

MESSAGES IN iOS 10: POWER OF THE PLATFORM

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FROM IDG

Everything you need to know about macOS Sierra



TAKE



A

STAND



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How to set up a new Mac securely and update an older one

If you're setting up a Mac from scratch for yourself or for another person, you can make a number of baseline choices, but they're good for existing installations, too.

BY GLENN FLEISHMAN

When you get a new Mac, how can you make sure you've set it up to be as secure as possible? If you walk through a completely fresh installation process, Apple tries to guide you into making the most-secure choices among alternatives, but it's probably the worst time to try to sort out the options available and make those decisions.

A reader asked for advice for the next time they start from scratch, and I can offer that in this column. However, all of my suggestion can work just as well as later additions, whether you're reinstalling OS X, installing and then migrating from a different Mac, or just continuing to use an existing installation. It's better to set this up first, but it's never too late to add layers.

SAY YES TO FILEVAULT 2

FileVault 2 (go.macworld.com/filevault2), introduced in OS X 10.7

Lion, is Apple's name for full-disk encryption (FDE). With FileVault 2 enabled, OS X starts up using the OS X Recovery partition instead of booting directly from your startup volume, which presents an account login selection screen. OS X uses that to unlock an encryption key, which is in turn used to decrypt your startup volume in real time, and the regular boot proceeds. When powered down, the entire contents of your drive are strongly encrypted.

There's a secondary advantage with SSDs, which distribute writing

FILEVAULT ENCRYPTS the entire contents of a drive; when powered down, a Mac can't be cracked by any currently known means.



Your iCloud account "glennf@me.com" can be used to unlock your disk and reset your password if you forget it.

If you do not want to allow your iCloud account to reset your password, you can create a recovery key and store it in a safe place to unlock your disk.

- Allow my iCloud account to unlock my disk
 Create a recovery key and do not use my iCloud account



Cancel

Back

Continue

new data to avoid excessive wear on specific flash memory cells, as flash eventually degrades. Without FileVault 2 enabled, there's no absolutely secure way to delete data permanently on an SSD; with it enabled, fragments scattered around an SSD are encrypted, making recovery effectively impossible.

With a new system. Starting with OS X 10.10 Yosemite, Apple enables FileVault 2 during the setup or upgrade process unless you uncheck the Turn On FileVault Encryption box during that stage of the setup. You can choose between using iCloud as a backup method to unlock the disk; if the iCloud option is unchecked, create a recovery key. If you forget your password, either iCloud or the Recovery Key will be your only way to unlock the disk—the data is otherwise lost forever.

With an existing installation. Follow these steps:

1. Open the Security & Privacy system preferences pane.
2. Click the FileVault tab.
3. Click Turn On FileVault.
4. Decide whether you want to use iCloud or a Recovery Key as a backup if you can't recall your password.
5. Select which accounts can start up a Mac from being shut down, and unlock the startup volume.
6. Click Restart to begin the process.

The FileVault process can't be halted once it's underway, and it can slow down normal system performance. Start it on a Friday afternoon so it can run for hours or days. (You can disable FileVault, however, which requires another restart and a long period of time for decryption.)

MAKE ROUTINE CLONES AND BACKUPS

This may not seem like a security issue, but having a reversion position in case your system is compromised is all about security. Macs have largely, but not entirely, escaped malware, and the fact that most attackers can't get their claws into OS X or Safari to spread an attack widely doesn't mean it won't happen. Ransomware has such a high rate of financial return that criminals have started to try to infect Mac users ([go. macworld.com/osxransomware](http://go.macworld.com/osxransomware)); they don't need to comprise millions of people, only thousands or tens of thousands.

Apple will prompt you about setting up Time Machine while finishing up OS X's installation, as it will every time you attach a new disk to your Mac if Time Machine remains

IT HAS A FIXED HEIGHT THAT RAISES IT JUST THREE INCHES, AND HAS JUST A -5 TO 15 DEGREE TILT SWING.

enabled. If you're not ready to get another backup solution in place, take Apple's advice. You can get extremely inexpensive, fast, USB 3.0-compatible multi-terabyte portable and AC-powered hard-disk drives from a number of sources, so there's no excuse to not be backing up from the get-go.

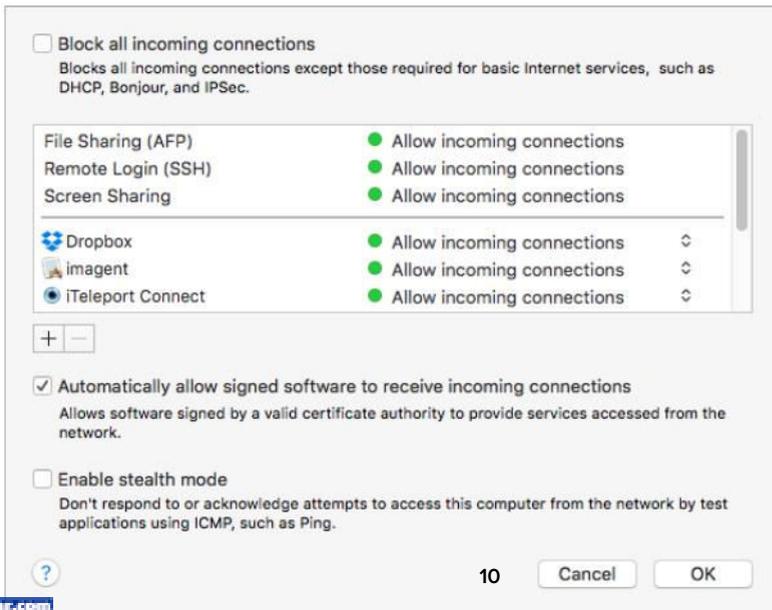
If at all possible, I recommend a three-pronged attack:

- Use SuperDuper or Carbon Copy Cloner (go.macworld.com/drivecloning) to create regular, even nightly clones of your startup volume. This lets you get back in business right away, even if you have to wipe your entire startup drive. I'd recommend

always using a clone in addition to or instead of Time Machine.

- Cycle clones to an off-site location, like a safe-deposit box. Even if you can't do this regularly, it's still another insurance policy.
- Backup documents to encrypted cloud-hosted storage, preferring a service that lets you set a passphrase in such a way that the service never has access to it, such as CrashPlan or Backblaze. This prevents employees of the company, hackers, and the government (warrant-free intrusion) from accessing your files.

Should you get infected, in the worst case, you can roll back to a clone or copies of documents in



THE BUILT-IN

FIREWALL in OS X is adequate, but you might step up to a more customizable and expansive third-party network access and monitoring tool.

cloud storage, or an earlier Time Machine snapshot.

TWO-FACTOR AUTHENTICATION WITH YOUR APPLE ID

Enabling two-factor authentication (2FA) for the Apple ID or IDs you use with your computer and iOS devices is a must in the current cracking climate. Seemingly every day, passwords are exposed from major online networks and retailers. If you've ever re-used your Apple ID password, its exposure with a crack could let someone gain access to your account.

Someone could also potentially gain remote access to a Mac if you have Back To My Mac enabled and allow your iCloud login to be used with it. That attacker would use your Apple ID credentials on another Mac, see the Mac show up in the list of available devices in the Finder, and then log in with the same Apple ID.

Apple's 2FA is an update to its older two-step system (go.macworld.com/apple2fa), but it still relies on trusted devices to verify that you're a legitimate person using a password to use an Apple ID for any online purpose.

In El Capitan, Apple doesn't yet prompt you during setup to enable 2FA. When I set up a macOS Sierra system from scratch, I already had 2FA enabled, so had to provide

confirmation, but I couldn't see whether it would prompt you if you don't have it turned on yet. If you're using two-step authentication, you have to disable it first in order to turn on 2FA. (iOS will, however, prompt you while setting up a new device or after erasing a device and setting it up from scratch.)

In OS X:

1. Open the iCloud system preference pane, and click Account Details.
2. Click Security.
3. Click the Turn On Two-Factor Authentication option.

Follow the steps to add a trusted phone number or trusted devices.

I've had Apple's 2FA enabled for months, and it's such a relief every time I get the notification on multiple devices when I log into an Apple website or set up a new device—it reminds me positively that Apple is keeping track.

CONSIDER INSTALLING SOME LIMITED MONITORING SOFTWARE

As a post-installation consideration, you might enable OS X's firewall (in the Security & Privacy system preference pane), which offers some

SEEMINGLY EVERY DAY, PASSWORDS ARE EXPOSED FROM MAJOR ONLINE NETWORKS AND RETAILERS.

reasonable but very limited baseline behavior, or install third-party software that's more extensive and customizable. Something like Little Snitch (go.macworld.com/little-snitch) is a good idea—the software monitors incoming and outgoing connections, and lets you approve or deny them.

Little Snitch and similar software don't prevent malicious activity, but if you're paying attention as it asks you what's acceptable and what's not, you might notice if something awful has inserted itself into your system. You'll also be able to control the “phone home” behavior of legitimate apps that you don't want to connect back to the mothership to report information about you—even if that information is benign.

While network-monitoring software makes sense, I've been down on the anti-virus category for the Mac for many years, because by the time an app is capable of identifying and removing malware, it's generally too late to be of any good. Apple updates its silent Gatekeeper in OS X to add malware signatures to

prevent them from running, and that's seemed to forestall any widespread attacks.

However, if you regularly exchange documents with people on other platforms or use multiple platforms yourself, or run Boot Camp or virtualized instances of Windows and other OSes, it's worth not just installing virus-detection software on those platforms, but also on a Mac so long as it detects cross-platform viruses. Macro-based viruses that don't activate in OS X software as well as payloads in documents you might transfer to Windows could turn you into a carrier. Intego Internet Security X9 (go.macworld.com/integox9) combines application networking access and anti-virus software, including recognizing Windows malware, into a single bundle. ■

SOMETHING LIKE LITTLE SNITCH IS A GOOD IDEA—THE SOFTWARE MONITORS INCOMING AND OUTGOING CONNECTIONS, AND LETS YOU APPROVE OR DENY THEM.

With Sierra, Apple lets the Mac be the Mac

Our fears about the grand unification of OS X and iOS were unfounded.

BY DAN MOREN



While big updates like iOS 10 (go.macworld.com/ios10ishere) and massive rethinks like watchOS 3 (go.macworld.com/watchos3) might have commanded the lion's share of attention during Apple's WWDC keynote and the ensuing aftermath of discussion and Zapruder-level dissection, it's worthwhile to pause for a moment and consider the state of Apple's most venerable platform, the Mac.

No longer burdened by its increasingly dated X-laden moniker, the rebranded macOS got a major addition in the form of Siri, as well as some more minor improvements sprinkled throughout the OS.

But to me, the big message to take away from Apple's recent presentation is that the company is all too happy for the Mac to share features and technologies where it makes sense, but to still let it stand on its own two legs and be the best version of itself.

TWO ROADS DIVERGED IN A YELLOW WOOD

Given the rapid success of iOS in the last almost decade, more than a few folks were worried that Apple might decide to shift the Mac toward a stronger resemblance to its mobile sibling. The company's fall 2010 event was even described as "Back to the Mac," the main thrust of which was bringing features from iOS to OS X, most notably a new Mac App Store and the changing of the scroll

direction. That spurred fears of forced convergence among Mac fans, who didn't want the peanut butter of iOS infesting the chocolate of their Mac experience.

But despite those changes, the iOS-ification of the Mac has never really happened. Yes, some features have been borrowed from the mobile OS or debuted in both places, but they've firmly remained two separate things, true to the words of Apple's own Craig Federighi on the occasion of the 30th anniversary of the platform:

We have a common sense of aesthetics, a common set of principles that drive us, and we're building the best products we can for their unique purposes. So you'll see them be the same where that makes sense, and you'll see them

BUT DESPITE THOSE CHANGES, THE iOS-IFICATION OF THE MAC HAS NEVER REALLY HAPPENED.

be different in those things that are critical to their essence.

Apple seems to have followed through on that promise, and there's nowhere it's more evident than in the improvements that the company announced recently.

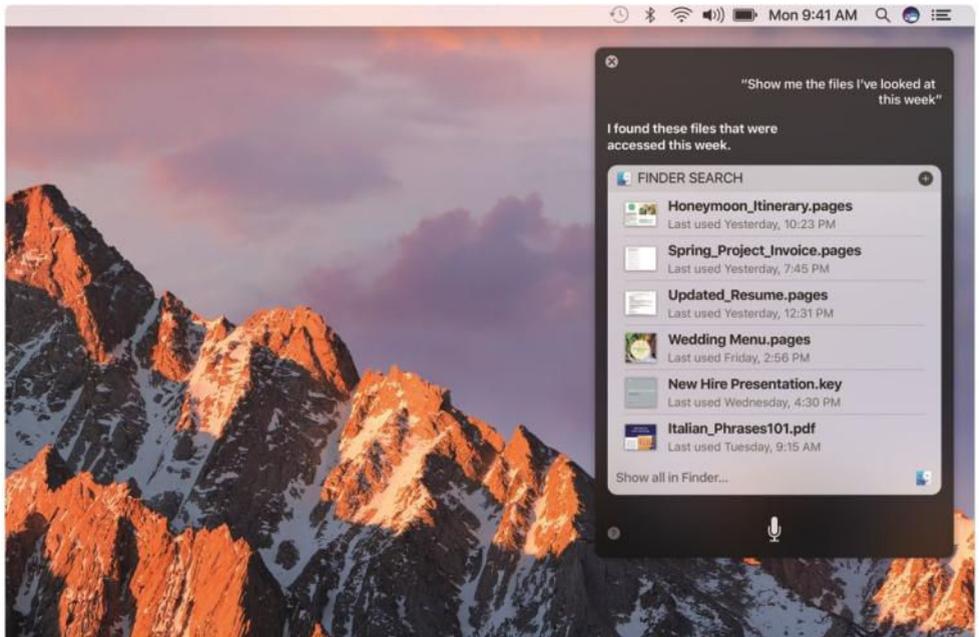
SIERRA, MEET SIRI

When Apple demoed the addition of its virtual assistant, Siri, in the upcoming version of macOS (go.macworld.com/macos-sierra), most of the tasks that were shown revolved around

one thing: managing files. For example, Federighi showed how you could present complex natural language queries to Siri—i.e., “Show me the files I shared with Jony last week.” In truth, that's not much more than what the company showed off last year in its improvements to Spotlight in El Capitan.

But as the demos continued, showing how you could store those files temporarily in Notification Center, then drag them into another app, it became clear that Apple was

SIRI ISN'T JUST
Spotlight by voice—it has some great Mac-specific abilities as well.



showing off features that simply don't exist—or, moreover, don't make sense—on the company's mobile platform. These are *inherently* Mac-specific features, in addition to all the same things you can ask Siri on the Mac about the weather, sports, web searches, and so on.

Apple is also putting forth Siri on the Mac as a way to multitask more effectively: have it go out and accomplish tasks while you're still doing something else. That's fundamentally a different choice than on iOS, where Siri takes over the entire interface and consumes *all* of your attention. It's in the same vein of macOS handling multiple windows and many apps with aplomb. Despite recent improvements to multitasking on the iPad, the Mac remains unquestionably the champ in this department.

Besides Siri, most of Apple's major macOS-related announcements involve your Macs better communicating with other Apple devices: using your Apple Watch to automatically log in to your Mac, for example, or authenticating an Apple Pay transaction with your iPhone or Apple Watch, or even sharing clipboard information between your Macs and iOS devices. This isn't so much convergence as it is integration, admitting that all these devices

serve different purposes in your life, and all of them are here to stay—so they might as well get along.

OPENING UP

As information from WWDC sessions leak out, it's also becoming apparent that Apple

has dialed back on some of its attempts to import iOS-like behaviors to the Mac. For one thing, the company announced that it would no longer mandate that

apps must be in the Mac App Store in order to implement iCloud-related features. That's a big deal, because access to iCloud was one of the biggest carrots Apple had been using to entice Mac developers from traditional distribution models into its own store. Though Federighi and Apple's Phil Schiller demurred when questioned about the Mac App Store during a live interview with Daring Fireball's John Gruber (go.macworld.com/gruberinterview), it's pretty apparent to even a casual user that the Mac App Store hasn't enjoyed its

THIS ISN'T SO MUCH CONVERGENCE AS IT IS INTEGRATION, ADMITTING THAT ALL THESE DEVICES SERVE DIFFERENT PURPOSES IN YOUR LIFE, AND ALL OF THEM ARE HERE TO STAY—SO THEY MIGHT AS WELL GET ALONG.

iOS counterpart's blockbuster success.

On the other hand, reports from the initial beta of macOS Sierra also suggest that Apple has eliminated Gatekeeper's "run apps from any source" security setting, now strongly nudging developers toward either being registered with Apple or distributing through the store. (You can, however, still override the feature on an app-by-app basis.) But, notably, the company didn't simply lock the platform down to only Mac App Store programs, as many had feared might

eventually come to pass.

All of this, to me, points to a loosening up of Apple's "my way or the highway" approach when it comes to the Mac, and acknowledges that the platform has long had its own thriving culture and manner of doing things. Just as Apple has clearly decided to rethink its choices and discard ideas that didn't work on its newest product (go.macworld.com/watchos3crowd), the company has shown that it's willing to do the exact same thing for its longest-running product line. ■



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Reviews

The Latest Mac Products
Reviewed & Rated



MAC GEMS ARE APPS THAT OFFER STANDOUT UTILITY OR UNIQUE FEATURES AT A GREAT PRICE.



PHOTOGRAPHY

JPEGMINI PRO FOR ADOBE PHOTOSHOP: JUST ONE CLICK FOR OPTIMIZED JPEGS

BY J.R. BOOKWALTER

JPEGMINI PRO is a handy Mac application (go.macworld.com/jpegminireview) for reducing the size of JPEG image files with virtually no distinguishable difference from the original. At the time, it offered no way to optimize files directly out of my favorite image editing software, but I'm happy to report this oversight has now been addressed.

JPEGMINI PRO FOR ADOBE PHOTOSHOP



AT A GLANCE

JPEGmini Pro adds an Adobe Photoshop extension to allow any file type to be saved as an optimized JPEG image in as little as a single click of the mouse.

PROS

- Fast one-click JPEG files from Adobe Photoshop CC
- Displays storage space saved
- Photoshop extension works with any source file type
- More affordable bundle includes standalone, Lightroom versions

CONS

- Photoshop extension not available for separate purchase
- No options for advanced users
- No extension or plugin in free version

PRICE

\$99

COMPANY

Beamr

ONE-CLICK SAVE

In addition to a stand-alone application and Adobe Lightroom plug-in, JPEGmini Pro now includes an extension for Adobe Photoshop CC 2015 and higher. Rather than save files using Photoshop's cumbersome native export options, generating an optimized, high-quality JPEG file can now be done in just one click.

The JPEGmini extension opens in Photoshop as a sparsely populated panel with a single blue button. Clicking Export With JPEGmini saves the current file to the location of your choice without needing to fiddle with any quality settings. Best of all, the extension works with any file open in Photoshop, an improvement on the stand-alone application, which is limited to processing JPEG source files only.

BIG SAVINGS

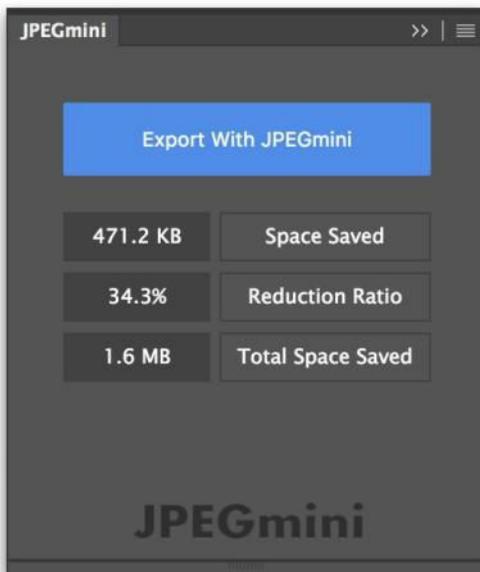
In addition to the export button, JPEGmini Pro for Photoshop also displays the amount of storage space just saved (also presented as a numeric "reduction ratio" percentage) and total space savings to date. It's easily becoming my favorite way to save high-quality JPEG files from Photoshop for all but the rare occasion when I want more control over the end results.

While there's still no OS X Photos extension support, the developer is working to make the software less expensive to own. JPEGmini Pro is now \$50 cheaper in a bundle with the stand-alone application, Photoshop extension, and Adobe Lightroom plug-in. (Sadly, there's no way to buy the extension alone.)



BOTTOM LINE

Smaller, optimized JPEGs from any source file in Adobe Photoshop makes JPEGmini Pro more useful—and now, more affordable than ever. ■



JPEGMINI PRO now offers one-click export from Adobe Photoshop CC, along with handy information on how much space you've saved by using the extension.



MONITORS

ACER H277HU: USB-C PASSTHROUGH MONITOR WORKS WELL WITH APPLE'S MACBOOK

BY GLENN FLEISHMAN

A 2015 OR 2016 MACBOOK has a neat complement in the 1440p 27-inch Acer H277HU (on Amazon; go.macworld.com/accerh277hu) display. You can connect the MacBook's sole USB-C port directly into the back of the H277HU using an included (albeit short) cable, and the H277HU acts as a second display while also charging the laptop and adds two USB 3.0 Type-A ports at the rear of the display.

The display is sharp, bright, and expansive, with its front glass extending to the top, left, and right edges. Hidden on-screen display (OSD) buttons are underneath the bottom-left edge. Testing the display with apps and with live-action and

animated high-definition video, there are no motion artifacts, and the tone is rich and deep. Even with my 2015 MacBook, there was no lag, flicker, or other indication of anything but on-target performance of the 2560x1440 pixel display.

The monitor also has HDMI and DisplayPort connections, so you can use it with other computers or as an output source for an Apple TV, other player, or an HDMI-switching receiver. The built-in three-watt speakers are fine, but have about as little oomph as you'd expect.

Unfortunately, even at its \$500 MSRP, it lacks a stand with much adjustment. It has a fixed height that raises it just three inches, and has just a -5 to 15 degree tilt

ACER H277HU



PROS

- Crisp, edge-to-edge display
- Excellent brightness without motion artifacts
- USB-C video and passthrough power

CONS

- High premium for USB-C support
- Bad button arrangement for OSD
- No height adjustment, limited tilt

PRICE

\$500



swing. That won't work with some setups, or it will require an additional stand onto which you place the monitor.

The OSD buttons are hidden, but also irritating to find. I turned the monitor off several times because the power button is in line with the other controls and has the same soft-press action. The volume control for the display requires using the buttons; otherwise, you typically rarely need to adjust OSD.

While the H277HU has several color profiles you can select among with an Empowerment button (no joke), I found the user-selected option with very minor tweaking using OS X's calibrator to provide better results. (With external inputs,

like a streaming-media player or Blu-ray, the scene adjustment could be more useful.)

BOTTOM LINE

The Acer fits the bill as a MacBook monitor/micro-dock combination, but the price is about \$100 above what similar monitors without USB-C cost, and the lack of height adjustment and limited tilt in the stand might put you off. If it doesn't fit your needs exactly, more USB-C monitors are expected soon from Dell and others. ■

IT HAS A FIXED HEIGHT THAT RAISES IT JUST THREE INCHES, AND HAS JUST A -5 TO 15 DEGREE TILT SWING.

PHOTOGRAPHY

PRIIME STYLES: PRO PHOTO PRESETS JUMP FROM iPhone TO MAC, MINUS EDITING

BY J.R. BOOKWALTER

IT'S NOT HARD to spice up photographs in just a few clicks of the mouse these days. The more difficult part of the process is finding an app with quality filters worth using—and one of the better mobile solutions around has finally made the leap to the desktop.



PRIIME STYLES 1.0.2



AT A GLANCE

With more than 100 photo presets created by the world's best modern photographers, Priime Styles for Mac delivers a professional look via the stand-alone app or extension support for Photos and Lightroom.

PROS

- 101 professional one-click photo filters included
- OS X Photos extension, Adobe Lightroom support
- Explore mode for previewing all filters at once
- Batch mode (stand-alone or Lightroom only)

CONS

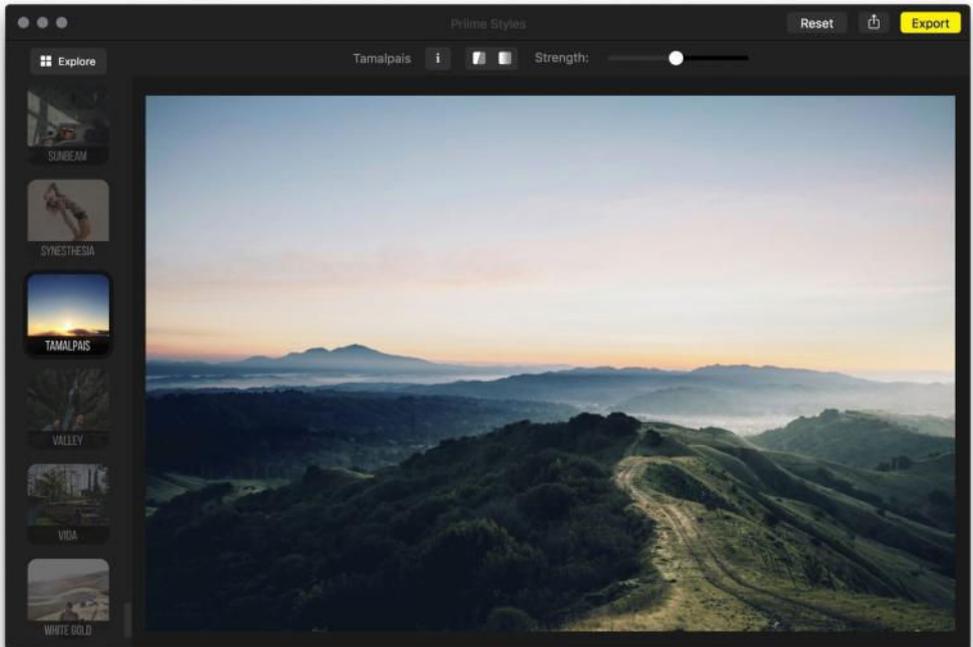
- Lacks editing tools found in iPhone version
- No effects options (frames, film damage, etc.)

PRICE

\$30

COMPANY

Priime



101 STYLES

Priime Styles, \$30 on the Mac App Store (go.macworld.com/priime-styles), is a Mac version of the popular Priime photo editor for iPhone. The two apps share the same impressive catalog of “styles,” what we typically refer to as one-click image filters or presets. Created by dozens of the world’s top photographers, there are over a hundred styles to choose from—101 to be exact, although the apps offer them up in different ways.

Priime for iPhone (go.macworld.com/priime) is free to download, requiring a \$10 in-app purchase to unlock everything. By comparison, the Mac version includes the entire lineup out of the gate, but at three times the cost. This type of pricing disparity is fairly common with mobile and desktop software, but in this case the two apps aren’t exactly equals.

For starters, Priime Styles isn’t really a photo editor at all. It’s more a gallery of one-click filters that can be applied to imported images which

PRIIME STYLES OFFERS A clean, stand-alone Mac app for applying one-click filters that can enhance photos in almost any file format.

can be shared or exported. There's a sole slider for adjusting the strength of the applied filter, whereas the iPhone app offers crop and rotation options, as well as an arsenal of image-adjustment tools.

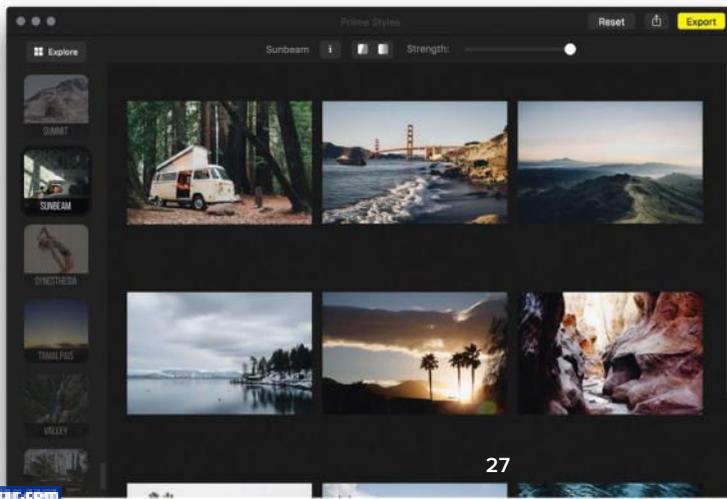
Although that sounds disappointing, Priime Styles makes up for this deficiency in other ways. The Mac version directly integrates with Adobe Lightroom catalogs, providing a far richer palette of editing options, along with non-destructive extension support for OS X Photos, a feature not offered on the iOS version.

YOU GOT THE LOOK

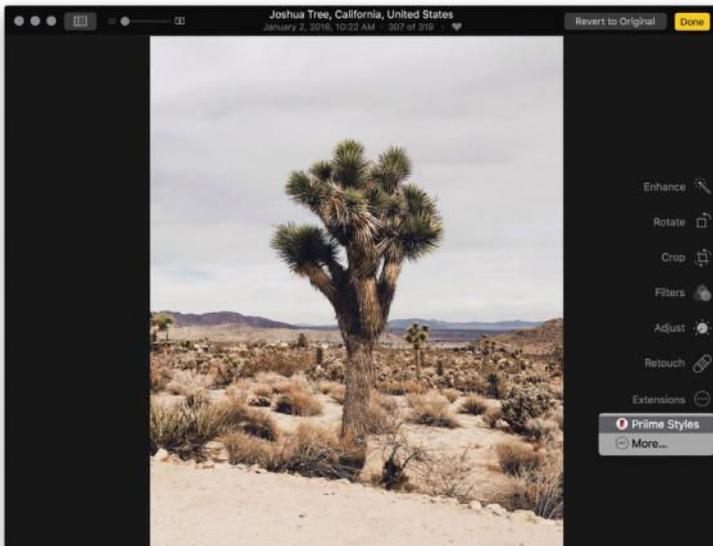
The stand-alone Priime Styles is a fairly minimalist affair, featuring a dark user interface that can be navigated via keyboard, with a scrolling ribbon of styles along the left side. Just about every conceivable image file type is supported, including JPEG, TIFF, PNG, and a wide assortment of raw formats.

One nifty feature is the ability to open multiple photos and apply one filter with a single click. There's support for full-screen mode, which is perfectly suited to working with more than one photo. Buttons at the top allow users to preview the original unfiltered image, or side-by-side split view, which also works in batch mode.

The Info button provides detailed information for the selected style and which type of image it was designed for. If the sheer number of



THE STAND-ALONE version of Priime Styles can be used to apply a single filter to a batch of images at once.



MAC USERS CAN apply Priime Styles directly within OS X Photos, thanks to extension support.

available choices is too much, click the Explore button to display the currently-selected image as a grid of thumbnails with styles already applied, making it easier to pick the right one.

As an OS X Photos user, I was most interested in how Priime Styles worked as an extension. I'm happy to report it's almost exactly the same experience as the stand-alone app, minus batch editing and sharing/export options. Styles tend to be on the conservative side, but they're good quality and a nice way to punch up lackluster photos.

BOTTOM LINE

Priime Styles lacks the image-editing tools of its iPhone equivalent, but with so many filters to choose from and OS X Photos/Adobe Lightroom support, you won't care. ■



EMAIL UTILITY

MAIL ARCHIVER X 4: VERSATILE MAC EMAIL UTILITY IS POKY BUT INDISPENSABLE

BY J.R. BOOKWALTER

AFTER YEARS of using email, those messages start to consume valuable internal storage space and can eventually slow down your Mac, where a copy of every single email is cached locally. That's why it's a good idea to occasionally archive and purge older messages.

FULL-FEATURED BACKUP

As the name implies, Mail Archiver X, \$40 (mothsoftware.com), is a Mac application for offline storage of messages, folders, and entire

MAIL ARCHIVER X 4.0



AT A GLANCE

Mail Archiver X archives messages from major email clients or IMAP servers into a searchable database complete with attachments, headers, and more.

PROS

- Archive multiple email clients, IMAP accounts at once
- Robust export options including Evernote, FileMaker
- Retains email formatting, attachments

CONS

- Slow performance with large databases
- Setup options are global only
- Only modest increase in speed for subsequent backups
- No import of standalone MBOX archives

PRICE

\$40

COMPANY

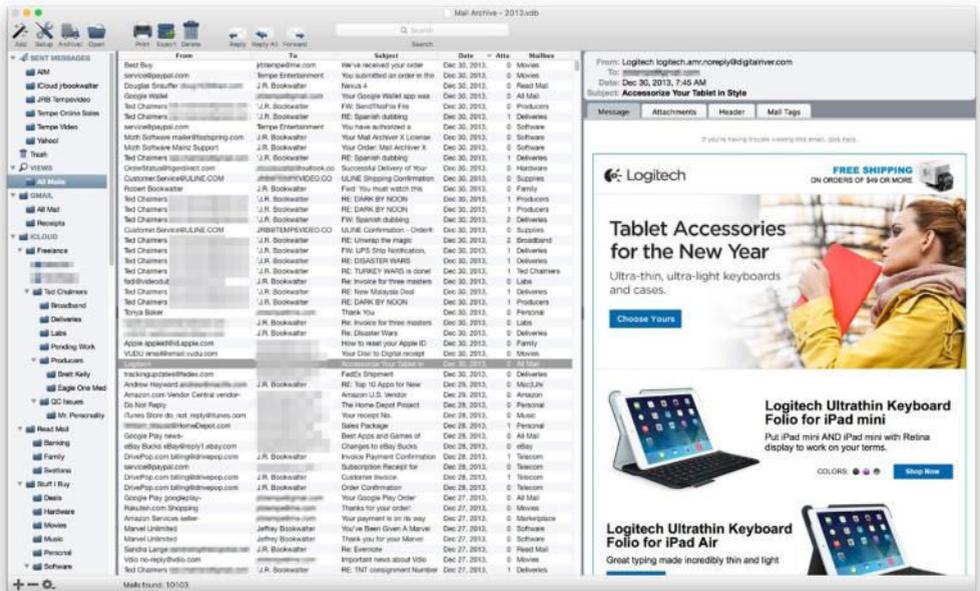
Moth Software

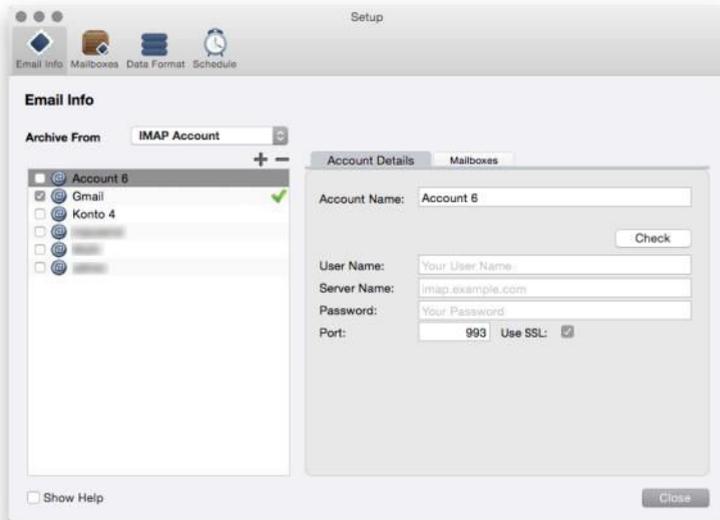
accounts. Instead of saving messages as flattened PDF documents or exporting mailboxes into MBOX format that are only readable by the same email client, Mail Archiver X faithfully archives messages into its own Valentina database from which they can be viewed, searched, or further saved to a variety of common formats in a few clicks of the mouse.

This comes in especially handy for Evernote users who want to retain cloud-based copies of certain emails, such as software receipts containing license codes you'll need in the future. Mail Archiver X exports multiple emails complete with tags to a specific notebook along with optional attachments. Messages can also be exported to MBOX, PDF, RTF, text, or XML formats; owners of FileMaker (filemaker.com) 12 or later can also use that popular productivity application for an external database.

Mail Archiver X utilizes a familiar three-panel layout, with mailboxes along the left side, message list in the center, and preview at right. The

MAIL ARCHIVER X offers the unique ability to archive messages into a searchable database, complete with mailboxes and more.





MAIL ARCHIVER X 4.0 ALLOWS multiple email clients and IMAP accounts to be archived in a single click.

third panel also includes tabs for viewing attachments, header details, or mail tags. The toolbar across the top provides shortcuts for setup, print, export, delete, and search, as well as the ability to reply to or forward selected messages straight from the original email client.

While earlier versions supported popular email software like Apple Mail, Microsoft Outlook/Entourage, and Thunderbird, the latest 4.0 release allows users to archive from multiple clients at the same time, with granular control over which mailboxes are included. You can even archive directly from one or more IMAP server accounts, no mail client necessary.

SLOW AND STEADY

There's no denying Mail Archiver X is a convenient utility, but in the past the software hasn't exactly broken speed records. I'm happy to say performance has noticeably improved with version 4.0, but how much ultimately depends on the size of your archive. The larger the database grows over time, the slower it tends to become when viewing or sorting messages.

Thankfully, Mail Archiver X can create multiple smaller archives to keep things efficient, although it should be noted Setup options are

applied globally, rather than stored inside each database. This becomes tricky when using the built-in scheduling option to automate backup on a daily, weekly, monthly, or quarterly basis, or for archiving only mails that fall within a specific range, such as an entire year's worth of messages at a time.

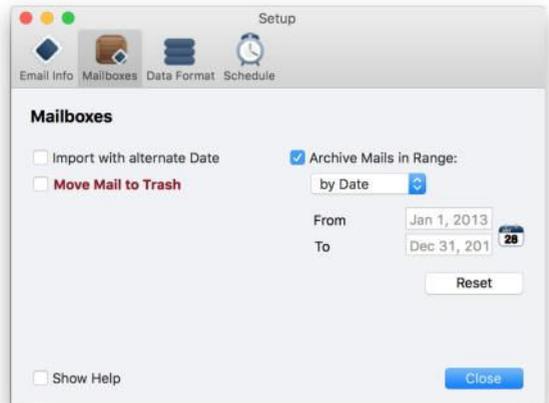
Mail Archiver X is also intelligent enough to skip emails that have been previously archived, but it's not a true incremental backup. If the initial archive took hours to create, subsequent backups will take about the same amount of time. If you're backing up thousands of emails in one session, it's a slow process. I typically archive overnight or on weekends, when my MacBook Pro is otherwise idle.

Leisurely performance aside, Mail Archiver X is unique in its ability to archive messages in a way that retains the structure and formatting of the original client. I'd love a way to add stand-alone MBOX files to an archive without first importing them back into Apple Mail, but in my experience, the developer is lightning-quick at addressing support issues. The software also includes tools to diagnose, clone, or rebuild database problems that may arise.

BOTTOM LINE

Support for multiple mail clients and IMAP accounts make Mail Archiver X 4.0 a worthwhile update and a good investment for heavy emailers looking to keep their clients lean. It's not the fastest utility around, but it's definitely one of the most robust. ■

ONLY WANT TO archive a year's worth of emails? Mail Archiver X can do just that, and a whole lot more.



BROWSER

VIVALDI 1.0: BROWSER OFFERS INNOVATIVE IDEAS, SOME MORE POLISHED THAN OTHERS

BY NATHAN ALDERMAN

VIVALDI, THE NEW BROWSER from some of the creators of Opera (opera.com), blends appealing looks with clever innovations. But while Vivaldi (vivaldi.com) deserves applause for trying new things and getting many of them right, it still strikes a few sour notes.

Many browsers trade off between ease of use and customization, sacrificing one for the other's sake. Vivaldi doesn't. You can move and change nearly every element in the interface, but upon first



VIVALDI 1.0 (MAC)



AT A GLANCE

A new browser from some of the team behind Opera, Vivaldi adds clever new design elements, but might take a toll on your CPU.

PROS

- Thoughtful, beautiful look and feel
- Easy-to-customize interface
- Useful Quick Commands and mouse gestures

CONS

- May eat up processor and battery power
- Some features poorly implemented

PRICE

Free

COMPANY

Vivaldi



opening, Vivaldi walks you through that process with easy, elegant setup screens. Want tabs on the bottom of the window, and the URL bar up top? No problem. (If you change your mind, you can adjust all these elements, with only slightly more difficulty, in Vivaldi's clean and well-organized Preferences.)

VIVALDI'S CLEAN, colorful interface goes easy on the eyes.

A (MOSTLY) WELL-TUNED INTERFACE

The browser sports a cheerful, chunky look reminiscent of 8-bit video games. The tab bar pleasantly changes color to match the dominant hue of the current page, and offers maybe the best page-load interface I've yet seen in a browser. As its progress bar creeps across the background of the URL bar, Vivaldi also displays a percentage and the number of total page elements loaded. Those numbers fade out once loading's finished.

Previous versions of Opera often felt stuffed to near-uselessness with overabundant features. Vivaldi feels like a calmer, more refined collection of the best fruits of those labors. A Spotlight-like Quick Commands box, summoned via simple keyboard shortcut, lets you jump between tabs or available navigation options with ease. A compact sidebar offers not only bookmarks and a searchable download archive, but also a

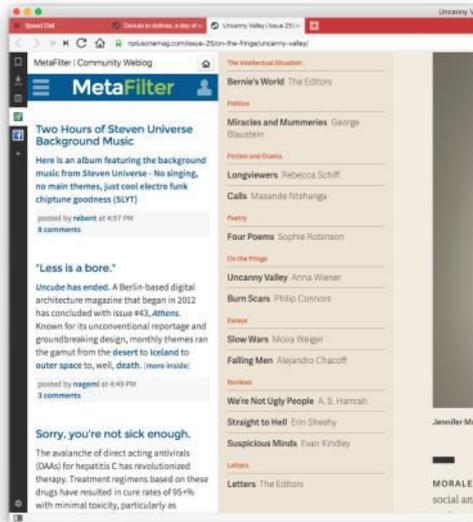
page-specific notepad and the ability to add your own favorite sites as sidebar options.

Even Vivaldi's lone concession to quirk—a tucked-away menu that lets you change page rendering on the fly with various visual filters—has its own practical side. Visually challenged users may welcome its ability to change all fonts to monospace and all pages to grayscale.

Vivaldi also refines many of Opera's tab innovations. You can preview tabbed pages by hovering over each one, or pulling down the bottom of the tab bar to reveal previews for all. Vivaldi also lets you display multiple tabbed pages side by side or in a grid in the main window, handy for multitaskers with plenty of screen real estate. You can also stack tabs to keep, say, your favorite sports blogs separate from your work-related pages.

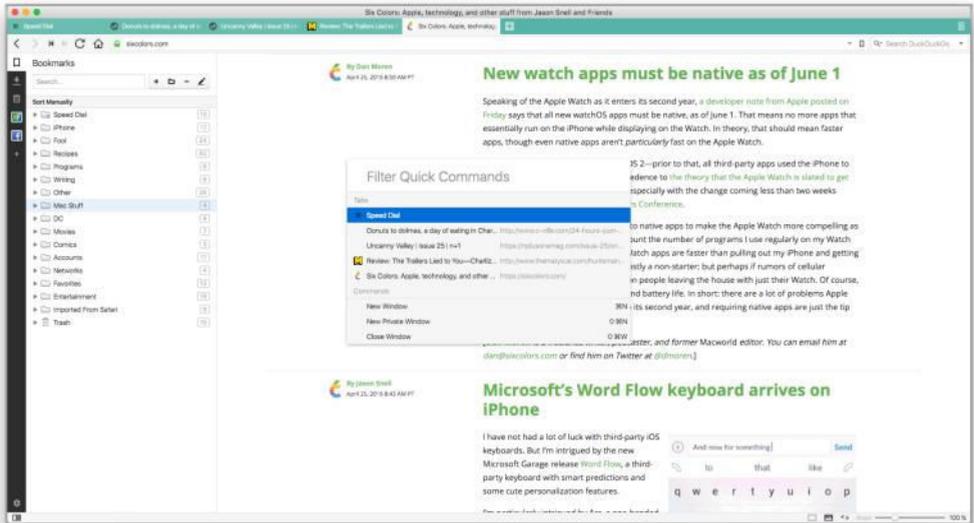
PASSABLE POWER, AT A PRICE

Here, Vivaldi shows its limits. I found tab stacking tediously fiddly; unless I did it just right, I'd move tabs, not stack them. I couldn't open a folder



THE SAME SIDEBAR that holds bookmarks and downloads can also store your favorite sites for side-by-side browsing...

...OR EASILY TAKE NOTES, with screenshots, linked to a given page.



full of bookmarks as a tab stack, or save a stack as a bookmark folder.

Vivaldi could also use more polish under the hood. Even when it was the only app running, it would often make my MacBook Pro’s cooling fans kick in during ordinary browsing, perhaps because of the multiple, memory-devouring Vivaldi Helper processes I saw in the Activity Monitor.

Given the workout it demanded of my CPU, I’d expect Vivaldi to blow the doors off other browsers. But in benchmark tests against the latest-as-of-press-time versions of Safari, Chrome (its closest cousin), and Firefox, Vivaldi ranked mostly in the middle.

It tied Chrome’s top score for HTML5 standards compliance, and nearly matched its wins for JavaScript performance. But Safari beat it

THE SPOTLIGHT-LIKE Quick Commands feature puts all your navigation options right at your fingertips.

BENCHMARKS: WEB BROWSERS COMPARED

Browser	Browsermark	HTML5 test	Speedometer	JetStream	Octane 2.0
Vivaldi 1.0	5330	521/555	60.36	144.45	25573
Safari 9.1	6860	410/555	77.8	76.279	22481
Chrome 50	5078	521/555	65.09	148.1	25755
Firefox 45.11	4942	478/555	37.8	147.18	25148

Higher scores are better. Best scores in bold.

and every other browser in broader tests related to everyday browsing performance, perhaps because Apple has optimized Safari to work with Mac hardware and efficiently manage power usage.

BOTTOM LINE

Though I wish it didn't put my CPU through a high-intensity workout, I still liked Vivaldi. It offers ideas that aren't just new for novelty's sake, but actually add fun and convenience to your daily Web routine. ■

Hot Stuff

What We're
Raving About
This Month

SCOSCHE MAGIC MOUNT POWER BANK

The \$60 Scosche MagicMount PowerBank (scosche.com) is a nifty Lightning connector battery pack that recharges an iPhone 6s or SE more than once through an attractive, damage-resistant case that connects firmly via a strong magnet. The MagicMount requires adhering a magnetic plate to the back of your phone or phone case, and it's not cheap. But given its utility and inclusion of a Lightning connector, it compares favorably to other alternatives. The PowerBank has a 4,000 mAh internal battery, which, factoring in overhead and conversion loss, should be able to take the 1,715 mAh battery of an iPhone 6s or the 1,624 mAh battery of an iPhone SE from "dead" to full about twice. For someone who wants all the advantages and isn't concerned about pocketability nor magnetic interaction with a laptop or other HDD, it's a nearly perfect fit.

—GLENN FLEISHMAN



LOGITECH'S LOGI BASE CHARGING STAND FOR THE IPAD PRO

At \$100, the Logitech Logi Base Charging Stand (logitech.com) is expensive for a tablet stand, but it's the Smart Connector built into the bottom that makes this accessory unique. There's a Lightning port around back that attaches to the USB charging cable shipped with every iPad Pro, enabling the device to be powered while cradled on the stand. With no apps running in the background, the Logi Base charges up the iPad Pro in about seven hours. Plus, it's as attractive as it is rugged, measuring 3.23 inches tall, 7 inches wide, and 4.48 inches deep. The stand weighs 12.6 ounces, and the angled support is exceptionally solid. Because of this, the stand has found a permanent home on my desk. No more plugging in a Lightning cable to top off, and my iPad Pro is always ready for action from the perfect viewing angle.—**J.R. BOOKWALTER**



Hot Stuff

BOSE QUIETCOMFORT 35 WIRELESS HEADPHONES

Priced at \$350, Bose's QuietComfort 35 (bose.com) are inarguably a premium set of headphones. Available in black or silver, the QC35 are housed entirely in nylon, leather, and a soft suede-like fabric.

No doubt, the decision to use these lightweight materials was made to compensate for the heft of the electro-guts required for the headphones to work their wireless magic—the headphones clock in at 10.9

ounces. Speaking of wireless, the headphones can be paired with two different devices via Bluetooth or NFC

at once. The QC35 packs a micro-USB charging port, power/pairing LEDs, power/pairing switch, volume- and track-control buttons (the latter of which allow for Siri use and to accept or decline phone calls), and an analog input. While they don't offer the best audio experience for the money, the headphones do sound very good, and their selling point is its active noise cancellation and sound sculpting—these cans deliver the best active noise cancellation in any headphone, wired or wireless, I've tried. —SEAMUS BELLAMY





What iOS 10 can tell us about the new iPhone

The next iPhone will ship with iOS 10—and everything we know about iOS 10 today can give us hints about the phone before it's even unveiled.

BY MICHAEL SIMON

There was a time when WWDC belonged to the iPhone. From the S cycle to the Retina display, FaceTime, and the App Store, some of the earliest iPhone breakthroughs were unveiled at Apple's annual developer's conference, with long stretches of keynote time devoted to specs and speed instead of software.

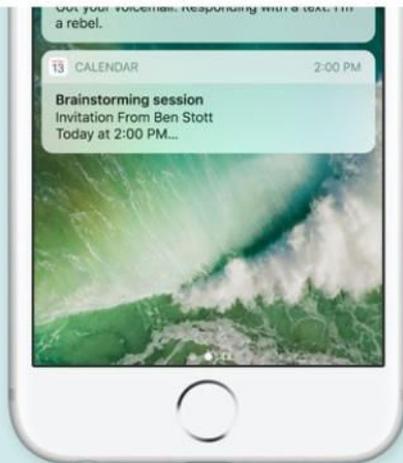
These days there's a better chance of an Android app making an appearance on the big stage than a new iPhone. But even as WWDC has consciously shifted away from splashy hardware releases, the iPhone is still very much the star of the show. The iOS portion of the presentation is both the longest and the most significant, not just because it spotlights major changes and feature upgrades, but also in how it sets the tone and direction Apple's next round of products will take.

And of course, at the end of that road map is the next iPhone. This year's timing is a little trickier than most, with most reliable rumor ([go. macworld.com/iphone7rumors](http://go.macworld.com/iphone7rumors)) sources predicting another minor refresh before the next big redesign. But if you dig a little into the iOS 10 preview, you can find some pretty big clues as to what's in the pipeline.

1. THE HOME BUTTON IS SHORT-LIVED

The biggest impediment to a

SLIDE TO UNLOCK is already gone in iOS 10. Is the Home button next?





radical change to the iPhone is our dependence on the home button. Aside from shaving off a few millimeters in any direction, there's isn't too much Apple can do in the way of design innovation; as long as it stays below the screen, future iPhones aren't going to deviate from the current size and shape.

But iOS 10 looks to be moving beyond the Home button (go.macworld.com/flathomebutton). All throughout the system you'll find shortcuts designed to eliminate the need to actually open apps and, consequently, continuously press the button to return to the Home screen. And with features like Raise To Wake and Rich Notifications on the lock screen, our button presses should be dramatically reduced in iOS 10.

There are already rumors floating around that Apple is looking to

embed Touch ID into the screen, and last year's introduction of 3D Touch seemed to hint that Apple is considering life beyond the button. But iOS 10 offers up the strongest evidence yet that the next big iPhone revamp will be missing its most iconic feature.

2. OLED IS THE FUTURE

Anyone who owns an Apple Watch knows the beauty of OLED screens. With the deepest possible blacks (thanks to its advanced backlightless technology that keeps black pixels off rather than simply turning them opaque), OLED screens can save both eye strain and battery life simply by dimming the colors of the interface.

Apple didn't specifically highlight the existence of a dark mode during its WWDC demo, but some beta testers have dug deep into the code to find

SAMSUNG'S GALAXY S7 and S7 Edge have OLED screens, allowing a curved screen on the Edge and an always-on time display that doesn't totally kill battery life.

versions of Messages and Settings with black backgrounds, strongly suggesting that Apple is working on a systemwide dark mode for iOS. It's something that would look good on any iPhone, but with an OLED display, dark mode would be stunning.

3. APPLE PENCIL SUPPORT IS COMING

The stylus has come a long way since Steve Jobs openly mocked it during the iPhone's introductory keynote. The Apple Pencil is much more than a tapping stick. Lag-free and packed with pressure sensors, it's the perfect companion to the iPad Pro, allowing writers and illustrators to use their tablets in amazing new ways.

But iOS 10 offers some hope that Apple's newest input device won't just be limited to the iPad Pro. Among the numerous enhancements to the Messages app are two features that would benefit greatly from the Apple Pencil. First, Apple Watch's unappreciated Digital Touch feature will make its way to the iPhone, where it will be much easier to draw and share fun little pictures with your friends. And Apple is also touting the ability to scribble notes in your own handwriting, and have the recipient "see it animate, just as ink flows on paper."

Of course, we could easily do these things with our fingers, but

these features seem to suggest that Apple is looking to expand the Pencil's reach to the iPhone. It likely won't be a main selling point, but being able to quickly switch from the iPad to the iPhone without putting down your Pencil would be a nice fringe benefit.



THE PENCIL will be more useful when supported by more devices.

4. THE DUAL-LENS CAMERA WILL ROCK

If it's true that this year's iPhone will break the pattern and offer few physical changes from the S model it will replace, one thing is certain: The camera will be greatly improved. The most reliable rumors peg the iPhone Plus as getting not one but two cameras, letting users capture sharper, more detailed photos, especially in low-light situations.

And now you'll be able to edit them right on your phone. iOS 10 paves the way for raw support, finally allowing iPhone users to work with full-resolution images right on their phone. And with Photos' new Memories feature, the images you snap on the new iPhone will be automatically grouped into albums ready for viewing on your Apple TV.

5. IT'LL BE LOCKED DOWN

Apple made headlines earlier this year when it refused a federal government request to help unlock a terrorist's iPhone, and as expected, it's doubling down on privacy and security in iOS 10. The protection of personal data was a running theme through this year's keynote, punctuated by the announcement that it will begin using differential privacy ([go. macworld.com/differentialprivacy](http://go.macworld.com/differentialprivacy)) to bolster things like QuickType and



Spotlight, promising the data it analyzes will be anonymous and private.

While differential privacy will obviously be a feature that benefits all iPhone users, it's a clear signal that Apple is working on making the iPhone's locks even stronger. There have already been rumors that Apple is working to make the next iPhone virtually impenetrable, and the protections in iOS 10 are further proof of its commitment to security and encryption. As Craig Federighi said near the end of the presentation, "All of this great work in iOS 10 would be meaningless to us if it came at the expense of your privacy," and it's easy to imagine Phil Schiller saying something quite similar after he unveils the next iPhone. ■

THE LG G5 has dual camera lenses, and some advanced features like manual focus and wider angles.



*“I want
to be
a bench.
Recycle me.”*



IWantToBeRecycled.org

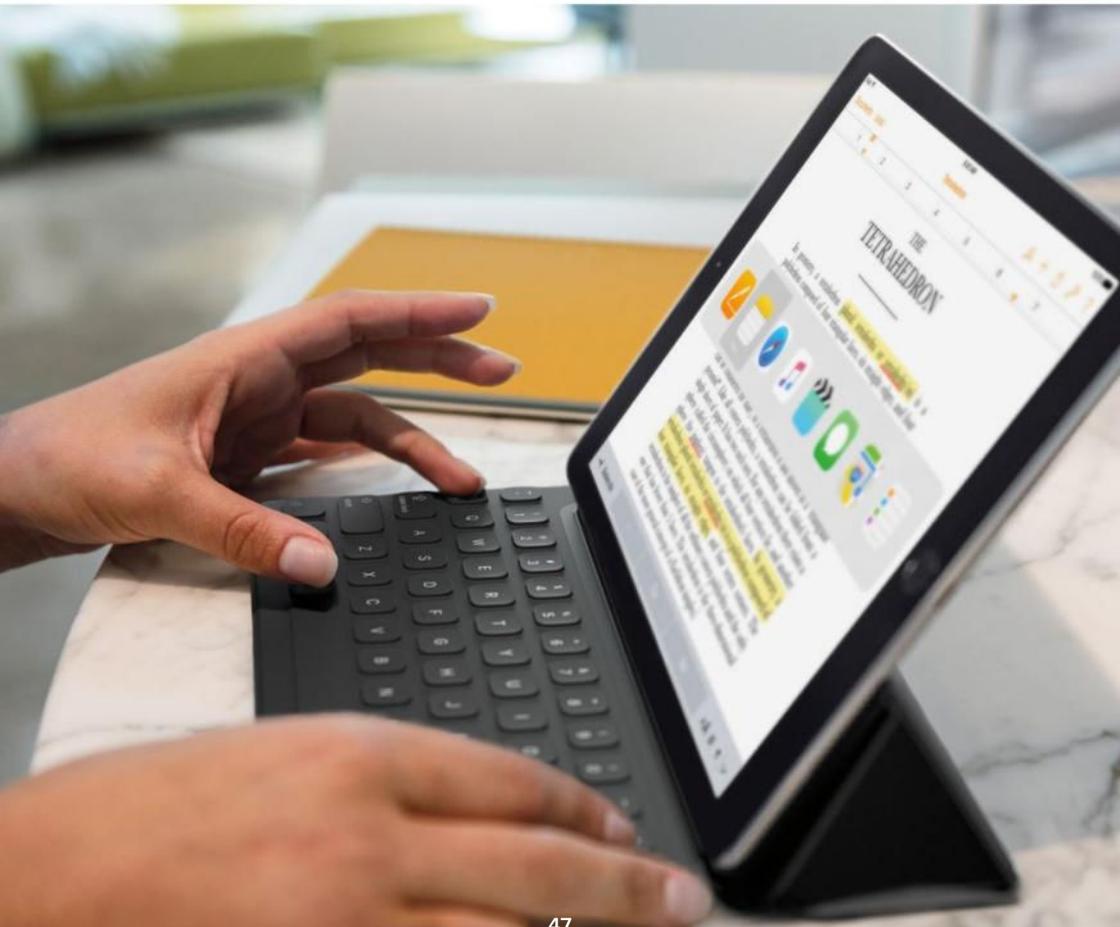


KEEP AMERICA
BEAUTIFUL

Must-have apps for the iPad road warrior

We're not going to tell you how to get your work done. But with good VPN, screen-sharing, and time-management apps on your iPad, you'll be prepared to tackle any task.

BY JASON CIPRIANI



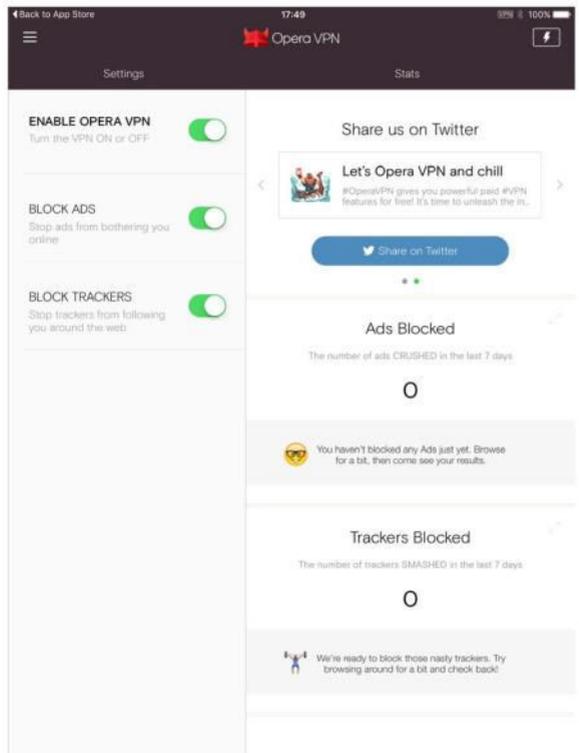
Taking your iPad Pro and iPhone out on the road? These apps can help you get some serious work done without a computer. Whether you're on a business trip and forced to connect to random Wi-Fi networks, or you're spending the day at a local coffee shop for a change of scenery, you can remain productive while keeping your data safe and secure.

PROTECT YOUR DATA

Something we hardly think about when we're at home or in the office is someone snooping on our Wi-Fi traffic, looking for bits and pieces of personal information as we go about our daily tasks.

But when you're using public Wi-Fi networks, you should constantly think about just that scenario. You've probably used one without even thinking twice about it—I know I used to all the time. But recently, I've started to use VPN apps when I'm not home, in an effort to protect my personal data.

Routing your Internet traffic through a VPN will encrypt important data, rendering it useless to would-be bad guys. Some apps can even



block ads and trackers in addition to keeping your data safe. Not too shabby, right?

OPERA VPN on the iPad.

The App Store is full of VPN apps, each claiming to be the best and the fastest. I can't vouch for all of them, but I can tell you I haven't had a bad experience using either the free Opera VPN app (go.macworld.com/operavpnapp) or while testing HotSpot Shield VPN (go.macworld.com/hotspotshield).

As with all free services on the

Internet, Opera VPN does collect some of your data in anonymized form and sells it to third-parties. But that does get you free unlimited VPN service plus ad blocking.

HotSpot Shield also offers a free version of its service, paid for by showing ads in the app itself. To go ad-free, you can sign up for a yearly Elite subscription for \$29. On top of that, HotSpot's CEO told ZDNet earlier this year (go.macworld.com/hotspotshielddata) the company doesn't keep or look at your data.

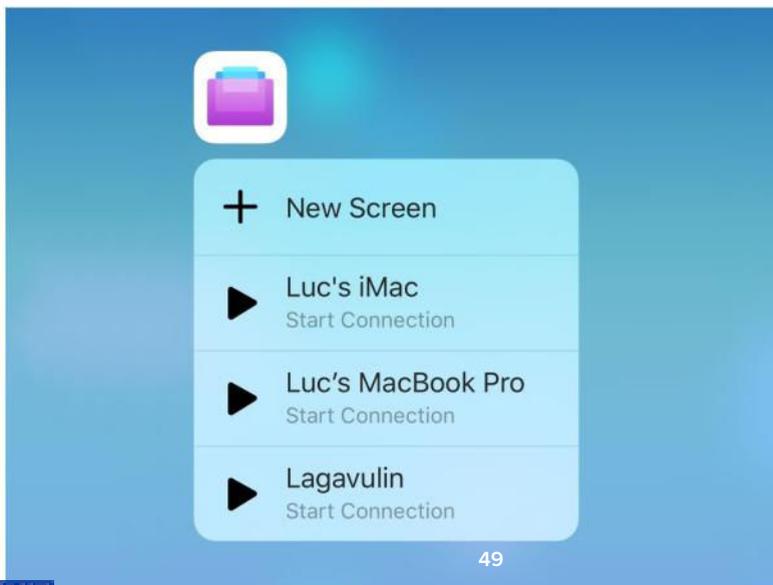
KEEP ACCESS TO YOUR COMPUTER

As someone who does a lot of work on an iPad Pro, I often need to access a file or run an app I only

have on my iMac in my home office. The easiest way to do this is to use an app like Screens (go.macworld.com/screens3app).

Screens, \$20 in the App Store, (go.macworld.com/screensapp) lets you remotely connect to, and take over, a Mac or PC, from anywhere you have an internet connection. The app is super simple to set up, requiring you to install Screens Connect on your computer and connect it to your account.

From there, the Screens app does the rest. You can move files to your iCloud Drive or Dropbox account, in turn making those files available on your iOS device. Or you can run a full-fledged computer application on the screen of your



SCREENS 4 HAS a Quick Action for the iPhone 6s and 6s Plus, letting you choose which Mac to connect to before you even launch the app.

iPad while you're (potentially) hundreds of miles away.

Don't think of it as cheating on your iPad Pro, think of it as a way of unlocking its full potential.

REMEMBER TO TAKE BREAKS

When you work in an office, interruptions are all too common. Sure, they can be frustratingly common, but at least your coworker telling you about his weekend plans provides a quick break from the task at hand. When working alone, it's all too easy to get wrapped up in work and *Bam!* hours pass without as much as a glance up from the screen.

Instead of trying to remember when to get up and take a break or switch tasks, install an app like Be Focused (go.macworld.com/be

[focusedapp](#)). Using Be Focused, you can set timers designed to help you keep track of the time you spend on a task, then switch to another one or just go for a walk.

There are a lot of Pomodoro-inspired apps (pomodorotechnique.com) available for iOS users, so if you find Be Focused doesn't work for you, keep searching until you find the right one.

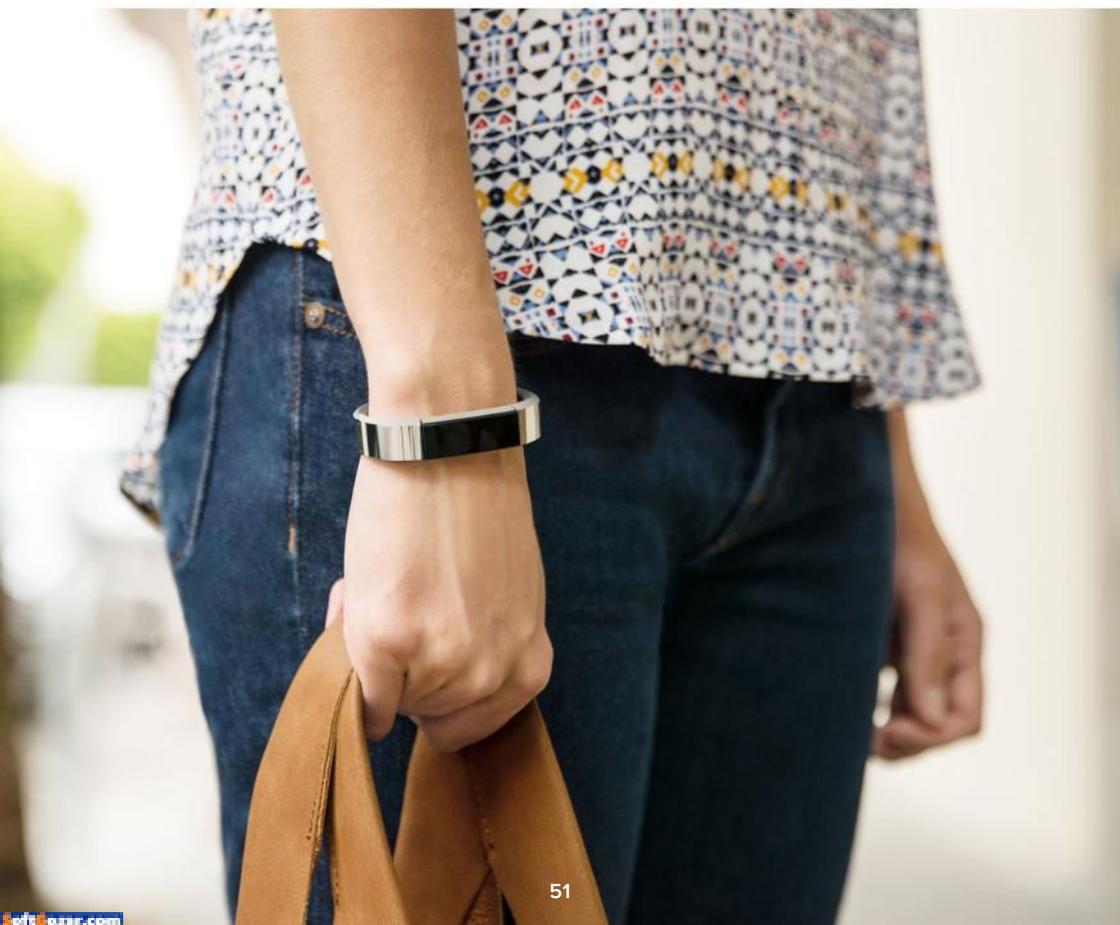
WHAT WORKS FOR YOU?

I have found using these apps has made traveling with nothing more than my iPhone and iPad Pro something that I no longer cringe about. Have you gone iPad-only for any extended amount of time away from the office? If so, what app or service have you found that's made the transition easier on you? ■

Fitbit Alta vs. Misfit Ray: Comparing 2 stylish new fitness trackers

The best activity band is the one you'll wear all day, every day. Fitbit and Misfit are aiming for your dollars with fitness trackers that focus on fashion.

BY CAITLIN MCGARRY



I've tested out a variety of fitness bands, from activity trackers disguised as analog timepieces to powerful cardio-focused watches and everything in between. There's a different audience for every fitness tracker on the market, but I've found that most people are looking for a basic band that tracks daily stats and sleep. A solid app dashboard that presents information in an easy-to-digest way is also essential, otherwise there's no point in tracking all that data.

But if an activity tracker doesn't fit into your life, you're not gonna wear it no matter how many features it has. That's why companies like Fitbit and Misfit, which was acquired by Fossil last year, have designed fitness bands that are fashionable and discreet enough to be worn all day and night, from the gym to the office to a night on the town and back to bed, without looking ridiculous. The Fitbit Alta and Misfit Ray have a few differences, namely the Alta has a display where the Ray does not, but both are designed with style in mind for daily wear, and both are in the same price range. The Ray



FITBIT ALTA

is \$100, also available on Amazon (go.macworld.com/misfitrayamazon), and the Alta is \$130, also available on Amazon (go.macworld.com/fitbitaltaamazon).

But that extra \$30 gets you a better, more accurate fitness band in the Alta, which has a display for easier, quicker access to your daily activity stats. Misfit's Ray is designed to look like a sleek piece of jewelry, which I appreciate, but I don't love its

notification method: a combination of vibrations and changing LED lights that mean different things. (What things? I can't remember.)

Fitbit also has a better app, and because the company leads the wearables market, chances are some of your friends, family, or coworkers are using a Fitbit and can compete in activity challenges with or against you.

The Ray wins on battery life, at eight months compared to the Alta's five days, but I'd rather charge a device than deal with batteries.

For more information on these wearables, check out my full reviews of both devices—the Misfit Ray, and the Fitbit Alta (go.macworld.com/fitbitaltarev). ■



RAY ROSE GOLD SPORT BAND

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



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



MAPPING

STREETS 3: GOOGLE STREET VIEW PANORAMAS, NOW ON YOUR APPLE WATCH

BY J.R. BOOKWALTER

IF YOU PREFER Apple Maps to Google's own, Streets 3 provides the missing link that restores Street View to iOS devices.

iOS 6 will be remembered as one of Apple's more controversial product launches. It wasn't only the decision to replace Google Maps with a less-reliable alternative that made iPhone users howl, but the lack of features we'd come to depend on, like panoramic street views, which remain absent nearly four years later.

STREETS 3.1.2



AT A GLANCE

Streets 3 provides Google Street View integration with Apple Maps for all of your iOS devices, complete with 360-degree panoramas on the Apple Watch.

PROS

- Google Street View, no Google Maps required
- Slick Apple Watch support
- iCloud sync for favorites, recent searches

CONS

- No option to disable "travel" animation
- No vertical pan or angle change on the Apple Watch

PRICE

\$2

COMPANY

FutureTap

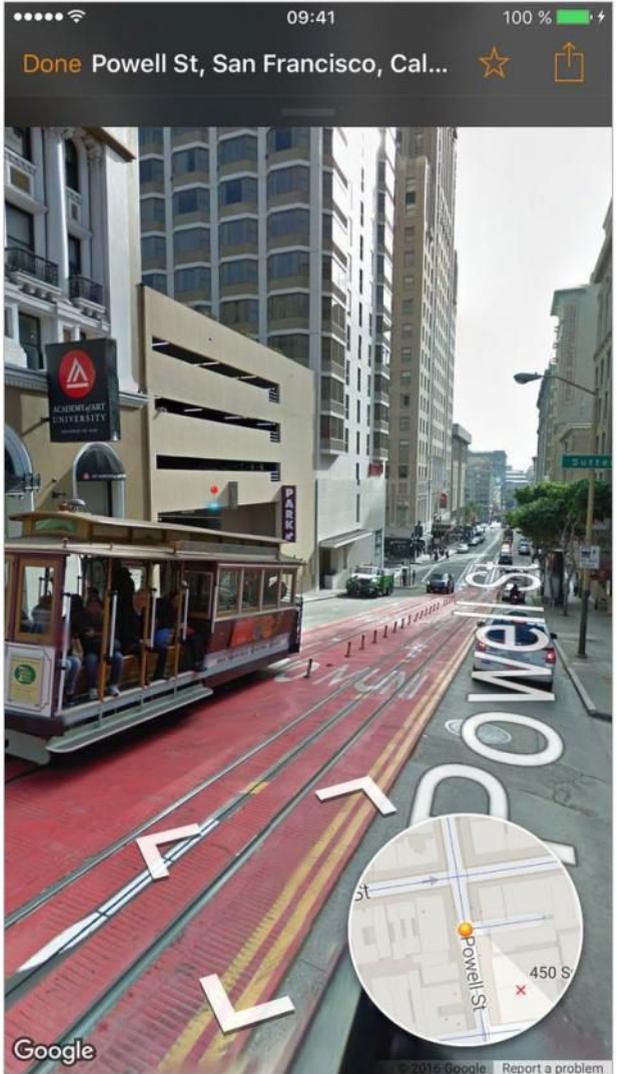
TAKIN' IT TO THE STREETS

There's no telling if or when Apple will introduce their own take on Street View, but it's hard to imagine Cupertino doing it better than Streets 3, \$2 on the iTunes Store (go.macworld.com/streets3app). This stand-alone app cleverly works in conjunction with Apple Maps to deliver 360-degree panoramas for nearly any location on the map.

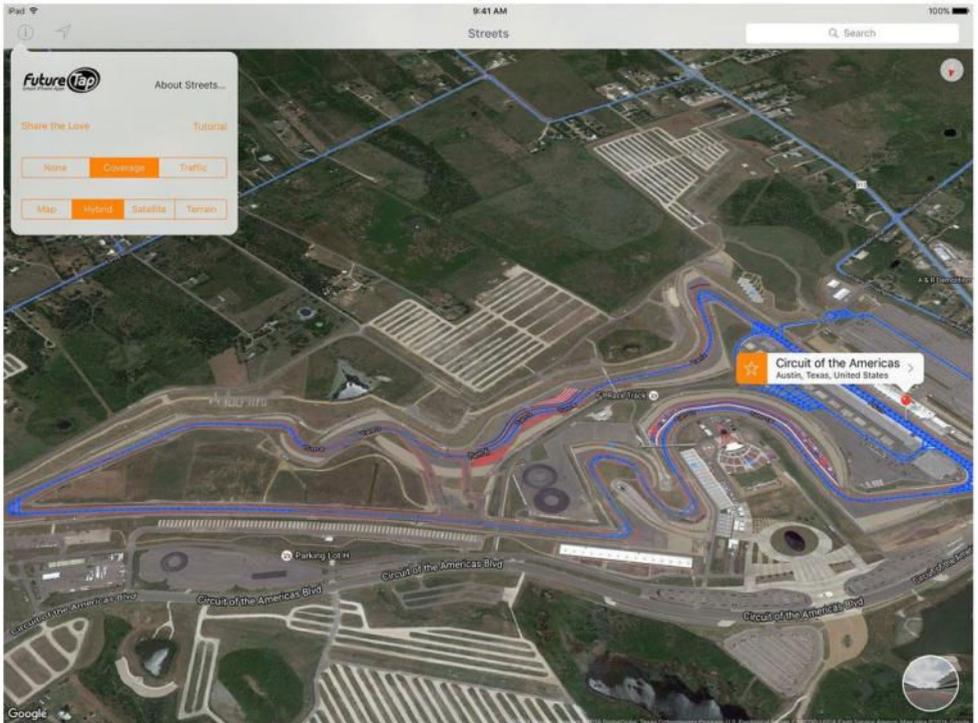
Featuring universal support for all iOS devices and optimized for iPhone 6s and iPad Pro displays, Streets 3 is powered by the same Google Street View imagery Apple abandoned with iOS 6. Search for an address or contact and Streets whisks you to that destination with an immersive, all-around pinch and zoom view. (Like Apple Maps, you can also drop a pin or switch to satellite and terrain views.)

Streets 3 provides panoramas for many indoor locations like businesses, which are displayed on the map in yellow instead of standard blue. If you don't have a destination in mind, Streets 3 features a Gallery of over 1,000 curated places from 11 categories to explore, including museums, national parks, and even a few underwater locales.

The user interface is familiar



IF YOU PREFER Apple Maps to Google's own, Streets 3 provides the missing link that restores Street View to iOS devices.



and easy to use, with iOS 9 sharing support to easily send places to friends or other apps. Users can save favorite panoramas and automatically sync them between devices; while browsing on an iPhone, it's a snap to jump straight to the same view on the more expansive iPad screen with Handoff.

IN ADDITION TO maps and panoramas, Streets 3 also includes satellite and terrain views, like Apple Maps.

FLICK OF THE WRIST

One of the most impressive technical feats Streets 3 pulls off is support for the Apple Watch. While the concept of viewing 360-degree panoramas on your wrist sounds absurd, the developers have done a great job porting Street View to the smaller device.

There are four Apple Watch options: Search using voice dictation, Favorites and Recents that sync from the paired iPhone, and Gallery.

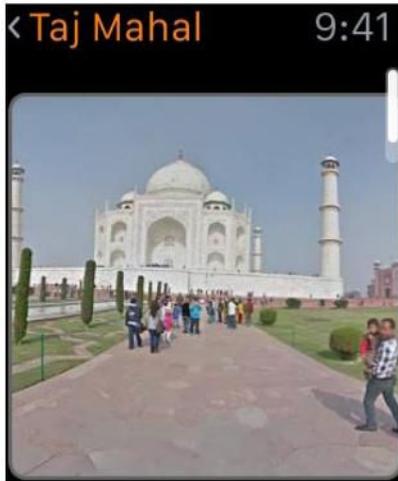
Load times are quite reasonable, and turning the digital crown moves the view left or right. (There's no way to shift the view angle or go up and down on the Apple Watch, however.)

FutureTap has also cleverly integrated Streets 3 with Apple Maps. Before starting turn-by-turn directions, tap the Share icon, then Routing Apps; select Route next to the Streets icon, and your destination magically opens inside the app. On iOS 9, it's equally easy to hop back to Maps.

Now that the bugs have been ironed out over three major iOS updates, I prefer Apple Maps to Google's own stand-alone app. If you feel the same way, Streets 3 reinstates the one big feature still missing, and does so with extraordinary style.

BOTTOM LINE

Optimized for all iOS device screens, Streets 3 pulls off the impossible by allowing Apple Watch owners to view panoramas on their wrist. ■



YOUR EYES DO not deceive you: Streets 3 is the only way to view Google Street View panoramas on the Apple Watch.

IMAGE/VIDEO UTILITY

KOJI GO: PROFESSIONAL FILM COLOR IN A VERY BASIC IPHONE APP

BY J.R. BOOKWALTER

INSTAGRAM MAY HAVE popularized the “faux film” look on mobile, but Hollywood has to create it the hard way. As any filmmaker will tell you, the talents of a good color timer are crucial to creating the right atmosphere or mood for a feature film, and the process is far more involved than choosing the right preset.



KOJI GO 1.0.3



AT A GLANCE

Koji Go transforms videos and photos with the look of 35mm motion picture film, courtesy of filters created by acclaimed Hollywood color timer Dale Grah.

PROS

- 19 professional 35mm film color looks
- Works with videos and photos
- iOS 9 Share extension support

CONS

- Only three basic looks included with app purchase
- Single-frame video preview
- Limited advanced controls
- No native iPad support
- Edited presets can't be saved for reuse
- No iOS Photos extension support for images
- No discount for buying all in-app purchases

PRICE

\$3

COMPANY

Koji Go

TRUE COLORS

Koji Go, \$3 on the iTunes Store (go.macworld.com/kojigoaopp), is a stripped-down mobile version of the company's film-emulation plug-ins for Mac and Windows. Like Koji Advance (\$199) and Studio (\$799), Koji Go taps the talents of Dale Grahn, the veteran color timer responsible for crafting the look of Steven Spielberg's *Saving Private Ryan*, Francis Ford Coppola's monumental *Apocalypse Now Redux* release, and hundreds of other films.

Compared to those efforts, a mobile app might seem far less ambitious. The developers took thousands of light measurements striking film, which were then handed off to Grahn to work his magic. The result is a set of 19 authentic filters to make iPhone videos and photos look more professional. (Sadly, there's no native iPad support.)

Only three filters are included with the purchase: Classic, Low Contrast, and Warm, which is likely to disappoint users accustomed to Instagram's plentiful (and free) catalog. The others are offered via in-app purchases for \$1 each or in packs of two or three, with no option to buy everything at a discount.

MODEST EXPECTATIONS

Koji Go is a straightforward and simple affair: Choose a photo or video, then use on-screen arrows or slide your finger across the bottom to preview each filter. That includes those that haven't been purchased, although you'll need to buy in order to save or share to other supported apps using the iOS 9 extension.



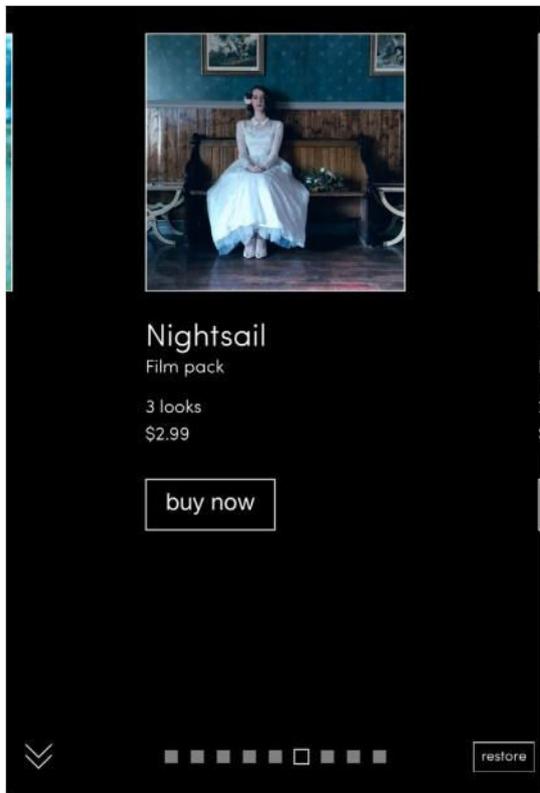
KOJI GO OFFERS a straightforward, no-frills user interface for applying professional 35mm film looks to videos and photos.

There's also an Advanced tab, a deceptive name considering you can only adjust density and temperature, with no way to save modified presets. For an app that prides itself on authentic, professional results, this is a disappointment. Koji Go filters also can't be applied as an extension from the Photos app—images can only be shared or saved as a new file.

The filters themselves are of high quality, but most looks are quite subtle compared to rival apps. The difference is more dramatic in motion than still photos, but Koji Go only provides a single frame preview. Users must save a video to see how filters look when played back.

BOTTOM LINE

Koji Go delivers true film color to iPhone videos and photos, but the variety of options and available looks are too limited. ■



IF THE THREE included looks aren't enough, there are 16 more available via in-app purchase, some in packs of two or three.

What's new at the App Store



LEGO STAR WARS: THE FORCE AWAKENS

Lego Star Wars: The Force Awakens (freemium; iPhone and iPad) (go.macworld.com/legostarwars): By now, you know how these Lego Star Wars games work. So all we'll say is this: Yaaaaay! The latest game is out! It'll keep us occupied a few more months until Rogue One comes out.

Exify



Exify, \$2; iPhone and iPad (exify-app.com), is the latest photo-editing app. It gives you quick access to exposure and lens information, image size and color space, and a magnifier for pixel-level details, among other details and features. Add a watermark, set a copyright, and more to make each image distinctly your own.

Gordon Ramsey DASH



Gordon Ramsay DASH, freemium; iPhone and iPad (glu.com), is a game that lets you experience becoming a chef under the guidance of one of America's meanest and most-famous food celebrities. Build your own avatar, then "travel around the globe and master your skills in unique restaurants" as you compete to reach the top of the leaderboards.

Landed



Landed, free; iPhone and iPad (triposo.com/landed), is the app to have when you arrive in a new city, whether you're on vacation or a business trip—it answers questions about how to get downtown, last-minute hotel deals, weather info, and more, helping you get around an unfamiliar place like you're a local resident.

Public



Public, free; iPhone (public.chat), "takes the most interesting group chats and makes them open for the world to see." It's like doing a talk show in text—complete with feedback from the audience.

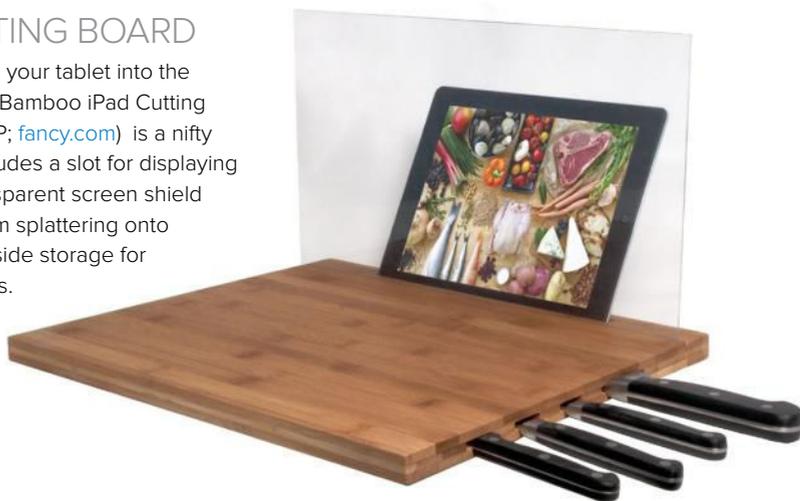
Chop, charge, and click

This month's roundup of iOS accessories features a bamboo cutting board that props up your iPad, a stylish 2-in-1 charging cable and battery, a 32mm lens that attaches to the Lightning port, and extra memory storage for your devices.

BY JOEL MATHIS

iPAD CUTTING BOARD

If you like to take your tablet into the kitchen, the \$25 Bamboo iPad Cutting Board (\$25 MSRP; fancy.com) is a nifty accessory: It includes a slot for displaying your iPad, a transparent screen shield to keep food from splattering onto the display, and side storage for up to eight knives.



MICROSD READER

The microSD Reader (coming soon; lexar.com/lexar-microsd-reader) is a Lightning-equipped device that lets you add memory storage to your iPhone or iPad. If you have extra documents, photos, videos, or music to save, the Reader can help you off- or on-load the content in a jiffy; you'll just need to download the Lexar Mobile Manager app to help you keep things organized.

Chop, charge, and click

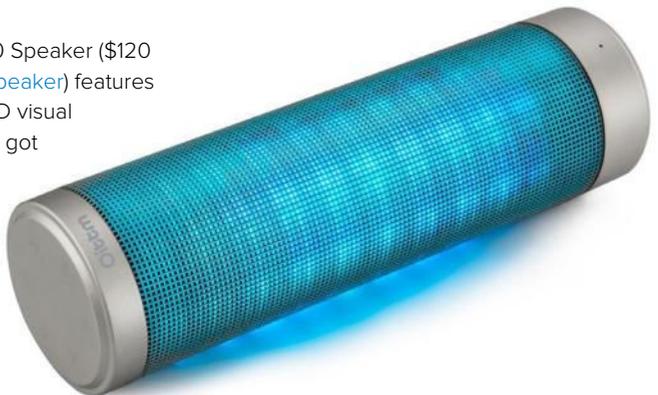


DXO ONE

We've written about the DxO One (\$499 MSRP; dxo.com/us/dxo-one) before, and because there's so much to love, this gadget is worth another mention—it plugs directly into your iPhone or iPad's Lightning port to create an iOS-enhanced camera. The device includes a 32mm lens, the ability to capture HD video, and has shutter speeds as fast as 1/8000 second.

PULSE SPEAKER

The Pulse Portable Bluetooth 4.0 Speaker (\$120 MSRP; go.macworld.com/pulsespeaker) features six kinds of "music pulsating" LED visual display modes—meaning you've got pretty much the whole dance party, lights and music included, available in this portable, 2.8-pound device.





JUMP CABLE

The JUMP Cable (\$50 MSRP; nativeunion.com/jump-cable) is an “Apple MFi Certified 2-in-1 charging cable and compact portable battery booster”—plug it into any USB power outlet for a direct recharge of your iOS device, or use it in backup battery mode to add another 30 percent to your device’s battery life.

iXPAND CASE

iXpand 128GB Memory Case (\$130 MSRP; go.macworld.com/ixpandcase) works with the iPhone 6 or 6s, dramatically expanding the storage available, while also protecting the phone from damage thanks to its hard plastic exterior.





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HIDDEN FEATURES OF MACOS SIERRA

IT'S THE LITTLE THINGS THAT MAKE THE BIGGEST DIFFERENCE, AND NOT EVERYTHING ABOUT SIERRA WAS REVEALED AT THE WWDC KEYNOTE.



BY JASON SNELL

PHOTOGRAPHS
COURTESY OF APPLE

It's been several weeks since macOS Sierra was announced by Apple, and I've gotten a chance to spend some time using it. If you've only seen the highlights from Apple's WWDC keynote, though, you may have missed a bunch of cool features that have flown beneath the radar. Here's a look at some of those interesting features.

STORAGE MANAGEMENT IS COMPLICATED

Apple's pitch about Sierra being better about freeing up your disk space (especially on comparatively cramped flash-storage drives) is true, but on stage Apple's Craig Federighi presented a very simplified version of the concept. The reality is that this

isn't a single feature, but a whole collection of them.

Yes, you can now sync your Desktop and Documents folders with iCloud, and (separately) give your Mac the option of deleting local copies of documents that are also stored in iCloud. But that's just one small way Apple is giving the system the opportunity to reduce storage space.

SIERRA focuses on storage.



There's an entire new Storage Management window, located in the System Information app, that provides a suite of tools to help you free up disk space. Some aspects of the window are based on turning on or tweaking settings, like how Mail stores attachments and if iTunes should delete video files that have already been watched. You can also set if you'd like items that have been sitting in the Trash for 30 days to be automatically removed.

But there's also a feature called Reduce Clutter that's reminiscent of a third-party spring-cleaning utility. This

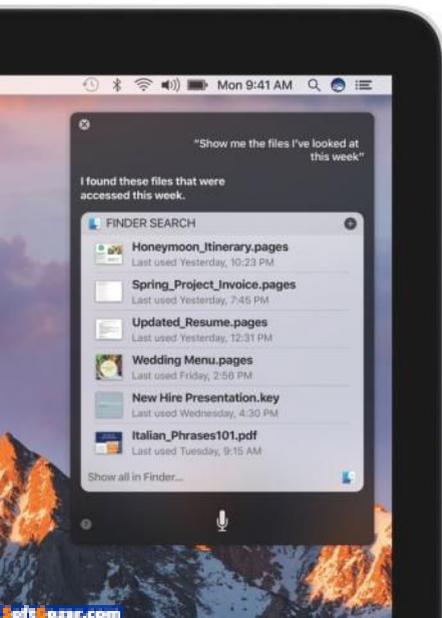
feature ferrets out large files in your system—giant iOS device backups (often unnecessary if you've moved backups to iCloud), DMG files you downloaded to install software, and the like.

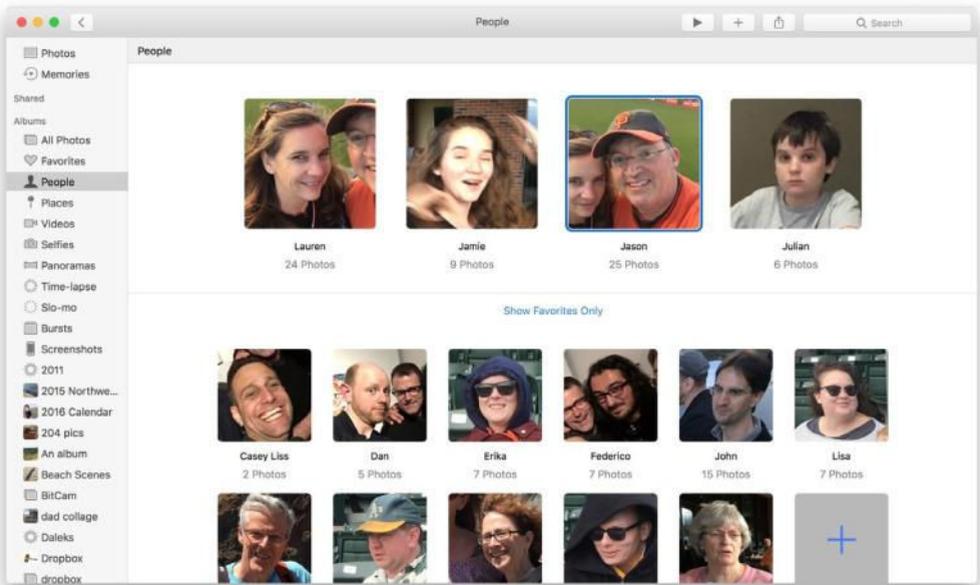
THE OPERATING SYSTEM IS ALSO MORE AGGRESSIVE IN CLEANING UP LOG FILES, WHICH MOST USERS NEVER SEE OR NEED, BUT CAN TAKE UP A LOT OF ROOM.

Then there are some tweaks Apple is making behind the scenes to save space. If you use Safari to download a file you've already downloaded before, Safari downloads the new version and removes the older versions of the same file, so you don't end up with five different copies of the same software installer in your Downloads folder. The operating system is also more aggressive in cleaning up log files, which most users never see or need, but can take up a lot of room.

SIRI CONTROL OF SYSTEM SETTINGS

At the keynote we saw Siri do the usual stuff that Siri can do on iOS, and of course Siri results can be pinned in Notification Center or even dragged out into other apps. But Siri can also perform a bunch of commands that





directly affect Mac hardware.

As you can on iOS, you can tell Siri to make the screen brighter or darker. You can also tell it to turn Wi-Fi on and off, adjust the system volume, put the Mac to sleep, and start the screen saver. Siri also has access to some system information, like the speed of its processor, how much memory it has, the Mac's serial number, and how much free space remains on the drive.

PHOTOS TAKES A NEW APPROACH TO FACES

Apple discussed updates to Photos in the context of iOS, not macOS, but

of course Photos for Mac is getting the same new machine-learning-based image categorization as Photos for iOS.

This new feature—which detects scenes, moods, animals, and, of course, people's faces—replaces the venerable Faces feature, which has been around since the iPhoto days. Apple says the new face-recognition engine is far more modern and efficient than the old Faces engine was, though in my testing it seemed to not catch as many faces. Let's hope there's more tweaking to do there.

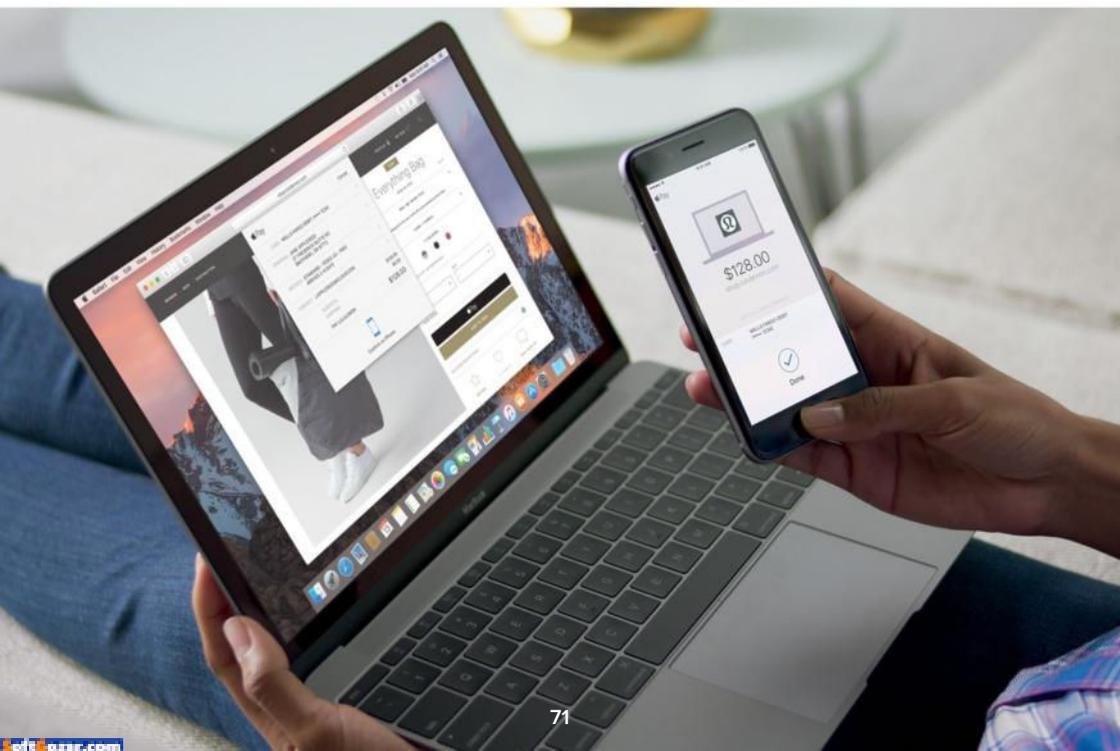
In any event, Photos now has a new People album that replaces the old Faces window. Photos identifies

PHOTOS REPLACES
Faces with People.

faces and tries to group the same faces automatically. If you have pictures of people's faces attached to their contact information, Photos will use that to try to automatically name them. Otherwise, you can identify faces directly within the People album, by clicking and typing. If the person's already in your Contacts list, you can add them quickly, but if not, you can just type their name and press Return. Adding an existing name to a set of faces causes those images to merge together, building up the facial-recognition database.

APPLE PAY KNOWS WHEN YOUR PHONE IS NEARBY

On stage, Federighi said that Apple Pay works with either an Apple Watch or an iPhone to let you buy stuff on the Web from right within Safari. What he didn't mention is that since your Mac is aware if there's an Apple Pay–eligible device within range, Safari can actually be instructed by webpages to show or hide Apple Pay buttons *based on a device's proximity to the Mac*. That's right, if you're browsing an Apple



MESSAGES in macOS Sierra.



Pay-enabled website without your iPhone or Apple Watch nearby, a website can opt to make the Apple Pay button vanish. And then if you bring your iPhone within range, the Apple Pay button can magically reappear.

PICTURE IN PICTURE ANYWHERE

The new Picture In Picture feature in macOS Sierra is basically the same feature as in iOS 9 on the iPad. It's great because you don't have to fuss to keep other windows from covering up the video you want to watch. On iOS, you can stick the video in the corners of the screen, and that was

demonstrated at the keynote, too.

If the corners of the screen don't work for you, though, have no fear! If you hold down the Command key while moving the Picture In Picture window, you can drop it anywhere you like.

RICH URL PREVIEWS IN MESSAGES

Like Photos, all of Apple's improvements to Messages were covered in the iOS portion of the keynote. While Messages for Mac can't create most of the cool effects added to iOS 10, it can play most of them back. But one improvement to Messages works both ways: the addition of rich URL

previews. Now when you send or receive a message that contains a URL, Messages will load the name (and if possible, an image) of the page you're referencing and display it in an attractive preview box. That's way more friendly than a bare URL.

SHARING IN NOTES

iOS 10 features iCloud-based sharing of notes in the Notes app, but guess what? Yep, the Mac gets this feature too. Just click on the Share button at the top of the Notes window and choose your method of sharing—you can send a share link via Messages, Twitter, or even just pop it on the clipboard and do what you want with

it. Once someone else is sharing your note with you, they can edit it at the same time you are, and changes show up within a couple of seconds. This should be great for families and friends alike.

BRILLIANCE COMES TO PHOTOS

A new effect in the editing window of Photos is called Brilliance, which does a whole bunch of different things—brightening dark areas, dropping down highlights, and increasing contrast. It's also been added as a dimension in the automatic enhance tool, changing how that tool behaves.

PHOTOS in
macOS Sierra.



COMPATIBILITY WITH FEWER MACS

The last three releases of OS X all added features without dropping compatibility from any Mac models. That's right, the system requirements for Mountain Lion, Mavericks, Yosemite, and El Capitan were all identical. (This isn't to say that some features of those versions didn't work on some Macs... but you could install all of them on the same group of Macs.)

With macOS Sierra, though, some old Macs have finally fallen by the wayside. Losing compatibility this time: iMacs from mid-2007 through mid-2009, MacBook Pros from mid-2007 to mid-2009, MacBook Pros from 2007 to 2009, Mac minis from 2009, Mac Pros from 2008 through 2009, and the Xserve. Basically, if you're running a Mac released in 2010 or later, you can definitely run macOS Sierra. ■



Forget the stickers:

iOS 10 turned iMessage into a platform, and that's more important

MESSAGES IN iOS 10 OPENS TO DEVELOPERS FOR THE FIRST TIME. THAT'S MAJOR.

By Caitlin McGarry



Apple's big changes to Messages in iOS 10 seem mostly cosmetic (go.macworld.com/messages-changes): Giant emoji, full-screen fireworks, handwritten scrawls across photos and videos, and stickers galore. These are features lifted straight from Facebook Messenger, Snapchat, Line, and all the other messaging apps that are resonating with teenagers and, even if they won't admit it, their parents. But the biggest change to Messages is more behind the scenes. Facebook Messenger and WeChat are taking over the world, but Apple's decision to open up iMessage to developers makes it clear that the company isn't yielding to the dominant messaging apps—in fact, it has an advantage.

Apple's iOS 10 demo at the recent Worldwide Developers Conference keynote was full of brand-new features, but Craig Federighi, Apple's senior vice president of software engineering, devoted a large chunk of time to changes coming to the Messages app (go.macworld.com/messagesios10). If you've used any other messaging app in the last few years, most of the flair coming to Messages looks more than a little familiar. iOS 10 gives Messages some signature Apple style, like an invisible ink feature that blurs your photos and texts and has to be swiped away, but the improvements are familiar.

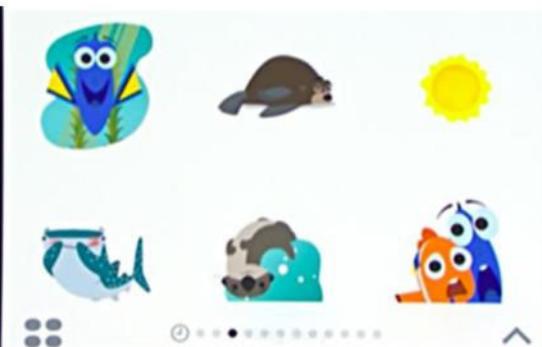
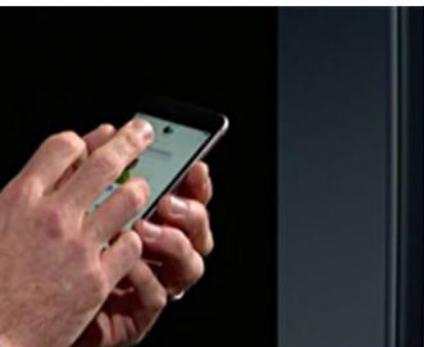
But Apple's decision to turn iMessage into a platform is more significant than all the Snapchat-like effects that have garnered the lion's share of attention, because third-party apps can now be used to

enrich your messages without ever leaving the Messages app. It's the Facebook Messenger approach, but more refined.

The new iMessage app drawer

The new iMessage software development kit allows developers to build extensions that bring their app experiences directly into Messages. In iOS 10, you can access third-party messaging apps from the iMessage App drawer. Just tap on the App icon next to the blank text field to find apps and create content that you can share straightforwardly in-app.

Federighi used a funny image-creation app called JibJab to demonstrate the features in his WWDC demo. JibJab lets you create and share e-cards with people, and the iMessage extension allows you to



FINDING DORY STICKERS are just the beginning.

select from a gallery of faces in your Camera Roll and drop a friend's face on a JibJab GIF. When you share that image with someone, it will appear in the same iMessage conversation with a button beneath the image to install JibJab. Whereas Facebook Messenger would kick you to the App Store to finish downloading the app, in iMessage, you'll remain inside your conversation. JibJab will appear in the new iMessage app drawer, which you can open without ever leaving Messages. That seamless installation process is huge for developers, JibJab cofounder and CEO Gregg Spiridellis told me.

"This is a monumental improvement in discovery," Spiridellis said. "If one of our users sends content to someone today in iMessage, there's no link back to JibJab. People don't know where that content came from or how to get it for themselves."

Facebook also used JibJab (



macworld.com/facebookjibjab) to demonstrate their Messenger app platform at F8 in 2015. Spiridellis said JibJab is platform-agnostic, but Apple has a clear advantage because its tools are built in at the OS level.

Apple isn't really trying to compete with Facebook Messenger or Snapchat or any other messaging app, and it doesn't need to. Addictive apps keep people using their iPhones. But Apple's newly open iMessage platform has the potential

APP DISCOVERY IN

Facebook Messenger: If you send someone a JibJab or Bitmoji, that person is also prompted to install the app into the Facebook Messenger platform.

to turn Messages into a universal hub for more than just messaging.

First come the stickers

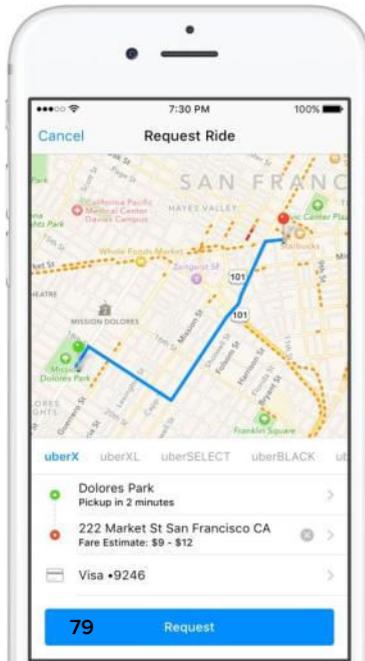
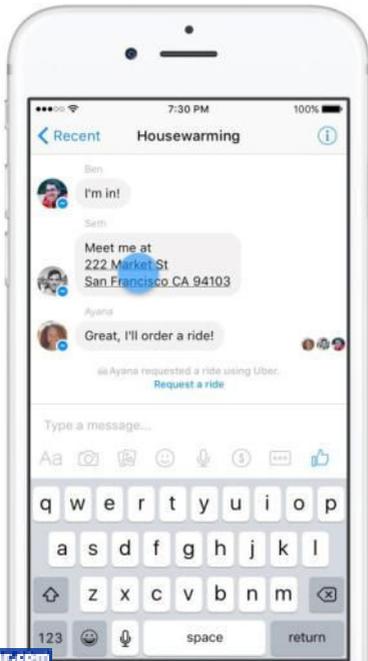
A cautiously open iMessage platform could herald a centralized app where you not only send messages with stickers and giant emoji, but also use Apple Pay to transfer money to friends and shop from brands. The Siri SDK launched at WWDC might signal the onslaught of iMessage chatbots.

OK, those days are a ways off, if they're coming at all, but Apple is clearly taking cues from Facebook Messenger and apps like WeChat,

which is popular in Asia.

"WeChat has become a hub for all of these different services in Asia and that's never happened here in the U.S.," JibJab CEO Spiridellis said. "I think Apple's opening up iMessage seems like the clearest opportunity for developers to take advantage of the fact that Messages is gonna become a hub for all sort of experiences."

Facebook's stand-alone messaging app has more than 900 million monthly active users sending messages, stickers, money, and more without ever leaving the app. Some of that functionality is enabled using



STICKERS AND GIFS

are cute and all, but Facebook Messenger also has useful third-party integrations, like ordering an Uber right inside the app.

other apps that are plugged into the Messenger platform, which launched last year. Tencent's WeChat has more than 700 million monthly active users, mainly in China, which is where Apple wants to dominate, and is also a platform for third-party developers.

It's unclear exactly how many people use the Messages app, though Federighi said during the

WWDC keynote that it's the most frequently used app on iOS. Given that Apple has a base of more than a billion active devices, it's safe to say a good chunk of them still use iMessage or send SMS messages through the

Messages app, even if they use over-the-top apps like Facebook Messenger or WeChat, too.

Tech entrepreneur Matt Galligan, who founded the now-defunct news app Circa, wrote a widely circulated blog post last year (go.macworld.com/messagekit) envisioning what iMessage as a platform would look like. Many of the features he dreamed up came to life in Facebook Messenger, but are even more relevant and seem more possible now that iMessage has actually

become a platform—limited, to be sure, but a platform all the same.

A limited but secure platform

Apple won't bring iMessage to Android (go.macworld.com/imessage-android), which will limit its capabilities. Facebook Messenger and WeChat can reach more users. But if

iMessage will ever become a hub, it's a safe bet that Apple will secure it with hardware integration that no other messaging platform is capable of.

"The children of tomorrow will have no understanding of the English language," Federighi

joked as he blazed through the host of novelties coming to iMessage.

Some of those visual changes aren't popular with people who want a bare-bones messaging app. But if Apple can please the next generation of iPhone owners (go.macworld.com/nextgenowners)

with gratuitous messaging tricks, they could become the Apple service users of tomorrow. And, as we all know, the future of Apple is services (go.macworld.com/appleservices)—or so the company hopes. ■

IF APPLE CAN PLEASE THE NEXT GENERATION OF IPHONE OWNERS WITH GRATUITOUS MESSAGING TRICKS, THEY COULD BECOME THE APPLE SERVICE USERS OF TOMORROW.





OS X NETINSTALL: INTRODUCTION

How to master the NetInstall service

Get a leg up on imaging and make it easier for you to deploy Macs in your environment.

BY JEFFERY BATTERSBY

One of the toughest things you have to tackle in your IT life, beyond the Sisyphean task of keeping everyone you deal with happy, is deploying devices in a way that doesn't require touching every single computer you're responsible for. Apple's NetInstall service (go.macworld.com/nis), which is one of the features available in Apple's Server app (go.macworld.com/sapp), offers a simple yet efficient set of tools to help you create and distribute images to every Mac in your environment.

Over the next several articles, we'll take a look at the NetInstall service, so you can get a leg up on imaging and make it easier for you to deploy Macs in your environment.

As was the case with our recent Profile Manager Primer (go.macworld.com/pipm), you're going to need a copy of Apple's Server app (go.macworld.com/sa) to set up the NetInstall service, so go and get yourself a copy. It will also be best if you attempt the following exercises on a server that isn't a production server. What we'll do here is unlikely to cause any trouble, but it's never a good idea to do test work on a computer that hosts your business information. So, practice on a test server and, once you've completed what we cover of the next few weeks, take what you've learned and apply it to your production environment.

The beauty of the NetInstall service is that once you've created and tested

an image you can copy it to the proper location on your production server and it will still work.

If you do plan to ignore this advice, make sure you have a good backup before you move ahead.

You've been warned.

THE BROAD VIEW

What will we cover over the next several articles?

- > Why you need a deployment tool
- > Basic system and network requirements
- > Best practices for a deployment service
- > Understanding image types:
 - NetInstall
 - NetBoot
 - NetRestore
- > Creating NetInstall, NetBoot, and NetRestore images
- > Creating custom installation images
- > Deploying images
- > Limiting images to specific devices or MAC addresses

> Troubleshooting the NetInstall service

We will also touch on creating workflows using DeployStudio (deploystudio.com), which adds significant functionality to Apple's NetInstall service.

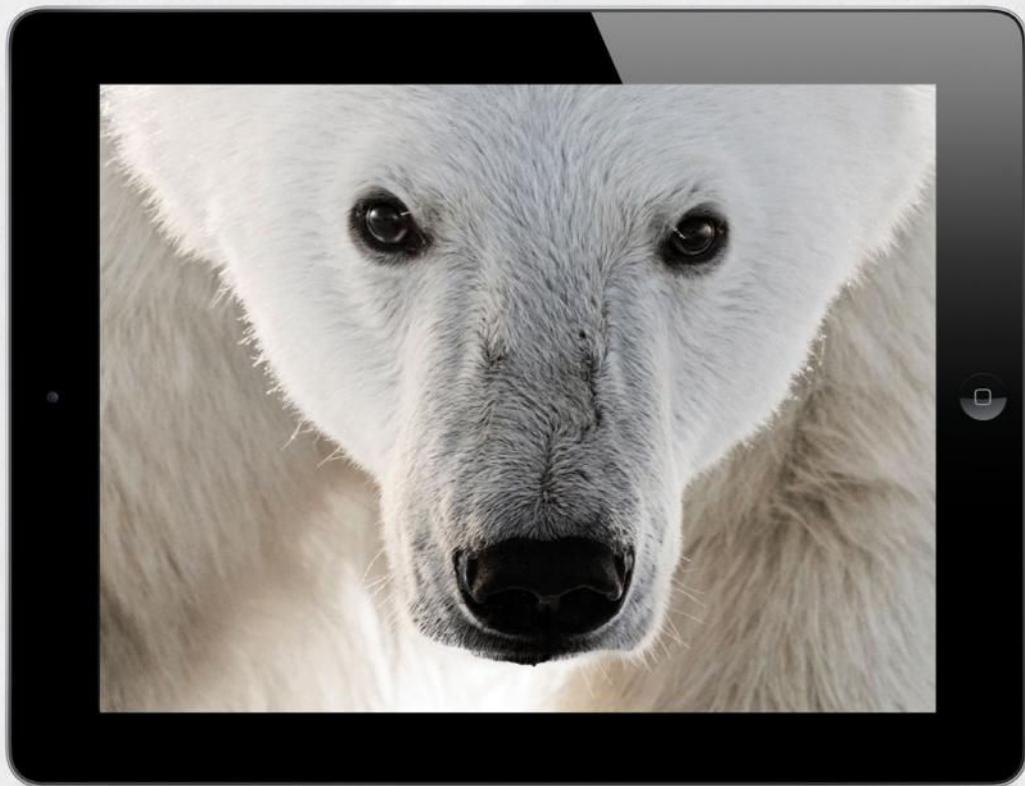
WHY YOU NEED A DEPLOYMENT TOOL

Been around the computer business for a bit? Then surely you recall the days of the sneakernet, which was a cute way of saying you walked to someone's desk with a floppy disk in hand to copy a file to their computer so they could work on it. Sneakernet has largely been eliminated, even in home office environments, because of the proliferation of high-speed computer networks but, interestingly, for many IT environments, and particularly for small business environments, the benefit of those networks hasn't transferred to the

installation of operating systems.

While Apple no longer ships installers on DVDs or thumb drives, you may still find yourself downloading an El Capitan installer from the App Store on every computer you want to install or update an operating system on. Worse yet, you may find that you're also manually creating administrative accounts, downloading and installing applications, adding computers to your MDM system, and binding to domain servers manually on every device you own.

Using a deployment tool can simplify that process, allowing you to create a single image that installs an OS, adds a device to your MDM and automatically adds it to your domain. In addition, if you need to install packages, such as Microsoft Office, Adobe's Creative Cloud, or even the Watchman Monitoring service we talked about last week, you can do that as a part of an image as well. ■



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MASTERING THE NETINSTALL SERVICE:

Network and system requirements

Before you can begin using the NetInstall service, you need to make sure you have a few basics in place.

BY JEFFERY BATTERSBY

Before you can begin using the NetInstall service, you need to make sure you have a few basics in place. Unlike setting up Profile Manager (go.macworld.com/pipm), we don't need to worry about certificates, or Open Directory, or user accounts. In fact, you really don't need to do much more than switch this service on and it just works. But there are a few things you need to make sure you have in place before you get started, otherwise you may discover that what should have been a boon turns out to be a boondoggle.

What are the basic requirements?

- > ethernet
- > high-speed network switch
- > DHCP

NETWORK

The NetInstall service requires high-speed networking in order to work properly, which means an ethernet network with your server and all the clients you plan to image connected to that network.

Nope, Wi-Fi is not supported.

If the computer you're running Server on has no ethernet port, you will not be able to use the NetInstall service. You won't even be able to turn it on. (You can enable the service as soon as you add any ethernet connector using Thunderbolt or USB.) You can, however, attempt to connect to the NetInstall service on a client computer that's only using Wi-Fi, but this isn't an option supported by Apple and it may offer up more headache than joy. But, if that's all

you've got at the moment, give it a go. Just make sure, when you roll this out for real, that all the devices you're imaging have an ethernet connection.

How fast does that ethernet network need to be?

First, a switched network (go.macworld.com/eth) is a requirement. You cannot use an ethernet hub that isn't switched. It will be too slow.

If you have a 100Base-T switched ethernet network, you will be able to support up to 50 simultaneous devices using the NetInstall service.

If you have a 1000Base-T switched ethernet network, you'll be able to support 50 or more simultaneous devices.

DHCP

If you're running a network of any sort, you probably already have a DHCP server. DHCP, aka Dynamic Host Configuration Protocol (go.macworld.com/dh), is the way your computer gets an IP address on your network, which is

what allows your computer to communicate with other computers on your network or anywhere else in the world.

It would be surprising if you didn't have a DHCP service running in your network, but if you're in an odd situation where you don't, then you'll need to have one before you can begin using the NetInstall service. In short: no DHCP, no NetInstall.

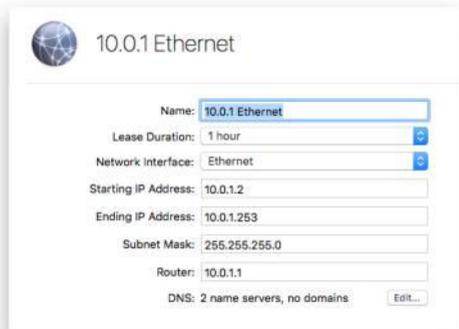
It's important to note that *you should only ever have one DHCP server running in your network*. You should work under the assumption that you already have one. If you're certain you don't have a DHCP server set up, perform the following steps to set up DHCP on your server.

Remember: Do not do this on a network where you already have a DHCP server.

1. Open the Server app on your server.
2. Locate the Advanced section near the bottom of the Server sidebar.
3. Select the DHCP service.
4. You should already see one interface set up for DHCP, if you do:
 - > Double-click the interface
 - > Set the Lease Duration to 1 hour
 - > Set the Network Interface to Ethernet
 - > Choose a starting IP address
 - > Choose an ending IP address
 - > Enter an appropriate subnet mask
 - > Enter a router address

5. If you *do not* see a DHCP interface set up already:

- > Click the + button that appears below the Networks window
- > Give your network a name
- > Set the Lease Duration to 1 hour
- > Set the Network Interface to Ethernet
- > Choose a starting IP address
- > Choose an ending IP address
- > Enter an appropriate subnet mask
- > Enter a router address. You will not need to enter any DNS information for the purposes of these exercises, but if you plan on using DHCP for other devices in your network, you will need to enter DNS information. When you're done, your settings should look something like this:



Click OK.

Turn the DHCP service on.

Next: We'll begin looking at how the NetInstall service works. ■



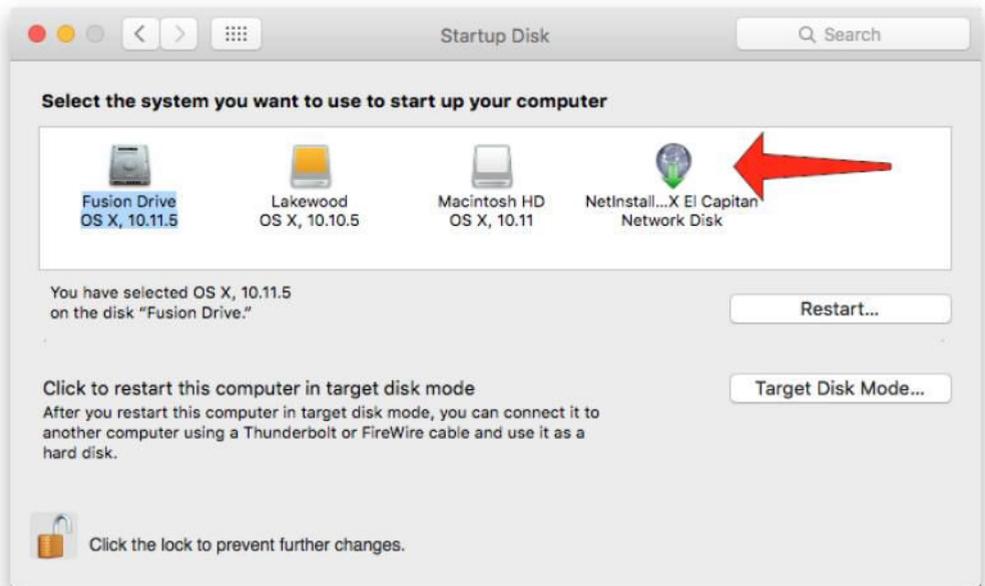
*“I want
to be
a bench.
Recycle me.”*



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MASTERING THE NETINSTALL SERVICE:

How the NetInstall service works

Before using the NetInstall service, understand how it works and to learn about the four different types of NetInstall images.

BY JEFFERY BATTERSBY

Before you begin using the NetInstall service, it's a good idea to gain a basic understanding of how it works and to learn about the four different types of NetInstall images. During the course of this series, we'll create basic versions of every type of NetInstall image and create images that incorporate some the NetInstall service's more advanced features.

The NetInstall service consists of three components:

- > NetInstall server
- > NetInstall image
- > NetInstall client

The NetInstall server acts as a repository for NetInstall images, hosts the NetInstall service, and delivers NetInstall images to NetInstall clients.

NetInstall images are specialized disk images designed to be hosted on a NetInstall server.

A NetInstall client is any Mac that is using your NetInstall server to install an operating system or application package, restore an image, or stream an operating system.

HOW NETINSTALL WORKS ITS MAGIC

In the previous article we talked about the minimum requirements for

using the NetInstall service. Now let's talk about the process a NetInstall service uses to stream an image to a client computer.

There are few ways to get a client Mac to start up using an image hosted on a NetInstall server:

- > Select one using the Startup Disk preference in System Preferences. (See image on previous page.)
 - > Hold down the N key or Option-N keys when starting up your Mac.
 - > Hold down the Option key when starting up your Mac and select a NetInstall



image.

Selecting the NetInstall image using the Startup Disk preference will start your Mac from that image the next time your Mac restarts.

Holding down the N key starts your Mac from the last used default NetInstall image. Holding down the

Option-N keys starts your Mac from the server's current default NetInstall image.

Holding down the Option key lets you use the boot manager to choose the NetInstall image you want to boot from.

No matter the method you choose, when your Mac starts up it will:

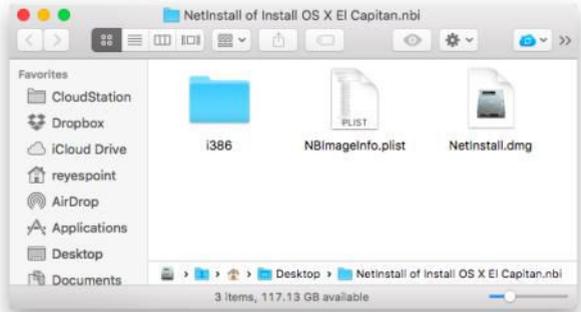
1. Get a DHCP address.
2. Send a Network request for booter files using the Boot Service Discovery Protocol (BSDP) service.
3. Use TFTP to download booter and kernel files.
4. Use HTTP or NFS to download the NetInstall image.

NETINSTALL PROCESS

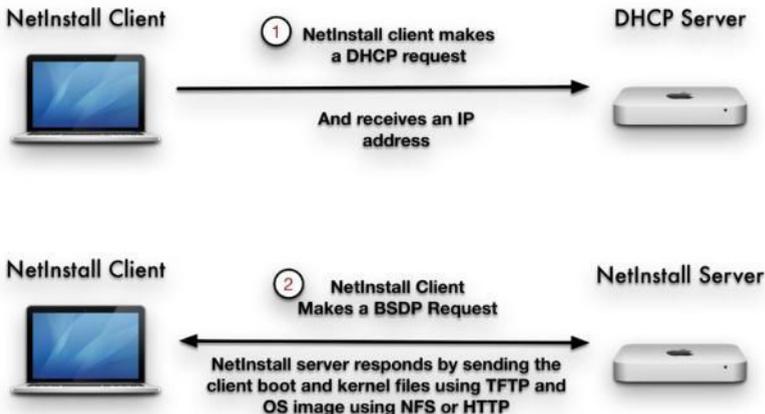
What happens next depends on the type of NetInstall image you've selected.

NETBOOT, NETINSTALL, AND NETRESTORE IMAGES

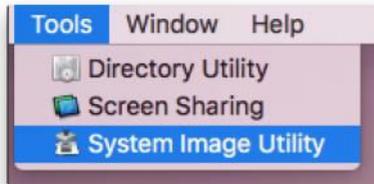
NetInstall images are folders with names ending with .nbi, containing a disk image, booter files, and configuration information.



They are created using a tool called the System Image Utility, which you'll find using Spotlight, navigating to the /System/Library/CoreServices/Applications folder, or by selecting it



from the Tools menu when you have the Server App open.



NetInstall images are a special kind of disk image, similar to what you might create using Disk Utility, that makes it possible to boot your Mac up using a network connection rather than a local hard drive. (More on using the System Image Utility to create an image later.) There are four types of NetInstall images ([go. macworld.com/nii](http://go.macworld.com/nii)).

> **NetBoot Image:** Lets you start one or more Macs using an operating system that is hosted on your NetInstall server.

> **NetInstall Image:** Lets you run an OS installation from an OS X installation disk hosted on your NetInstall server.

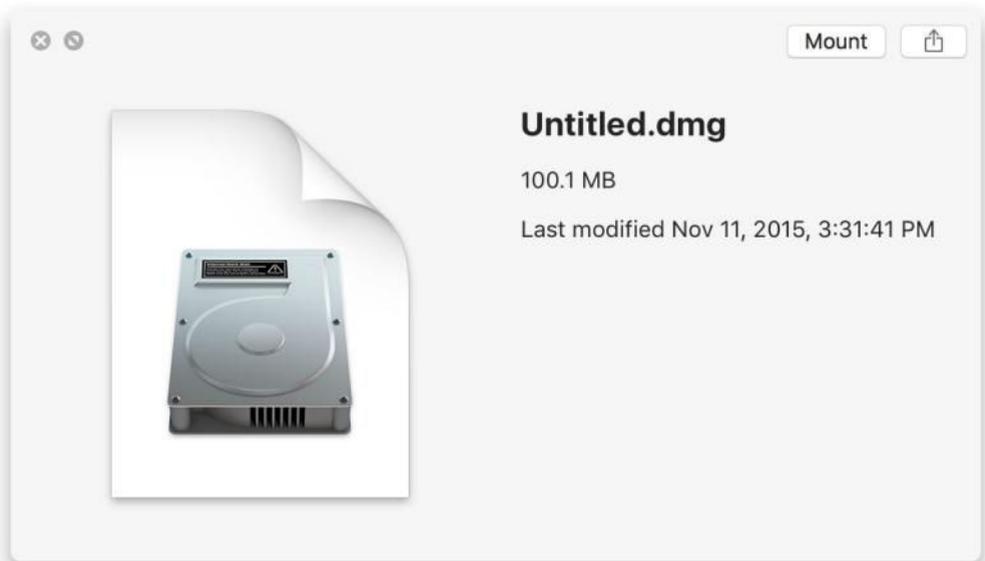
> **NetRestore Image:** Lets you replace the entire contents of a

Mac's hard drive based upon an image you've taken from another computer. NetRestore images contain all the settings and applications found on the original image.

> **NetInstall** image without an

operating system: In addition to an OS NetInstall image, you can also create NetInstall images that install applications, such as Microsoft Office, MDM Profiles, and run command-line scripts.

Next: We'll create our first NetInstall image and turn on the NetInstall service. ■



MASTERING THE NETINSTALL SERVICE:

How to create your first NetInstall Image

Before you can turn the NetInstall service on you need to create a network disk image to boot from. Here's how to do it.

BY JEFFERY BATTERSBY

Before you can turn the NetInstall service on you need to create a network disk image to boot from. The easiest image to create is a NetInstall image, which lets you install or update an operating system on any Mac.

DOWNLOAD A FRESH COPY OF EL CAPITAN

Before you can create a NetInstall image you need to make sure you have a fresh copy of the El Capitan installer downloaded to your hard drive.

1. Open the App Store on your Mac with the Server app installed.
2. Click the Purchased tab in the App Store.



3. Locate OS X El Capitan in the list of purchased apps.

4. If you see OS X El Capitan in the list, make sure it says Downloaded on the button next to the installer app.

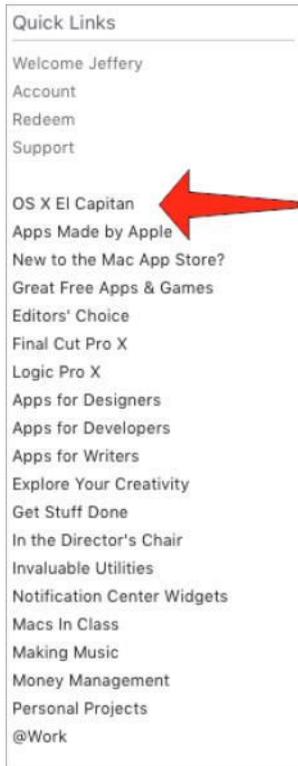


If it doesn't:

- > Click Download.
- > Wait...

5. If you don't find OS X El Capitan in your list of purchased apps:

- > Click the App Store's Featured tab.
- > Locate and click OS X El Capitan in the Quick Links section of the App Store.



- > Click the Download button for El Capitan.

- > Sign in using your Apple ID if you're asked to do so.

- > Wait...

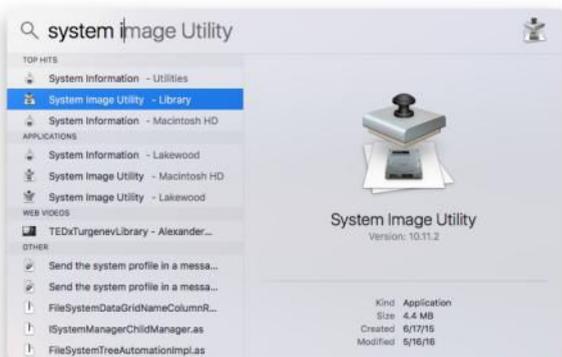
CREATE A NETINSTALL IMAGE

With your fresh copy of El Capitan, you can create your first image.

Every Mac, whether you have the Server app installed or not, includes a copy of the System Image Utility. It lives in the `/System/Library/CoreServices/Applications` folder, but you don't have to navigate to that folder in order to open the app. Instead, use Spotlight to find and open the System Image Utility.

1. Press Command-Space to open Spotlight.

2. Begin typing **System Image Utility**.



3. Open the System Image Utility.

Opening the System Image Utility starts a workflow assistant designed to walk you through the process of creating a new network disk image. The first step in this process is selecting the source you want to create the image from.

1. Click the Source menu.



What you see in the Source menu depends on whether or not you have

a downloaded El Capitan installer and whether or not you have any bootable disks, other than your boot volume, connected to your Mac. Because you just downloaded the El Capitan installer you

should see that in the menu.

2. Select Install OS X El Capitan from the Source menu.

3. Click Next. The next step asks you to select the type of network disk image you'd like to create. Note that you can select from the three different types of images we talked about last week.

4. Click the radio button next to NetInstall Image.
5. Click Next. A license agreement appears next. Feel free to read it, then/or:
6. Click the Agree button.

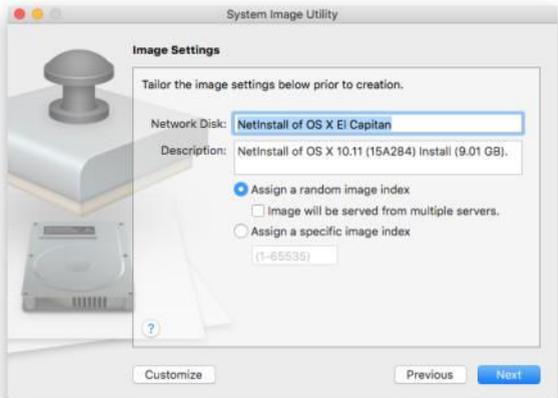


The next several steps let you add Configuration Profiles, install application packages, run post-install scripts, set configuration information, bind to directory servers, and filter clients by Mac model or MAC address. You can customize what you see in these steps by opening the System Image Utility's Preferences, selecting Steps, and deselecting any steps you don't want to see.



We're creating a basic image, so we won't add files or make any changes here.

7. Click Next until you see Image Settings.



Information typed in the Network Disk field is what you will see in the Startup Disk preference or when holding the Option key and using the Startup Manager. When creating several NetInstall disk images you'll want to make sure each Network Disk name is different enough that

you won't be confused when selecting the image you want to use.

8. Enter **NetInstall of OS X El Capitan** in the Network Disk field.

9. Leave the default information in the Description field.

10. Select the Assign A Random Image Index radio button.

11. Click Next.

12. Make no changes to Supported Computer Models.

13. Click Next.

14. Make no changes to Filter Clients By MAC Address.

15. Click Next.

16. In the Save dialog window that appears, give your image a name and save it to your Desktop.

17. Enter your Administrator User ID and password and press the Return key.

The System Image Utility will begin creating your NetInstall image as soon as you hit Return. First it will create a disk image, then it will copy installer files to the disk image and

add boot and kernel files to the NetInstall image folder. This should take about 5 to 10 minutes.



Click Done when you see the Image Creation Successful window.

Next: we'll start the NetInstall service and install OS X from this NetInstall image. ■

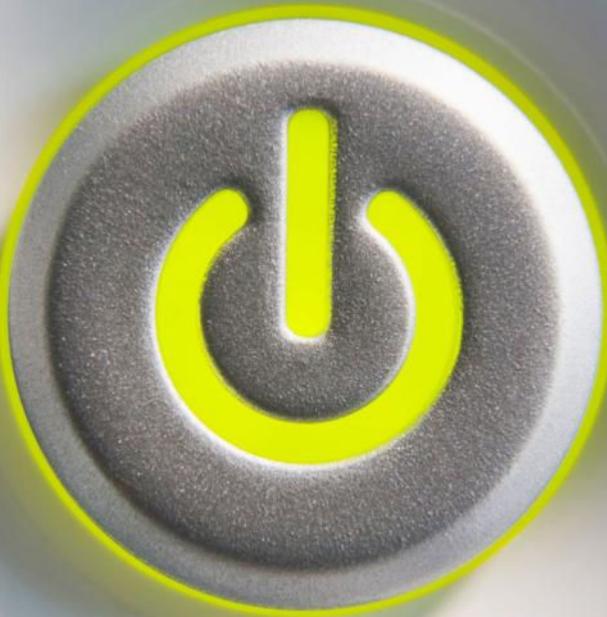
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MASTERING THE NETINSTALL SERVICE:

Fire up the NetInstall service

How to configure the NetInstall service and start it up.

BY JEFFERY BATTERSBY



nce you've created your first NetInstall image, which we did in the previous article, you have what you need to begin using the NetInstall service. But, to start the service up, you'll need to configure some settings.

To test the NetInstall service, in addition to your Mac running Server, you'll need to have another Mac connected to your ethernet network to connect as a client. Remember, every Mac using this service needs to have an ethernet connection.

CONFIGURING THE NETINSTALL SERVICE

Before you set the service up, let's take a look at what NetInstall looks like before you configure it.

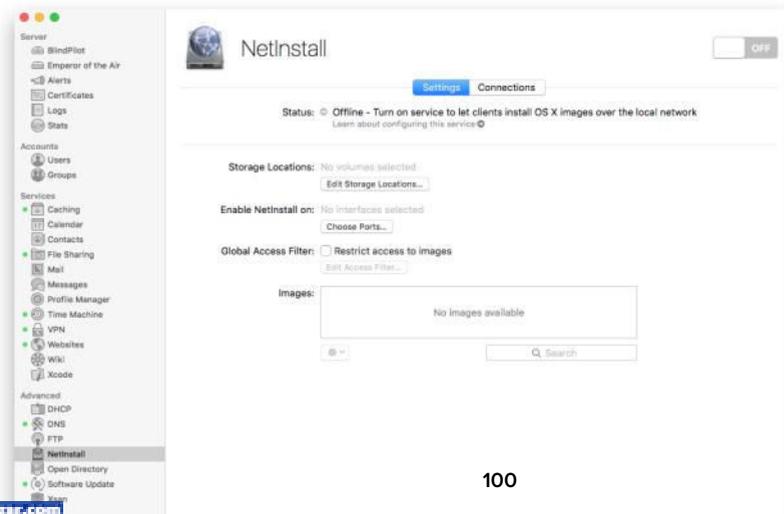
Open the Server app and click NetInstall in the Advanced section of the app's sidebar and take note of the current settings:

- > The service is off.
- > The Storage Locations setting should read No Volumes Selected.
- > The Enable NetInstall On setting should read No Interfaces Selected.
- > The Global Access Filter setting should not be checked.
- > The Images setting should read No Images Available.

For giggles, try to turn the service on.

You should see an error message telling you that the service can't be started until you enable one network interface.

Actually, you can't start the service because nothing has been config-





Unable to start NetInstall.

To start NetInstall, you must enable the service on at least one network interface.

OK

ured, but it's important to note that the service can't be started until everything is configured.

While the error you got was about network interfaces, you'll configure NetInstall from the top down.

STORAGE

The NetInstall service needs a location to store images and, if you're hosting NetBoot images, cache files for computers that have no hard drives. (Yup, you can NetBoot computers even if they have no internal hard drives.)

To set up storage locations:

1. Click the Edit Storage Locations button. You'll see a Volume for every hard drive you have connected to your server.
2. Click the menu next to the word *None* under the Stored Data column and choose Images & Client Data.
3. Click OK.

This creates two new folders on the volume you selected:

- > /Library/NetBoot/NetBootSPO
- > /Library/NetBoot/NetBootClients0

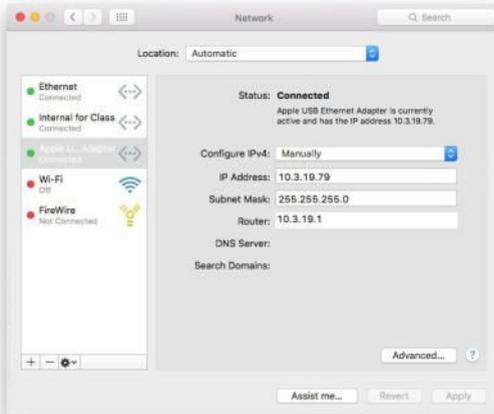
Make sure these folders have been created:

1. Open the Finder.
2. Click the Go menu.
3. Select the Go To Folder menu item.
4. Type **/Library/NetBoot**. Note: If you chose a volume other than your boot volume to store images and client data, you'll need to type: **/<name of the volume>/Library/NetBoot**.
5. Verify that both folders are here. Don't close the Finder window when you're done.

NETWORK INTERFACES

You may recall that we previously talked about the basic network requirements for using the NetInstall service. By default there are no network interfaces enabled. You may also recall that you cannot use Wi-Fi for the NetInstall service. So if you've been playing around with this on a Mac sans ethernet, it's time to grab your USB or Thunderbolt adapter and get wired.

1. Click Choose Ports under Enable NetInstall On. Note: The resulting window will show you all network interfaces with a physical network connection. You'll notice that I have three network interfaces available in the Network preference on my Mac, but only two appear in the Network Interfaces window. That's because the Internal For Class interface is not an actual physical network interface.
2. Put a check in the box next to the network interface you want to use.
3. Click OK.



IMAGES

We'll skip the Global Access Filter option, but what this allows you to do is restrict access to your NetInstall server to specific MAC addresses. No need to do that here. Just make sure there's no check in the Restrict Access To Images checkbox.

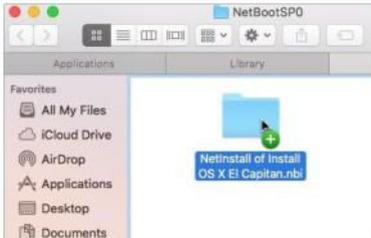
What you should notice is that there are no images available under the Images setting. That's because we haven't moved the image we created last week to the NetBootSP0 folder.

1. Click your server's Desktop.
2. Click the Finder menu.
3. Click Hide Others.

You should see the open NetBoot Finder window and the NetInstall image folder you already created. If you don't see either, you'll need to retrace the last few steps and you may need to go back to the

previous article.

4. Drag the NetInstall folder into the NetBootSP0 folder.
5. Authenticate as an administrative user if you're asked to.
6. After the move is complete, open the Server app.
7. Click NetInstall in the app's



sidebar if it's not already selected.

Note: Sometimes the Images setting won't update automatically. If you don't see your image in the Images window, select another service in the Server sidebar and re-select NetInstall.

8. Double-click your image in the Images setting.

9. Make sure Make Available Over is selected under the Availability section.

10. Click the protocol menu and choose NFS. (It defaults to HTTP.)

11. Select All Mac Models under the Access setting.

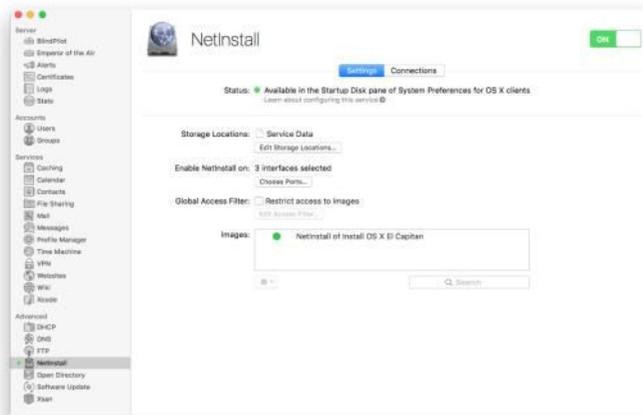
12. Make sure there is no check in the box next to Restrict Access To This Image.

13. Click OK. What you see should look something like this:



VERIFY THE SERVICE IS RUNNING AND START UP USING NETINSTALL

Open System Preferences on the computer you're using as a client, click Startup Disk, and make sure you can see your NetInstall image.



If you see your server:

1. Restart your Mac while holding down the Option key.

2. You should see your NetInstall image in the list of available bootable drives.

3. Select the NetInstall image and press return.

Your Mac will now start up to the El Capitan installer hosted on your server.

Feel free to run the installation, which

should reinstall the OS without overwriting any user data, or you can quit the installer and restart normally.

You've now booted from your first NetInstall image.

Next: We'll create a NetBoot image and start your Mac using an operating system that's hosted on your NetInstall server. ■



MASTERING THE NETINSTALL SERVICE:

Create a disk image for NetBoot and NetRestore

The final installment in our series on mastering the NetInstall Service for OS X Server.

BY JEFFERY BATTERSBY

In the previous article, we configured the NetInstall service and started a Mac using an installer image hosted on a server. Now we're going to up our game a bit and create a disk image we'll use at a later date to create NetBoot and NetRestore images.

CREATE A DISK IMAGE USING AUTODMG

Previously, we created an installation image from a fresh copy of the El Capitan installer. Now we're going to use a tool called AutoDMG to install OS X (or is that macOS!?) and a couple of other apps onto a disk image we'll use to create our next two NetInstall images.

AutoDMG is a phenomenal app that creates bootable disk images you can use to restore a single image to a single hard drive using Apple's Disk Utility, or to create network images with the System Image Utility for NetBoot and NetInstall images—which is exactly what we're going to do.

DOWNLOAD AUTODMG

AutoDMG is a free app, but you won't find it on the App Store. You'll find the most current release on GitHub (go.macworld.com/dmg). You'll want to download the latest release from this link.

AutoDMG is easy to use, and I suspect you'll find it becomes a regular part of your imaging arsenal, especially when you see how we use

it here. When the download is complete, put the AutoDMG app in your server's Applications folder.

CREATE AN AUTODMG IMAGE

Open AutoDMG and take a look around. You'll note, there's not much to see, but there's more here than meets the eye.

The AutoDMG app consists of three sections:

1. Installer Drop:

This is where you drag your OS installer.

2. Updates:

AutoDMG will check to see if there are updates for your copy of the Mac OS installer. If there are you can download them, and the updates will be applied to your fresh installation of the OS.

3. Additional Software: If there are other applications you want added as part of your OS installation you can drag them here. You can add drag-and-drop applications and



package installers to Additional Software and AutoDMG will handle them with ease. Drag-and-drop applications will be added to the Applications folder and package installers will be run and their software and resources will be placed where they belong.

To create your image:

1. Drag the EI Capitan installer you downloaded two articles ago to the Installer drop section of AutoDMG. AutoDMG will expand the installer and check to see if there are any updates. If the app finds updates, click the Download button.

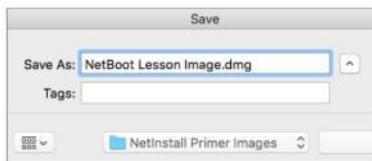
Note: If you see an error stating that your installer has been deprecated, you can still use it, but you're better off deleting your installer and downloading a fresh copy from the App Store.

2. Drag two applications to the Additional Software section of AutoDMG. I chose freemacsoft's AppCleaner ([go. macworld.com/ac](http://go.macworld.com/ac)) and Malwarebytes' Anti-Malware ([go. macworld.com/ amm](http://go.macworld.com/amm)) app.

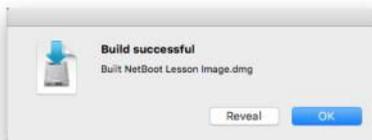
3. Click Build.

4. Give your disk image a name and save it.

5. Authenticate



as an Administrator and click OK. AutoDMG will begin creating your installation image, which, depending on the speed of your computer, should take approximately 15 minutes.



When the disk image is complete:

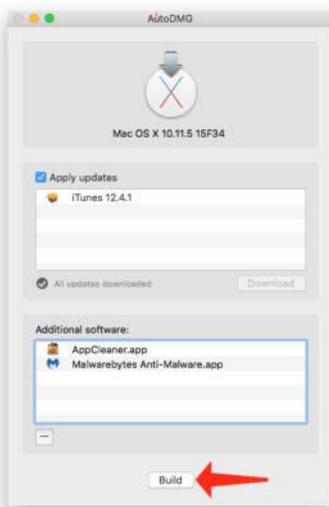
1. Click the Reveal button.

2. Double click the disk image.

3. Wait for it to verify. Note that the image is an exact replica of what you'd normally expect to find on a Macintosh hard drive.

4. Double-click the Applications folder and locate the apps you installed.

When you're done taking a look around, eject the disk image and keep it in a place you'll be able to find it. ■



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How to create instant slideshows in Photos for Mac and iOS

A slideshow is a great way to showcase your vacation pics.

BY LESA SNIDER

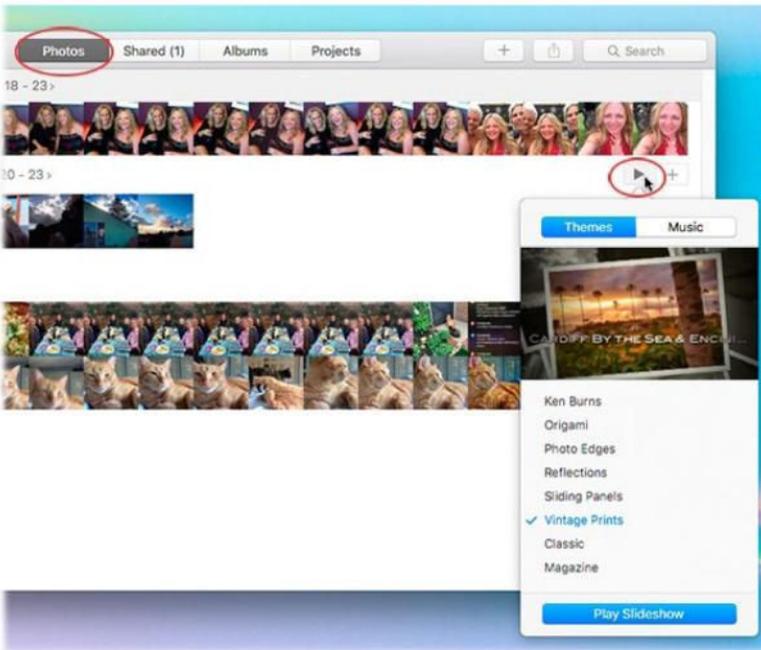
When it comes to showing off your pictures and videos, nothing beats a great slideshow. Seeing your digital memories overtake your entire screen, set in motion through smooth animations and transitions, complete with background music, is a uniquely personal cinematic experience.

Happily, the Photos application makes creating slideshows a snap both on your Mac and on your iOS devices. We're not talking slideshow projects, wherein you spend hours crafting every single slide, oh heck no. In this column, you'll learn how to make instant slideshows, where all

you have to do is pick the images you want to include and then click a couple of buttons.

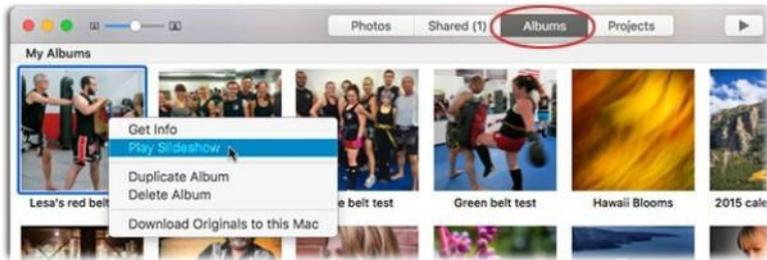
INSTANT SLIDESHOWS ON YOUR MAC

You can start an instant slideshow in Photos on your Mac in a variety of

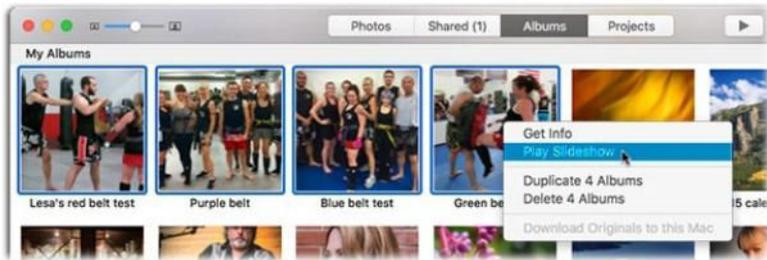


THE THEME PANEL

previews what each theme will look like applied to the first few pictures. The Music panel gives you access to your iTunes library for use as background music.



YOU CAN PLAY an instant slideshow of a single album (top) or several (bottom).



ways, depending on what button is active at the top of the Photos window and what you're viewing. Here are your options.

Photos view

In Photos view, point your cursor at a moment or collection, and then click the play button that appears above the thumbnails on the right. When you do, Photos automatically selects all the thumbnails in that moment or collection and opens the Themes panel shown here. Click the theme you want and then click Play Slideshow.

You can't trigger an instant slideshow while in Year view, but you can dip into Albums view and play a

slideshow based on the All Photos album.

Although there's no official limit to the number of pictures an instant slideshow can contain, it's possible that you may have too many pictures for your Mac's memory to handle, causing Photos or your Mac to crash.

Albums view

In Albums view, Control-click (or right-click on your mouse) any album (even those created by Photos) and choose Play Slideshow from the menu that appears.

To play an instant slideshow of multiple albums, select them by Command-clicking each one, and then Control-click one of the selected

albums and then choose Play Slideshow. The albums play in the order in which they appear in Albums view. You can also select an album (or several) and then click the play button in the Photos toolbar at the top of the window.

PHOTOS TOOLBAR WHILE IN ALBUMS

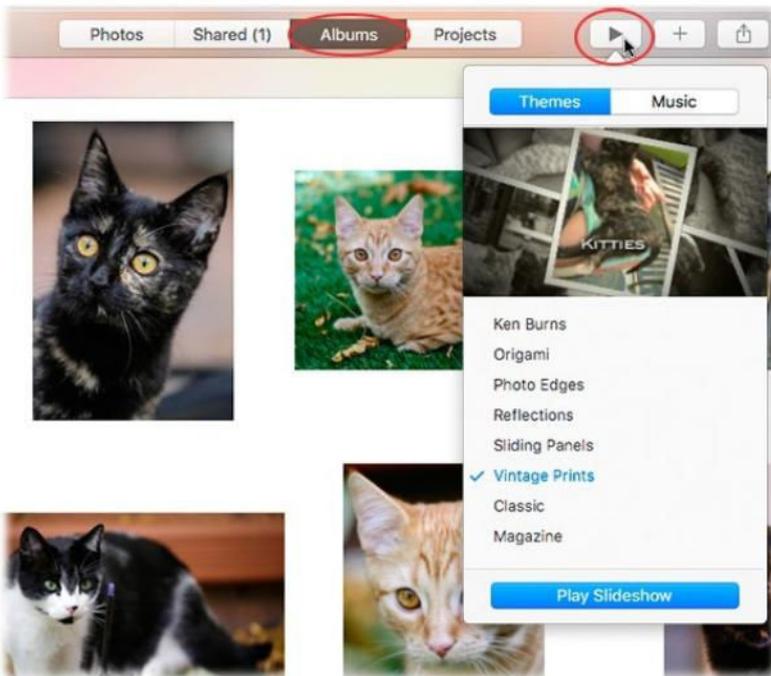
When viewing the contents of an album, make sure you don't have any thumbnails selected by clicking an empty area between two thumbnails, and then click the play button in

Photos' toolbar. Photos automatically includes all the images inside the current album in your show. (If you did have a thumbnail selected, only that image gets included in the show.)

To play a slideshow of just a few pictures in the album, select their thumbnails first, and click play. Either way, the Themes pane opens; click Play Slideshow to start the show.

Photos Sidebar

In the Photos Sidebar, Control-click an album and choose Play Slideshow



TO CONTROL THE order of pictures inside each album, rearrange them in the album before you start the slideshow.

from the shortcut menu. The Sidebar is Photos' equivalent of iPhoto's Source list. To turn it on, choose View → Show Sidebar.

Once the show gets going, you can pause it by pressing the space bar on your keyboard; tap the spacebar again to restart it. To move through the slides manually, use the left and right arrow keys on your keyboard. To end the show, press the Esc key or wiggle your mouse to summon the slideshow controls, and then click the X. Let go of your mouse button and after a few seconds the on-screen controls disappear.

INSTANT SLIDESHOWS ON YOUR iOS DEVICE

You can play instant slideshows in Photos for iOS, too, which is handy when you're out and about and you want to show off pictures hands-free. To do it, fire up Photos on your iOS device, tap Albums at the bottom of the screen, and then tap an album to open it. Your next move depends on which device you have.

On an iPad

Tap the word Slideshow at upper right and the show starts playing. The AirPlay icon at upper right lets you pick the device the show plays on: the iOS device or, if you're on a wireless network, an Apple TV-connected



monitor. The Options button at lower right summons a pane that lets you control theme, music, whether the show repeats (loops), and how long each slide stays on screen.

On an iPhone or iPod touch

It works slightly differently. Tap an album to open it and then tap Select at upper right. Next, tap or drag your finger across thumbnails to select some photos or tap Select All at upper left. Hold your device in portrait position (in lieu of landscape) and then tap the Share icon at the lower left. In the row of icons that appears at the bottom of your screen, swipe left to scroll horizontally, and then tap the Slideshow icon.

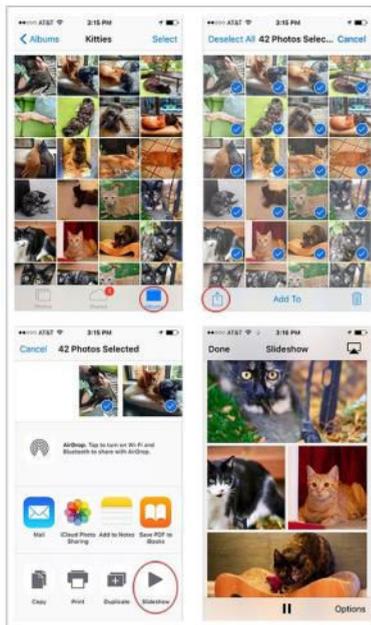
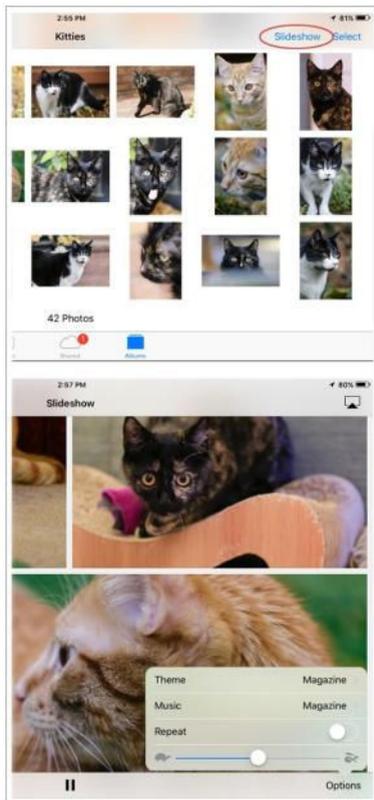
YOU DON'T HAVE to open the album first with this method. Here the Panoramas album is open but the slideshow will be of the Favorites album.

Once the show starts to play, tap your screen and you get the AirPlay and Options buttons described earlier.

If you don't see an Options button, you may be running an older version of iOS. In that case, tap the Home button on your device and open the Settings app. Scroll down the list and then tap Photos & Video. On the

resulting screen, scroll down to the section labeled Slideshow and you should see similar controls.

As you can see, Photos' instant slideshows are a quick way to show off your photos when a viewing opportunity arises. Until next time, may the creative force be with you all! ■



STARTING FROM UPPER left, these screenshots show the steps for triggering an instant slideshow on an iPhone or iPod touch.

ON AN IPAD, a Slideshow button appears at upper right whenever you open an album (top). Once the show starts, you can customize it using the Options menu (bottom).

How to manually exclude images from a Smart Album in Photos for OS X

A reader wants to customize the results of a Smart Album, and we found a workaround.

BY GLENN FLEISHMAN



Photos for OS X and Smart Albums

Q: I have created a date range Smart Album and there are specific pictures I want to remove from the album. However, when I try, it only gives me the option to delete the photo from my computer altogether. Is there a way to remove it from the album but not delete the photo entirely?

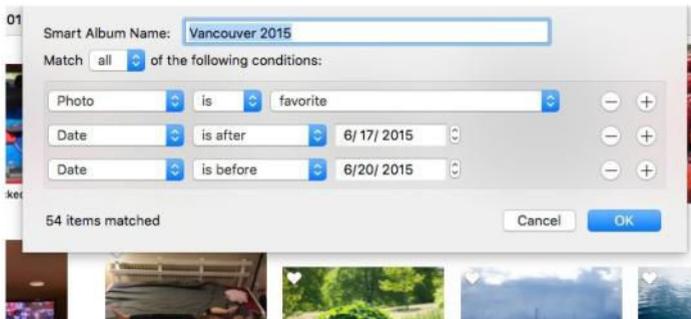
— Bruce Martens

A: My immediate thought was: No. Smart Albums match a set of criteria as opposed to regular albums, which you assemble intentionally. Deleting an item from a Smart Album de facto can't work, because that photo only appears because it matches one or more conditions!

But with a moment's reflection, I realized there's a perfectly straightforward way you can simulate the effect of customizing a Smart Album: use the Favorite option or a keyword to mark images you want to include on top of the matching conditions you're already using.

1. Start creating a Smart Album as normal: File → New Smart Album, set up criteria that match your needs, and click OK.
2. Now, look through the Smart Album and mark every photo you want to include in the set in an identical way. Use the favorite option to mark favorites, for instance, which is the simplest method. Or select images you want to include, choose Window → Info, click in the Add A Keyword field, and add a keyword you can use to filter against, like **Include**.
3. Edit the Smart Folder criteria by Control-clicking the name in the Sidebar. (View → Show Sidebar if you don't see the sidebar.)
4. Add a criterion to include images you've marked, like Photo, Is, Favorite. Be sure Match is set to All, so that all conditions are matched.
5. Click OK.

You can now remove additional items from the Smart Album by removing the favorite or the keyword. ■



MARK IMAGES WITH something you can match in a Smart Album's conditions, and you can then exclude items manually.



Hands-on: Photoshop updates include Content-Aware Crop and Face-Aware Liquify

Creative Cloud updates give photo editors powerful new tools without disrupting familiar workflows, and the video apps and Adobe Stock are improved too.

BY JACKIE DOVE

For a long time, it was hard to beat the buzz around Adobe's Content-Aware Fill feature, a function in Photoshop CC that "sees behind" unwanted objects to automatically fill in appropriate background content. Later, Adobe expanded content-aware capabilities with additional functions like Patch and Move. Now, Content-Aware Crop joins the arsenal in Photoshop CC 15.5, part of the company's Creative Cloud (go.macworld.com/cc2016update) 2016 update.

Other new Photoshop features in this release include Face Aware Liquify, Match Font, and a new Selection and Masking space. These join recently announced updates to Adobe's video app suite (go.macworld.com/adobeccvr) and performance improvements. These updates are available immediately to all Creative Cloud subscribers.

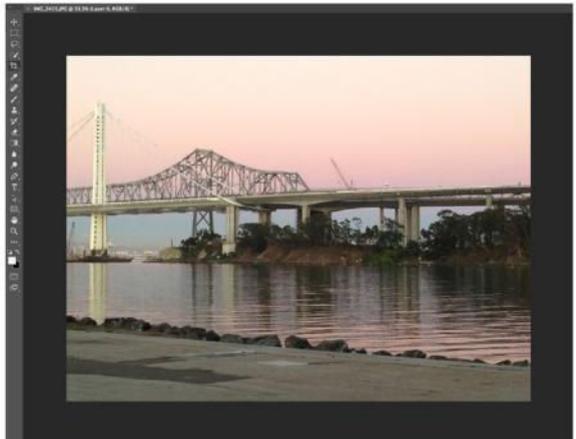
Why this matters: With Creative Cloud, Adobe needs to constantly add innovative features without disrupting the workflows of busy creative pros. This update adds useful but incremental changes that integrate seamlessly without adding layers of complexity.

CONTENT-AWARE CROP

Like Content-Aware Fill, Patch, and Move, Content-Aware Crop can salvage areas of a photo that would



CONTENT-AWARE CROP is just as easy as cropping a photo normally.



THE RESULT OF Content-Aware Crop.



THE FILTER AUTOMATICALLY recognizes multiple faces in your image, but they must be fairly prominent within the composition.

otherwise be removed when you straighten a crooked image. It requires no sleight of hand: If you can crop, you can use this feature. To crop your photo, make sure to check the Aware box at the top of the window. Photoshop then reads the contents of the image and fills in the contextual background. This is an easy way to fix a slanted horizon without having to reduce the size of your image. On the previous page is a completed crop with the corners automatically filled in with Content-Aware Crop.

FACE-AWARE LIQUIFY

Photoshop's Liquify filter is a powerful tool that lets you push, pull, rotate,

reflect, pucker, and swell the pixels of any image. It's not for every picture, of course, and despite its popularity, it was rarely used for faces. Photoshop 15.5's update of the Liquify filter now recognizes faces and lets you manipulate their eyes, nose, mouth, and face shape for a variety of effects, cosmetic corrections, and cartoony distortions.

Use the mouse or slider bars on the right side of the window to make independent and scalable adjustments to facial features.

Face-Aware Liquify lets you adjust face width, forehead and chin height, and jawline, to reshape your subject's head. Then you can zoom in to tweak eye size, height, width, tilt, and

distance. Correcting a squint, for example, is a matter of widening the eyes, but it's worth noting that eye adjustments work on both eyes simultaneously. You can't adjust one eye on its own. Finally, you can change the face's smile, including upper and lower lips and mouth width and height.

SELECTION AND MASKING SPACE

Making precise selections has been and remains one of the most tedious aspects of image editing. Over the years, Adobe has let Photoshop more easily select delicate objects like tree branches, hair, and fur. The new Selection and Masking space is a discrete place to concentrate on selections.

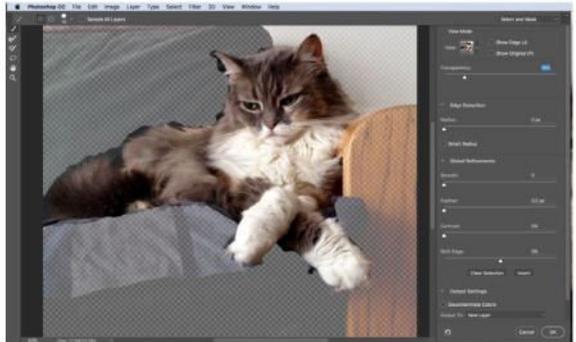
In the new Select And Mask interface, an adjustable Onion Skin view makes everything transparent except the object you selected. The improved Refine Edge brush tool now uses the GPU to render the results. Just brush over the edge areas. Check the Decontaminate Colors checkbox to help remove color fringing.

MATCH FONT

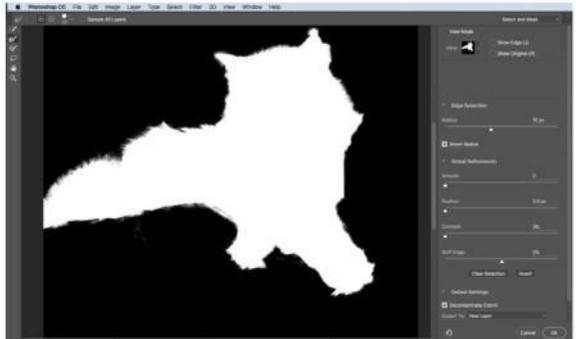
Adobe previewed Photoshop 15.5's new Match Font feature last year at its Adobe Max creativity conference (go.macworld.com/adobemax). This

simple command under the Type menu can identify and analyze text within images—even in a flattened JPEG—and match it to fonts in your system or ones available on Adobe Typekit. If you don't have a font, you can download it directly into your document for immediate use.

I saw funky lettering painted on the



TO FINISH THE selection, just brush over the edges. This fluffy cat was selected in practically no time.



WHEN YOU CHOOSE Select → Select And Mask, you'll get a new interface, with a Quick Selection tool to roughly separate the object from the background.

side of a building. While I doubt it was meant to replicate any formal font, the text was stylized enough for Adobe to match it to a number of fonts that may give similar looks.

ADOBE STOCK

With Creative Cloud 2016 come improvements to Adobe Stock, the image service launched last year and integrated into Creative Cloud desktop apps. A new one-click workflow from your Libraries panel lets you search, preview, tweak, and license images from Adobe Stock from within Photoshop. You can then share images with team members or clients, granting different levels of viewing and editing rights.

Accessing Adobe Stock from the

web shows you all the images you have licensed and allows you to select new ones and open them directly in any Creative Cloud app. A new Premium Collection offers 100,000 curated images.

ADDITIONAL UPDATES

Creative Cloud 2016 includes a number of productivity boosts, including up to four times faster performance on Content Aware and font functions, one-click export of assets and artboards in Illustrator to multiple formats and resolutions, and availability of Adobe Portfolio for creating photo websites.

Adobe has implemented the new video features it announced at the NAB conference (go.macworld.com/

THE NEW Match Font tool is found under the Type menu, and it was able to find several similar fonts to this vintage lettering.





SEARCH FOR AND
license new images
from Adobe Stock
from Photoshop's
Libraries panel.

[adobeupdate](#)), including virtual reality features in Premiere Pro and a Character Animator preview in After Effects CC. The Adobe XD (go.macworld.com/adobexd) experience design tool preview is now available in German, French, and Japanese.

Enterprise users benefit from simplified workflows for asset sharing

collaborative teams, read-only libraries and folders, archiving support, and versioning abilities. Adobe Stock for enterprise includes the new Premium Collection, advanced search, additional payment options, and a unified dashboard to keep track of images and videos. ■

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Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN



When sharing an Apple ID creates iMessage and text message confusion

Q: Our family has a single Apple ID/iCloud account. We keep getting each other's text messages. How do we stop that from happening?

— Danielle Gibbons

A: Unfortunately, an Apple ID and the associated iCloud account are a single entity—there's no way to split out multiple, different text messaging or iMessage delivery addresses.

However, it is possible to use third-party messaging apps, like WhatsApp (go.macworld.com/whatsapp), and third-party apps that handle sending and receiving text messages, like Text Free (go.macworld.com/textfree), because you can set up a unique account with those services.

WhatsApp is free to use, but all the people with whom you're communicating have to also use WhatsApp.

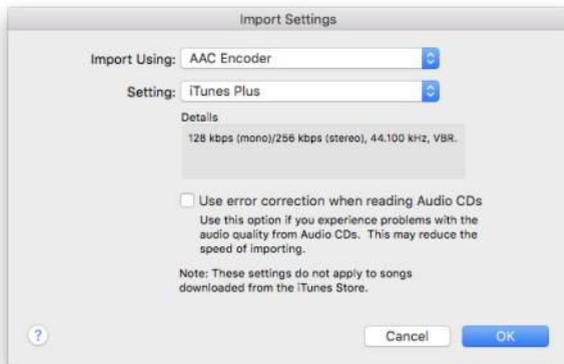
Text Free and other apps that support mobile-network SMS text messages create a "real" phone number to route incoming and outgoing messages from the app that appear just like text messages to other people. However, these apps pursue different payment models: some may append advertising to your texts unless you pay; others have in-app purchases for bundles of texts. Check reviews to find the best match.

How to convert between music file formats in iTunes

Q: I want to convert MP3 to AAC in iTunes, like I used to. But in the latest version, I can't figure out the process.

— Larry Dixon

A: I admit, it's a little wonky, and I had to read up and test the process,



because elements of it date way, way back in iTunes and show their age. You can select any media file or files in iTunes that's not DRM protected, and then choose File → Convert → Create [Format] Version. That creates a copy of the file or files in iTunes in what format appears. You can also hold down the Option key and the menu item changes to Convert To [Format], and lets you save the selected items in any location you want.

For me, [Format] is MP3. But that can be changed:

1. In Preferences → General in iTunes, click Import Settings next to When A CD Is Inserted. Yes, I know that doesn't seem to make sense, but it's part of how hoary this part of the software is.
2. From the Import Using menu, select the output format, and then optionally pick or customize further details from the

ITUNES PUTS ITS file-format conversion settings in Import Settings, which made sense for ripping CDs.

Setting menu (the encoding rate and other variables).

3. Click OK and OK.
4. Now the File → Convert submenu item will show whatever CD import format you selected.

iOS's Wi-Fi Assist can also lead to unexpected use of your mobile data

Q: We just had one of our employees use 84GB in 12 hours. She has a new iPhone 6. She received an overage message and her data was shut off. Highest use of data in her apps indicates “Media Services.” No one knows why nor how this is possible. She was at home on wireless at the time as well.

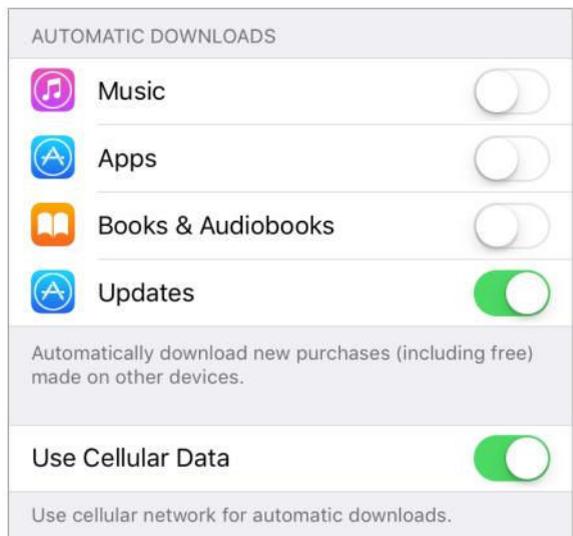
— Sue Simpson

A: First off, great diagnosis job on Sue and her staff’s part. If you’re trying to find a bandwidth drain, going to Settings → Cellular will show you data consumed by each app, but not in order of usage, only alphabetically. Swipe down to the bottom of that list and tap System Services, which is sorted by internal iOS processes from most to least usage.

Here’s where Sue and team found that Media Services had consumed most of that data. Media Services

seems to be the service that’s invoked by iCloud Music Library and iTunes Match. When active, both services check your local iOS (and OS X) music libraries against what’s stored in Apple’s cloud in different ways.

iCloud Music Library is part of an Apple Music subscription. When you have an active subscription and you enable iCloud Music Library, Apple syncs files on every device on which you’ve opted into iCloud Music Library. It collects anything you’ve marked to listen to in Apple Music, like adding it to a playlist; anything you’ve purchased from Apple; and



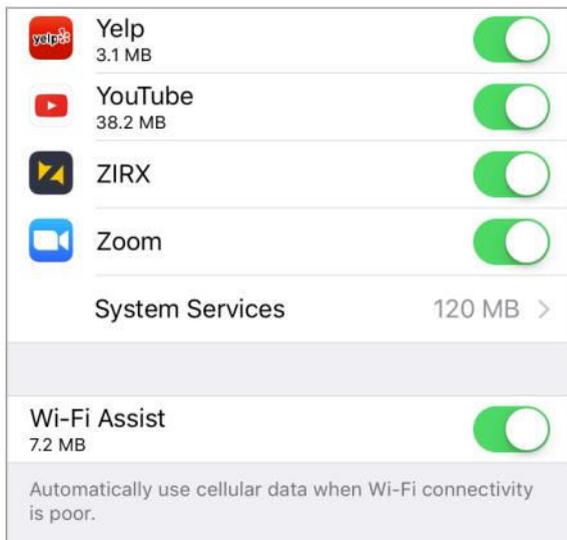
DISABLE USE CELLULAR DATA if you’re concerned about overages related to iTunes.

any unique music you've added to iTunes anywhere, like music you created or ripped.

Both iTunes Match, a separate subscription, and iCloud Music Library reduce upload time and storage needs by matching tracks from the iTunes Store against files in your iTunes library. Both services leave your original files alone, but mark the iTunes Store track in your library. On other devices, when you opt to download all songs added or manually tap a cloud-download symbol, iTunes (OS X) or Music (iOS) downloads the 256 Kbps AAC file from the iTunes Store.

With Apple Music only, iCloud Music Library retrieves DRM versions of the songs that aren't kept and can't be played without an active Apple Music subscription. With iTunes Match, the same tracks are retrieved DRM-free, and can be played forever.

So with Sue's employee, the problem is most likely that she has a huge library of lossless-encoded music and enabled either or both iTunes Match and Apple Music Library. If she did this from a Mac, the uploads would occur entirely via a broadband connection, and potentially go unnoticed, probably even with a monthly included-usage cap that some ISPs now impose (or plan to impose).



That alone shouldn't have caused the problem if she had disabled using cellular data for the Music app (Settings → Music → Use Cellular Data) or she was on a Wi-Fi network, as she believed herself to be. The other culprit here is almost certainly Wi-Fi Assist, Apple's iOS 9 technology for shifting some data to mobile when you're connected to a badly performing Wi-Fi network.

I wrote previously about disabling Wi-Fi Assist, but it shouldn't have engaged with Media Services, because Apple says it doesn't engage background tasks and has other brakes on excessive data use. Based on messages in forums about the same problem Sue's

WI-FI ASSIST APPARENTLY can misfire with music syncing. Disable it to avoid this.

employee saw, Wi-Fi Assist can't be relied on when iCloud Music Library or iTunes Match is enabled. Turn it off.

As for the bill associated with 84GB of data: it's worth calling the carrier. Given that Apple enables Wi-Fi Assist by default and doesn't honor its limits all the time, a mobile provider might be willing to re-rate the month (move a customer to a higher tier that's better priced) or even forgive the data overage. ■

Ask Mac 911

We're always looking for problems to solve! Email us at mac911@macworld.com including screen captures as appropriate.

Mac 911 can't provide direct email responses or answers for every question. For that, turn to AppleCare, an Apple Store Genius Bar, or the Apple Support Communities.