really shines on a big screen with a gamepad.

4

Modern Combat 5: Blackout

Spend a couple minutes with Modern Combat 5: Blackout (free; go.macworld.com/modcom5) using a Siri Remote and you'll quickly learn that they really, really aren't meant to be together. Gameloft's first-person shooter automates player movement when using the Siri Remote, but the resulting experience is incredibly awkward and fumbly, and really not worth the hassle.

Luckily, a gamepad solves all problems here: Modern Combat 5 emulates the Call of Duty console game template, and it feels right at home with analog sticks and triggers. The quick-hit missions are solid fun, and the multiplayer combat is a delight if you can find enough players to face off against. And it's free, albeit with an energy system and paid perks to contend with.





5 Transistor

Transistor (\$10; go.macworld.com/transistor) was one of the first big games available for the Apple TV, and it's clear that a lot of work went into making it fit on the Siri Remote. Through some clever streamlining and configuring, it's relatively easy to experience this dazzling sci-fi adventure with just the Siri Remote, although jamming a lot of commands onto the tiny device can make things feel cramped.

And that's where a gamepad provides some welcome breathing room. Transistor was originally designed for a proper controller, and with it, you'll have sharper control of heroine Red and be more comfortably able to interact with and explore the city. It's not only a big-screen showcase, but also a nicely meaty quest, so this is one well worth enjoying with a gamepad.

6 Real Racing 3

Real Racing 3 (free; go.macworld.com/realracing3) is the best simulation-style racing game on iOS, and it's much the same on the Apple TV, delivering loads of licensed cars and numerous real-life tracks to zip around—and it looks really sharp on the big screen. The Siri Remote's tilt controls work solidly for steering, and if you're only playing casually, it'll do the trick.

Switching to a gamepad makes it feel much more like a console-like simulation, however, offering more precise steering and better control over acceleration and braking. Real Racing 3 scales well between those two experiences, but it's especially great with a gamepad, and really gives the Apple TV some console gaming cred in the process.





7 Disney Infinity: 3.0 Edition

This one requires some explanation (go.macworld.com/disneyvsskylanders): You'll need the Disney Infinity: 3.0 Edition starter pack (go.macworld.com/disneyinfinity) to play the full game, and it actually comes with the great SteelSeries Nimbus controller. It's also priced at \$80 as of this writing, but the gamepad itself would be \$50. So what do you get?

Well, you get a full-fledged *Star Wars* console game, along with two smart chip-equipped figurines and a Bluetooth base that pulls those characters into the game. You can also add on new *Star Wars*, Marvel, and Disney adventures, and use a wide array of Infinity figurines in the Toy Box mode to create and share your own little games and worlds. It's a big, exciting game, and well worth the investment if you love Disney's myriad properties. And if you're planning on buying the Nimbus anyway, this is a perfect way to do so.

8 Oceanhorn

Meanwhile, if you want a game that looks and plays like a big console adventure, but lacks the heft, extra plastic, and big price tag of something like Disney Infinity, give a strong look to Oceanhorn (\$9; go.macworld.com/oceanhorn). This iOS original is strongly modeled after Nintendo's Legend of Zelda series, but the action role-player deftly avoids feeling like a half-hearted clone.

The Siri Remote's touchpad isn't the best option for 3D character movement, as it can feel a bit confined, although Oceanhorn does a fair job of making this adventure playable with your thumb alone. Switch to a gamepad, however, and Oceanhorn better resembles the classic games it emulates, giving you precise control of your hero on land and at sea.





9

Skylanders Superchargers

The most ideal way to play Skylanders Superchargers (free; go.macworld.com/skylanders) is to buy the starter kit, which sells for \$50 to \$75 (go.macworld.com/skylanderstarter) and comes with a couple of smart toys, a Bluetooth portal, and a small gamepad that only works with Skylanders. But if you already have an Apple TV gamepad—and/or you don't want all that expense and plastic—you can just download the app and buy the content within.

The full Superchargers game is sold as a \$20 in-app purchase, and that gets you a full-fledged console action game, complete with on-foot beat-'em-up action and various vehicle missions that let you race and fly. And the free initial download lets you try out the game before you consider shelling out for more. Like Disney Infinity, it offers up a fun, kid-friendly adventure and really makes your little set-top box seem like a proper game console.

10 AG Drive

Many iOS games have tried to replicate the intense fun of anti-gravity racing classics like F-Zero and Wipeout, but AG Drive (\$4; go.macworld.com/agdrive) is the only one that deserves to be mentioned in the same breath as those greats—and it's on the Apple TV, as well. It looks fantastic and has thumping techno beats to match, and like Real Racing 3, there's a precision upgrade to using a gamepad.

AG Drive has you hold the Siri Remote sideways and keep your thumb on the touchpad, sliding in either direction to whip around the wild curves. This works well enough, but using an analog stick makes steering feel so much smoother and gives you more command on the track. And AG Drive isn't an easy game, so every little bit of added control helps.





11 DuckTales: Remastered

DuckTales is a proper old-school game from the 8-bit era, which means it doesn't really have a use for analog sticks and trigger buttons—but even a relatively simplistic 2D platformer isn't best experienced with the Siri Remote. It's solid enough, with the touchpad used for movement and all other actions mapped to the play/pause button, but that scheme sacrifices some fluidity of movement and action.

Meanwhile, a gamepad has a directional pad and at least a couple of dedicated buttons for jumping and using Scrooge McDuck's cane as a pogo stick or weapon, which make this updated classic a lot more enjoyable. And DuckTales: Remastered (\$5; go.macworld.com/ducktales) has crisp, redone graphics that look really superb on a TV screen.

12 Xenowerk

Like Geometry Wars 3, Xenowerk (go.macworld.com/xenowerk; \$2) is an arcade-style game built for analog sticks, as you guide a gun-toting heroine through alien-infested facilities. But unlike Geometry Wars 3, I wouldn't try to play Xenowerk with the Siri Remote for more than a couple minutes. The scheme is very awkward, and it honestly takes away from the tension and excitement of the game.

Luckily, this is a very fun little shooter to experience if you do have a gamepad, as the twin-stick controls work well for movement and blasting, and there's a visceral thrill to the combat. It can be repetitive, but it's very easy to get your couple bucks of fun out of Xenowerk.





MAC GEMS ARE APPS THAT OFFER
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SOFTWARE

AIRFOIL 5: AUDIO UTILITY PUMPS UP THE VOLUME WITH BLUETOOTH SUPPORT, AIRFOIL SATELLITE, AND MORE

BY GLENN FLEISHMAN

AIRFOIL 5 IS A DIGITAL VENTRILOQUIST that lets you throw your computer's "voice." The latest version builds on the foundation of letting you take a single app's audio output and route it to one or more places to play it back. It's something like iTunes multi-"speaker" support but with much more control, and it works with any application, all while not relying entirely on AirPlay.

AIRFOIL 5



PRICE WHEN RATED

\$29 new, \$15 upgrade (free to purchasers of previous version after Nov. 1, 2015)

COMPANY

Rogue Amoeba Software

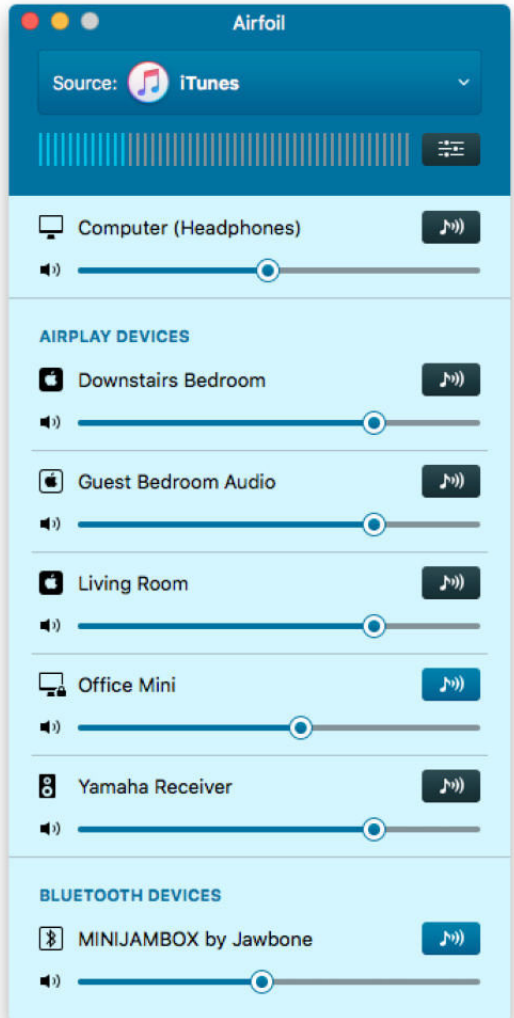
Airfoil (rogueamoeba.com/airfoil/mac) can target any AirPlay destination, as it's long been able to. In my house, that includes an older and current-generation Apple TV, a Yamaha stereo receiver during a brief period of rudimentary but functional AirPlay support, two computers via Airfoil Satellite (rogueamoeba.com/airfoil/#satellite) (also discussed in this review), and a Jawbone Mini Jambox (via Bluetooth). Airfoil Satellite can stream to iOS and Windows 10 devices and Airfoil Speakers in Android. That's a lot of options.

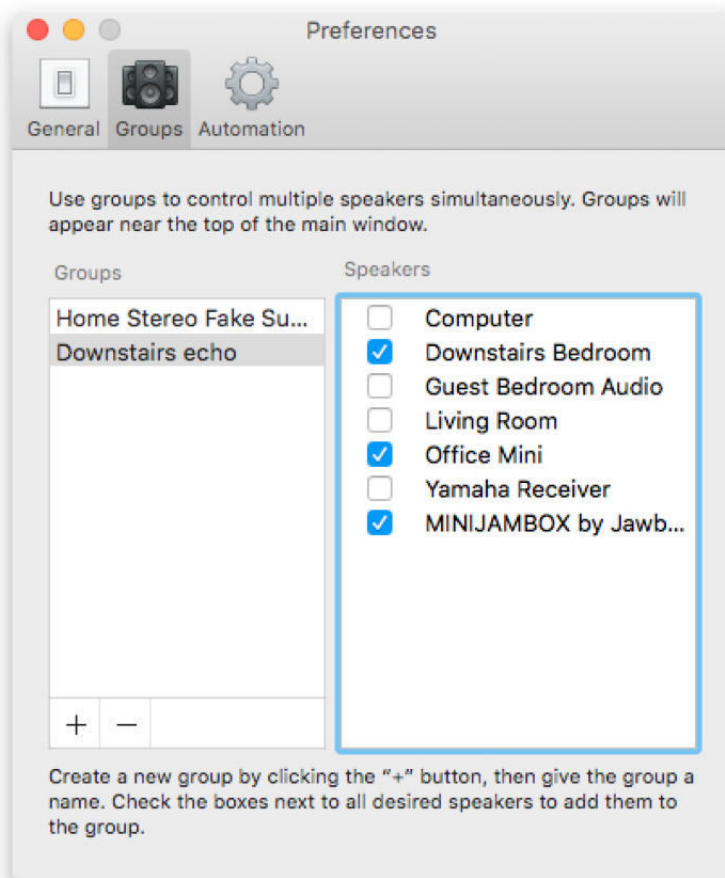
Airfoil 5 runs on a Mac, or run the similarly updated Airfoil 3 on Windows, (rogueamoeba.com/airfoil/windows) and can dynamically turn on and off available audio output devices. Every speaker has a separate volume control that lets you balance sound. You can also lock these adjustments to system output, so you can raise and lower all volume by adjusting your OS X's control.

The input to Airfoil 5 can be any running app or, amusingly, any input source. If you've got a microphone, you could use Airfoil 5 as part of a public address system (albeit with some delay). You can also select System Output, the aggregate total of all sound in OS X that's directed to the default audio device, and then distribute that among other speakers and systems.

The secret sauce in Airfoil is how it keeps everything in sync: It tries to determine and match latency—the delay between data being sent and played as sound—to the most-lagging device. This generally works, even as it introduces a slight delay whenever you press play,

AIRFOIL OFFERS SEPARATE volume controls for every device available as an output source.





THE NEW GROUPS option lets you create collections of speaker combinations you use routinely.

pause, or switch audio inputs. It's worth it to avoid the weird echo effect that otherwise can occur. In testing, it worked like a charm, creating rich, broad sound. Airfoil routes stereo sound by design, although encoded audio (like Dolby Digital) may make it through intact from a source to a destination capable of decoding and playing it as intended. Rogue Amoeba tells me that they don't test for this feature or support it, so don't rely on it.

If you have trouble with a given output's sync, a new Advanced Speaker Options dialog (in the Speakers menu) lets you tweak the delay.

That menu also lets you hide speakers that you never want to use with Airfoil, reducing clutter in your output display.

MORE NEW FEATURES

Bluetooth support is new and extremely welcome, given all the Bluetooth-connected speaker and headphone options now available.

Any device paired with your Mac can be selected in any combination.

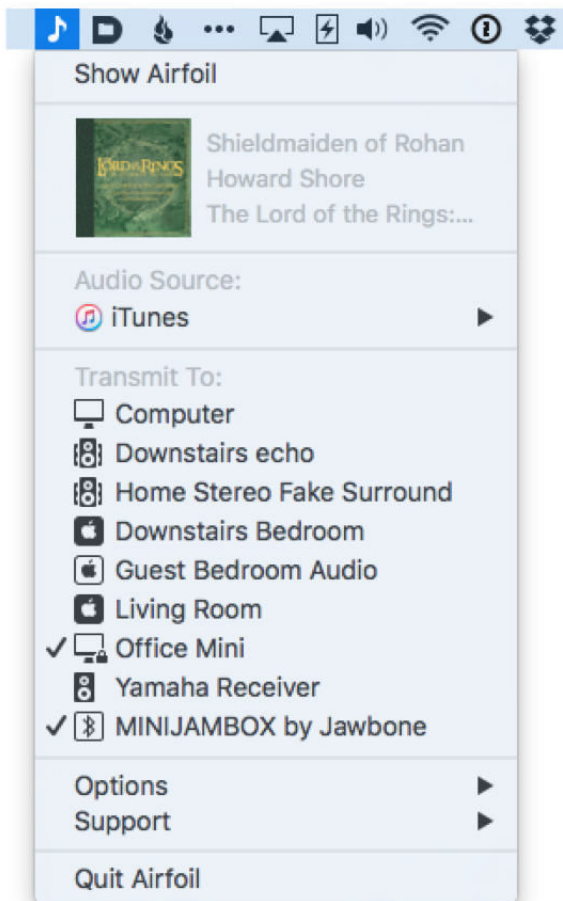
Another useful new feature is Audio Groups, set in Preferences, which lets you name a set of speakers making it just a single click to swap among preset collections.

Yet another set of new features is also in Preferences in the Automation tab. Airfoil can be set to automatically begin transmitting to a selected set of speakers when it's launched, so this is a way to set up your preferences without clicking a thing with Airfoil as an OS X startup item, or whenever you launch Airfoil. The same tab also has an automatic disconnect option, which releases remote speakers that can only accept one source at a time after Airfoil has been transmitting silence for a set period of time, which defaults to 5 minutes.

AIRFOIL SATELLITE

Airfoil works with a refreshed version of its remote speaker software, now called Airfoil Satellite. It's available at no additional cost for OS X, Windows, and iOS. Airfoil Satellite can remotely have Airfoil send it audio if it's not selected on the host machine, and

A NEW SYSTEM menu provides access to almost all of Airfoil 5's features without switching to the main app.



can even remotely control Airfoil with essentially a duplicate of its main control interface. (Both options can be disabled in Airfoil's preferences, too, if you're in a more complicated network environment.)

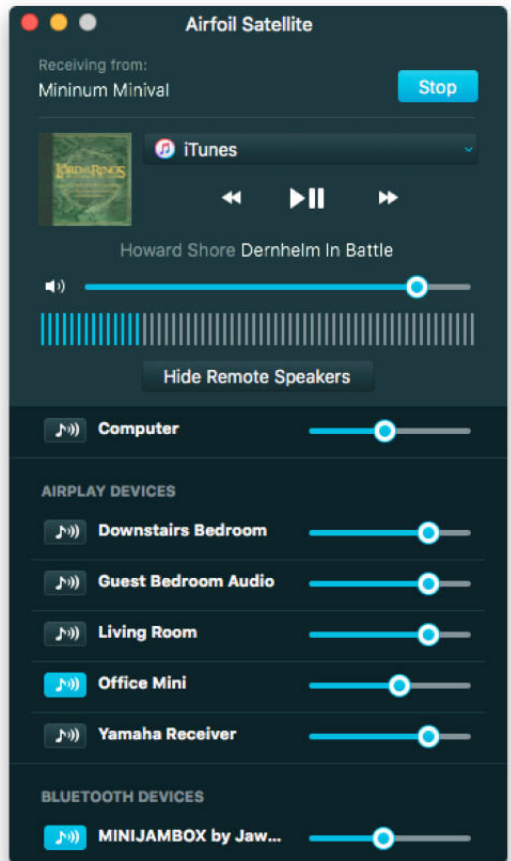
With iTunes as the audio source, Airfoil Satellite can pause and resume playback, as well as jump back and forth a track. It also displays the now-playing track information.

Airfoil Satellite only works with the latest version of Airfoil. The older Airfoil Speakers software remains available for Android and Linux, and is also free, but can't take advantage of the newer remote control and remote activation options.

Airfoil 5 is \$29, or \$40 in a Mac and Windows bundle. Purchasers of Airfoil 4 starting November 1, 2015, receive a free upgrade; contact Rogue Amoeba if email didn't arrive with details. Owners of that release from before that date can pay \$15 for the full version. A free trial download works identically to the paid version for 10 minutes and then overlays noise.

BOTTOM LINE

As a user of Airfoil for many years, this latest release's new skin certainly makes it seem more up to date, but all the changes beneath the sleeker look make it more useful with a greater variety of audio devices and situations. ■



AIRFOIL SATELLITE REFRESHES earlier software that turns a computer or iOS device into a remote speaker for Airfoil.

SOFTWARE

PRO PLAYER 2: ROLL OUT THE RED CARPET FOR THIS PRO QUICKTIME PLAYER

BY J.R. BOOKWALTER

BELIEVE IT OR NOT, QuickTime turns 25 years old this year. The multimedia software that debuted with System Software 6 (!) soon became the de facto method for playing video on the Mac, eventually introducing an optional Pro upgrade that allowed users to perform basic edits, merge files, and export to supported video codecs.

With the release of Mac OS X Snow Leopard and QuickTime X in 2009, Apple went back to basics, stripping QuickTime Player X of most pro-centric functionality. Over time, some features like Trim would return, but in the eyes of power users, the damage was done.

There's been no shortage of powerful media players ever since, many capable of playing just about any file you can throw at it, even without proper codecs installed. But these alternatives are often designed for power users, rather than content creators who require a fast, lightweight player for reviewing files.

EDITOR'S BEST FRIEND

Pro Player 2 (digital-heaven.co.uk/pro-player) falls into the latter category, but it's important to note up front that this application is designed strictly for playback of MOV, MP4, and audio files, rather



PRO PLAYER 2.1



PRICE WHEN RATED

\$30

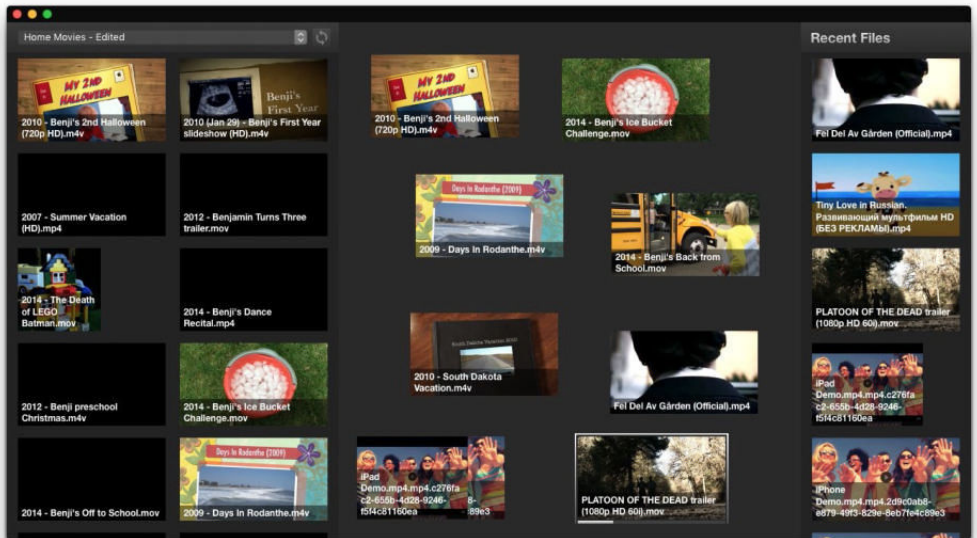
than the “everything but the kitchen sink” approach of open-source players like VLC (videolan.org/vlc). There are no editing tools or MPEG support, and if you’re hoping to rip Blu-rays to MKV and watch on the Mac, you’ll be disappointed.

On the other hand, if you want to view ProRes or MXF video files with a large timecode display and buttons that don’t obscure the picture, control playback using keyboard commands, or listen to specific tracks on multichannel audio files, this is most definitely the software you’re looking for. (Note: MXF playback requires Final Cut Pro, Motion, or Compressor installed on the same system.)

In addition to playback, the app includes a browser where users can add frequently used folders or access recently opened files, along with a faux “desktop” for previewing multiple files, complete with interactive thumbnails you can scrub through. But it’s not cheap: After a brief flirtation as a free app with optional Plus Pack upgrade to unlock higher-end features, Pro Player 2 now costs a flat \$30 starting with version 2.1.

PRO PLAYER 2 isn’t the cheapest QuickTime player around, but it’s definitely one of the few designed with pro content creators in mind.



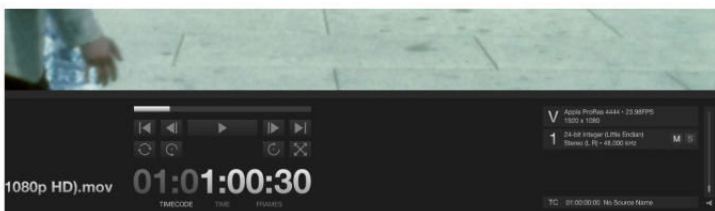


KEYBOARD JOCKEY

That's just as well, because the app is designed as a companion to traditional content creation software like Final Cut Pro or After Effects, which cater to a non-consumer audience. Instead of waiting for heavy-weight applications to launch just to take a quick spin through a Quick-Time file, Pro Player 2 allows you to dive in immediately with few compromises.

Compared to other media player apps, Pro Player 2 can be controlled almost entirely from the keyboard. For starters, the player implements familiar “JKL” shortcuts found on most editing software, used to play backward, pause, or play forward; each additional press shuttles play-

IN ADDITION TO PLAYBACK, Pro Player 2 includes a browser for managing favorite folders, recent files, and more.



KEYBOARD SHORTCUTS are prevalent in Pro Player 2, which can also be used to key in specific timecode numbers like a pro.

back faster in the desired direction, or you also can click and hold the mouse to shuttle or jog.

In addition to playback, there are keyboard shortcuts for toggling between Browser and Player modes, full-screen viewing (with or without on-screen controls), and the ability to mark in/out points to play or locate specific sections of a video; clicking the current time display can also be used to precisely jump to a specific frame. The M key mutes all audio playback, and motion graphics designers can even toggle alpha channel display.

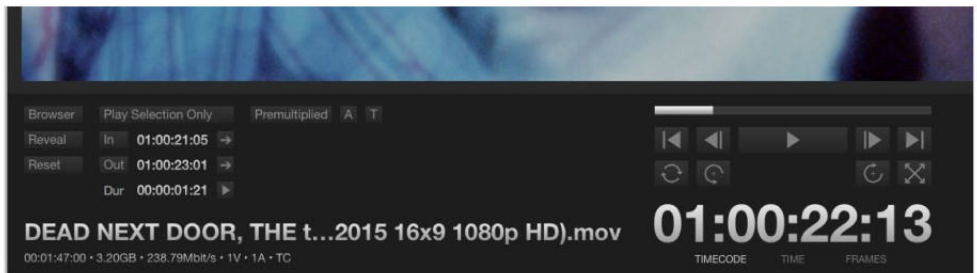
FAMILIAR UI

Like QuickTime Player X, Pro Player uses a dark background theme to keep the focus on the content being played. But that's where the similarity ends: The user interface has the familiar look and feel of video editing software, with selection, playback, and audio controls left, right, and center, respectively. If the open file contains a timecode track, Pro Player displays it by default, but users can also view in absolute time or frames.

Pro Player shows the filename in the lower left corner, complete with runtime, file size, data rate, and number of tracks. Video format, frame rate, and size information is displayed at right, along with accompanying audio format, track arrangement, and bitrate; for multitrack QuickTime files, individual audio tracks can be muted or soloed, with a single fader to control volume.

Aside from a slightly more affordable price, there's really only one

NEED TO PLAY a specific section of a video repeatedly? Mark in and out points to limit Pro Player 2 to only that selection.



thing Pro Player 2 needs: Support for video playback to external devices from manufacturers like Blackmagic and Matrox. I have two such pieces of Thunderbolt hardware attached to my 15-inch MacBook Pro with Retina Display, but neither outputs audio or video to my connected monitors. This means playback is only as accurate as an attached Mac display, which isn't recommended for color or other quality control, particularly with older interlaced video files.

BOTTOM LINE

As a companion app for content creators, Pro Player 2 is well worth the asking price, but the lack of external display hardware support keeps it from being as "pro" as it could be. ■



AUDIO OR VIDEO files with multiple channels can be independently muted or soloed for previewing specific tracks.



HARDWARE

SATECHI USB-C PASS THROUGH HUB: TINY, POWERFUL EXTENSION FOR ON-THE-GO

BY GLENN FLEISHMAN

MACBOOK DOCKS have started to arrive a year after Apple introduced its single-port USB-C–based ultra-portable MacBook (go.macworld.com/usbcmacbook), and the Satechi Type-C Pass Through USB Hub (go.macworld.com/satechihub) with USB-C Charging Port is one that will fit a lot of users' needs at an affordable price. Of special interest is its inclusion of USB-C pass-through power, something that's popping up all over suddenly, letting you continue to keep a MacBook charged while using external ports.

The dock is tiny and handsome in brushed aluminum available in

SATECHI TYPE-C PASS THROUGH USB HUB WITH USB-C CHARGING PORT



PRICE WHEN RATED

\$45

COMPANY

Satechi

colors matching Apple's three MacBook options, gold, silver, and space gray. For Mac users, the Satechi logo and branding on the top may be too much, but you're in luck! Because USB-C is reversible, you can use the dock, which has an integral connector, either sticking out past the back of the Mac (showing the branding) or tucked in toward the trackpad end, unadorned. The USB-C connection can't be used for data, only for power.

The dock has four ports in addition to the USB-C pass-through: two USB 3.0 Type-A jacks, one full-size SD card slot, and a microSD slot. In a previous model (go.macworld.com/satechiusbchub) of the Satechi dock that lacks the power pass-through, the memory card slots couldn't be used simultaneously. While Satechi says that's the case with this dock as well, I was able to mount both card types and copy between them.

The microSD slot is awkward, though that's true of all similar slots. The card has to be inserted flipped (logo on bottom) when the dock's logo is facing up. I inserted it the wrong way around and had to use a pair of pliers to remove it very carefully. I'd recommend using an SD card adapter (which ships with most microSD cards) unless you can train yourself. The SD slot is also slightly awkward: You only need to push the card in a very small amount, just enough to cover the exposed pins.

I tested the Type-A ports with a reference external bus-powered USB 3.0 2TB WD My Passport Ultra hard drive, and it



performed at the same rate as direct USB-C connection, 90MBps for both read and write. This is about 20 percent off its maximum speed according to sites that benchmarked the drive. (The MacBook's internal SSD measured 120MBps for writes and 300MBps for reads.)

The SD card slots fared just as poorly as they do using Apple's USB-C to Type-A adapter and a generic card reader: with a "45MBps" UHS-I Class 10 SD Card, about 33MBps write speed and 37MBps read rate and about 12MBps write and 36MBps read for an identically rated microSD card. (The MacBook with a card reader sometimes reached 14MBps for writes, but that's negligibly different and wasn't consistently repeatable.)



BOTTOM LINE

Weighing in at 0.64 ounce and measuring 3.31 by 1.06 by 0.3 inches (plus a projecting USB-C jack), and costing just \$45, the dock is a perfect lightweight counterpart to the MacBook that replaces two to four other adapters and devices, most of which won't pass USB-C power. ■

KANEX DIGITAL AUDIO ADAPTER FOR APPLE TV: COMES TO THE RESCUE OF APPLE TV OWNERS

BY GLENN FLEISHMAN

WHEN THE FOURTH-GENERATION Apple TV (go.macworld.com/appletv4) came out, the complaint I expected least was the lack of an audio output port (go.macworld.com/appletvoutput). That's because I own a relatively new receiver that handled HDMI audio and video switching; while not rare, it's nowhere near common. Many people rely on older receivers that can't switch HDMI and extract the audio, use standalone powered speakers that require a separate audio signal, or prefer receivers that omit digital video functions.

Kanex has a solution for everyone who fits that description, the Digital Audio Adapter for Apple TV (kanex.com/hdmi-optical-audio). The only downside is its \$60 price tag—although far cheaper than

KANEX DIGITAL AUDIO ADAPTER FOR APPLE TV



AT A GLANCE

Handy adapter that passes through video over HDMI from an Apple TV while splitting out audio in both stereo and surround-sound formats.

PROS

- Well-produced audio splitter
- Decodes 5.1 and 7.1 surround sound
- Has both 3.5mm audio and SPDIF optical audio interfaces

CONS

- Relatively expensive

PRICE

\$60

COMPANY

Kanex



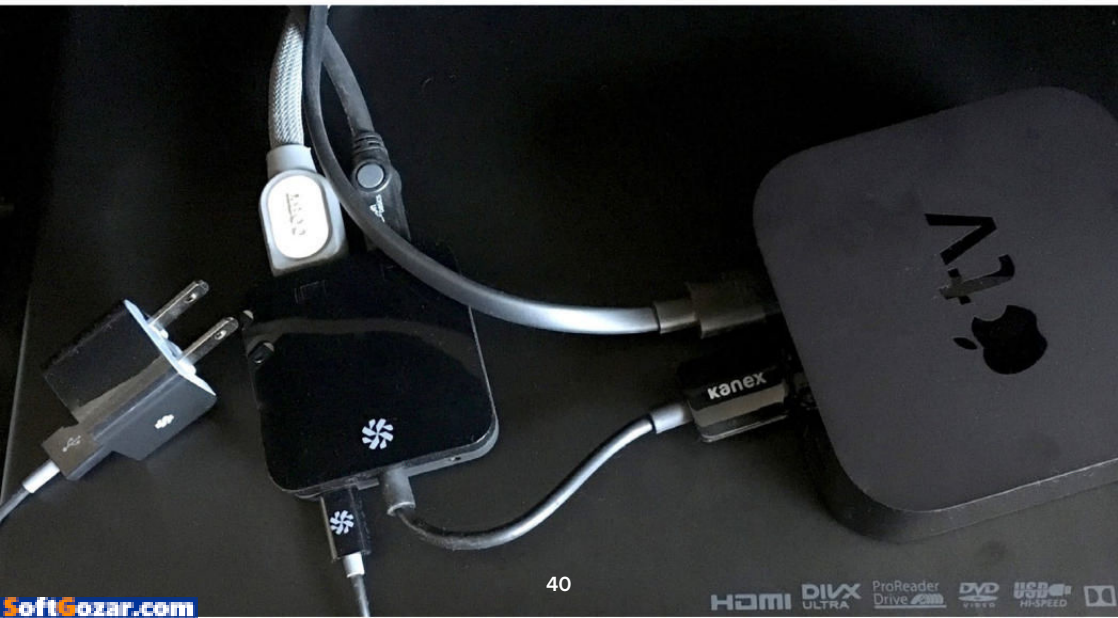
getting an HDMI-switching receiver.

The Kanex adapter is, in essence, an HDMI shunt: It has a short integral HDMI cable to plug into an Apple TV (or a Roku, an Amazon Fire TV, or other devices), and an HDMI port to accept a cable that connects to a TV set. You can plug it inline with an existing setup. It supports HDMI 1.4 and ostensibly passes through every high-definition format and resolution currently available. It has both S/PDIF optical digital and 3.5mm stereo audio ports, which make it universally compatible.

The drawback is that it requires power, although it includes a necessary micro-USB cable and compact AC adapter that has the same size and shape as one for an iPhone. You wind up moving around a fair amount of gear to get it hooked in, but that's a one-time issue. In my case, I needed to feed the power cord out the back of my A/V cabinet, then slightly disassemble the receiver setup to route the TOSlink optical digital cable into the S/PDIF.

The S/PDIF support includes both 5.1 and 7.1 surround sound; Kanex says any uncompressed, encoded format will work, like DTS Digital and Dolby Digital. I tested this with an iTunes-purchased movie and a fourth-generation Apple TV, dutifully listening closely to each of my five speak-

THE KANEX (at left) is compact, sleek, and well designed, but it's got lots of jacks and plugs to manage.





ers and subwoofers, and heard crisply delineated separation.

The 3.5mm stereo output can be used with powered speakers or as an input to a receiver that lacks S/PDIF support, but it even works with headphones. There's no volume control in the Kanex, and the Apple TV's volume controls only the HDMI endpoint (like a TV set), so if you want to control playback level you need headphones with an inline slider or dial. (Also make sure to set the Apple TV's audio settings to stereo if you had it on surround sound, otherwise it won't decode properly.)

Also note that the Kanex can only have one type of audio jack connected at once. That shouldn't be a problem for most people. But if you swap among sources, be sure to unplug it from its power cable, remove one audio and replace the other, then plug the power adapter back in. With two plugs jacked in, Kanex says you'll encounter problems.

Kanex notes, I suppose for completeness, that its adapter doesn't block AirPlay mirroring to the Apple TV. It's really a straight HDMI pass-through, so it shouldn't, but I expect some buyers want additional reassurance.

The \$60 price tag is the only thing that's going to be a sticking point for some. You can get splitters with some part or all of the functionality for a third to half as much. But those come from no-brand-name compa-

THERE'S NO VOLUME CONTROL IN THE KANEX, AND THE APPLE TV'S VOLUME CONTROLS ONLY THE HDMI ENDPOINT (LIKE A TV SET), SO IF YOU WANT TO CONTROL PLAYBACK LEVEL YOU NEED HEADPHONES WITH AN INLINE SLIDER OR DIAL.

nies, have few online reviews, and typically have an industrial look to them compared to the sleek shiny black finish of the Kanex model. These off-brand items also occupy about four to six times the volume of the Kanex, which is quite compact.

BOTTOM LINE

Kanex's Digital Audio Adapter for Apple TV is elegant and comes with the backing of its reputation for managing technical support and manufacturing problems. For a plug-and-forget-it device you want to work reliably, the extra price likely doesn't work out to extra in the long term. ■



Hot Stuff

What We're
Raving About
This Month

ALTWORK DESK

The \$5,900 Altwork desk (altwork.com) is no ordinary workstation. It's an entirely configurable workstation on wheels that actually has you lay down on your back to work. OK, you're probably wondering: Who wants to lay down while they're working? I felt the same, until I sat down at Altwork's desk, pressed a button, and let the machine gently recline until I was on my back with a monitor above my head. I'm not gonna lie: It feels like being the captain of a spaceship. But aside from the novelty, the ability to recline and still see a display and have easy access to a keyboard and mouse (thanks to an adjustable desk and magnets) is essential for people who have experienced injury or live with chronic pain. —**CAITLIN MCGARRY**

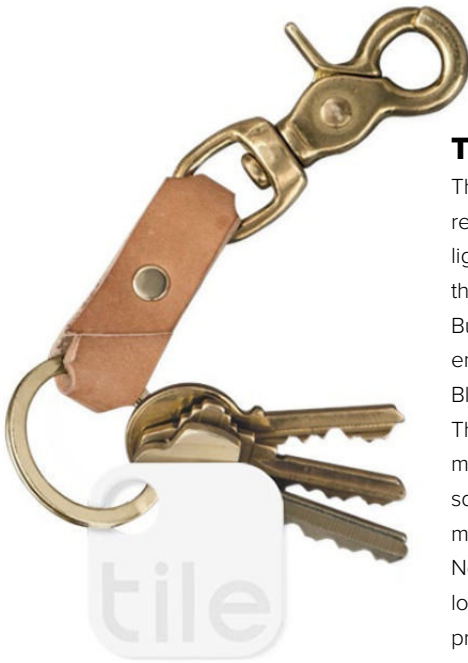


Hot Stuff



OWC USB-C DOCK

OWC's \$159 USB-C Dock (owcdigital.com) neatly extends a 12-inch MacBook to act like a desktop. The OWC dock has a panoply of networking and peripheral ports that come close to matching what you find on a current Mac mini model (it's shy one monitor-capable outlet compared to the mini). Plug a short USB-C male-to-male charging-compatible cable from a MacBook to the appropriately labeled port on the AC-powered dock, and the world opens up to you. The dock works in OS X and with Windows 10 via Boot Camp. —GLENN FLEISHMAN



TILE

The new Apple TV has the most elegant remote control I've ever used. It's thin. It's light. It has cool-to-the-touch aluminum on the back, and smooth glass on the front. But man, is it easy to lose. That's how I ended up with Tile (thetileapp.com), a \$25 Bluetooth tracker with a built-in speaker . There are other Bluetooth trackers on the market, but I was drawn to Tile because its square, 37mm frame almost perfectly matches the 38mm-wide Apple TV remote. Now whenever the Apple TV remote gets lost, I can open an app on my iPhone and press a button to have the remote make a sound. It's seamless. —JARED NEWMAN



Chewable coffee and the Apple Watch: Getting started with basic biohacking

I thought hacking your brain seemed extreme. Then I tried Go Cubes.

BY CAITLIN MCGARRY

The breakout star of South by Southwest Interactive wasn't a social app or a piece of hardware. It was chewable coffee. Little red and yellow packages of caffeine-packed Go Cubes were all over downtown Austin.

But these weird little latte-flavored gummies aren't just a novelty snack, or even an easy way to mainline caffeine without having to pee every five minutes. Chewing Go Cubes is the first step on the road to biohacking, or quantifying your body and your brain to achieve maximum productivity.

Most people wouldn't consider wearing a fitness band that tells you when you've walked 10,000 steps in a day, using an app to track your workouts, or logging your food intake forms of biohacking, which, to be honest, sounds like a weird, extreme practice for people who believe we're closer than ever to The Singularity. But if you quantify your body's inputs, like food, and its outputs, like exercise, then you're well on your way to being a biohacker. At least that's what Nootrobox cofounder Geoff Woo told me.

Nootrobox makes nootropics, or powdered supplements designed to boost your brainpower, but those products have limited appeal for regular folks. So the company just released Go Cubes, a more mainstream way to hack your brain, and

there's a reason its supply sold out in three days on Amazon Launchpad (go.macworld.com/gocubesamazon). You can buy a box of 20 four-packs for \$59, or slightly cheaper on the Nootrobox website (gocub.es), and they come in three flavors: mocha, pure drip, and latte. (To be honest, I could not taste the difference between the three.)

A CHEWABLE BUZZ

Go Cubes are almost exactly as





strange as you might imagine. The texture is like a Sour Patch Kid, though a cube tastes almost exactly like a latte. There is a bitter, sour coffee center, which some people don't taste and others (like myself) taste quite acutely. Unlike liquid coffee, the cubes deliver a concentrated dose of caffeine in a pocket-friendly form. There's a little more to the cubes than just efficient caffeine delivery, which I'll dive into in a minute. But first, I had to test these things—and pass them out to unsuspecting coworkers—to see their effects on a range of people.

The benefit of eating a Go Cube

instead of just drinking a cup of coffee is the precise hit of caffeine you get: 50mg of caffeine in each chewable. Two cubes equals one cup of coffee. You will definitely feel that concentrated dose, in my experience. On an empty stomach, two Go Cubes made me feel like a jittery mess, where a regular cup of coffee does not have this effect. When I hit my 3:00 p.m. post-lunch slump, two cubes turned me into a machine of productivity, churning out stories and emails like it's my job (and it is, so that worked out).

Some of my human guinea pigs—my friends and colleagues—couldn't

NOOTROBOX COFOUNDERS Michael Brandt, left, and Geoffrey Woo, right, believe the human body is the next computing platform.

get past the intense coffee taste, which is much stronger than in a typical cup of the stuff. Others find the effect to be too much like, well, crack.

I cajoled my coworker Leah Yamshon into trying the cubes while we were in Austin. She was tired and needed an afternoon pick-me-up. She gamely ate two cubes, but the look of disgust on her face made me burst out laughing. However, she admitted later that the cubes got the job done—she powered through her afternoon with ease.

“I’d rather have an afternoon iced coffee,” she said.

HACKING YOUR BRAIN

So they’re not for everyone. But there’s a little more to Go Cubes than a convenient caffeine hit. Nootrobox CEO Woo says nootropics—even the mainstream chewable variety like his coffee cubes—are designed to modulate input and output. So the company put L-theanine, an amino acid found in tea, in the cubes to pump up its cognitive effects. Scientific studies have shown that caffeine and L-theanine together (go.macworld.com/caffeinetheanine) improve your attention while lessening the coffee jitters.

That all sounds legit, but more studies need to be done—and that’s where the self-tracking devices we

carry with us all the time, like our phones, fitness bands, and smart-watches, come in.

“The biggest knock on the supplements industry is ‘can you actually show effects?’” Woo says. “It’s very hard to track these things because it’s expensive to do clinical trials and you’re not getting enough granular data. With Apple Watch, we have supercomputers on our wrists. We’re not only innovating on the best inputs on the human body, but we can actually capture it.”

Especially if the Apple Watch one day has skin-capacitive sensors that can sense things like cortisol levels in your sweat.

Capturing that data isn’t easy now, but that will soon change, Woo says.

He compares the biohackers of today with the Homebrew Computer Club of the 1970s, which is now recognized for seeing then what few people could—that personal computers would change the world. It was in this club that the kernel of what would become the Apple I was



THE APPLE WATCH could play a key role in measuring biohacking efforts.

formed. So in a few years, biohacking won't be such a crazy idea, Woo says. Forget virtual and augmented reality: The next platform of computing is us.

"We're adjacent to Soylent. They're about replacing food. We're about performance enhancement," Woo says. "Food is one of the primary inputs we put into our system. If we think about the human body as a platform, that correlates with outputs. We have information about how inputs affect outputs, so let's be rigorous about maximizing outputs with inputs."

I haven't tried Nootrobox's other nootropic stacks, which are designed to activate different parts of your brain during the day, but after experiencing

the Go Cubes' effects, biohacking doesn't seem like such a bizarre concept. Woo called me in the midst of a 36-hour fast, which all of Nootrobox's employees collectively do each week to "generate new brain cells," he tells me. I love food and have never fasted in my life, but by the end of our conversation I was trying to figure out if I could fit it into my schedule. I want new brain cells, too. I don't know if chewable coffee, nootropics, and an Apple Watch can turn me into the optimum version of myself, but it certainly is seductive to think so. ■

**FORGET VIRTUAL AND
AUGMENTED REALITY:
THE NEXT PLATFORM
OF COMPUTING IS US.**

NOVELS ROCK 'N' ROLL
STAND-UP COMEDY JAZZ
VIDEO GAMES MOVIES
COMIC BOOKS TALK RADIO

EVERY NEW ART FORM HAS ITS FIGHT FOR FREE SPEECH.

OUR TIME IS NOW
FIGHT FOR YOUR VIDEO GAMES

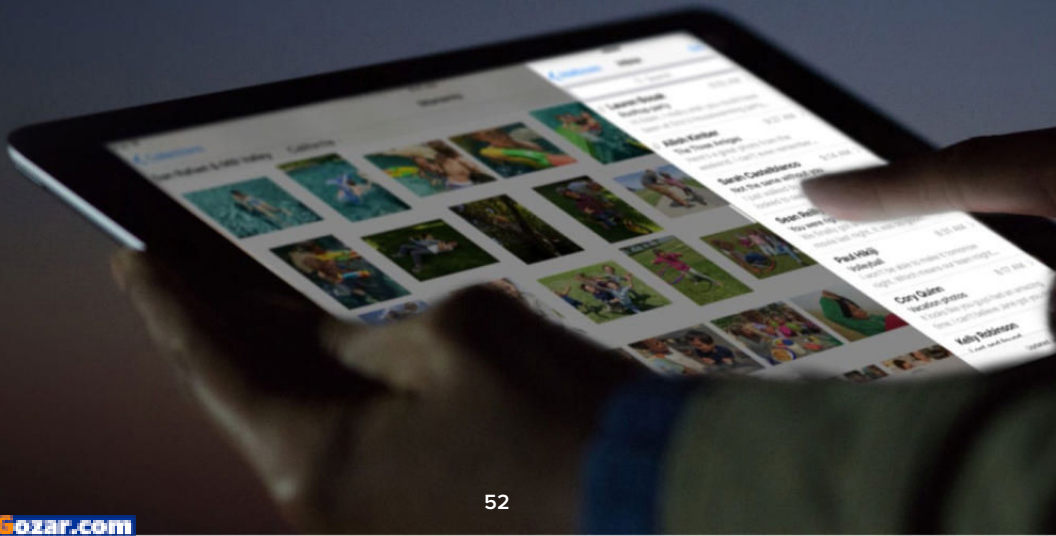


V I D E O G A M E V O T E R S . O R G

iOS 9.3: The new Night Shift feature probably won't help you sleep better

There's no solid evidence that mobile screens' color temperature is the real culprit to keeping you up at night.

BY GLENN FLEISHMAN



The Night Shift feature in iOS 9.3 lets you adjust the color temperature of the display, shifting away from blue spectrums of light, in the putative interest of improving sleep. But Apple makes no promises. On its website, Apple notes, “Many studies have shown that exposure to bright blue light in the evening can affect your circadian rhythms and make it harder to fall asleep.” In iOS, the feature is explained with “This may help you get a better night’s sleep.”

In fact, this feature likely will have little or no effect on most people. Apple hasn’t misrepresented any of the science, but clinical work done to date doesn’t point a finger right at mobile devices or even larger displays. Night Shift also can’t remove enough blue to make a difference if that color is the culprit. And blue light may not be the trigger it’s been identified as. While researchers haven’t tested the new feature yet, several factors add up to at best a placebo effect and a reminder to power yourself down.

Apple might have done better to create something called Night Safe, an option that would countdown the moments until you’d be locked out of your hardware till morning except for emergencies or going through a tedious override process—a Do Not Disturb on reverse steroids.

Jumping to the chase, if you’re ready to crash: If you want to sleep better, the almost universal suggestion from both sleep and lighting

researchers is to turn off any screen two hours before your planned bedtime. Some also recommend using warmer lighting throughout your house in sources you use in the later evening.

WHY DO YOU FEEL BLUE?

Our circadian rhythm, a biological cycle, regulates how our body functions and repairs itself, although it’s commonly associated with sleep and wakefulness. It’s roughly 24 hours for human beings, and our bodies use a number of cues to keep us on track. Getting out of sync can contribute to illness (go.macworld.com/cancercircadian), obesity, diabetes, and even an increased risk of cancer (medscape.com/view/article/707460).

Researchers have conducted studies over decades that isolate people from external cues to see what a natural cycle looks like, and how we sleep and wake. More recently, a lot of clinical and survey

work has looked into measuring the effect of lighting: cycles of light and dark, light temperature, brightness, and other factors.

A discovery about 20 years ago helped make a connection, the limits of which are still being felt out. Many animals, including humans, produce the hormone melatonin across the circadian cycle, but it's suppressed to low levels during natural waking hours. As it gets dark, that suppression abates, and melatonin production helps us become sleepy and remain asleep. (It has many other attributes, too, and other hormones have cycles that seem less tied to sleep.)

Melatonin production starts ramping up about two hours before your body's natural sleep cycle would start—often described in research as about 10 p.m. in local time. And it's produced in the largest quantities in the wee hours, wherever in the world you are, right in the middle of what your body perceives as the darkest time of day.

If you want to sleep better, the almost universal suggestion from both sleep and

lighting researchers is to turn off any screen two hours before your planned bedtime.

Since this light receptor type was discovered, scientists have connected in many, many studies not just light and melatonin suppression, but specifically light that's heavy on blue frequencies (go.macworld.com/bluefrequency). Blue light can ostensibly offset the cycle of hormone production by a couple of hours or more. This has led to speculation that staring at television sets, monitors, and mobile displays disrupts or delays sleep. If you have to get up or are woken up at a fixed

NIGHT SHIFT LETS YOU schedule a change in color temperature, but it may not be enough to help with sleep patterns.

Night Shift automatically shifts the colors of your display to the warmer end of the color spectrum after dark. This may help you get a better night's sleep.

Scheduled

From 10:00 PM
To 7:00 AM >

Manually Enable Until Tomorrow

COLOR TEMPERATURE

Less Warm More Warm

Warmer settings may affect the appearance of some onscreen motion.

time, as for most people, this both reduces sleep and throws off the body's endocrine and other systems.

Daylight has a large proportion of short-wavelength light at the blue end of the spectrum (around 460 nanometers). Indoor lightning has been traditionally "warmer," or towards the yellow, longer-wavelength end (about 555nm) or red at the far end (650nm). That's true of fire and most incandescent lighting.

But a shift in lighting over decades has shifted towards cool, "white," or "daylight" illumination, whether incandescent, fluorescent, or LED. While thought of as whiter, they actually produce bluer light, resembling more closely our perception of a sunlit day.

This description of color gets labeled color temperature, and is measured in kelvins (K). On one end of the spectrum, you have red/yellow candlelight at 1,000K, considered very warm; at the other end, pure blue sky is 10,000K, considered very cool.

Most LCD monitors and mobile displays can calibrate against a standard called D65, which centers at 6,500K, fairly blue and fairly cool—it's described as outdoor daylight at noon. Many displays are tuned or default to a higher temperature, though, and are much bluer.

Specific research and reasonable speculation centers around how

predominantly blue light from television sets, computer monitors, laptop displays, and mobile screens might be connected with the increase of a host of ailments in nations in which a large percentage of residents use those technologies before and at bedtime.

Of special interest is the simple lack of sleep. The CDC estimates ([cdc.gov/features/dssleep](https://www.cdc.gov/features/dssleep)) 50 to 70 million U.S.

adults have disorders that prevent them from sleeping sufficiently to be alert, productive, and rested on an average day.

All the discussion of blue light has led to programs and extensions for many computer platforms that attempt to reduce the production of blue light in order to avert circadian rhythm disruption. The f.lux software (justgetflux.com) is a well-known example, available for OS X, Windows, Linux, and rooted Android phones. (It could be installed through a workaround in iOS, until Apple asked f.lux to stop distributing it.)

iOS's Night Shift is just the latest entrant for color-temperature shifting, albeit making it available to roughly

THE CDC ESTIMATES 50 TO 70 MILLION U.S. ADULTS HAVE DISORDERS THAT PREVENT THEM FROM SLEEPING SUFFICIENTLY TO BE ALERT, PRODUCTIVE, AND RESTED ON AN AVERAGE DAY.

500 million devices via iOS 9.3. Only devices released starting in about 2013 have hardware that supports the feature, according to Apple's feature notes.

But the big problem is that there's no solid evidence that mobile screens' color temperature is the real culprit, nor whether devices and monitors can shift enough to matter if they were—or even if blue light on its own is the trigger.

BLUE MEANINGS

While exposure to colors of light has been well researched, it's not entirely clear that merely seeing light heavy in the blue part of the rainbow is the trigger—or at least the sole trigger. It may be that a shift in color in the hours around twilight (go.macworld.com/shiftincolor), which comes with a change from blue to yellow, could be a more significant marker. Blue may be a red herring.

It might also be the intensity of light or the proportion of the visual field it occupies. A large, bright screen that's far away could have as little or the same effect as a small, bright screen close up. Many of the studies until recently used full-room illumination or specifically-tuned light sources (like panels used to treat seasonal affective disorder), and have taken place in highly controlled laboratory environments that block

all other light. Because of the cost and complexity of the experiments, the most rigidly constructed ones often involve only a dozen or so individuals who spend several days under observation.

In terms of size and brightness, it's more likely that an effect on melatonin production would come from adjusting an iPad Pro than an iPhone of any size, due to light and intensity of light produced.

Mariana G. Figueiro, a professor at Rensselaer Polytechnic Institute and the program director of its Lighting Research Center (www.lrc.rpi.edu), says her group has used precise measurements of light sources and displays to calculate predicted effects and performed clinical testing to test outcomes.

She notes there's a huge variation between an iPhone, a tablet, and large-screen televisions. "People tend to have a misconception that because it looks bright, because your visual system is so sensitive, that it is affecting your melatonin," she says. Her work and that of others has shown that you "can still suppress melatonin with a warm color if it's a high light level."

Even what's being displayed matters. Dr. Figueiro says a Facebook page with a white background and mostly text produces more light than the same page viewed with

white on black text.

Although she hasn't tested Night Shift yet, she says that in terms of size and brightness, it's more likely that an effect on melatonin production would come from adjusting an iPad Pro than an iPhone of any size, due to light and intensity of light produced.

But beyond the variation, there's the degree of blue removal. Ray Soneira, the president of Display-Mate, a company that makes video-diagnostic hardware and software, says that Night Shift and related software doesn't turn down blue spectra in the correct range enough, thus not providing assistance even if true.

Via email, Dr. Soneira explains that he feels there's a paucity of "understanding of displays, light spectra, or human color vision" among many researchers in the field that's leading to a mismatch in what's being tested and conclusions reached. As a result, those studies are influencing system design without a firm grounding.

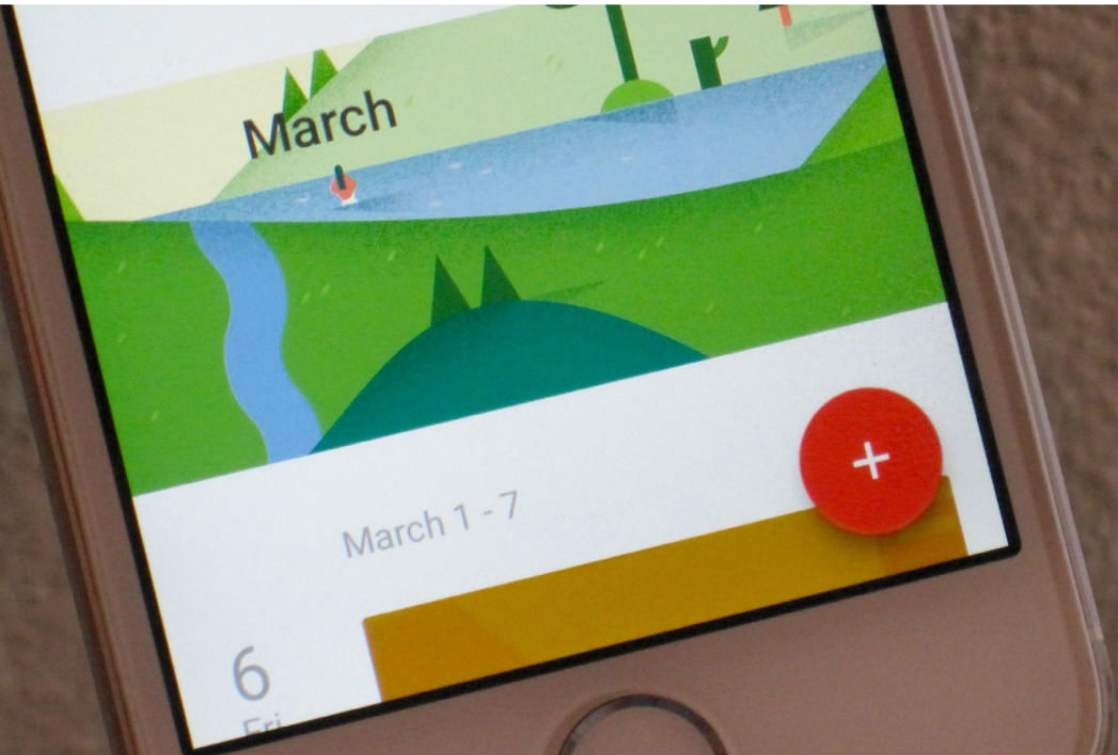
In the case of Night Shift and similar systems, he argues that the blue component would need to be entirely removed or reduced significantly more than the systems offer, which in turn would make the display too yellow for most people. He writes, "Just slightly reducing the blue, which is what most apps do,

won't accomplish much, so the improvements people experience are often mostly due to placebo and their own conscious modification of their behavior in using displays."

In any case, Dr. Figueiro says sleep research shows there's an extremely important and often overlooked factor that requires more discipline than an automatic color-temperature adjustment. "Disruption of sleep is not just melatonin suppression; it's what you're doing to your brain to keep it alert," she says. She recommends turning off all your screens two hours before going to bed. "These programs help, but they don't completely remove the possibility of suppressing melatonin."

But she's not disregarding color as a factor. Instead of focusing on screens, her group is working on an app that would gather information about your light exposure across a day and make recommendations about the best times to get the right light. With remote-controlled, color-variable bulbs from Hue and others, she suggests a future in which this app could change overall lighting to fit your needs, and, just maybe, have a real impact on your sleep. ■

**DR. FIGUEIRO
SUGGESTS TURNING
OFF ALL SCREENS
TWO HOURS BEFORE
GOING TO BED.**



5 of the best Google apps for iOS, and how to use them

Not all Google geeks use Android. Bring popular productivity tools to your iPhone or iPad with these native versions of your favorite apps.

BY MICHAEL ANSALDO

Being an Apple aficionado doesn't mean you have to suppress your Google-geek streak. Google has made many of its popular productivity apps available for iOS, so it's not hard to design your own Android-esque ecosystem (go.macworld.com/dyo-android) on your iPhone or iPad. Here are the five you should start with.

GMAIL

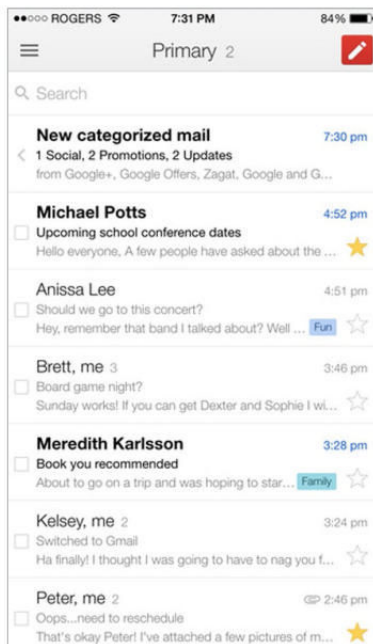
Gmail (go.macworld.com/gmailapp) has more than 900 million users (go.macworld.com/900mgmail), and chances are you're one of them. If so, you know that Apple's mail app doesn't always play nice with Gmail's push feature. A few third-party alternatives promise to smooth out the relationship, but the easiest way to avoid it is to use the official Gmail app.

The app brings the best of Gmail's features to your iPhone or iPad, including multiple-account support, instant push notifications, threaded conversations, and its renowned search capabilities. And archiving, labeling, and deleting is a lot more straightforward than in the swipe-centric mail app.

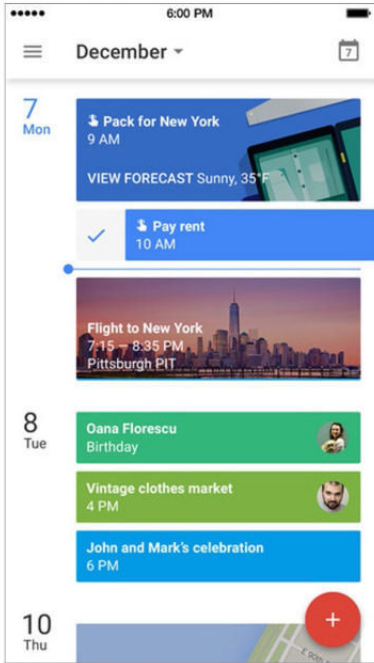
GOOGLE

You're already using Google for all your web searches. Download the talk-instead-of-type app, and you won't have to be envious of your Android friends anymore (we know you are). Just say "OK Google" to find out where the nearest dry

cleaner is or to find out what time your favorite team is playing tonight. Even better, the Google app (go.macworld.com/googleapp) can help you with your productivity by reminding you to call a client or providing the status of your flight. Siri has some competition.



FOR THE MOST
seamless Gmail
experience on iOS,
use the official app.



GOOGLE CALENDAR presents events in a familiar chronological scroll.

GOOGLE CALENDAR

The native iOS calendar will sync with your Google account, but the experience is much better with the official Google Calendar app (go.macworld.com/googlecalapp). The app's default schedule view presents the days in a chronological scroll, which feels much more natural thanks to the many social feeds we thumb through regularly. If you don't like that, you can opt for one-day, three-day, or week-long views. Its

best trick, of course, is automatically detecting events and appointments in your Gmail account and adding them to your docket.

GOOGLE KEEP

Apple's stock Notes app has come a long way from its days as a digital notepad. Recent updates added more text formatting options, check-list creation, the ability to insert attachments into notes, and password protection (go.macworld.com/pwprotection).

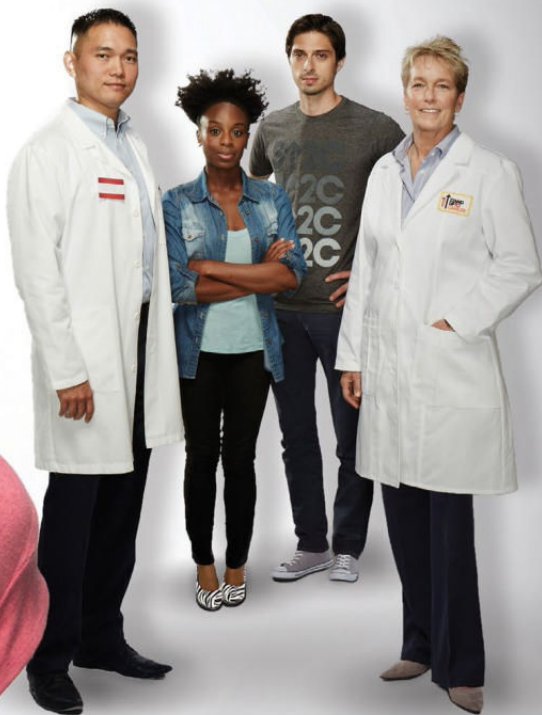
Google Keep (go.macworld.com/googlekeepapp), however, remains the more mature note-taking app. It has all of the above features, plus scanning capabilities, OCR, and time- and location-based reminders. It also supports voice-dictated notes, an essential feature for capturing inspiration on the fly.

GOOGLE AUTHENTICATOR

Two-factor authentication adds a layer of security to your login by requiring information in addition to your password. In the case of your Google account, it requires a one-time verification code, which this app generates. Once you configure Google Authenticator (go.macworld.com/googleauth), it will supply the code even without a network or cellular connection. It also supports multiple accounts. ■

IT'S IMPOSSIBLE
TO BEAT CANCER.

ALONE.



It takes all of us to beat cancer.
Doctors, researchers, volunteers,
and most importantly, people like
you. Join the movement to beat
cancer at StandUp2Cancer.org



♥ CVS Health



SHOPPING LIST APP

ANYLIST: GROCERY APP CROSSES OFF NEARLY EVERYTHING ON OUR SHOPPING LIST

BY J.R. BOOKWALTER

ALTHOUGH MY WIFE LOVES TO BROWSE on her iPhone and iPad, she's old-fashioned when it comes to shopping. Planning weekly meals or making a grocery list is all about pen and paper, no matter how much I try to infuse software into the mix. But her traditional ways may not be long for this world.

ANYLIST 5.2



AT A GLANCE

AnyList is a full-featured grocery shopping list and recipe organizer with lightning-fast cloud sync and cross-platform support.

PROS

- Cross-platform grocery shopping list and recipe manager
- Insanely fast cloud sync
- Easy sharing of lists, recipes

CONS

- No Apple Watch support
- Mac, web apps require annual paid subscription
- Limited database support for department or drug stores

PRICE

Free; in-app purchases available

COMPANY

Purple Cover Inc.

ATTENTION SHOPPERS!

AnyList (anylistapp.com) is a free, universal grocery shopping app offering a built-in database of items for creating multiple lists. Start typing the name of an item, and the app autocompletes each entry to speed up the process. You can even add items by voice with Siri, thanks to a clever feature that checks Reminders for new items at launch, then removes them once imported.

Once an item is in your cart, tap to cross it off the list; another tap restores it for next time. Added items are automatically separated into categories, but can be manually sorted into custom groups. You can mark items as favorites, move or copy between lists, and assign color themes.

AnyList also stores entire recipes, either manually entered or copied and pasted from websites or email. With a single tap, all required ingredients are added to a shopping list, or the complete recipe can be printed or shared via email.

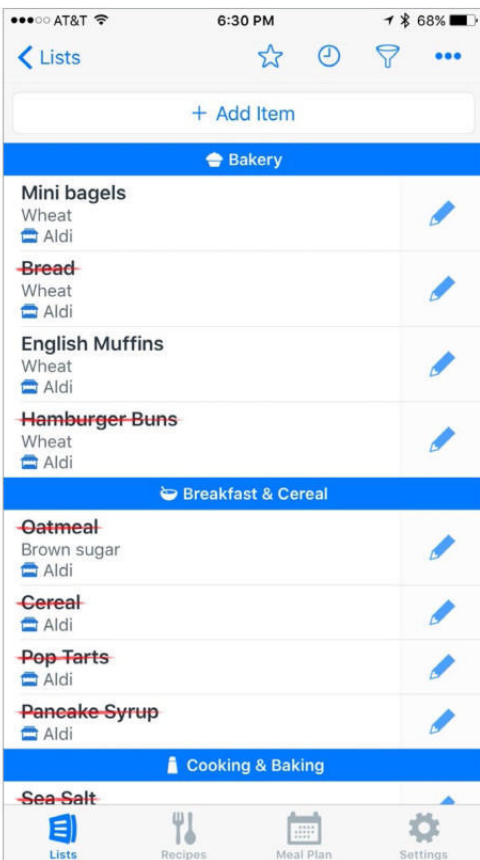
Recipes and individual lists can be shared with others, such as your spouse, roommates, or the entire family. All that's required is an email address, used to sign up for a free account. Everything is securely backed up in the cloud, with freaky fast sync between devices.

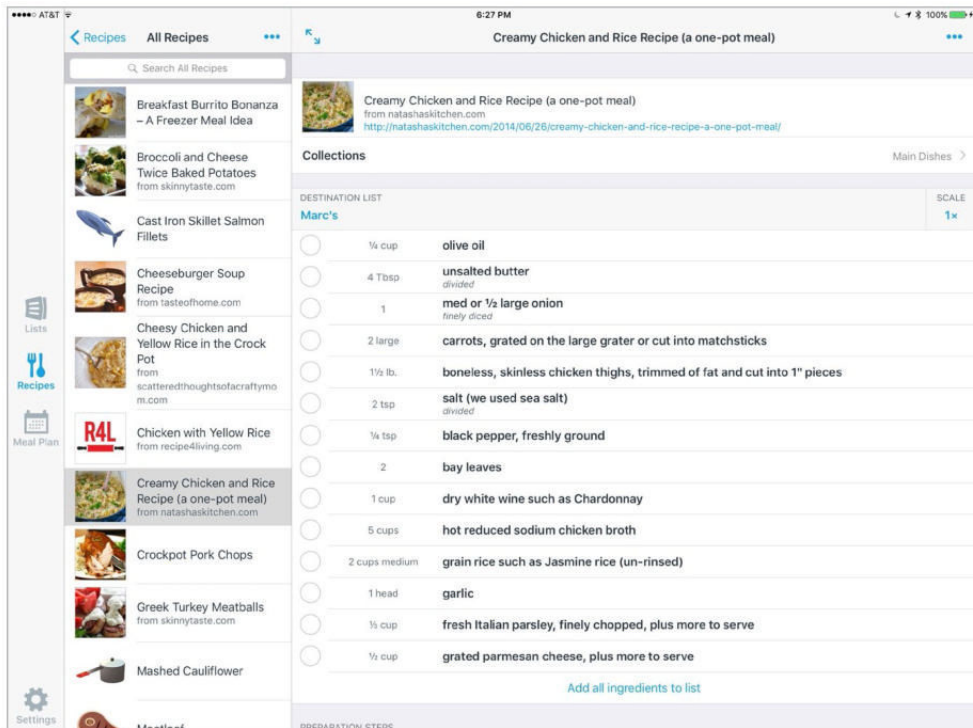
BUFFET OF FEATURES

While the free version offers an impressive array of features, a paid subscription (\$8 for a single user or \$12 for a family per year) really makes AnyList boil. For starters, paid users are able to access accounts from any web browser, or use companion native applications for Mac and Windows.

Subscribing also adds browser extension support for automatically

ITEMS CAN BE checked off your list as they're purchased with a tap, and restored for next time the same way.





importing recipes from popular websites with a click. This feature worked like a charm on SkinnyTaste, The Cozy Apron, Allrecipes, and countless others, breaking down a list of ingredients and preparation steps with a photo of the completed dish. On rare occasions where websites weren't formatted to microdata or hRecipe standards, it was a trivial matter to copy and paste data into the Mac app, which parses an entire block of text into individual steps.

Paid members can also add photos to items, scale recipe ingredient quantities, assign stores to lists, personalize with premium themes, and organize lists into folders. There's even an option to set up location-based reminders, which trigger when you're near a favorite store, but it would be nice if this worked only for lists with unpurchased items.

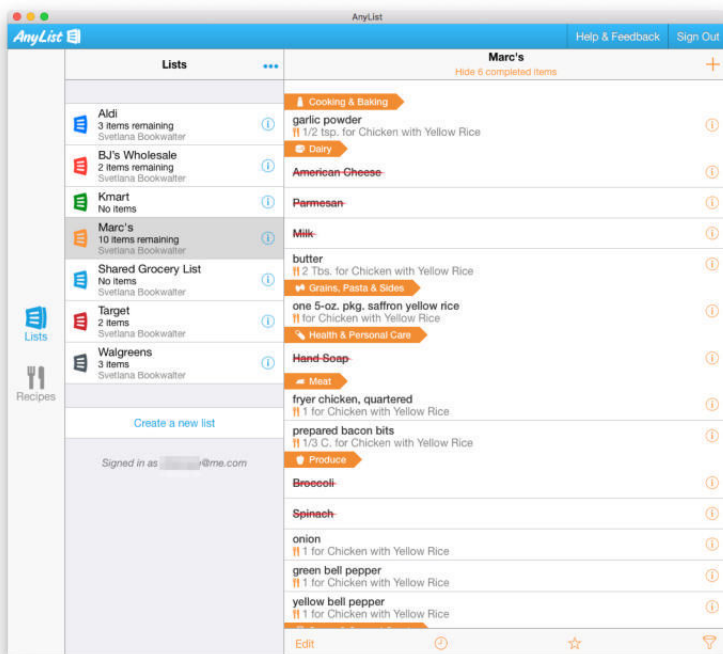
Although AnyList can be used to keep track of any kind of list, it's

ANYLIST IS ALSO a depository for all your favorite recipes, and ingredients can be added to a shopping list in one tap.

best suited to grocery stores; I'd love to see more categories and common items from department and drug stores added to the mix. There's also no companion Apple Watch app, which would make checking off items as they're purchased even more convenient.

BOTTOM LINE

AnyList checks off just about everything you could want in a grocery shopping app, but works best with a paid subscription. ■



AN ANNUAL PAID subscription also adds native Mac and PC applications to the mix for planning shopping trips from the desktop.

TEXT EDITOR

ULYSSES FOR iPhone: ANYTHING BUT A PLAIN TEXT EDITOR

BY MICHAEL SIMON

EVEN BACK WHEN the only way to write on the iPhone was on a skeuomorphic notepad, it was clear that Apple's revolutionary handset was a productivity dynamo. Marker Felt aside, and after just a few minutes with Notes ([go.mac world.com/notesios9](http://go.macworld.com/notesios9)), it wasn't hard to envision a day when a multitude of writing apps would be available to store, save, and share your thoughts.

But I'm not sure even Steve Jobs could have imagined an app like Ulysses (ulyssesapp.com). Already one of the best text editors on the Mac, Ulysses has always lived up its powerful pedigree, with first-class organization, excellent Markdown support and a smart, sophisticated interface that's as adept as it is adaptable. When it came to the iPad last year it brought the same writing and editing experience to iOS, expertly tailoring the mouse-centric experience for touch without losing any of its functionality.

But while the iPad is a natural fit for an app like Ulysses, the iPhone is a trickier proposition. For most full-featured text editors, the iPhone app is a companion, sacrificing features for the sake of an uncluttered workspace. In fact, The Soulmen's previous iPhone effort, Daedalus Touch (daedalusapp.com), was just that: a lesser, retooled Ulysses sidekick designed for simple, on-the-go note-taking.



ULYSSES FOR iPhone



PRICE

\$20 introductory price;
\$25 regular price

COMPANY

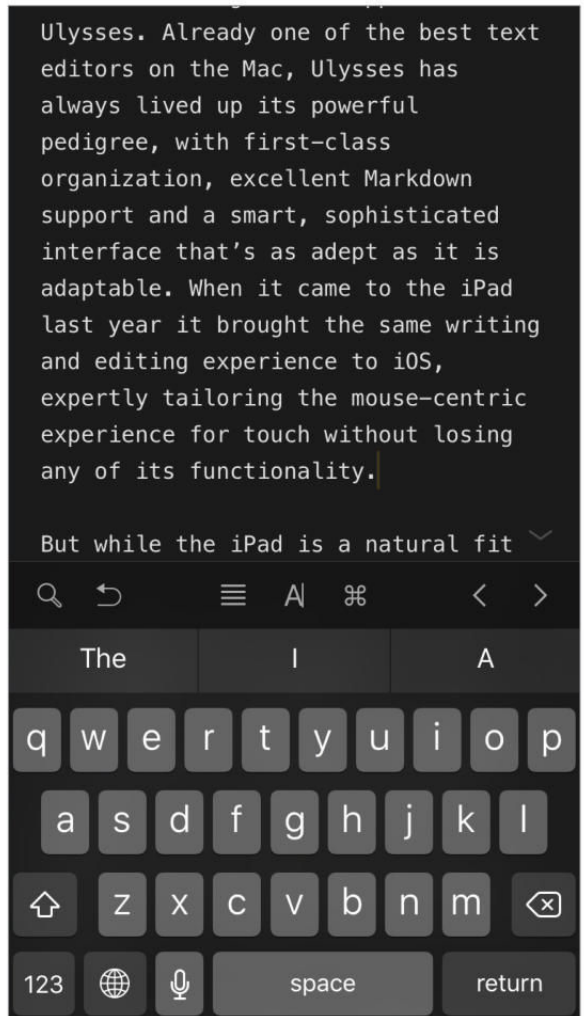
The Soulmen

Ulysses for iPhone (go.macworld.com/ulyssesapp) is anything but watered-down. The universal app is only a companion in the sense that it syncs documents edited on other devices, but it works as well as a standalone app as it does as part of the larger suite (which now also includes an iPad Pro version). With an interface equally suited for long-form pieces and short notes, nothing about it feels underpowered or crippled; if anything it might be the first text editor that successfully brings desktop-level performance to a 5-inch screen.

Users of the Mac or iPad version of Ulysses will instantly be familiar with its multi-paned layout of groups and sheets, but the placement of buttons and menus have been carefully considered for the smaller screen. For example, you'll always find the symbol to create a new group or new document at the bottom of the screen, making it easier to reach with your thumb. And panels can be navigated simply by swiping from the edge of the screen, also helping with one-handed use.

EASY WRITER

But no matter how you hold your phone, Ulysses will deliver a near-perfect writing experience. Its interface is minimal for sure, but you won't have to hunt to find expert features like Markdown shortcuts, special characters and an in-document search bar, thanks to a refined button bar that puts a host of

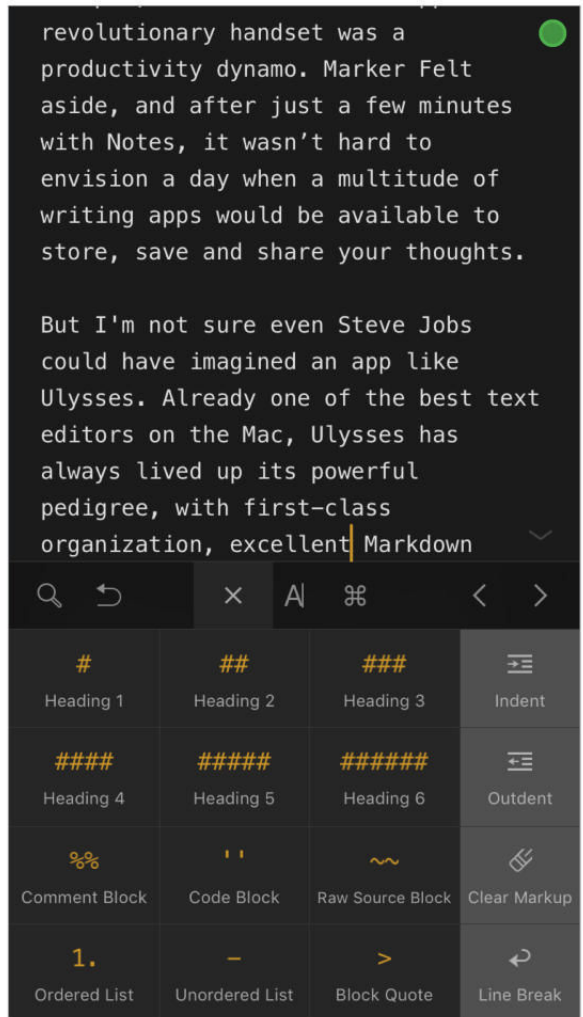


options at your fingertips without a hint of clutter or confusion. Hide the keyboard and you'll see a word/character count, but you can't use it to get stats within a selection of text, a feature that's useful in 1Writer (1writerapp.com) and Pages (apple.com/ios/pages).

Swiping left on the editing window brings up the attachments pane, where you can add keyword filters, set goals, take notes, and attach images, power-user features that make Ulysses feel more like a miniature OS X app than an iOS one. And you can customize it with a dark mode or one of four tasteful themes, with many more available for download in the Ulysses Style Exchange (though you'll need the Mac app to install them).

iCloud keeps documents constantly synced across all three platforms, and you can import files from Dropbox, One Drive Google Drive and a variety of other locations. Those concerned about the reliability of Apple's servers can rest their minds; Ulysses for iPhone utilizes the same local backup system as the Mac and iPad versions, letting you browse previous versions in the event a document reverts to an outdated version (which happened once or twice during testing). Exporting is no slouch either, with settings for HTML, ePub, Medium, and DOCX.

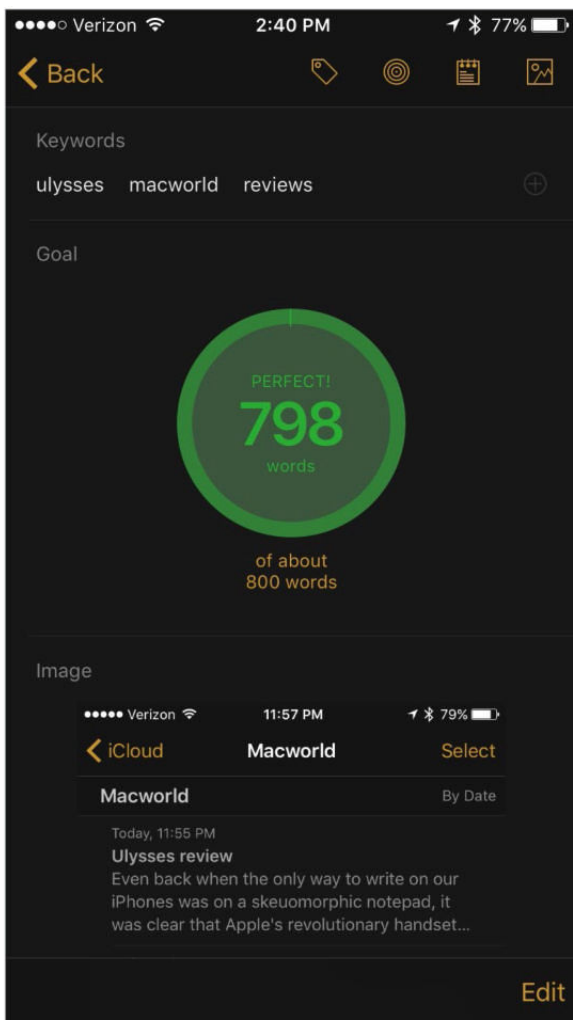
Ulysses is the first text editor that truly seems built for the iPhone 6. It



doesn't need the big screen to operate—and surely iPhone 5 users won't regret the purchase—but Ulysses is right at home on the 4.7- and 5.5-inch models (and takes full advantage of the S's 3D Touch as well). Dedicated users of the iPad app will no doubt find themselves reaching for their tablets far less often, and won't freak out if they forget to pack it. Ulysses is the text editor iPhone users have wanted for years, and like the rest of the suite, it was well worth the wait.

BOTTOM LINE

Everything that makes Ulysses great on the Mac is concentrated in the exquisite iPhone version, so much so that you might actually prefer writing on a five-inch screen. ■



What's new at the App Store



COMPOSER'S SKETCHPAD

We missed the \$3 Composer's Sketchpad (composerssketchpad.com) when it first launched, so the latest update is a chance to correct that oversight. The app lets you jot down musical ideas with your finger—or Apple Pencil, if you have an iPad Pro—and hear them played back using 100 instruments and a percussion set. (Check out this trailer: go.macworld.com/composer-sketchpadtrailer.) The update includes support for multitasking, portrait mode, and other bug fixes.

MLB Manager 2016



Ever want to play video sports games, but without all the button-pushing and quick reactions they usually require? The \$5 MLB Manager 2016 (go.macworld.com/mlbmgr2016) lets you sit back and coach—either take an existing team and guide it through a season, create your own fictional club to test out matchups, or choose a historic team (from 1919, 1939, or 2012)—to play with. (Additional seasons are available for \$1 apiece.)



Divvio

The free Divvio (go.macworld.com/divvio) app lets friends (natch) divvy up bills by tracking group expenses, as well as who paid whom for what. It's ideal for outings, or for tracking bills with your roommates.



parkOmator

parkOmator (go.macworld.com/parkomator) remembers where you park, how long you have left on your meter, and, when it's time to return to your car, tells you the fastest route back. The \$2 app includes Apple Watch support.

Shapr3D



Shapr3D (go.macworld.com/shapr3d) is “a quick but precise way to create 3D models for engineering, design, 3D prints, and more.” Use your Apple Pencil, and developers say the app works as a “state-of-the-art modeler.” Even with just your trusty fingers, the app lets you “explore modeling work on the fly.”

—JOEL MATHIS

Keeping it wireless

This month's roundup features a house monitor that alerts your phone, a mobile EKG monitor on your phone, and an amplifier to get the best sound out of your Apple TV. Plus a smart bluetooth adapter and a tablet table.

BY JOEL MATHIS



TAP NUMBERS TO VIEW PRODUCTS. TAP WEBSITE URLs FOR MORE INFO.



SMART BEAN

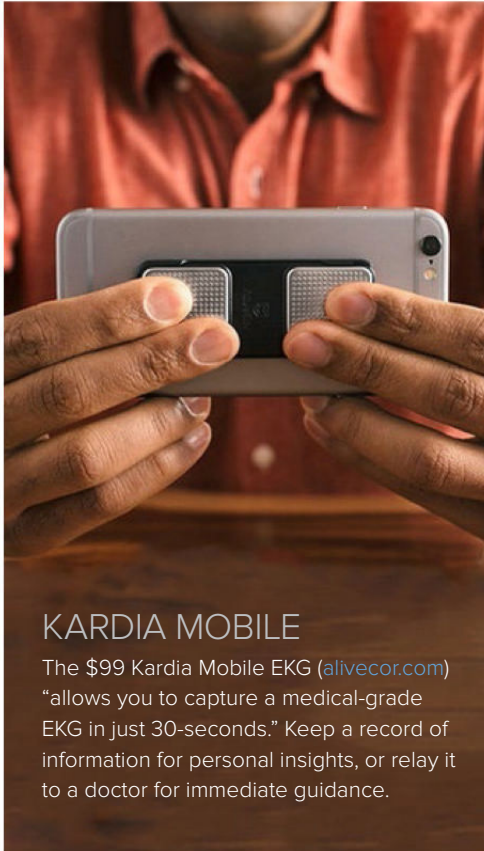
The \$30 Smart Bean (antemobileproducts.com) is a Bluetooth adapter—enabling wireless functionality on wired headphones, speakers, and more. It has a range of up to 30 feet and offers up to eight hours of music playback on a single charge.

WITHINGS HOME

The \$190 Wi-Fi Security Camera with Air Quality Sensors (withings.com) is an app-enabled device—monitor it from your iPhone!—that offers HD video, two-way audio, a 135-degree wide angle, and night vision capabilities.



Keeping it wireless



KARDIA MOBILE

The \$99 Kardia Mobile EKG (alivecor.com) "allows you to capture a medical-grade EKG in just 30-seconds." Keep a record of information for personal insights, or relay it to a doctor for immediate guidance.

IN-HABIT

The \$99 In-Habit amplifier for Apple TV (intonationaudio.com) is built to compliment your second- or third-generation Apple TV; the device provides an optical input, two 3.5mm stereo jacks, and Bluetooth connectivity for streaming audio from your iPhone or iPad.





NOMAD

The €310 Nomad tablet table (spell-online.com) is basically an end table meant to feature your iPad. The frame is made of powder coated steel; the tabletop tablet insert is made of walnut or oak and finished in translucent oil. It comes in a half-dozen colors.

LUNA


The \$129 Luna (crazybaby.com) is billed as the “perfect integration of sound, light, and appearance,” made with an aircraft-grade aluminum skeleton which houses a 2-inch full range NdFeB speaker—you’ll get some deep bass from this—and featuring the “Luna eye,” a light that changes colors and patterns according to your preferences and the music. Using MESHNET network technology, up to 32 units can be paired together, creating a music network.





9.7-INCH iPAD PRO REVIEW: HITS THE SWEET SPOT BETWEEN SIZE AND PRICE

You don't need to spend more on the 12.9-inch iPad Pro—the smaller model is a better size and isn't hampered by having half the RAM. **By Susie Ochs**



LIL PRO IS EXACTLY
the same size as the
iPad Air 2—most cases
should fit, but old cases
might obstruct the new
iPad's extra speakers.

A funny thing happened while I was reviewing the 9.7-inch iPad Pro (apple.com/ipad-pro). I forgot my computer at home and only brought the iPad to work. This wasn't intentional. I'm not doing the "Can the iPad Pro replace my laptop?" challenge. I tried that (apple.com/ipad-pro) briefly with the 12.9-inch iPad Pro, and didn't have the best results, constantly running into annoying little roadblocks and workarounds that slowed down my workflow.

The reason I didn't notice that my laptop wasn't in my backpack that morning is simple: I'm carrying two iPads right now, both the 9.7-inch iPad Pro and its big old 12.9-inch sibling, and the larger iPad Pro is almost as big as my laptop.



**VIDEO:
9.7-INCH
IPAD PRO**

Go ahead, save a couple hundred bucks by picking the 9.7-inch iPad Pro over the 12.9-inch model (go. macworld.com/ipadpro97vid).

Internet connection required.

Yes, at 1.5 pounds, the big iPad Pro is lighter than my 2.4-pound 13-inch MacBook Air, but I didn't feel those missing ounces in the context of the rest of the junk in my bag, and the footprint of the big iPad versus my laptop is nearly the same. I find the big iPad Pro unwieldy—I'd rather just bring my computer, thanks—but the new 9.7-inch version (starting at \$599 at the Apple Store, go.mac-world.com/buy97ipad) is sized just right, and with nearly all the power, it's definitely the iPad for me. (And, no, I didn't notice the difference in RAM, but more about that later.)

Size matters

Even though the 12.9-inch iPad Pro is the most powerful iPad I've ever

used, after I was done reviewing it, I didn't take it anywhere. Most of the time, it just sat on my desk. The 9.7-inch iPad Pro (can we call them Lil Pro and Big Pro, please?) is sized like an iPad Air 2, and it weighs just a hair under a pound. Like the iPad mini and iPad Air 2 before it, the Lil Pro seems to disappear into my bag, and I don't mind taking it everywhere, much to the delight of my iPad-loving 4-year-old son.

One of the advantages of the Big Pro's screen size is that it gives you plenty of room to run two apps side by side in iOS 9's split-screen mode. Even with less real estate, side-by-side works great on the Lil Pro, too. With the Big Pro's 2732x2048 display, each app's half of the screen

THE SMART KEYBOARD

isn't my favorite to type on, but I do like it as a slim protective cover, and its magnetic attachment is more convenient than a full case.

Apple 9.7-inch iPad Pro



AT A GLANCE

The 9.7-inch iPad Pro is more portable and takes better video than the bigger iPad Pro. It adjusts your screen's color temperature to match your surroundings, and generally does everything the bigger iPad Pro can do, only for less money.

PROS

- Weighs under a pound, and smaller size is easier to use away from a table
- Supports Apple Pencil
- Shoots 4K video

CONS

- Less RAM than the bigger version, but real-world performance is barely affected

PRICE

Wi-Fi only: \$599 for 32GB storage; \$749 for 128GB; \$899 for 128GB. Add \$130 for cellular.

COMPANY

Apple





winds up being almost as big as the 2048x1536 Lil Pro held in portrait mode. But half of the Lil Pro's screen still winds up being enough space to work in, even as you use text-heavy apps like Mail and Safari.

I see a lot more webpages (including Macworld.com and even Apple.com) default to tablet or mobile views in split-screen Safari, even though they load as the full-size version when Safari has the entire screen. That's not a big deal, and even helps readability. Both sides of the screen stay active in split-screen mode—I was able to play a *Macworld* video in Safari on one half of my screen while writing this review in Byword on the other half.

True Tone

The Lil Pro has one feature its big brother doesn't, True Tone. This feature is enabled by a new ambient light sensor embedded in the Lil Pro's display. Every iOS device has these ambient light sensors, which enable the Auto Brightness feature, but in the new Lil Pro, those sensors measure the color temperature of the light in the room, not just its intensity. That way, iOS can adjust the color temperature of your display, in an attempt to match it up, so your display doesn't look more blue in some light and more yellow in others.

You can turn this off in System Preferences → Display, but it's a binary on/off switch. There's no slider

THIS SCREEN IS way too nice to yellow it up by layering True Tone and Night Shift together.

to lessen the intensity of the effect—the whole idea is that it’s automatically adjusted. The new Night Shift feature in iOS 9.3 (go.macworld.com/ios93), on the other hand, isn’t controlled by sensors, so it does have a slider to let you adjust the intensity. (I can’t stand it at any more than about 25 percent, but your mileage may vary.) Night Shift isn’t aimed at matching the color temperature of the room; rather it just shifts the temperature of your screen from blue to yellow at night, in case the reduced blue light helps you sleep better—although the research isn’t so conclusive (see page 52, “The new Night Shift”) that this particular feature would help. You can use both Night

Shift and True Tone together on this Lil Pro, but it looks terrible, like your screen was suddenly submerged in a bucket of apple juice.

I remain ambivalent about True Tone. I don’t mind keeping it on, but I wish I could tone it down just a tiny bit. Still, after a couple of days I stopped noticing it, until I had the Lil Pro side by side with a MacBook, and the MacBook screen’s blueish tint was more visible than ever. Anyone who does get hooked on True Tone may start jonesing for it on all their devices, and I wouldn’t be surprised if Apple starts building these new light sensors into more screens. In the meantime, there’s always f.lux (justgetflux.com) on the Mac.



THE CAMERA

PROTRUDES just a bit, but the Lil Pro has a flash, for the first time on an iPad. (The iPad here is shown with the Smart Keyboard cover.)

Pro features at a value price

The Lil Pro joins the Big Pro in supporting the Apple Pencil (go.macworld.com/applepencilrev), which remains just delightful. In fact, it's even more so now, just because more apps support it. I like drawing and coloring with the Pencil to relax, but I'm even taking more meeting notes with it lately, too, just because the "infinite scroll" writing feature in GoodNotes 4 (go.macworld.com/GoodNotes4) is so fun. The Pencil is also better with the Lil Pro because it's easier to hold the smaller iPad in one hand while you draw or write with the other. With the Big Pro, I felt like I had to be seated, preferably at a table, when I was going to do anything with the Pencil.

It's also worth pointing out that the Lil Pro starts at \$200 cheaper than the Big Pro, and the Pencil is \$99. The Lil Pro's Smart Keyboard is \$20 less too, at \$149, compared to \$169 for the Big Pro's Smart Keyboard. So a full setup of a 32GB Wi-Fi-only iPad Pro, Smart Keyboard, and Pencil is \$847 if you choose the smaller iPad Pro, and \$1,067 if you choose the larger version.

Oh, and if you use Microsoft Office, there's another bit of potential cost savings from choosing the smaller iPad. Microsoft requires an Office 365 subscription if you want to



create Office documents on a tablet larger than 10.1 inches—so that rule applies to the Big Pro but not the Lil Pro (go.macworld.com/officeontablets).

If you don't already have Office 365 for your Mac, you could save \$7 per month or \$70 per year (the price of Office 365 Personal) by avoiding buying it for your iPad Pro.

The smaller Smart Keyboard provides almost the same typing experience as the Smart Keyboard made for the Big Pro. It has all the same keys in exactly the same

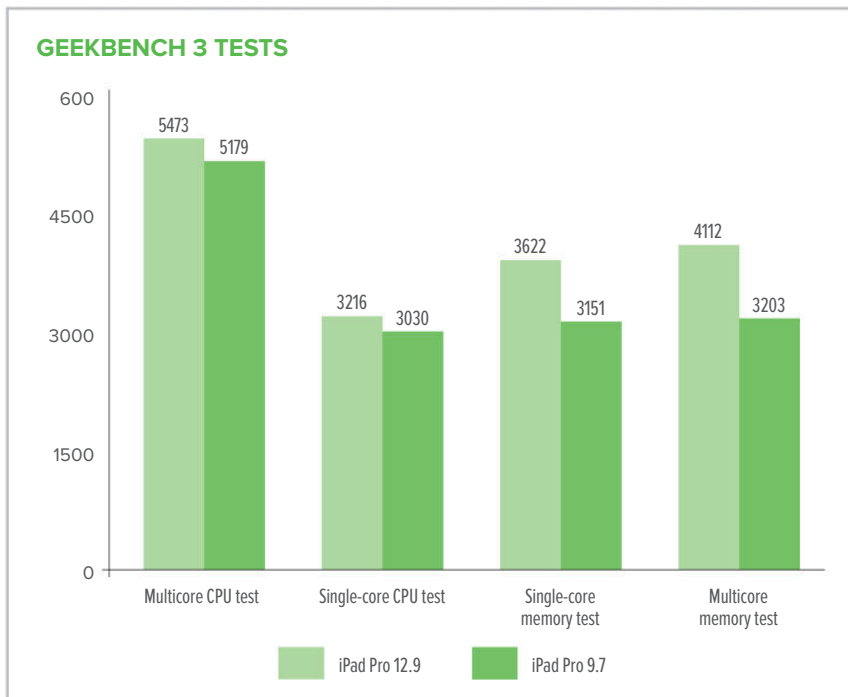
THE PENCIL IS ALSO BETTER WITH THE LIL PRO BECAUSE IT'S EASIER TO HOLD THE SMALLER iPad IN ONE HAND WHILE YOU DRAW OR WRITE WITH THE OTHER.

places; they're just a little smaller. Both keyboards have a spill-resistant fabric coating and low-travel keys that I can't seem to type on without slamming my fingers down as hard as possible. (It's like my fingers don't believe the short-travel keys are really going down, and I formally apologize to every coworker who has discreetly slid on his or her headphones when I start up with my infernal key-pounding again.)

I really appreciate the extra

speaker power on both iPad Pro models, since I watch a lot of streaming movies and TV on my iPads. The four speakers provide enough oomph for an action movie, and make music and podcasts sound better when you're listening without headphones too.

The iSight camera on the Lil Pro is even better than the Big Pro's camera, because it has a True Tone flash and supports Live Photos, which the Big Pro doesn't. Plus, it records 4K video,



while the Big Pro is stuck on 1080p. Want to shoot slo-mo? The Lil Pro lets you choose 1080p at 120fps or 720p at 240fps, while the Big Pro can only handle 720p at 120fps. Again, the Lil Pro's physical size makes me more likely to use it to shoot stills or video, and even if you scoff at the very idea, don't forget that plenty of apps use the cameras for things like augmented reality or even...well, shooting video. For example, an app called Hudl Technique (hudl.com/products/technique) lets you film a baseball, tennis, or golf swing and then analyze it in slo-mo for proper form and technique. It's universal for the iPhone and iPad, but the iPad's bigger screen

makes it a lot easier to use, and the camera captures enough detail that you can zoom way in on a wrist or an ankle turn during a swing.

What about the RAM?

It's true that the Lil Pro has 2GB of RAM, or half the RAM of the Big Pro, which has 4GB. But bigger screens demand more resources to power them, and in testing with GeekBench 3, the Big Pro only scored about 6 percent better overall, so I don't think many people will notice a performance hit in most tasks. Memory-specific tests show more of a discrepancy, because as it turns out, it's not just the amount of RAM that's differ-

OH YEAH, and as of right now, this is the only iPad that comes in Rose Gold.



ent, but the memory bandwidth too.

In Geekbench 3's multicore memory benchmark, the Big Pro scored 4112. On the Lil Pro, the same test produced 3203, or about 28 percent worse. In most tasks, you're unlikely to see the impact of a little less memory bandwidth. Where it's more likely to manifest itself is graphics-related tasks such as gaming.

In 3DMark's Sling Shot Extreme test, for example, the Lil Pro scored 3146, about 20 percent worse than the Big Pro's score of 3787. But when the same test was set to render offscreen, the Big Pro's 3794 only bested the Little Pro's 3528 by 7.5 percent. And in the AnTuTu Benchmark app, the Lil Pro scored just 11 percent worse than the Big Pro.

As a matter of policy, Apple doesn't get into the weeds on its choices for the amount of RAM or how it's configured. It could be that Apple selected slightly lower-speed RAM for the Lil Pro to save on power since the smaller unit has a smaller battery. Also, the smaller screen has a lower resolution, and Apple may have decided it didn't need the highest performance RAM.

For the most part, the amount of RAM is probably nothing to lose sleep over. There's nary a performance difference in the computing side of things and even on graphics tasks, when you consider the resolu-

tion, the difference is pretty small, as well. When buying a Mac with configurable RAM, I tend to max it out at purchase as a way of "future proofing" the machine, hoping that the more RAM I have, the longer that Mac will last before it feels obsolete. If you can't stand the thought of buying an iPad with half the maximum RAM

available, you could shell out an extra \$200 for the Big Pro, or wait to see what Apple does with these iPads next year. But for me, the 9.7-inch iPad Pro's performance is worth its price and then some.

Bottom line

If you're using an iPad Air or older, the 9.7-inch iPad Pro is a worthy upgrade. If you're trying to decide between a 12.9-inch iPad Pro and the smaller version, I'd go small because it's a more convenient size, and the \$200 price difference is worth the minimal decrease in performance, especially if you plan to spend that difference on Apple's accessories. ■



IF YOU'RE USING AN iPad AIR OR OLDER, THE 9.7-INCH iPad PRO IS A WORTHY UPGRADE.



*“I want
to be
a bench.
Recycle me.”*



IWantToBeRecycled.org

SoftGozar.com



KEEP AMERICA
BEAUTIFUL

GOOD NEWS FOR FANS OF SMALL PHONES: APPLE DIDN'T MAKE THE 4-INCH IPHONE SE A SECOND-CLASS DEVICE.



REVIEWED:

iPhone SE

IT'S A POCKET-SIZE POWERHOUSE

The SE is the little iPhone that could. With a 4-inch screen and the body of an iPhone 5s, it fits in my pockets

better than my iPhone 6s, and it's easier to use one-handed. But it doesn't compromise much over its bigger, more expensive siblings.

If you were waiting for Apple to put out another 4-inch phone before you'd upgrade, you're probably dancing in the streets right now—and you should be, because this phone is such a huge step up from the iPhone 5s. If you're on the fence between the iPhone SE (apple.com/iphone-se) and the flagship iPhone 6s (go.macworld.com/iphone6sreview), the SE's lower price (starting at \$399 at the Apple Store, go.macworld.com/buyse) might sway you to the smaller screen, especially because the SE delivers nearly as much performance.

iPhone SE



AT A GLANCE

For anyone who's been holding out for a smaller iPhone, the 4-inch iPhone SE is worth the wait.

PROS

- Easier to hold and use one-handed
- Great camera

CONS

- No 3D Touch


PRICE WHEN RATED

\$399 for 16GB of storage; \$499 for 64GB

COMPANY

Apple





APPLE DIDN'T MOVE ANY OF THE BUTTONS, SO YOU CAN STILL USE CASES BUILT FOR THE IPHONE 5 AND 5S.

DEJA VU DESIGN

In his hands-on (go.macworld.com/iphonese1st), Jason Snell called the iPhone SE a flashback to the iPhone 5 and 5s, and he's entirely right. Apple points out the "matte-chamfered edges" (the iPhone 5s's chamfers were, um, less matte, I think?) and "color-matched stainless steel inset Apple logo" (meaning the logo is a separate piece of inlaid metal and not merely stamped on), but that's just marketing. If a friend asks about your iPhone SE and you triumphantly show

off its matte-chamfered edges, you probably deserve the eye-roll you're about to get.

What is important, then? Apple didn't move any of the buttons, so you can still use cases built for the iPhone 5 and 5s. The rear-facing iSight camera sits flush with the back of the phone, unlike the slightly protruding camera that the larger iPhones have been plagued with since the iPhone 6. And the SE's flat edges let you stand it up on its side, in case you want to take a photo or

MMM, so matte-chamfered!

watch a video and you don't have a proper iPhone stand.

The Touch ID button on the iPhone SE is the “first generation” version from the iPhone 5s and the iPhone 6, not the freaky-fast second-gen Touch ID on the iPhone 6s. But thanks to the iPhone SE's A9 chip, its Touch ID button unlocks the phone faster than the iPhone 6's, just not quite as fast as the iPhone 6s's.

And of course, the 4-inch screen

is easier to reach with your thumb while you're holding the phone one-handed. Size was the biggest deal for me when using this iPhone. Suddenly I could drop my phone into any pocket again (pockets on women's pants are small, too), and comfortably reach the whole screen. The last time I used my Apple Watch to ping the iPhone SE so I could find it, it was already in my back pocket!

REMEMBER THE iPhone 5S? This looks and feels just like it—only now in pink. (Excuse me, rose gold.)

SUDDENLY
I COULD DROP
MY PHONE INTO
ANY POCKET AGAIN
(POCKETS ON WOMEN'S
PANTS ARE SMALL, TOO),
AND COMFORTABLY REACH
THE WHOLE SCREEN.





THE IPHONE SE (left) captured all the detail and colors as the iPhone 6s (right) did.



SINCE THE IPHONE SE supports Live Photos and all the same photo features as its bigger siblings, you're not giving up much.

EXCELLENT CAMERA

Apple gave the iPhone SE the same rear-facing camera as the iPhone 6s: It takes 12-megapixel stills, 4K video, and even Live Photos. Since the screen doesn't have the pres-

sure-sensitive 3D Touch feature, you just press and hold to make a Live Photo animate. The camera launches fast, and takes photos fast. I was very pleased with the camera's performance, which you

can see in the side-by-side shots taken with the iPhone SE and the iPhone 6s.

The front-facing camera (which Apple calls the FaceTime HD camera) is the same as on the iPhone 5s, however. It takes 1.2-megapixel stills, compared to the 5-megapixel FaceTime HD camera on the 6s. So if you are a real selfie nut, you might want the extra pixels of the flagship phone. But the FaceTime HD camera can use the SE's screen as the flash,

and doing so tended to smooth out some of the noise, so those photos look pretty good too. Since I only take a fraction of my photos with the front-facing camera, its weaker specs didn't bother me at all.

NO 3D TOUCH? NO BIG DEAL

3D Touch is probably the biggest trade-off. On the new iPhone 6s, 3D Touch lets you “deep press” the screen for more options. Deep-press-

NO PROTRUDING
camera bump, hooray!

THE CAMERA
LAUNCHES FAST,
AND TAKES
PHOTOS FAST.



**VIDEO**

To view this video,
go to [go.
macworld.com/
sevid](http://go.macworld.com/sevid)



IDG.tv

ing an icon on the home screen can reveal Quick Actions, which are shortcuts into different parts of an app. Once inside an app, deep-pressing controls the “peek” and “pop” maneuvers: You can peek at an image, email, or search result without opening it all the way, and then press a little more on that preview to pop it open into a full-screen view.

It's fun when you get the hang of it, but it's also one of those things I use to demo the iPhone 6s to people, and then promptly forget about the rest of the time. So I didn't think I'd miss it on the iPhone SE, and for the first couple

of days I really didn't. I found myself trying a couple Quick Actions a few days into my test, and being temporarily confused that they didn't work. I was only a little bummed when I remembered the SE doesn't support 3D Touch, but at the end of the day, that feeling only served to remind me that the SE is such an all-around powerful performer that I just forgot it didn't do everything my iPhone 6s can do.


BOTTOM LINE

If you are still rocking the iPhone 5s, 5c, 5, or earlier, your upgrade is here, and I think you'll find it was

worth the wait. If you have an iPhone 6 or later and you've always hated its size, this might feel a lot better—its performance isn't a down-

grade, just its physical dimensions. The iPhone SE is powerful, speedy, and a worthy addition to the low end of the lineup. ■

I ONLY MISSED 3D
Touch very briefly, and if you've never had it, you won't miss it at all.



THE iPhone SE IS POWERFUL, SPEEDY, AND A WORTHY ADDITION TO THE LOW END OF THE LINEUP.

Thomas Staton asks about backup strategies:

Since I have two backup drives, should I use Time Machine on both, or use cloning hardware on one and Time Machine on the other?

I'm a great fan of belt, suspenders, duct tape, and a spare belt. Time Machine and clones have different purposes, though you can use them to the same end in the right case. If you have a non-recoverable drive failure, you can either use a clone or a Time Machine drive to restore to the last backed-up point.

Time Machine's advantage is twofold in the right case. First, it's routinely backing up, so even as you work, some files are being written in backup form. Second, it has archives of previous versions of the same files.

However, using two drives as Time Machine destination provides redundancy in case one fails, but it doesn't provide diversity. If something goes wrong with one Time Machine backup, it's possible the

other would be corrupted for the same reason. And you're not getting enough differential between them to have a more recent restore point, either, even if both work perfectly.

Cloning with something like Carbon Copy Cloner (bombich.com) or SuperDuper (go.macworld.com/superduper) typically happens on a schedule, so you won't have the latest version of a dead drive, but one that could be several hours out of date. Standard cloning software doesn't archive older file versions, either.

However, because I store email remotely, and use Dropbox and other synchronized data tools, I'm more concerned with getting back to work faster than

I am having an up-to-the-minute (or -hour) restore point of everything. Dropbox will resync after I restore.

I like the flexibility of a clone because Time Machine can be fussy and sometimes restores will fail for no diagnosable reason. I prefer using Time Machine to restore older file versions, and clones to restore entire drives. This is especially easy when the clone is written to a

TIME MACHINE AND CLONES HAVE DIFFERENT PURPOSES, THOUGH YOU CAN USE THEM TO THE SAME END IN THE RIGHT CASE.

volume as a sparse disk image, which can be mounted by Disk Utility from OS X Recovery. Last year, I had a recent clone on hand after a drive failure (which I'd made partly because I thought the drive was nearing death), and was able to boot into OS X Recovery, select the disk image from an external mounted drive, and write that to my new drive, and then boot from it.

Beyond the above, I strongly recommend you keep a recent backup, preferably in encrypted form, somewhere else. With two drives, you might use Time Machine as your regular backup, and cycle in the second drive from another location or a safe-deposit box for regular clones. You could also buy an inexpensive third drive, one that's

USB-bus powered for compactness, just for this purpose. Multi-terabyte portable drives where you don't need high performance for use as an active drive are pretty cheap.

I also recommend having some form of hosted online backup, so that in the event of total destruction of your equipment, your files still live on in the ether. Backblaze (backblaze.com), for instance, lets you back up your files and lock the encryption key with a passphrase that they never have access to, making you the only weak link in the encryption chain. Many folks who have few applications installed rely on cloud services, and use web apps and Google Drive or Dropbox to make sure they have the very latest versions of every document they're working on. ■



PEACE CORPS **RESPONSE**

3-12 MONTHS CAN MAKE A
LIFETIME OF DIFFERENCE

Peace Corps now offers short-term Volunteer assignments overseas for 3 months to 1 year for especially skilled professionals with at least 10 years experience.

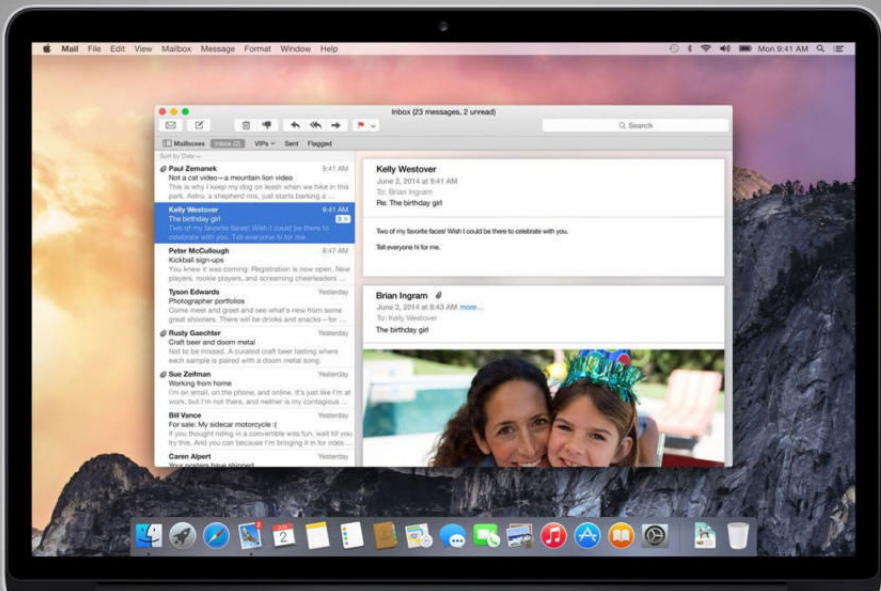
Browse the opportunities on our website and register to receive alerts when new postings become available.

peacecorps.gov/response

How to filter email

Get control of your messages in OS X's Mail, iCloud, and Gmail.

BY KIRK MCELHEARN



While email is slowly being replaced by other forms of communication such as text messaging, or services like Slack, it is still the main way people do business. The average user receives about 90 emails per day, a dozen of which are spam. To help work efficiently with email, it's a good idea to filter some of your messages. You may want to have separate mailboxes for your work and personal emails, or specific mailboxes for emails from close friends. If you're using email for business, you may want to filter emails by client, or put support emails in one mailbox, and sales queries in another.

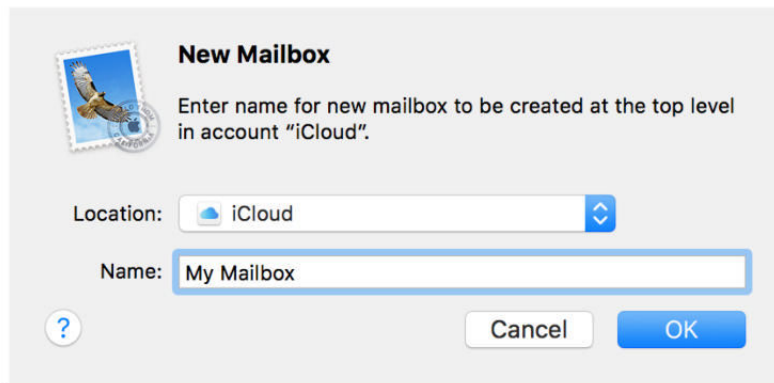
There are many ways to filter email: in some cases you can filter your email directly on a server, so filtered messages don't go into your inbox at all, making it easier to deal with email on your iOS device. And you can filter email on your Mac, in your email program.

In this article, I'll look at filtering email on iCloud and Gmail, two of the most popular email services, and

explain how you can create filters in Mail. It's easy to set up filters, and it can make your email life a lot easier.

FILTERING IN MAIL

I'll start with Mail on OS X, since, if you use this app, you'll want to set up folders or mailboxes there that your server-side filters will use as well. If you don't have multiple mailboxes, create a new one by choosing



New Mailbox

Enter name for new mailbox to be created at the top level in account "iCloud".

Location:

Name:

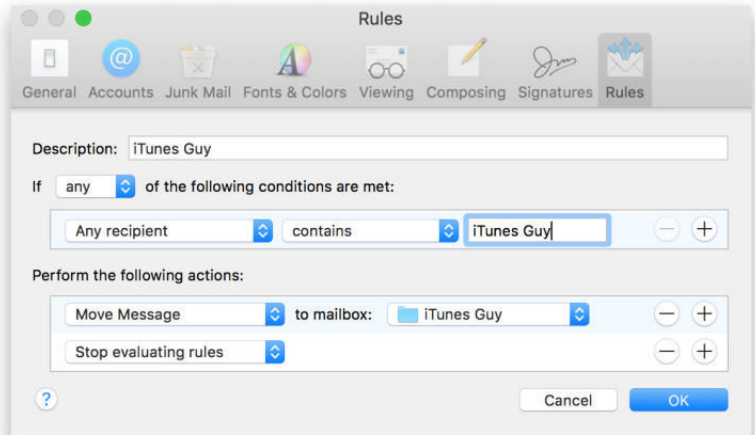
CREATE A new mailbox on iCloud.

Mailbox → New Mailbox. Select a location; if you choose On My Mac, you won't be able to use filters on your server, so choose your email provider, such as iCloud or Gmail. (I won't cover setting up filters with other email providers; check their documentation to find out how to do this.)

Click OK, and you'll have a new mailbox both on the server and in Mail. You'll be able to move messages there from within Mail, in the iOS Mail app, and on iCloud.com.

Choose Mail → Preferences, then click Rules. Click Add Rule and then give your rule a name. Choose something from the condition menu, such as From, To, Any Recipient, Date, and more, and enter the text you want to filter. This could be a keyword in the subject, or an email address, or a client's name. Choose what to do with the message; in the example, I'm moving messages sent to my iTunes Guy address to a specific folder. And then I add the condition Stop Evaluating Rules, so no other rules affect the message.

For more ideas of rules you can



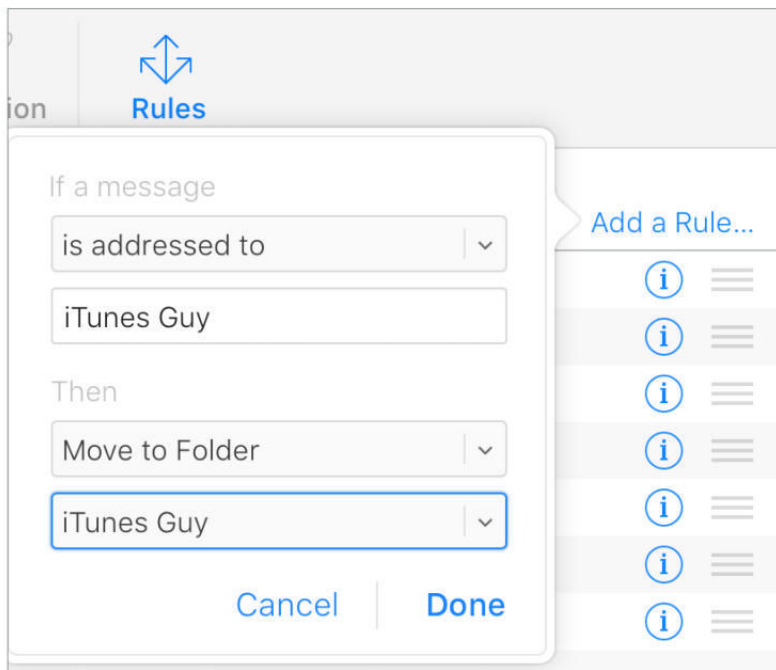
create in Mail, read Five Essential Mail Rules (go.macworld.com/5mailrules).

When you use filtering on your Mac, your email is filtered there as long as the Mac is running, and you've got Mail open. Even if you're not home, if your Mac is on, Mail filters your messages, making it easier to deal with mail on your iOS device. You may not want to leave your Mac running all the time, but if your Mac supports Power Nap, you can let your Mac sleep, and it will check for new email from time to time, and filter it while doing so. To activate this, choose the Apple menu → System Preferences → Energy Saver, and then click Enable Power Nap.

FILTERING ON ICLOUD.COM

To filter messages on iCloud.com, log into iCloud.com on the web. Click on Mail, then click the gear icon at the

HERE'S A SIMPLE RULE in Mail: it looks for a specific recipient, then moves messages to a folder.



FILTERING MESSAGES
on iCloud.com means they won't show up in your inbox, even on your iOS devices.

bottom left of the page. Choose Rules, and then Add A Rule. Choose a condition from the first menu. You can choose who a message is from, who it's addressed to, Cc'd to, or you can have iCloud filter emails that contain specific words in the subject.

In the Then menu, you can tell iCloud to move the message to a folder, to the Trash, or forward it to another email address. For the first choice, you then select a folder; for the third option, you enter an email address for forwarding.

Click Done, and iCloud will filter

these messages on the server, placing them in the folder(s) you've selected.

The advantage to filtering email on the server is that your Mac doesn't need to be running. When you check email on your iPhone or iPad, your inbox won't be as cluttered. You can still access the filtered emails by checking specific folders in Mail on your iOS device, but your inbox won't contain as many messages.

FILTERING ON GMAIL

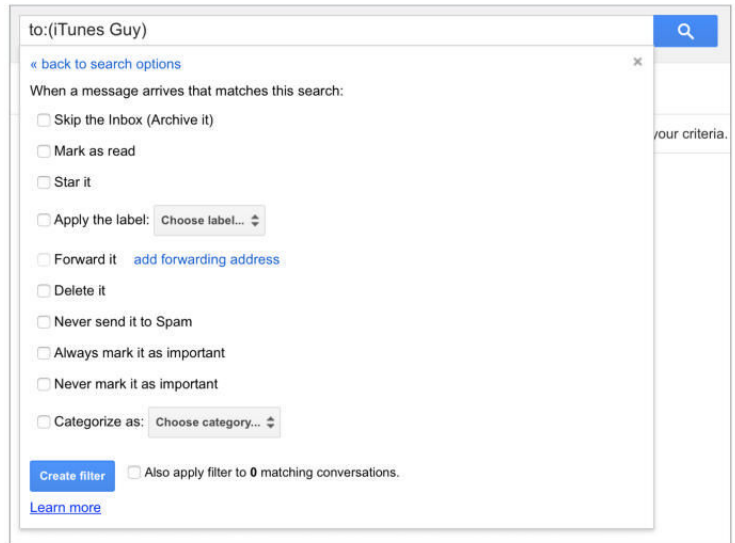
If you use Gmail, you can also filter

messages. Click the gear icon, then choose Settings. Click Filters and Blocked Addresses, and then click Create A New Filter. Enter the term you want to use in the appropriate field: From, To, Subject, Has The Words, etc.

Click Create Filter With This Search, and then choose how you want messages matching this filter to be processed. Gmail

gives you lots of options for this: the emails can be archived, marked as read, forwarded, deleted, and much more. Click Create Filter to save the filter.

As with iCloud, these server-side filters act on messages before they get to your Mac or your iOS devices. This is useful if you want to keep your iPhone's inbox from getting



overloaded with messages you don't need to see right away.

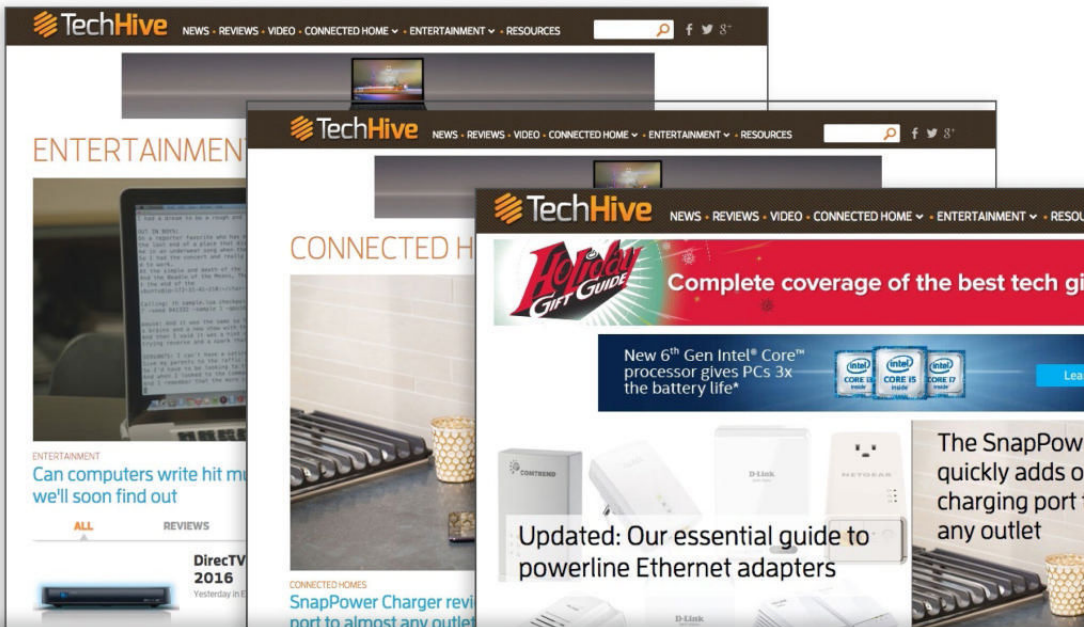
No matter which method you use, you'll find that filtering your email can save you a lot of time, and keep your inbox less crowded. Try it out, on your Mac, or on your email server, and see how much easier it can be to deal with email. ■

CREATE A FILTER in Gmail, and then choose how Gmail processes messages matching your filter.



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How to use the Finder window toolbar to save time

Tweaking the Finder toolbar can help you become more productive.

BY KIRK McELHEARN

Many of the apps on your Mac have a toolbar; that's the gray section at the top of the window that contains a number of buttons and, perhaps, a search field. You see this in Safari, Mail, the iWork apps (Pages, Numbers, Keynote), and even in the Finder. The buttons available in these toolbars let you quickly access some of the most common functions of their respective apps.



THIS IS THE default button set for the Finder toolbar.

Tweaking the Finder toolbar can help you become more productive. You can add buttons for functions you use often, ones that might be harder to access via menus. You can add a specific button that offers most of the same menu items as the Finder's contextual menu; this is great if you'd rather click a button than right-click or Control-click. And you can use the Back and Forward buttons to move through windows or tabs you've viewed, and use the Finder view buttons to change Finder views.

CUSTOMIZE THE FINDER TOOLBAR

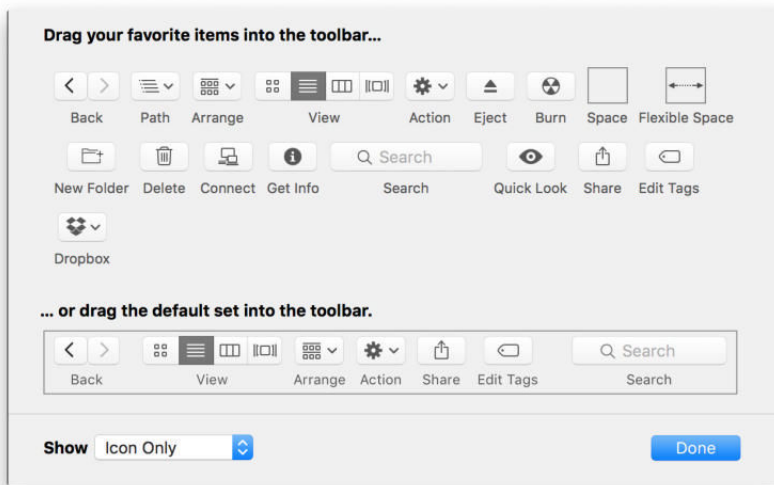
To start with, you should check out which buttons are available in the Finder toolbar. By default, you see the Back and Forward buttons, the four View buttons, the Arrange button, the Action button, the Share button, the Edit Tags button, and a

Search field.

If you simply want to thin out the toolbar, you can remove any of these buttons easily. Just press and hold the Command key, and then drag one of the buttons off the toolbar. And if you want to rearrange the buttons—you might prefer the Search field to be on the left, for example—press and hold the Command key and drag a button to where you want it.

But you can do a lot more than just move and remove buttons. You can add a number of other buttons and fields to the Finder toolbar. To see these, choose View → Customize Toolbar. You'll find a number of buttons for actions that you may use frequently.

To add any of these items to the toolbar, just drag and then release them where you want them to live. You can move them around, and you can add spaces; you'll see there are two types of spaces—a regular,



CLICK AND DRAG the buttons you want from this window to the toolbar.

fixed-width space, and a flexible space that changes its size according to the amount of room there is.

Here are a few of the buttons you may or may not want to use in the Finder toolbar:

> **Action:** The Action button is part of the default button set. It's the equivalent of the contextual menu, which you display by right-clicking or control clicking an item. The Action button's menu changes according to what is selected, offering a range of actions you can perform on an item.

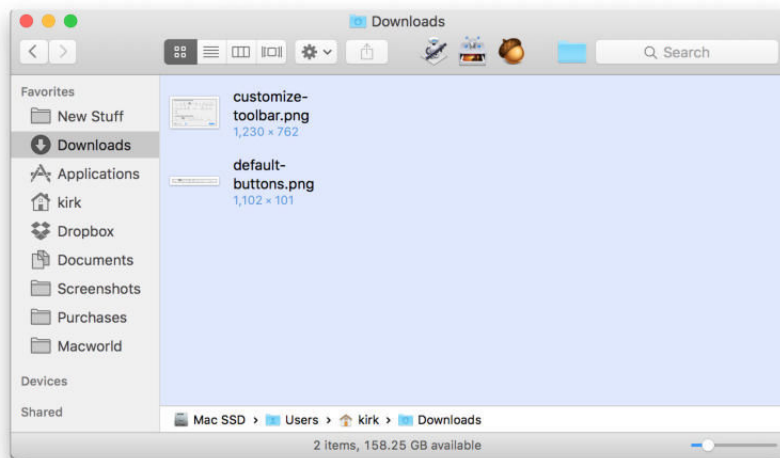
> **View:** This button lets you change Finder views. (Learn about Finder views on page 106.) However, you may never or rarely want to change your windows' views. If so, you can remove this button, saving a lot of space. Just drag it off the

toolbar and you can still change views from the Finder's View menu or by using keyboard shortcuts.

> **Share:** The Share button lets you quickly share items in the Finder, sending them via Mail or Messages, or sharing them on Twitter or Facebook, or to other apps or services. You can access this feature from the contextual menu (right-click an item and choose Share, then choose a service from the submenu), but if you share a lot, it's good to have this button handy.

> **Edit Tags:** If you use Finder tags, you'll find that this button streamlines adding and changing tags.

After you've made your choices, click Done. Note that from the Show menu at the bottom left of the Customize sheet, you can choose to



YOU CAN ADD files, folders, and apps to the Finder toolbar. Here's my Finder window, with two apps and an Automator workflow I use often, and a folder I want to access quickly, but don't need in the sidebar.

display Finder toolbar buttons as Icon Only, Text Only, or Icon And Text. I find Icon Only to be the most economical; it's better than just seeing the names of the buttons, and once I've remembered what each button does, it saves space by not displaying their names below the icons. Try the different options and choose what works best for you.

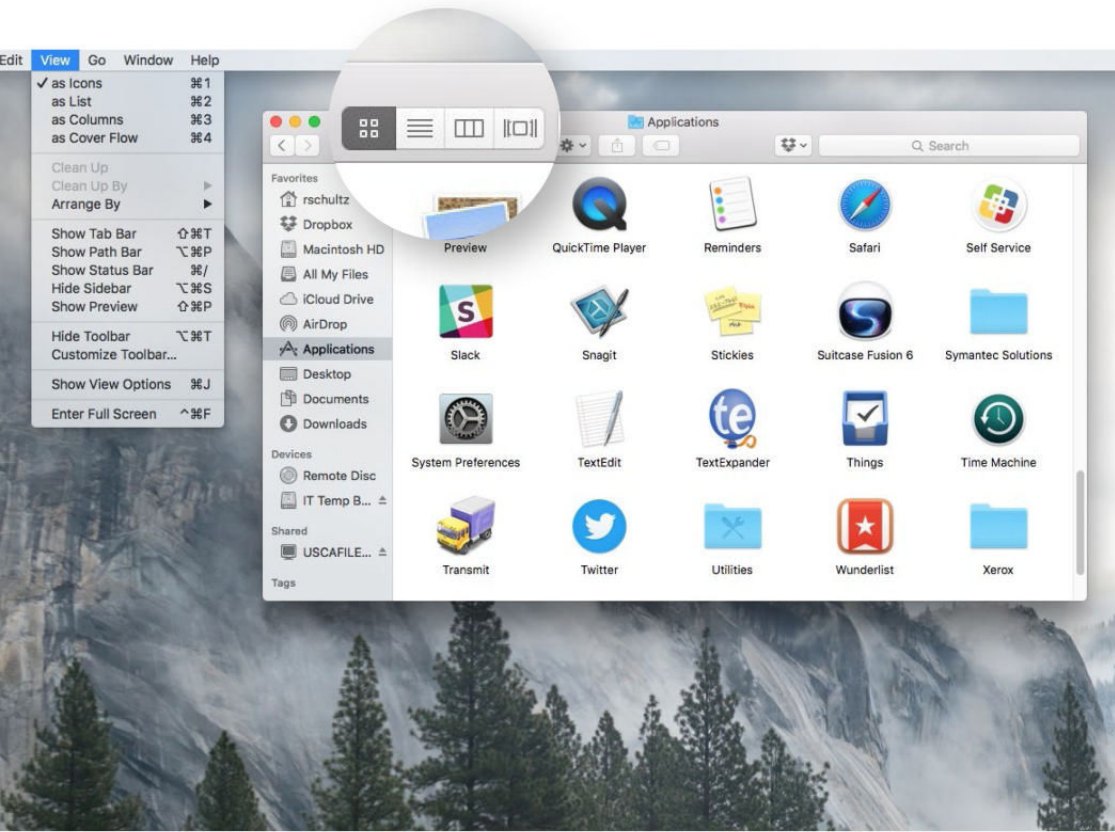
QUICK ACCESS TO APPS, FILES, AND FOLDERS

In addition to the stock toolbar buttons, you can add any file, folder, or app to the Finder toolbar. This gives you quick access to items you use often. To add an item to the toolbar, hold down the Command key

and drag it to the toolbar. You can drag it to the exact position where you want to use it. When you release the Command key, the icon will stay where you want.

This is very useful if there's an app you want to access quickly: it can be quicker to drag a file to an app's icon in the toolbar than, say, dragging a file to the Dock, which is further away. Or you may have a network volume you connect to regularly; just drag its icon to the toolbar, and you'll be able to access it in one click from any window.

Take advantage of the Finder's flexible toolbar. It can save you time and make you more productive, giving you quick access to the functions you use most. ■



Get the most out of Finder views

You can save time by learning when to use Icon, List, Column, or Cover Flow view.

BY KIRK McELHEARN



One program you use all the time is the Finder. It's your Mac's filing system, organizational structure, and overseer. We all know how to open, move, and copy files, but most of us go about our business without ever considering the most efficient way to get these tasks done.

As a prime example, you can use the Finder's View menu options to view files and folders in four different ways, but most people don't know why they'd bother. They stick to one view for all their windows when, in fact, there are valid reasons to use each. Here's how to use the right view at the right time, and save time and trouble in the process.

FLEXIBLE ICON VIEW

OS X uses Icon View by default. Select it by choosing View → As Icons, pressing Command-I, or clicking on the Icon View button in a

Finder window's toolbar. This view shows your files as familiar icons.

Some people like Icon View because they can arrange file icons as if they were objects on a desk. For example, one group of related items on the left side of a Finder window, and another on the right. Some people don't like Icon View for the same reason; icons can get messy and confusing. They're easy to straighten up, though. Choose View → Clean Up and the icons snap into a grid formation.

ICON OPTIONS

You can not only place icons wherever



ICON VIEW LETS YOU work with your files and folders much as if they were on an actual desktop. If things get messy (as they have here), choose View → Clean Up, and the icons snap to a grid.

you please, but also change how this view looks. From the View Options inspector (View → Show View Options or Command-J), you can, for example, adjust grid spacing (how close together icons appear) and choose a color or picture as a folder background.

Another option lets you set, say, a green background for folders containing important files, and a blue background for folders containing documents you need to edit. Just press Command-J, click on Color (in the Background section near the bottom of the View Options window), and then click on the color well. When the color picker appears, choose your color and click OK. With different backgrounds, you can tell multiple windows apart at a glance.

The options you set in the View Options inspector apply only to the selected folder, unless you select the Use As Defaults option; this applies the change to all folders that use the current view and that haven't already been customized in some way. (It will also apply to new Finder windows you open using File → New Finder Window or Command-N.) This can come in handy when a certain option

proves useful for only certain types of files. For instance, choose the Show Icon Preview option to make the Finder display a thumbnail of files' contents (for file types it's familiar with). Since this is most useful for photos and videos—you can see their contents at a glance—you can turn previews on only for folders that contain them.

Likewise, you might use the Arrange By option in different ways depending on a folder's contents. Open your Downloads folder, choose View

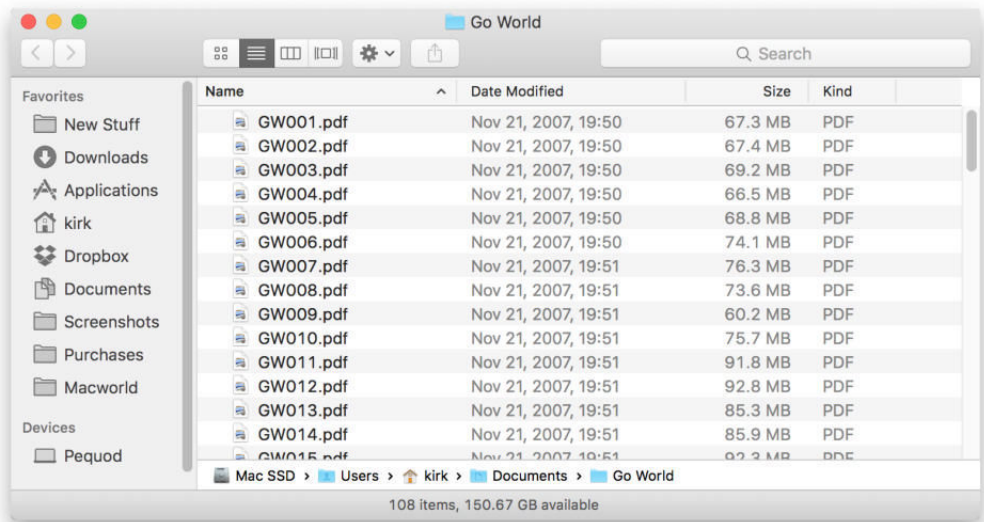
Options, and then select Date Modified from the Arrange By menu to see the most recent files at the top left corner of the folder. In a folder containing files you want to

copy to an external drive, you might choose Arrange By Size to see the largest files first, so you can choose which ones you can fit on the disk.

IF ICON VIEW WERE THE ONLY CHOICE FOR ORGANIZING FILES, MANY MAC USERS WOULD BE LOST.

COMPACT LIST VIEW

If Icon View were the only choice for organizing files, many Mac users would be lost. Lots of people prefer the more compact List View (View → As List or Command-2). In this view, you see filenames, dates (when the files were either modified or created),



LIST VIEW MAY NOT be very exciting to look at, but its columns can give you a lot of information about a file or folder at a glance. You can tell the files here are sorted by name, because the Name in the column header is slightly bold, and there's an arrow at the right of the column indicating the sort order.

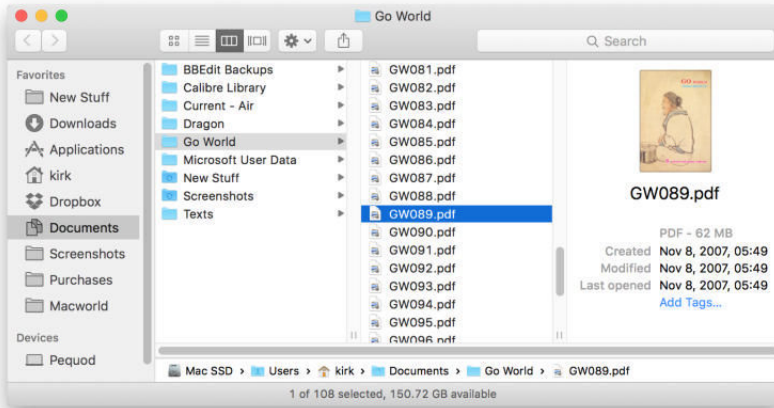
sizes, and more. The View Options inspector lets you choose which columns to display.

Since List View is made up of columns, it's easy to change the order your files appear in. Just click on a column header to choose an attribute to sort by. For example, click on Date Modified to see the most recently changed files at the top of the list, and click on that header again to change the sort order and show the oldest files at the top.

You'll probably find List View most practical for folders that contain lots of files you want to be able to sort by name, date, size, or kind. You have the

option of displaying a preview icon as part of the list. List View has two icon sizes; small ones are tiny, and large ones are 24 pixels wide. Although they can provide an at-a-glance way to see what types of files you're dealing with, these icons aren't really big enough to be very helpful.

If you use List View a lot, a better way to see file previews is to open a special Info window (Command-I). Unlike the Info window that displays when you press Command-I, this window stays visible, changing its display whenever you click on a new file. You can see good-sized previews of your images here, as



COLUMN VIEW LETS

YOU see at a glance where your files are in your Finder hierarchy. Even though you can't view many details about groups of files, the preview column gives you a lot of information about individual files.

well as play music and movie files by clicking on previews. You can also open any file, folder, or application by double-clicking on this preview.

One of List View's biggest advantages is that you can open folders and browse their contents in the same window. Click on the disclosure triangle next to a folder's name, and the folder's content appears below. You can open and close as many folders as you want, and go to as many sublevels as you want. To close a folder, just click on the disclosure triangle again.

POWERFUL COLUMN VIEW

I know many people who swear by Column View. One *Macworld* colleague jokingly said to me, "You mean there are other views?" Column View (View → As Columns or Command-3) shows your files within

their hierarchy; you see the folders and files above and below your current folder, each level in a separate column. This makes it easy to move files without having to open multiple Finder windows. Just drag a file from one spot to another in the hierarchy. So Column View is helpful, for example, when you need to zip up and down your Mac's hierarchy to find specific files and move or copy them to other locations.

However, this view can get confusing, especially because when you click on a folder, the Finder may shift all of the window's columns to display its contents. You may have to scroll back and forth horizontally to keep track of things.

You can arrange files according to name, date, size, and so on in Column View by choosing these options from the View Options

window, but only the items' names are displayed. So Column View is not useful when you need more information than just names. However, you can choose to see a useful preview column, which shows a large thumbnail of the selected item. And here you can preview photos and videos along with all the file information List View provides, such as size, creation and modification dates, and more.

TAMING COLUMN VIEW

Column View can be tricky. For example, it can be hard to figure out how to make new folders appear where you want. This is just a question of being in the proper column. Make sure you click on an item (not a folder) in a column before pressing Command-Shift-N to make a new folder in that column. If you click on a folder, the new folder will appear inside the selected folder.

If you have trouble with filenames getting cut off in columns, there are a few quick ways to make them legible. Resize a single column by dragging the very bottom of one of the column dividers until you can see the longest filename. Alternatively, double-click on the divider to make it that size automatically. You can Option-double-click to make all columns as wide as the widest column in the Finder window, but this can make the window unman-

ageably huge. It's usually better to resize all the columns at the same time by pressing and holding the Option key while you drag.

When you use Column View in an Open or Save dialog box, you have one more way to do this. Control-

HAVING TROUBLE WITH FILENAMES GETTING CUT OFF IN COLUMNS? THERE ARE A FEW QUICK WAYS TO MAKE THEM LEGIBLE.

click on the column divider icon (at the bottom of the divider), and you'll see a contextual menu. Choose from Right Size This Column, Right Size All Columns Individually, or Right Size All Columns Equally.

QUICK AND PRETTY COVER FLOW VIEW

Cover Flow View gives you a different way to view your files. Choose View → As Cover Flow or press Command-4 to view your files and folders as graphics in the top section of a window; the same files are shown in a list in the window's bottom section. (You can't change that bottom section's appearance.) Cover Flow is not very useful for everyday file management because it limits the number of files you can see at a time.

That said, Cover Flow View is a wonderful tool when you need to sift through a folder of photos, videos, or even text files, as long as OS X can display the contents of those files. If you increase the size of your window, Cover Flow View can display huge previews. This is helpful, for example, when you need to find a Word document or a Numbers spreadsheet with specific content at the beginning. (No matter how big the preview is, Cover Flow displays only the document's first page.)

SEE MORE WITH QUICK LOOK

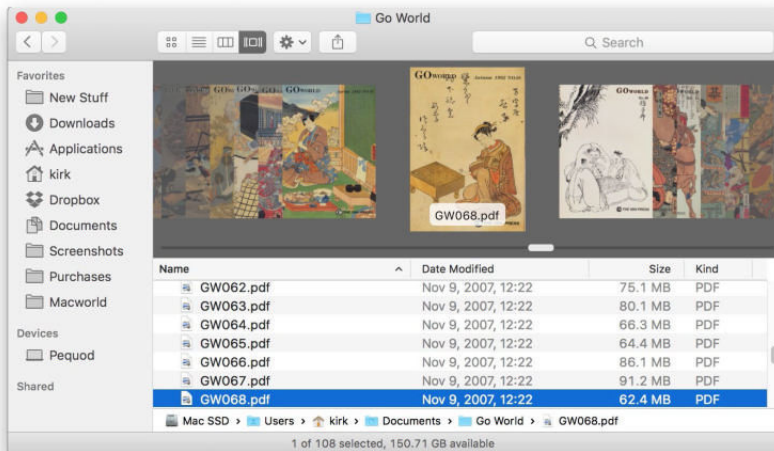
All four views can display some kind of preview, but nothing compares with Quick Look. Use it in any view by selecting a file and pressing the spacebar. If the Finder can read the file type, a Quick Look window pops

open and displays the file's contents. You don't have to wait for an app to load or the file to open, which means that you save a lot of time when you just want to glance at some files to find the one you're looking for.

Quick Look can be more or less interactive for different types of files. For Apple Numbers and Microsoft Excel workbooks, you can click on worksheets to see their contents. You can scroll through Microsoft Word documents and Apple Keynote presentations, and you can click on links in HTML pages. Have a folder full of files you want to examine closely but quickly? Select the files and then press the spacebar.

You'll see a number of tools displayed on the Quick Look window. With some files, such as PDFs, Word files, Pages files, etc., you'll be able

COVER FLOW ISN'T practical for managing files and folders, but it can be useful when you need a quick way to look through a bunch of files that OS X can preview.

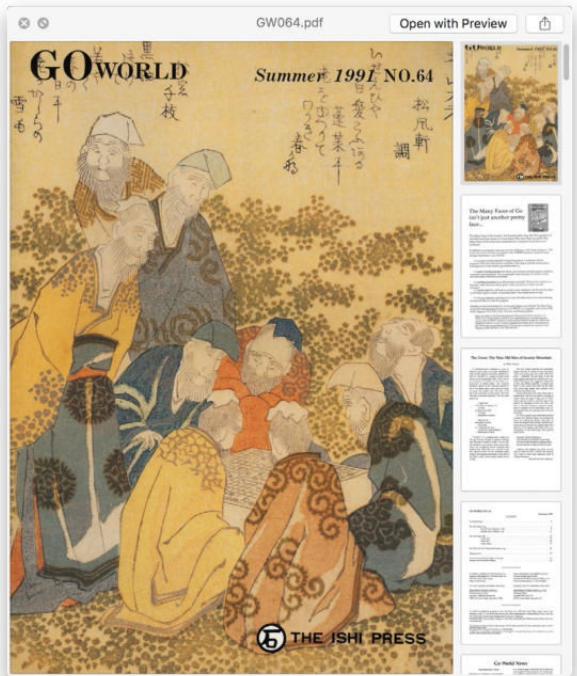


to view thumbnails of the files' pages. If you've selected multiple files, click on the Previous and Next arrows to move through your files. Click on the Index Sheet button to see all the files' previews at once, or click the Full Screen double-arrow button to make the preview fill your screen. If you decide that you want to preview a different file, don't close the Quick Look window; rather, just click on a different file. The Quick Look window will update to show the selected item. And click the Open With button at the top of the window to open the file with its default app. There's also a share button at the top right that lets you send it to a friend by email or Messages, share it on Facebook or Twitter, and more.

One disadvantage of Quick Look is that its floating window appears only when you're in the Finder. If you switch to another program, it disappears. It doesn't close, though; just switch back to the Finder to see it again. Press the spacebar to dismiss it.

INCREASE YOUR FINDER SMARTS

You spend a lot of time in the Finder,



THE QUICK LOOK WINDOW lets you see into your files, and, for some document types, scroll through thumbnails of their pages.

so learning about its many possibilities can save you time and give you more power over your files and folders. Mastering Finder views is one of the first steps to becoming a Mac power user. ■

Why video streaming will never be like music streaming

Why is so much music available to stream, and so few movies and TV shows?

BY KIRK McELHEARN



It's Friday night, and you want to kick back and relax after a long week's work. You fire up your Apple TV and click on Netflix to find a movie to watch. Maybe you like Denzel Washington, and want to see one of his great movies. Search for Denzel, and what do you find? Four films, and not the best. No *Malcolm X*, no *Philadelphia*, no *Hurricane*, *Training Day*, or *Inside Man*. They've got *Flight*, but they don't have *American Gangster* or *The Taking of Pelham 123*. (However, if you want to pay for a rental, the iTunes Store has 41 of his movies..)

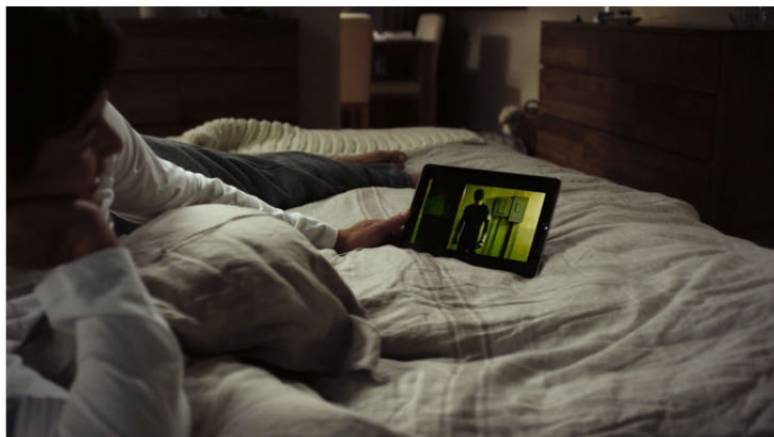
But if you want to check out the latest albums on Apple Music or Spotify, just look at what's new. You'll have almost all of the biggest hits, in every major genre, along with most artists' full catalogues. You want to hear an old Rolling Stones album? No problem.

Why the discrepancy? Why is so much music available to stream, and so few movies and TV shows?

HOW MANY SONGS AND MOVIES?

When you check out music streaming services, they all try to lure you by saying how many "songs" they have. Apple Music has more than 30 million songs, Spotify has about the same number, and Deezer claims to have 40 million.

But streaming video services (those with a fixed monthly fee for





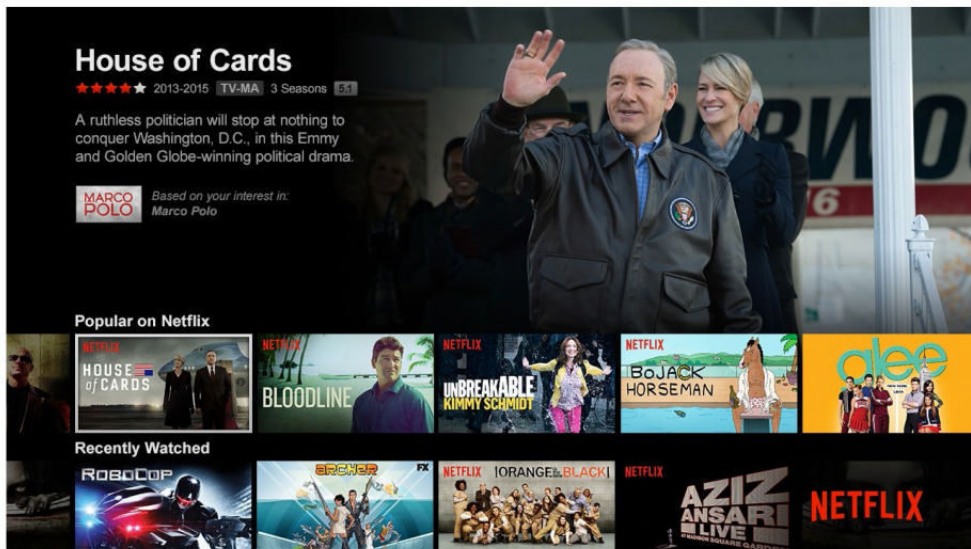
unlimited streaming, such as Netflix and Amazon Prime Video) are nowhere near as proud of citing the size of their collections. Amazon claims that they have 15,000 films and TV episodes available to stream as part of Amazon Prime Video, but, when the service launched in the U.K., I examined what was available, and found that there were only 2,269 movies and 938 TV series ([go. macworld.com/amazoninflates](http://go.macworld.com/amazoninflates)). Amazon counts each episode of a TV series as one of their 15,000 titles. According to FlixList (flixlist.co), Netflix has just over 15,000 titles as well, counting the same way Amazon does; they currently have 2,680 movies.

Sure, music streaming services count songs, not albums—similar to the way Amazon and Netflix count TV series—but if you assume an average of ten songs per album, that's still three million albums compared to fewer than three thousand movies.

What if Apple gets into the game with a subscription streaming video service? Would they have any more titles available for a subscription service? Most likely not.

WINDOWING

The big difference between the two types of streaming is licensing. While it's easy for a large or small record



label to release an album to stream on Apple Music or Spotify, movie releases obey a logic that is only understood by Hollywood’s creative accountants. Movies and TV shows are released in a Byzantine way to benefit from “windowing,” which allows the producers to exploit their work as efficiently as possible. Each step of the release schedule has very different returns, and is calculated to make the most profit possible.

With a record album, the release schedule is generally: Release to CD, download, and streaming, at the same time.

There are some exceptions, but not many. Not all artists stream their music, and some labels won’t play

the streaming game at all (such as the jazz/classical label ECM, or the classical label Hyperion). And an artist can choose to sell an album on CD and by download, and not clear it for streaming right away, as Taylor Swift has done recently. But with most music, the release schedule is all at once, though, with some albums, not every track is available to stream right away (go.macworld.com/amtrackavails).

Movie windowing, on the other hand, generally follows a much more complex schedule, which is partly based on the history of movie distribution.

- > Theatrical release, which lasts up to around four months.
- > DVD and Blu-Ray release, as well

as VOD (video-on-demand) release; these are exclusive for a few months, sometimes longer.

- > Pay TV availability, starting around six months after release, and lasting potentially for several years.

- > Free-to-air TV.

- > SVOD (subscription video-on-demand), or all-you-can-watch streaming.

This windowing schedule is different for movies that are straight-to-Netflix, or movies and TV series produced by Netflix, Amazon, Hulu, and other services. In addition, after a while, movies and TV shows are pulled from streaming services, in order to (hopefully) continue to sell DVDs and Blu-Rays (though many of these get discounted as time goes on). That's why a movie you added to your watchlist last month may be gone when you finally get around to it.

Windowing can be even more

complex, as there have recently been films released on Netflix before or simultaneous with theatrical release, so this system is undergoing changes. But it will be a long time before you can stream any movie you want. The amount of money involved in a film is several orders of magnitude higher than that required to make an album, and Hollywood accountants are going to make sure they optimize their returns at every step.

In the meantime, you'll keep on spending that "Netflix hour"—the time you waste looking for a movie to watch on your subscription service—before you give up and rent a movie on the iTunes Store. ■

IT WILL BE A LONG TIME BEFORE YOU CAN STREAM ANY MOVIE YOU WANT.



“ SURE,
AT FIRST I WAS A LITTLE TAKEN ABACK
BY THE WHOLE PEEING STANDING UP THING.
BUT I TAUGHT HIM TO THROW A STICK
AND NOW HANGING OUT WITH HIM
IS THE BEST PART OF MY DAY.”

— EINSTEIN
adopted 12-09-10

A PERSON
IS THE BEST
THING TO HAPPEN
TO A SHELTER PET



adopt

theshelterpetproject.org





How to adjust left/right audio balance in iOS

A reader would like to compensate for hearing loss by rebalancing sound on his iOS device.

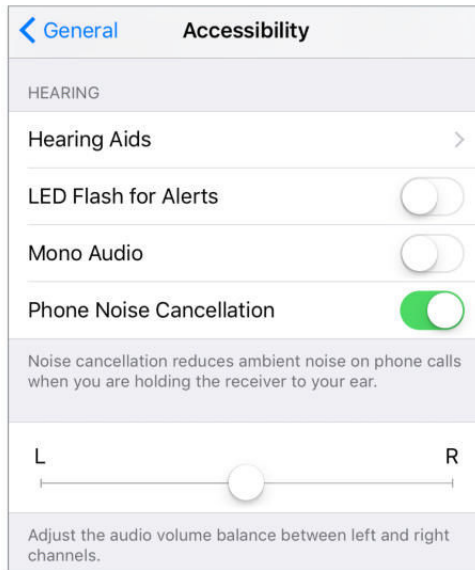
BY KIRK McELHEARN

Richard Crouse writes in about audio balance: “I have hearing loss in my right ear. If I turn up the volume to hear in my right ear, the left ear is dangerously loud.”

Apple has offered a left/right audio balance for several iOS releases, but it doesn't make it obvious where to find it. It's not in Sounds, but in Accessibility (Settings → General → Accessibility). Swipe down to the Hearing section, and you'll find a number of options. All iOS devices can adjust left/right balance.

But you'll also see settings for working with Bluetooth-connected and other hearing aids, for mono audio, and to remove phone noise cancellation, which can affect the quality of calls negatively in some cases.

Accessibility is a misnomer, because the section is full of useful customization and controls that are useful for everyone, not just people with a specific lacuna, like a visual or hearing impairment.



As a general tip, if you're looking for whether a setting exists, Settings has a slightly hidden search feature. Swipe down slightly from the top, and you can tap in any potential keyword. Enter **bal** and the nested balance setting appears as a match. Tap, and you leap right to it. ■

Ask the iTunes Guy: Hide iTunes features, finding songs, and more

Answers to your questions about Apple's media app.

BY KIRK McELHEARN



Sometimes, you want to use iTunes just to listen to music, and not be bothered by the app's many other features. In this month's column, I explain how you can make a minimal iTunes, hiding many of the features you don't use. I also look at what you can do when you've got too much media to fit on your hard drive; how you can find (or not find) which songs you've "loved" on Apple Music; and explain how to fast forward in Apple's iOS Music app.

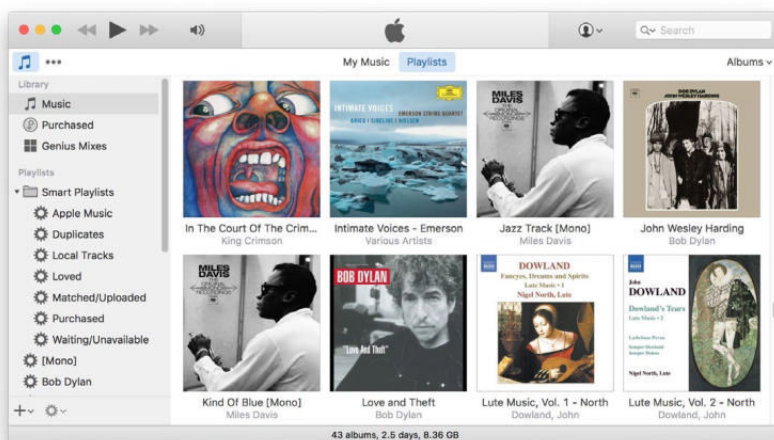
MINIMAL iTUNES

Q: I only use iTunes to listen to music, and I find that there are just too many buttons in its interface. Is there any way I can simplify this?

A: iTunes does have a lot of features. It handles many media kinds: music, movies, TV shows, apps, podcasts, and more. And there's the iTunes

Store, Apple Music, radio, and a whole lot of other features.

Fortunately, you can choose which of these features iTunes displays. If you're tired of seeing icons and buttons you don't use, you can hide them. When you do this, you also prevent accidentally clicking a button that takes you somewhere in the iTunes Store with no easy way to get



YOU CAN MAKE iTunes into a minimal music player by tweaking the app's preferences and settings. Here's what iTunes looks like when you get rid of all the non-music stuff.

back where you were. There are a few steps to take, but you may find that a minimal iTunes is a lot better for when you just listen to music.

I've explained how to do this in an article on my website, "How to Set Up Minimal iTunes for Music Only," (go.macworld.com/minimalitunes).

If you want, you can re-add many of these features when you want to use them; it's only a few clicks to show or hide these buttons and icons.

LOST LOVES

Q: Is there a way to create a smart playlist for loved songs which aren't added to My Music?

A: This question is a follow-up from a question about using "loves" in iTunes (go.macworld.com/itunes-loves), where I explained how to make a playlist of music you've "loved." You may listen on the go, and tap the little ♥ next to a track or album but not think of adding it to your library, or not have the time to do so. Unfortunately, there's no way for iTunes to create a smart playlist for music that's not in its library. Your loved tracks are recorded in your Apple Music account, but if you haven't added them to your iTunes library, then you may have trouble finding them.

Apple Music should have a way of showing you all the music you've

loved that you haven't added to your library so you can do so later. It uses these loves to fine-tune its recommendation algorithms, but it should also have a built-in playlist so you can go back and check which songs you rated.

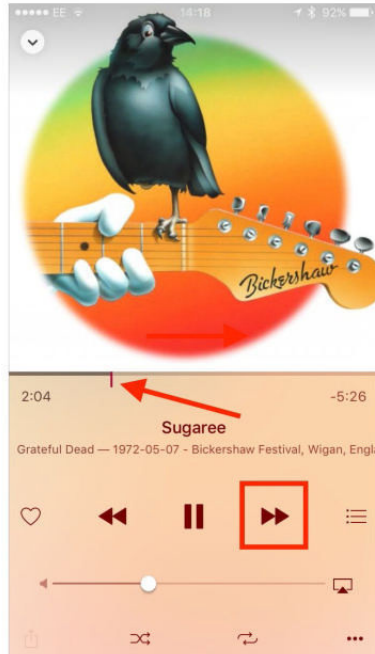
FAST FORWARD

Q: I recently switched to an iPhone. I am having a difficult time trying to find a good MP3 player that will let me fast forward through a song. Can you recommend something?

A: Pretty much every music player app on iOS, including Apple's Music app, allows you to do this. Just press the ►► button and hold it; at first, the music skips ahead in small intervals, but if you keep holding, the scrubbing gets faster, and you can fast forward through a song a few seconds at a time. When you've reached

FAST FORWARD

BY pressing and holding the ►► button, which is surrounded by a red square. Scrub by dragging the playhead, which the red arrow is pointing at.



the spot you want, just release the ►► button.

Note that you can also manually scrub through a track by dragging the playhead just below the album artwork.

TOO MUCH STUFF

Q: I've filled up my hard drive with music, podcasts, movies, and TV shows. Can I put additional files on an external hard drive yet keep them in my iTunes library?

A: You can, but the easiest way to do this is to move your entire iTunes library to an external hard drive. I explain how to do so in “How To: Move Your iTunes Library to an External Hard Drive,” (go.macworld.com/exhditunes).

If you don't want to move the entire iTunes library, what you might want to do is simply move items you don't currently need in your iTunes library to

another drive. The files that take up the most space are movies and TV shows. Find the ones you don't plan to watch in the near future, then drag their files from the iTunes window to a folder on an external hard drive. Wait until the copy has finished, then delete the files from iTunes.

This said, if your movies and TV shows are purchased from the iTunes Store, and your Internet bandwidth is fast enough, you might even want to delete them entirely from your iTunes library. You'll be able to re-download them again when you want to watch them, or even just stream them. ■

Ask the iTunes Guy

Have questions of your own for the iTunes Guy? Email him at itunesguy@macworld.com for his consideration.

Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN



Why your base station and OS X might report different Wi-Fi rates

Rich Knudson wants to know why his 802.11ac-bearing iMac from late 2015 isn't giving him the performance he expects when connected to a new Time Capsule, which also has 802.11ac Wi-Fi networking. He compared AirPort Utility numbers to OS X's hidden display, and writes: "The data rate/Tx [transmit] Rate and RSSI [received signal strength] are very different between AirPort Utility and the extended Wi-Fi data you get

when you option click the Wi-Fi icon in the top right menu bar. One of the benefits I was expecting with my new setup was to connect my iMac to the network using wireless-ac and see a step function improvement in data rate/Tx Rate speeds.”

A: As someone who has tested and used Wi-Fi for 15 years, I was curious about this, too. It’s true that a Wi-Fi adapter and a Wi-Fi base station have asymmetrical parameters. The Wi-Fi adapter in a mobile or desktop device almost always has a less-powerful radio and antenna arrangement for reasons of size and battery. (Desktop Macs can use more power, but they’re relying on similar designs.) A base station can produce a much stronger signal and its antenna arrangement has a design optimized for reach and performance; it doesn’t have to play nice with computer or handheld functions, like an adapter does.

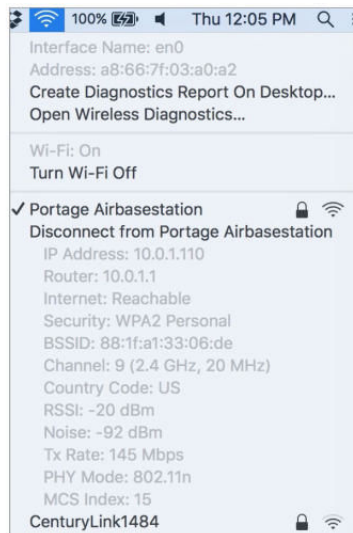
So it’s very likely you’ll see an adapter report stronger signal strength from the base station than the base station will report for the adapter. A base station can push out more power in a focused direction, allowing a distant receiver to pick up a signal, and it can also have more receive sensitivity, allowing a faint transmission by the adapter to be

heard clearly.

But other reported values should be the same: If you’re looking around the same moment, the data rate should be identical, as that’s a function of the negotiated connection between adapter and base station. Wi-Fi in all its flavors allows devices to move to faster and slower rates as performance improves or degrades. This allows you to move closer to or farther from a base station and maintain a connection.

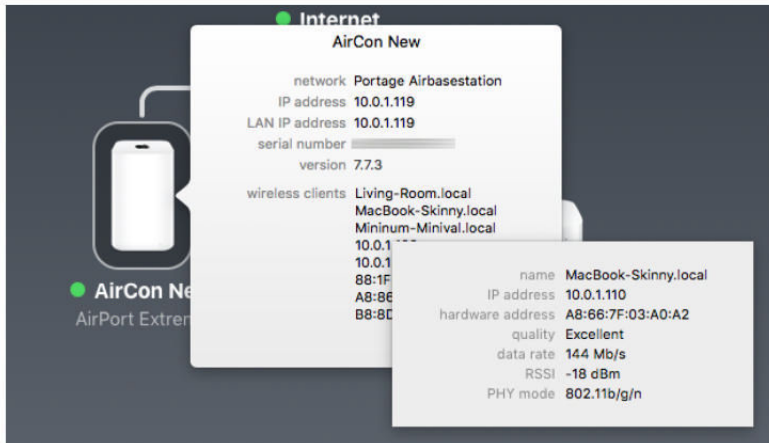
The 802.11n and 802.11ac flavors can also use variable amounts of frequency—different channel “widths”—based on the active electromagnetic environment in the ranges they’re employing. Over very, very short intervals, from one frame to the next (the wireless data equivalent of a packet), raw throughput could vary by a factor of four.

If you want to check your own values, it’s very straightforward. In OS X, hold down the Option key and click the Wi-Fi icon (as Rich notes) and you’ll see detailed diagnostic and



OS X DYNAMICALLY updates values in its Wi-Fi menu for the current connection.





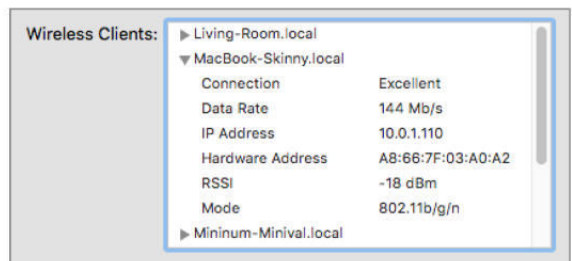
HOVERING OVER A client for a base station reveals the last-updated Wi-Fi details.

performance information. In AirPort Utility 6, click a base station and hover over any entry in the Wireless Clients list to reveal connection details. (You can also hold down the Option key and click Edit, and in the now-revealed Summary tab, you can click the expand triangle in the Wireless Clients list to see details as well.)

I asked Apple about this situation, as it seemed like there were disparities. It replied that because Wi-Fi environment changes constantly, the values represent essentially a snapshot of a sliver of time—if the snapshot in OS X and AirPort Utility aren't the identical moment (probably down to milliseconds), the details will vary slightly. AirPort Utility only refreshes after launch if you press Command-R, then new values are loaded.

Rich sent screen captures showing that the base station thought it was connected at a rate of 351Mbps, while his Mac said 117Mbps. That's obviously a threefold difference, but because of constant rate changes, it's within expected ranges.

To get a better sense of network hotspots and performance, you can use tools like WiFi Explorer ([go](#)).



THE AIRPORT UTILITY base station configuration dialog's hidden Summary tab reveals client information, too.

macworld.com/wifiexplorer) and NetSpot (netspotapp.com). And if you'd like to check actual throughput, instead of reported network speeds, jperf is your best bet. It requires the installation of Java, but not in a Web browser, so you're not exposing yourself to Web-based or remote attacks. You install jperf on a target Mac connected via ethernet to the base station, and then on a Mac connected by Wi-Fi. You can then set one as a server and one as a client to run tests.

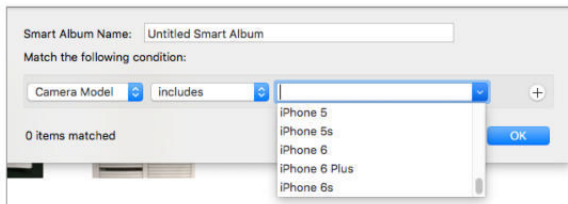
How to separate iPhone pictures in Photos for OS X

Q: Can I search for photos taken with iPhone in my Photos library? I've got over 13,000 photos that I've tried to keep organized and export them to an external drive so that I can vacate space on my hard drive, but want to keep the low-quality iPhone photos separate.

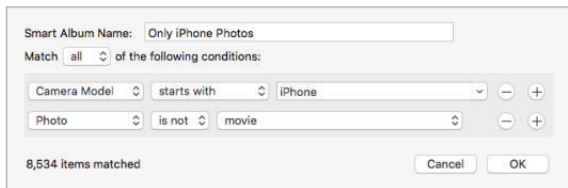
— Jenni Kapanen

A: Yes, you're in luck! I feel like the Smart Album feature in Photos (as in iPhoto) has a lot of overlooked power. Here's a great case.

Start by choosing File → New Smart Album. Now you can select criteria. While there are some iPhoto elements missing from Photos for OS X (notably related to whether



THE CAMERA MODEL criterion lets you select among camera and smartphones or make broader matches.



CREATE A SMART album that only includes iPhone images.

any face has been set in a picture), you can still create complicated chained or independent queries.

For instance, for your purposes, you could create two smart albums: One would look for all photos taken by cameras that aren't iPhones; the other could be only pictures taken by iPhones. This would let you separately browse through both categories. (Unfortunately, you can't create a smart album and then create a separate one that's its inverse selection.)

Let's say I want an album that only contains photos (not videos) taken by any iPhone model. In the New Smart Album dialog, I'd choose All from the Match menu, as I have two criteria. My first is Camera Model set to Starts

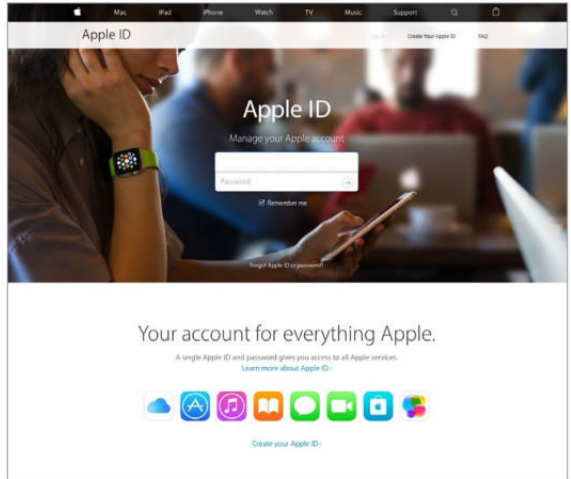
With and then iPhone. (I could also select Is and pick specific iPhone models in the list.)

Then I'd click the + to add another criterion, and choose Photo, set matching to Is Not, and choose Movie from the category pop-up menu. After clicking OK, and I'd now see only images taken by any iPhone I've ever owned.

These criteria can be useful, too, if you're trying to sort or find images taken with more particular photographic parameters. If you want only shots at ISO 100 taken at f/2.2, you can do that, too. Or, only pictures in a certain date range that were taken without a flash.

Can you merge synced data from multiple Apple IDs?

Q: One thing that I don't fully understand is why iCloud can't be used as a solution to this problem? Would it be possible for me to set up a new, third Apple ID and to sync both existing accounts to it and then delete them and implement the new, third Apple ID on all my devices? Everything is in sync (which is why I haven't moved to using just one Apple ID before now). If I add a new contact on my iPhone, it pops up on my iMac. Likewise with Calendar entries.



Also, the 385 physical CDs that I've uploaded to iTunes on my iMac are also there on my iPhone and music I've purchased from iTunes on my iPhone are also on my iMac.

— Dara Hogan

A: Dara has a problem that a lot of readers share: two Apple IDs that are both used for iTunes and iCloud. Dara also notes because everything is in sync she would rather stay put, which is a common one for many, and is the reason that I continue to use an older Apple ID for iTunes and a newer one for iCloud.

So here's the problem. You can't migrate anything among Apple IDs using iCloud or other tools, nor migrate your email. You could make

sure one Mac (better than iOS for this purpose) was up to date with contacts and calendars, and you'd use Mail or another IMAP-supported mail client to download all email that was stored on the server to local storage.

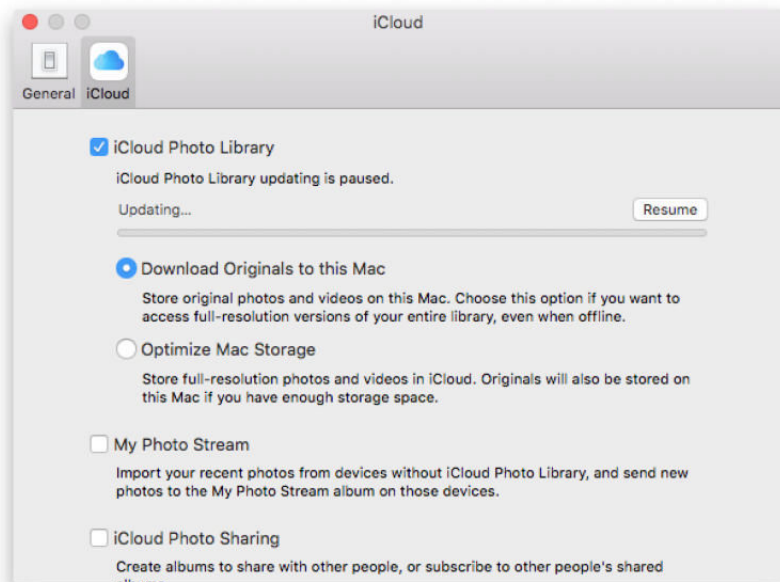
If you used iCloud Photo Library or iCloud Music Library or iTunes Match, you'd want to be sure that 100 percent of the synced material is stored locally on the Mac, too. (In iCloud Photo Library, set the iCloud preferences to download full-resolution images. With iTunes, you can search for song files stored in the cloud through a Smart Album ([go](#).

[macworld.com/smartplaylists](#)), then select and download all of them.)

You'd also need to make sure you'd cleared out iCloud Drive of any files you need.

Then you could disable iCloud and be sure to click every dialog that asks that you want to keep information stored locally. Now, you can create a new Apple ID you plan to use with iCloud synchronization and enable synchro-

YOU CAN'T MIGRATE ANYTHING AMONG APPLE IDS USING iCLOUD OR OTHER TOOLS, NOR MIGRATE YOUR EMAIL.



IN iCLOUD PHOTO Library, set the iCloud preferences to download full-resolution images.



nization for all the services.

However, a lot of provisos:

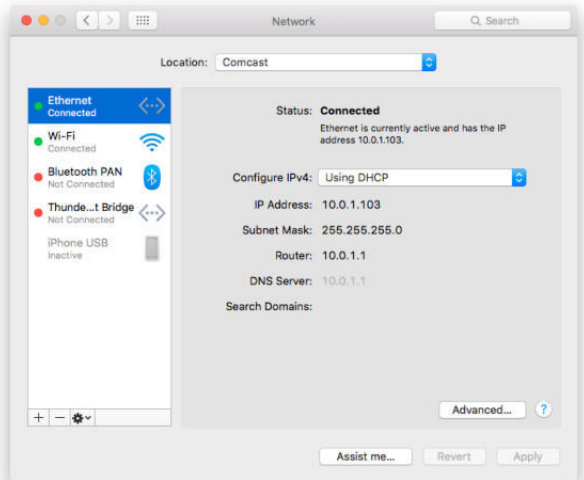
> All DRM-protected media purchases and all Mac App Store and iOS apps remain locked to the accounts through which they were originally purchased.

> If you want to keep using one of the emails associated with your other Apple IDs—especially to send email using that address as the return address—you need to keep an entry in your mail programs for it. (You can forward iCloud email (go.macworld.com/fwdicloudemail), though, and that may be enough of a solution for many people.)

> There may be Apple-associated or third-party connections to the Apple IDs or associated email addresses, so you may regularly have to log in or enter passwords in any case.

If that all works for you, then a third Apple ID (or consolidating sync to one of the two existing ones) should work out just fine.

Of course, the real solution here is for Apple to act like a company doing business in 2016 and build Apple ID migration and merge options that preserve media ownership and transfer the licenses and consolidate previous purchase histories and other records. Many, many, many companies do this, and some have tens of millions of customers, too.



Until that happens, everything else is a second-best measure.

THE NETWORK SYSTEM preferences pane lets you activate multiple interfaces at once, and see the status of all network connections.

Can you use Wi-Fi and ethernet on a Mac at the same time?

Q: I have an ethernet connection to my FiOS modem/router and it works great. Somewhere along the line I had to turn on my Wi-Fi as well. Don't remember why. Just curious, is it a benefit or a deficit or is it neutral to have both connections active at the same time?

— Don Smith

A: Don (and Don really exists, I didn't invent him, I swear), that's a great area to discuss. OS X is a well-designed modern operating system that for

many releases has let you have multiple active network interfaces. They can be “real” in the sense of directly corresponding to physical hardware that’s part of or attached to a Mac, or “virtual,” as is the case with VPNs (virtual private networks).

Typically, they won’t conflict, even if you have two or more interfaces connected to the same network, such as Wi-Fi and ethernet. A few years ago, OS X would balk at this; but since Mavericks (10.9), I’ve kept both active. (You may want Wi-Fi active at all times so you can take advantage of Continuity features that require Wi-Fi, and to use AirDrop.)

OS X automatically sorts network interfaces in the Network system preferences pane in the order of first “connected” interfaces (ones with an active signal and IP address), then disconnected ones, and finally those marked inactive. (You can select any interface, click the gear icon, and choose Make Service Inactive to disable it.)

But you can choose the order in which OS X accesses your local network and the Internet. Click the gear icon and then select Set Service

Order, and you can drag interfaces around in the priority you want OS X to use them when they’re available and connected.

The most likely scenario for this is cascading an ethernet, Wi-Fi, and iPhone USB connection with a laptop. When you’re plugged into ethernet, you don’t want to have to turn off Wi-Fi, so you set ethernet as the first item in the Service Order. Likewise, if you’ve unplugged from ethernet, you’d prefer Wi-Fi, but if that’s not available either, you want to use your iPhone’s hotspot. Setting this order means no mucking about when your network conditions change. ■

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