

# Macworld

DECEMBER 2016 | MACWORLD.COM

FROM IDG

FIRST  
LOOK:

## MACBOOK PRO

THAT TOUCH BAR WILL GRAB YOU!



INSIDE

### iPhone 7 Plus review

The best camera ever

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*ScanSnap*



**Own productivity**

*ix500* wireless desktop scanner

Incredibly fast

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One button simple



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MacBook Pro hands-on **79**



iPhone 7 Plus review **85**

## MacUser

Ta-dah! Touch Bar is the highlight of Apple's newest MacBook Pro **7**

Meet Apple's complete MacBook lineup **13**

7 technologies killed in Apple's new MacBook Pro **19**

MacUser Reviews **23**

Hot Stuff **43**

## iOS Central

Photo shootout **47**

6 more ways to make the most of Mail for iOS **55**

Tim Cook: Augmented reality will be an essential part of your daily life **61**

iOS Central Reviews **65**

What's new at the App Store **73**

iOS Accessories **74**

## Working Mac

How switching to Macs is paying off for IBM **95**

Set up the Calendar Service in macOS Sierra Server **97**

Use the advanced Calendar Service features in macOS Sierra Server **103**

Bring back a physical Escape key on the new MacBook Pro with Touch Bar **108**

## Create

Adobe Photoshop Elements 15 review **111**

Use Photoshop Elements to combine images like a pro **122**

Watermark multiple photos in Lightroom **128**

## Help Desk

Mac 911: Troubleshoot Photos and fix iCloud **135**

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The one-year (12-issue) subscription rate is \$34.97; the two-year rate, \$59.97; and the three-year rate, \$79.97. Checks must be made payable in U.S. currency to *Macworld*. Please allow 3 to 6 weeks for changes to be made to an existing subscription.

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**MACWORLD EDITORIAL**

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Starting with the March 2003 *Macworld*, back issues can be downloaded in digital format, from [www.zinio.com](http://www.zinio.com) (\$6.99; Mac OS X 10.1 or later required).

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**PUBLICATION INFORMATION**

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**December 2016, Volume 33, Issue 12**

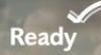
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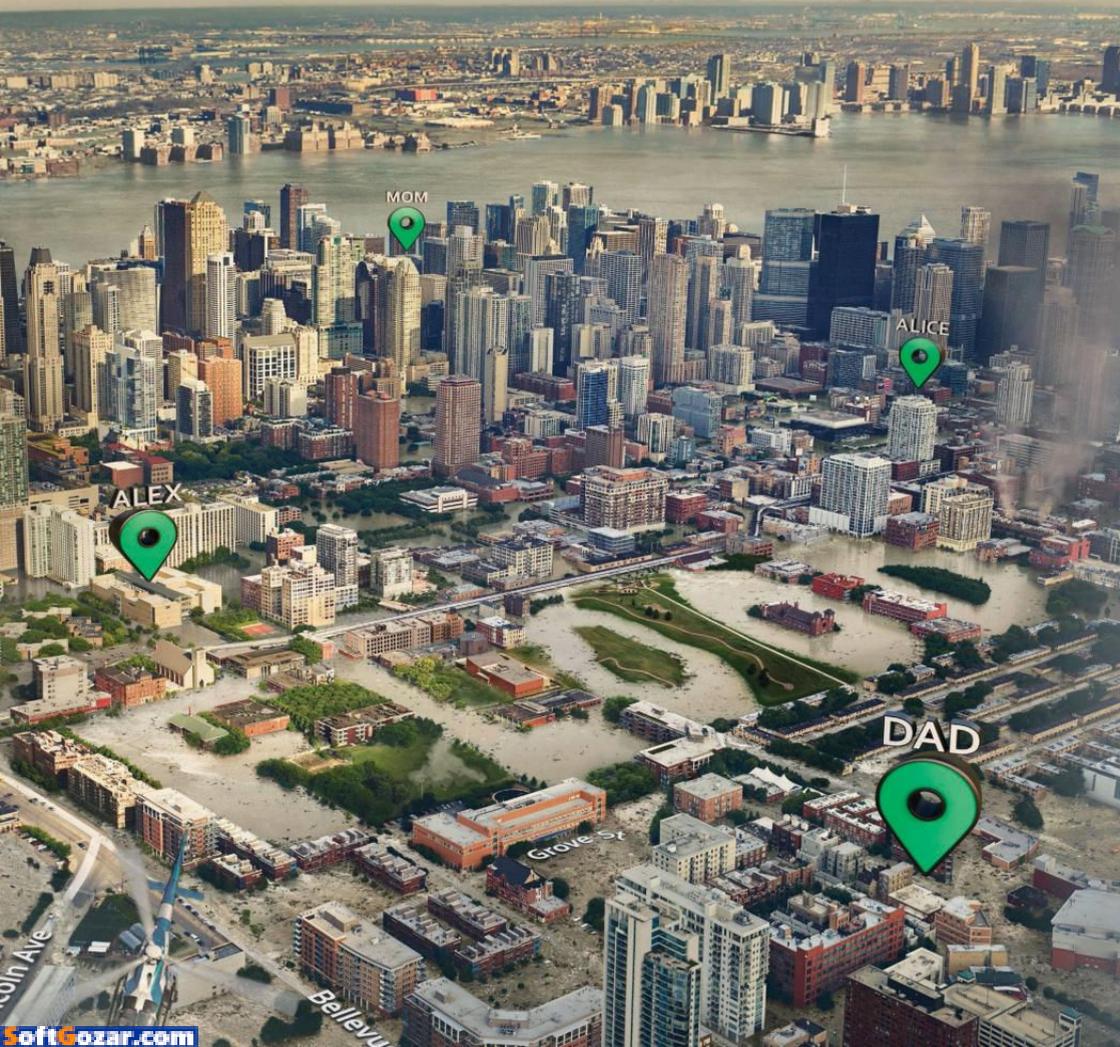
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## Ta-dah! Touch Bar is the highlight of Apple's newest MacBook Pro

Apple finally—finally!—updated its high-end laptop with new keyboard functionality, processors, and more.

BY ROMAN LOYOLA

It's been rumored for some time, and it even made an appearance in the macOS Sierra 10.12.1 update ([go.macworld.com/toolbarleak](http://go.macworld.com/toolbarleak)), but on October 27th Apple officially revealed a new MacBook Pro. The killer surprise-and-delight feature? It's called Touch Bar, an OLED panel that replaces the row of function keys usually found on the top of the Apple laptop keyboard.

The Touch Bar does a lot of things, but the headline feature may be support for Touch ID. When you encounter a process that requires you to show your fingerprint (such as Apple Pay), you place your finger on

the Touch ID area of the Touch Bar. The Touch ID sensor is integrated with the power button.

The functions provided by the Touch Bar change based on the software you are using. For example,

**ADOBE PHOTOSHOP CAN**  
use the Touch Bar to  
perform image edits.





if you're using iTunes, the Touch Bar lights up with icons representing player controls. During a chat, the Touch Bar can be used to instantly place emoji. In the Photos app, you can access editing functions on the Touch Bar and apply those edits to the photo you're working on.

Customizing the Touch Bar can be done using drag and drop. You can select the functions you want on the main screen, and drag them to the location you want off the bottom of the MacBook Pro's screen and onto the Touch Bar.

During the Mac event, Apple said that third-party software developers will be able to create Touch Bar controls for their software. Adobe showed how the Touch Bar can be used to perform image edits in Photoshop. Algoriddim demonstrated how a DJ can use the company's Djay software and the Touch Bar to perform mixes. Apple's Phil Schiller

also said that Microsoft will be offering Touch Bar tools for Microsoft Office.

Apple updated the Force Trackpad, too, which is now double the size of the previous trackpad. The new keyboard takes its cues from the 12-inch MacBook; the MacBook Pro keyboard is based on butterfly switch technology, but Apple called this a "second generation" butterfly switch that's more responsive to better suit the demands of pro users.

## DESIGN CHANGES, THUNDERBOLT 3

The all-aluminum case design of the new MacBook Pro is thinner and lighter, and available in silver and space gray. The 13-inch model is 14.9mm thin, 23 percent smaller than the previous 13-inch model, and 3 pounds. The 15-inch model is 15.5mm thin, 20 percent smaller than the previous 15-inch model, and 4 pounds.

**THE MACBOOK PRO** relies on Thunderbolt 3 ports for connectivity.

To help cut down on the weight and size on the MacBook Pro, Apple shrunk down the size of the speakers. But according to the company, there's no sacrifice in audio performance; Apple claims that the speakers have twice the dynamic range, 58 percent more volume, and 2.5 times more bass response than those of its predecessor.

The most drastic change is to the ports. Apple is going all in with Thunderbolt 3, providing multiple Thunderbolt 3 ports on the MacBook Pro—there are no USB-A ports. There's also no MagSafe adapter port; charging is done through

Thunderbolt 3. The MacBook Pro's Thunderbolt 3 support USB-C, so users can still connect their USB devices, but you'll need a USB adapter.

While it seems like Apple is doing what it can to make the headphone jack obsolete, it still lives on the MacBook Pro—it's the only other port type featured on this new machine. The MacBook Pro no longer has an HDMI port. The SD Card slot is gone, too.

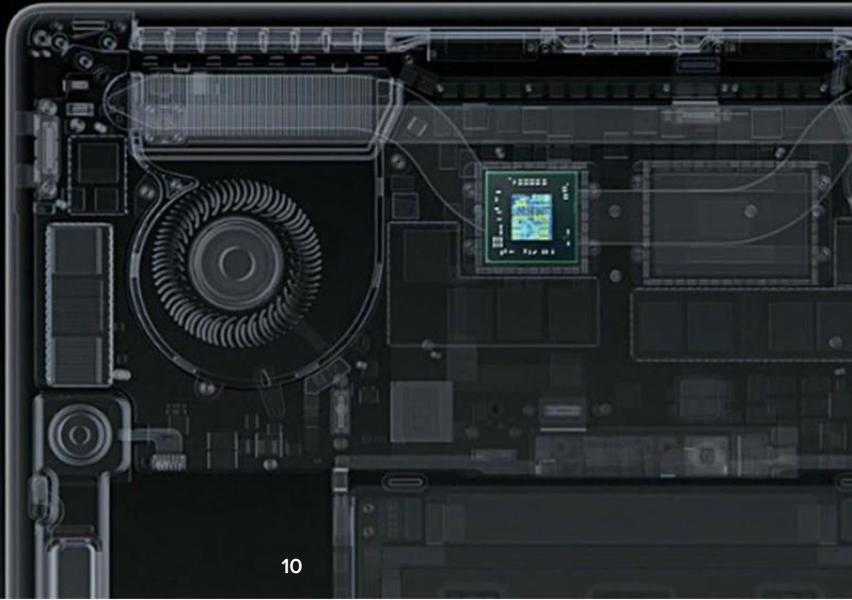
### IMPROVED DISPLAY AND GRAPHICS

According to Apple, the LED-backlit IPS displays in the new MacBook Pro

**THE 15-INCH MACBOOK Pro** uses AMD graphics processors.

#### Radeon Pro

14 nm GPU  
Polaris architecture  
Up to 4GB VRAM  
Up to 2.3x faster



are now 67 percent brighter, have a 67 percent higher contrast ratio, and can display 25 percent more colors than previously. The displays offer 500 nits of brightness and support for the P3 wide color gamut.

The 13-inch MacBook Pro has a 2560-by-1600 native resolution (227 pixels per inch). Supported scaled resolutions are 1680 by 1050, 1440 by 900, and 1024 by 640.

The 15-inch MacBook Pro has a 2880-by-1800 native resolution (220 pixels per inch). Supported scaled resolutions are 1920 by 1200, 1680 by 1050, 1280 by 800, and 1024 by 640.

The 15-inch model uses an AMD Radeon graphics cards. The standard configuration uses a Radeon Pro 450 with 2GB of graphics memory and can run two external 5K displays. Apple offers buyers the option to upgrade the graphics to a Radeon Pro 460 with 4GB of graphics memory that and run up to four 4K displays.

The 13-inch models have Intel Iris Graphics, which are integrated with the main CPU. The low-end Intel Iris Graphics 540 can run one external 5K display, which the Intel Iris Graphics 550 can run two 4K displays.

### **13-INCH MACBOOK PRO**

> **\$1,499 13-inch MacBook Pro (no Touch Bar):** 2GHz dual-core Core i5 processor, 8GB memory, 256GB SSD, Intel Iris Graphics 540, two Thunderbolt 3 ports

> **\$1,799 13-inch MacBook Pro (with Touch Bar):** 2.9GHz dual-core Core i5 processor, 8GB memory, 256GB SSD, Intel Iris Graphics 550, four Thunderbolt 3 ports

> **\$1,999 13-inch MacBook Pro (with Touch Bar):** 2.9GHz dual-core Core i5 processor, 8GB memory, 512GB SSD, Intel Iris Graphics 550, four Thunderbolt 3 ports

> **\$2,399 15-inch MacBook Pro (with Touch Bar):** 2.6GHz quad-core Core i7 processor, 16GB memory, 256GB SSD, 2GB AMD Radeon Pro 450 Graphics, four Thunderbolt 3 ports

> **\$2,799 15-inch MacBook Pro (with Touch Bar):** 2.7GHz quad-core Core i7 processor, 16GB memory, 512GB SSD, 2GB AMD Radeon Pro 455 Graphics, four Thunderbolt 3 ports ■



#### **PODCAST**

Listen to our podcast about the new MacBook Pro ([go.macworld.com/podcast531](https://go.macworld.com/podcast531)).

Thanks for leaving  
your car here last night  
and not ending my  
family's lives.

Tara Inskip



SAVE A LIFE. DON'T DRIVE HOME BUZZED.  
BUZZED DRIVING IS DRUNK DRIVING.



U.S. Department of  
Transportation



# Meet Apple's complete MacBook lineup

Apple unleashed three new MacBook Pros during its October event. Here's a closer look at each one, the dates you can get them, and how much they cost.

BY LEAH YAMSHON



**A**fter September's annual iPhone-focused event, it was time for the Mac to have its turn in the spotlight. And boy, did we get some major Mac news on October 27: Apple revealed three new MacBook Pros ([see page 7](#)), two of them featuring the Touch Bar, Apple's brand-new touch control panel at the top of the keyboard. The MacBook Pro got a minimal refresh in October 2015 to introduce the Force Touch trackpad, but it's been a minute since the line has seen a major update.

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As new products come in, old products must go out—so Apple's complete MacBook lineup now looks a little different. Here's a look

at each MacBook in Apple's collection, including information on pricing and on-sale dates for the just-announced Pros.

## THE NEW MACBOOK PRO

The 2016 MacBook Pro is available in three versions: two 13-inch models, one featuring the Touch Bar and one featuring standard function keys, and a 15-inch model with the Touch Bar ([go.macworld.com/buyapplebookpro](http://go.macworld.com/buyapplebookpro)).

### 13-INCH, WITHOUT TOUCH BAR

**Price:** Starts at \$1,499

**Configuration:** 2GHz dual-core Core i5 processor, 8GB memory, 256GB SSD, Intel Iris Graphics 540, two Thunderbolt 3 ports

**When can I get it?** You can get it right now!

### 13-INCH, WITH TOUCH BAR

**Price:** \$1,799 for a 256GB SSD, \$1,999 for 512GB SSD

**Configuration:** 2.9GHz dual-core Core i5 processor, 8GB memory, 256GB/512GB SSD, Intel Iris Graphics 550, four Thunderbolt 3 ports

**When can I get it?** Preorders started the day of the event; these Pros are expected to ship started November 10

### 15-INCH, WITH TOUCH BAR

The 15-inch 2016 MacBook Pro comes in two standard configurations, both of which feature the Touch Bar:

**Price:** \$2,399

**Configuration:** 2.6GHz quad-core Core i7 processor, 16GB memory, 256GB SSD, 2GB Nvidia Radeon Pro 450 Graphics, four Thunderbolt 3 ports

**Price:** \$2,799

**Configuration:** 2.7GHz quad-core Core i7 processor, 16GB memory, 512GB SSD, 2GB Nvidia Radeon Pro 455 Graphics, four Thunderbolt 3 ports

**When can I get it?** Preorders for both versions started the day of the event; shipping started November 10





## THE OLD MACBOOK PRO

Does the price range of the 2016 MacBook Pro make you sick to your stomach? We feel you, and so does Apple. They're keeping an older Pro model in the lineup as an entry-level machine, in both a 13-inch and 15-inch configuration ([go.macworld.com/buymacbookpro](http://go.macworld.com/buymacbookpro)).

### 13-INCH

**Price:** \$1,299

**Configuration:** 2.7GHz dual-core Intel Core i5 processor, Turbo Boost up to 3.1GHz, 8GB 1866MHz memory, 128GB PCIe-based SSD, Intel Iris Graphics 6100, two Thunderbolt 2 ports

**When can I get it?** Right now!

### 15-INCH

**Price:** \$1,999

**Configuration:** 2.2GHz quad-core Intel Core i7 processor, Turbo Boost up to 3.4GHz, 16GB 1600MHz memory, 256GB PCIe-based SSD, Intel Iris Pro Graphics, two Thunderbolt 2 ports

**When can I get it?** Right now!



## MACBOOK

Apple's 12-inch notebook launched in 2015, and introduced us to a ton of new features that other MacBooks now have (like the Force Touch trackpad, butterfly key mechanism, and USB-C port). Though we didn't hear anything about it during the recent event, it's definitely still around, in four colors (to match your iPhone, naturally). You have two standard options to choose from ([go.macworld.com/buymacbook](http://go.macworld.com/buymacbook)):

**Price:** \$1,299

**Configuration:** 256GB PCIe-based onboard flash storage, 1.1GHz dual-core Intel Core m3 processor with Turbo Boost up to 2.2GHz, 8GB memory, Intel HD graphics 515

**When can I get it?** Right now!

**Price:** \$1,599

**Configuration:** 512GB PCIe-based onboard flash storage, 1.2GHz dual-core Intel Core m5 processor with Turbo Boost up to 2.7GHz, 8GB memory, Intel HD graphics 515

**When can I get it?** Right now!



## MACBOOK AIR

Some bad news for MacBook Air fans: Apple quietly killed the 11-inch MacBook Air, and while the 13-inch Air is currently still available, Apple won't be updating it ([go.macworld.com/no11inmacbookair](https://go.macworld.com/no11inmacbookair)) going forward. However, Apple did make a point of comparing the Touch Bar-free 13-inch iPad Pro to the Air, noting that this new model is smaller and lighter than the Air while offering more power. The 12-inch standard MacBook has also been compared to the Air.

For now, here's what you'll find in the last remaining Air:

**Price:** \$999 for 128GB of storage;  
\$1,199 for 256GB of storage

**Configurations:** 1.6GHz dual-core  
Intel Core i5 processor with Turbo  
Boost up to 2.7GHz, Intel HD

graphics 6000, 8GB memory,  
128GB/256GB PCIe-based flash  
storage

**When can I get it?** Right now ([go.  
macworld.com/buyamacbookair/](https://go.macworld.com/buyamacbookair/))! ■



# 7 technologies killed in Apple's new MacBook Pro

R.I.P. HDMI, SD cards, and more.

BY BRAD CHACOS

**A**pple's never been shy about shaving off features in its quest for slimmer, faster computing. The new MacBook Pro lineup is no exception. Following in the footsteps of the radical 12-inch MacBook, the revamped MacBook Pro and its slick Touch Bar cull several old standbys from its design—and kill one of its siblings in the process. Here are seven technologies eradicated in the new MacBook Pro notebooks. For more details on whether we think the eliminations are worthwhile, check out *Macworld's* MacBook Pro hands-on impressions ([see page 79](#)).



**THE NEW MACBOOK**  
Pro's ports are limited to USB-C.

## MAGSAFE

This hurts. This really hurts.

The MacBook's vaunted, brilliant MagSafe used magnets to gently attach your power cord to your laptop, rather than relying on a hard connector jammed inside a port. MagSafe clamped on tightly enough to stay stable under normal conditions, but lightly enough to disconnect when tugged—a literal laptop lifesaver when, say, a dog or child streaks across a room and trips over your cord.

The new MacBook Pro relies on USB-C for power instead, just like the aforementioned 12-inch MacBook. It's a more flexible, industry-standard charging solution for sure...but I still can't help but mourn MagSafe's loss.

## SD CARD SUPPORT

The SD card slot on MacBooks comes in handy for photographers and folks looking to expand their laptop's storage ([go.macworld.com/tardiskpear](http://go.macworld.com/tardiskpear))—or at least it used to. The overhauled MacBook Pro



ditches native SD card support as well as most other auxiliary connections. It's streamlined down to four USB-C/Thunderbolt 3 connections and a solitary audio jack. (Note that the all-in reliance on USB-C means traditional USB peripherals won't work with the MacBook Pro unless you pick up some adapters.)

## HDMI

Better pick up a USB-C-to-HDMI connector while you're at it, if you plan on connecting your notebook to an external display.

## DISCRETE ESC AND FUNCTION KEYS

That swanky new OLED strip of adaptive touchscreen keys in the new MacBook Pro needed to fit in somewhere. That "somewhere" is

where the MacBook's Escape and function keys previously called home, just underneath the display. Don't weep for their loss, though: The Escape and function keys are gone but not forgotten, with digital doppelgangers springing to life on the Touch Bar when needed.

## MACBOOK AIR

It looks like the end of the line for the beloved MacBook Air series. Apple killed the 11-inch MacBook Air ([go.macworld.com/no11inmacbookair](https://go.macworld.com/no11inmacbookair)) outright when it launched the MacBook Pro and all but said it's the end of the entire line. Rather than launching a new 13-inch MacBook Air, Apple released a cheaper, feature-limited version of the 13-inch MacBook Pro instead. Apple Senior VP Phil Schiller devoted significant

time onstage to highlight how the new MacBook Pro is actually thinner, lighter, and less voluminous than the 13-inch MacBook Air.

You can still buy a \$1,000 13-inch MacBook Air on Apple's website ([go.macworld.com/macbookair](http://go.macworld.com/macbookair)) for now, but don't expect it to last forever. The MacBook Pro and \$1,300-plus 12-inch MacBook ([go.macworld.com/12inmacbook2016](http://go.macworld.com/12inmacbook2016)) are clearly the future for Apple's laptops.

## MACBOOKS WITHOUT RETINA DISPLAYS

And with the writing on the wall for the MacBook Air lineup, we're finally moving beyond MacBooks with janky, subpar displays. No

MacBook Air option even hit 1080p resolution.

Good riddance.

## OPTICAL DRIVES

"But wait!" I hear you screaming.

"Apple still sells a legacy non-Retina

MacBook Pro,

too!" No more, hypothetical, easily excited reader. Apple has discontinued that as well, and with it goes the last MacBook with a built-in optical drive. Time to snag Apple's USB SuperDrive ([go.macworld.com/usbsuperdrive](http://go.macworld.com/usbsuperdrive)). (You're going to need a USB-C adapter for that, too.) ■

NO MACBOOK AIR  
OPTION EVEN HIT  
1080P RESOLUTION.  
GOOD RIDDANCE.



USB-C ADAPTER

## SATECHI SLIM ALUMINUM TYPE-C MULTI-PORT ADAPTER: PORTABLE MACBOOK DOCK MAKES NO COMPROMISES

BY GLENN FLEISHMAN

**PASSTHROUGH POWER WAS** initially rare for USB-C docks, which were designed to extend the single port on a 2015 and 2016 MacBook. This was unfortunate, because a dock should be a way to get more out of a laptop without watching the battery drain. The Satechi Slim Aluminum Type-C Multi-Port Adapter (\$60 on [go.macworld.com/satechislum](http://go.macworld.com/satechislum)) is part of a wave of docks that started to appear in mid-2016 that are both affordably priced and can make use of an Apple or a third-party USB-C charger while offering extensibility.

The Satechi is a neat combination of aesthetics and function. The rounded corners are nice for a unit you'll drop into a bag, and the



aluminum finish (available in four colors) can match or complement your Mac.

Utility matters, too. The built-in cable has reinforcement at the dock connection and the head. The USB-C jack is in an aluminum case for durability and stability, and it fits snugly into a MacBook. The cable itself has a heavy-duty flexible coating. All of that should combine to make it stand up well to wear and tear.

The dock has an HDMI port that supports 4K video at up to 30Hz using the DisplayPort standard. This is an odd aspect of USB-C, as support for the standard is built into the Mac and carried across the USB-C bus through dedicated channels, so the dock just has to get out of the way and route the signal appropriately. This one does so. (The port can support lower-resolution displays, too.)

I tested a newly erased external USB 3.0 solid-state drive with the dock's USB 3 Type-A ports, and was able to get the maximum read (400

### SATECHI SLIM ALUMINUM TYPE-C MULTI-PORT ADAPTER WITH TYPE-C CHARGING PORT



#### AT A GLANCE

There's a lot to like about the Satechi Slim Aluminum Type-C Multi-Port Adapter. It lets you charge or attach two USB devices and supports a 4K display.

#### PROS

- Compact with robust built-in cable
- Handles both 4K over HDMI
- Comes in four finishes

#### CONS

- Maximum 2 amps via USB Type-A port

#### PRICE

\$60

#### COMPANY

Satechi

MBps) and write (300 MBps) speeds, even connected to the 4K display, which can reduce the number of data lanes available on the USB bus.

The only downside to the dock is minor and didn't come up in testing. Each Type-A port can provide no more than 1 amp (A) of power, and combined, the dock shouldn't exceed 2A. The HDMI output and USB-C power passthrough don't count against this. USB devices should "handshake" with a port on a computer, dock, or hub to figure out how much power a device can obtain from the port. But Satechi says that a higher-amperage USB device could try to pull more current than the dock can handle without shutting down. In testing, I didn't see this even with a bus-powered SSD attached that formatted itself over several hours and an iPhone 6s charging via a Lightning cable. Some other docks I've tested seemed to shut down much more readily based on power pulls; that didn't happen with the Satechi.

## **BOTTOM LINE**

There's a lot to like about the Satechi Slim Aluminum Type-C Multi-Port Adapter, including the price. At \$60, it's \$20 less than Apple's less robust and less capable USB-C Digital AV Multiport adapter ([go.macworld.com/appleusbcbport](https://go.macworld.com/appleusbcbport)), which has an awkward dongle shape and one fewer USB 3 Type-A port. If you just want to be able to charge or attach two USB devices and have the option for up to a 4K display, the Satechi is an attractive pick. ■

**THERE'S A LOT TO LIKE ABOUT THE SATECHI SLIM ALUMINUM TYPE-C MULTI-PORT ADAPTER, INCLUDING THE PRICE.**



DISK UTILITY

## DISK DRILL 3: MAC UTILITY NOW RECOVERS DATA FROM iOS DEVICES, TOO

BY J.R. BOOKWALTER

**EARLIER THIS YEAR** I reviewed Disk Drill 2 ([go.macworld.com/diskdrillpro2rev](https://go.macworld.com/diskdrillpro2rev)), a highly recommended utility for recovering data from any storage volume attached to your Mac, regardless of which file system it was created with. While the software exceeded expectations in terms of functionality, it was sorely lacking in visual flourish, with a user interface that seemed out of step with the current operating system.

I'm happy to announce this grievance has been addressed with the new Disk Drill 3 ([cleverfiles.com](https://cleverfiles.com)), which not only sports a much-

### DISK DRILL 3



#### AT A GLANCE

Disk Drill 3 resurrects data on more than 200 internal or external media types regardless of what file systems they use, and it now includes recovery for iOS and Android devices as well.

#### PROS

- Robust data recovery for Mac, iOS, Android
- Background disk health monitoring
- Refreshed UI a better fit with current macOS aesthetic

#### CONS

- iOS data recovery tends to be slow on larger capacity devices
- No option to bypass scan of iCloud Photo Library

#### COMPANY

Cleverfiles

needed fresh coat of digital paint but also nicely spices up the existing buffet of tools.

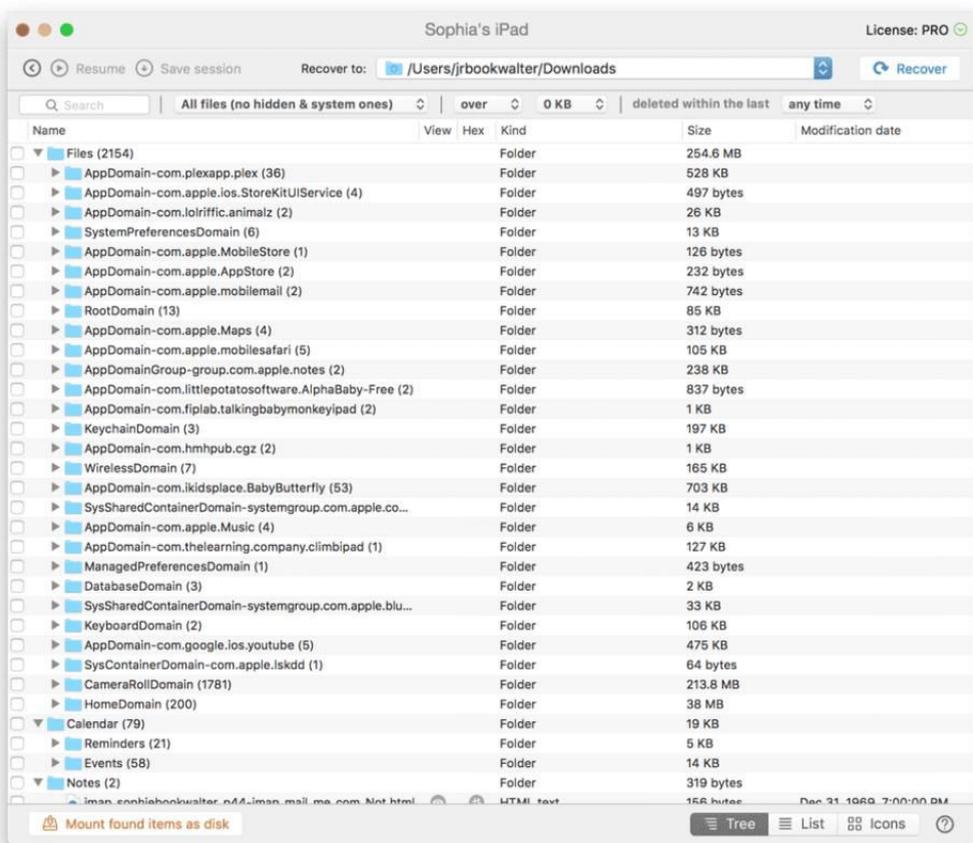
## IOS-FRIENDLY

Like previous versions, Disk Drill 3 offers data recovery as a free download, which includes a handful of tools for monitoring disk health, identifying and removing unwanted files, performing data backups, and more. There's also full support for macOS Sierra 10.12 (it works with OS X Mountain Lion 10.8.5 or later), including the ability to create a bootable USB recovery drive in a few clicks.

Disk Drill 3 adds the ability to recover data from an iPhone, iPad, or iPod touch, which is handy when an iOS update fails without a current backup available or an older device stops working because of water or other physical damage. It works the same: plug in the iOS device, click Recover, then select Camera Roll photos, videos, contacts, calendar, Voice Memo recordings, Notes, bookmarks, Messages chats, or call history data to resurrect. (Android devices are also supported when



**NEW IN DISK DRILL 3** is the ability to recover data from iOS devices, but it's a time-consuming process without an existing iTunes backup.



rooted or in USB mass storage mode.)

There is some sleight of hand involved, however. In the absence of an iTunes backup, Disk Drill 3 first creates one, a time-consuming process for those of us with larger capacity devices. My 128GB iPhone 6s Plus was about 80 percent full and took several hours to scan before recovery could take place. Judging from status updates, a lot of unnecessary time was spent scanning my entire iCloud Photo Library; a better solution would be an option to skip this content entirely, since it's already backed up in the cloud.

The resulting backup doesn't appear alongside others created in

**RECOVERING FROM AN iOS** device is largely the same as doing so from any other volume—select the desired data and click Recover to copy it to your Mac.

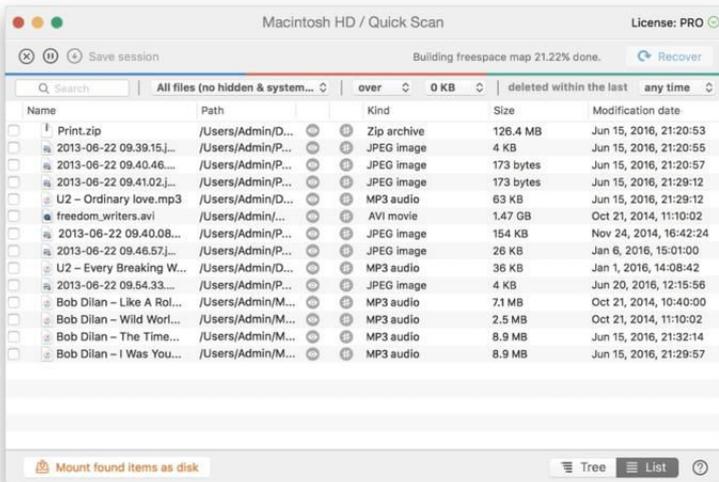
iTunes. Instead, it's tucked away in the user's Library, temporarily consuming valuable space on your system drive. Although the actual recovery happens quickly, I'd recommend importing an existing iTunes backup to expedite the process. (There's no support for recovery from iCloud backups, but this feature is in the works.)

## MORE SPEED, SUPPORT

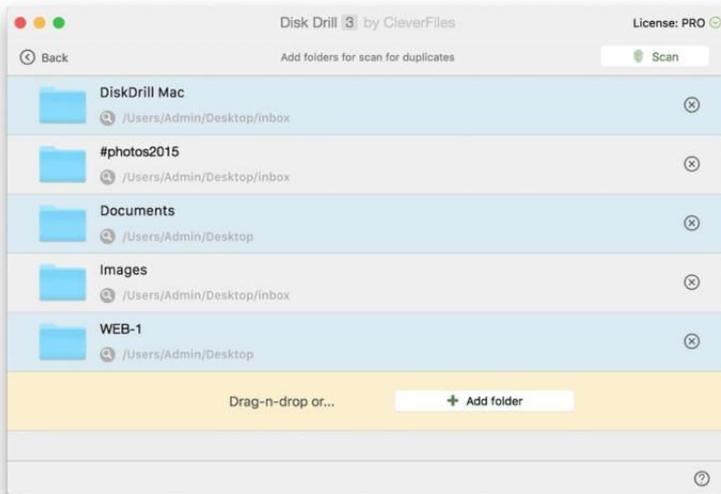
Although Disk Drill 3 won't win awards for the iOS recovery speed, in almost every other regard, the software is faster than previous versions, and works harder at discovering files for recovery—up to 30 percent more, according to the developer. Byte-to-byte disk backups were quicker, as was mounting scan results as a disk image on the desktop, a handy feature that no longer requires the creaky old FUSE to be installed.

Disk Drill bulks up on support for native file systems (ExFAT, EXT4) and file signatures (Evernote XML notes, rich text documents, and others have been added). There's also a new module to find and eliminate duplicate files, which worked quite well in my tests.

Last but not least, Disk Drill 3 offers a fresh new user interface, which now hides system partitions by default for a cleaner look and feel. There's also a preference setting that offers more control over which



**THE FREE VERSION** of Disk Drill 3 digs up 30 percent more files for recovery than previous releases.



**DISK DRILL 3** also includes the ability to scan for duplicate files lurking inside folders on your Mac.

disk types appear in the main view.

While the free version tackles the basics for most users, an \$89 Pro upgrade allows a single user to run Disk Drill 3 on up to three Macs, adding a more comprehensive Deep Scan, the ability to search lost partitions, and rebuild catalogs on unmounted HFS+ formatted drives.

## BOTTOM LINE

Disk Drill 3 again delivers the goods, and this time awesome data recovery tools are backed up by good looks and a more intuitive user interface. ■

# FONTAGENT 7 AND FONTAGENT SYNC: ALL-NEW INTERFACE AND FONT SYNCING ACROSS USERS AND MACS

BY JAY J. NELSON

**FOR A NUMBER OF YEARS**, the options for professional font-management utilities have been three: Extensis's Suitcase Fusion, Monotype's FontExplorer X Pro, and Insider Software's FontAgent Pro (now simply FontAgent). Each caters to a different type (pun intended) of user, and FontAgent 7 ([go.macworld.com/fontagent7](http://go.macworld.com/fontagent7)) seems squarely aimed at users who need to manage a sizable collection of fonts but don't want to worry about lots of details. It also makes sharing a font collection among multiple Macs or members of



## FONTAGENT 7



### AT A GLANCE

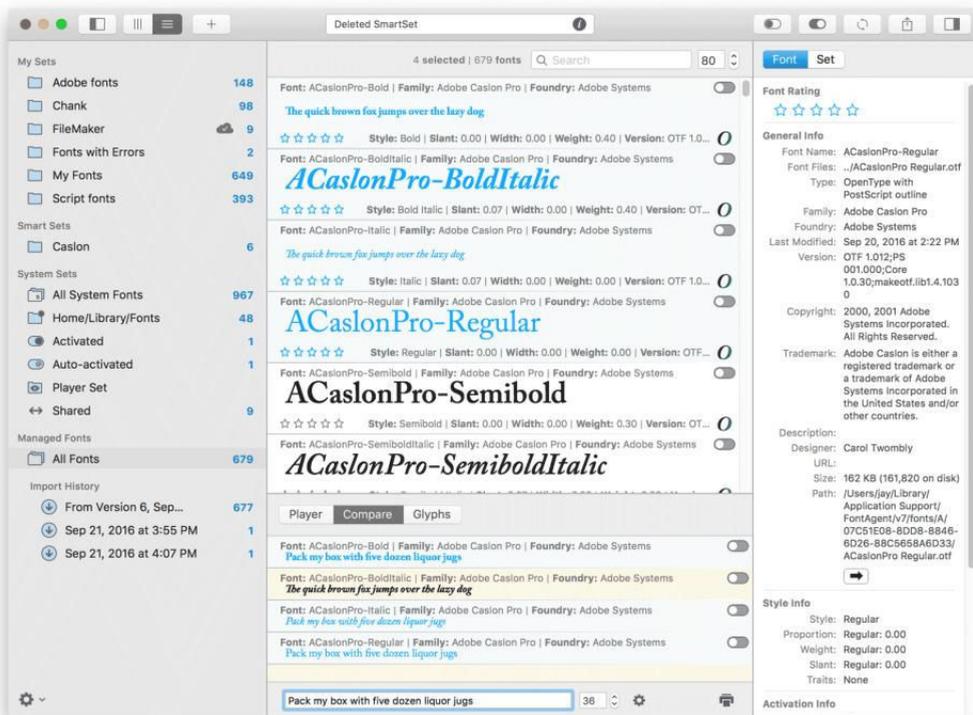
FontAgent 7 is full of useful new features, including an updated interface, new font previews, and a dramatically improved font identification engine.

### PROS

- New modern interface, world-class font identification
- Seamless font sharing
- Timed font cache removal

### CONS

- No automatic classification of fonts
- No application-specific font sets



a workgroup very simple.

New to FontAgent 7 is an updated interface, new font previews, a dramatically improved font identification engine that eliminates the need for dedicated FontAgent libraries, auto-activation plug-ins for the latest design apps from Adobe and Quark, and a new way to share fonts.

## NEW INTERFACE

FontAgent 7's most obvious improvement is the new interface, which lets you use one, two, or three panels. The left panel shows your font Sets and lets you select one and view its content in the center panel. The center panel lets you switch between a Table view, with its sortable columns of data about your fonts, and a List view, which shows fonts in their native typefaces with metadata about each font.

The bottom part of the center panel provides three view options:

**THIS IS FONTAGENT 7's** three-panel interface, with the center panel in List view. The Status field at the top displays my last operation, which was to delete a Smart Set. The right panel displays all the information that can be known about a selected font or font Set.

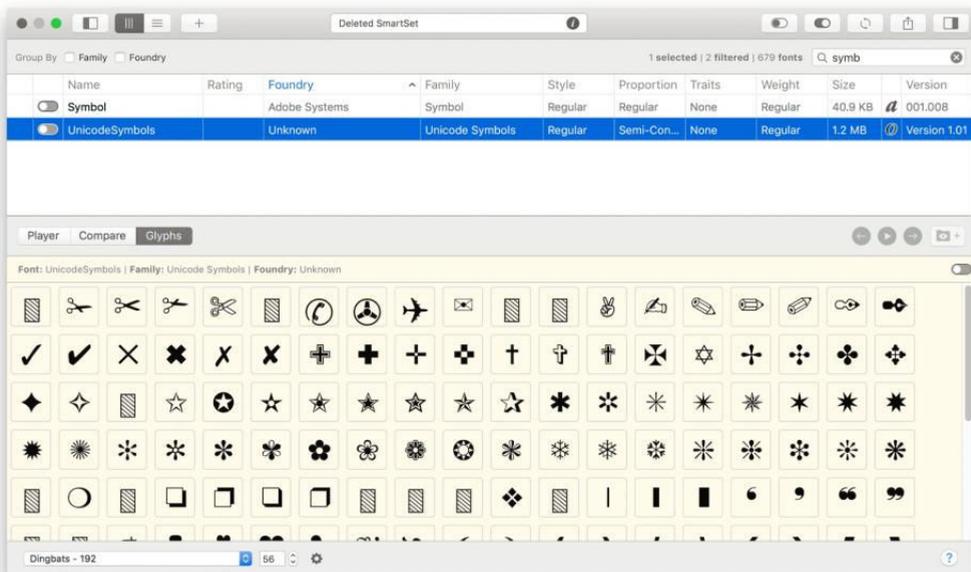
- > Player view plays a slideshow of your selected fonts in custom text and colors.
- > Compare view lists your selected fonts in custom text and colors.
- > Glyph view lets you view individual character glyphs and drag them into your documents.

Buttons across the top let you control the view options, activate and deactivate fonts, and share and synchronize font Sets with other users. A Status field at the top displays the most recent action you performed, such as importing or activating fonts.

## SETS

When you're looking for a specific kind of font, a Smart Set can help you find fonts that have shared attributes. For example, you may be looking for OpenType fonts with the word *Pro* in their name. Or perhaps you want to wrangle up every font with *Futura* in its name. A Smart Set can collect all your fonts with these attributes, and will update automatically when new fonts are added to your collection.

**THIS IS FONTAGENT 7's** center panel in Table view, with Glyphs showing below. The drop-down menu at bottom left conveniently lets you choose a subset of the font to view.



Also, FontAgent 7 lets you tag any Set as a startup set, instead of letting you assign one Set for the fonts you always want to activate when your Mac starts up.

The subscription-only Sync version of FontAgent 7 lets

you share any set with your other Macs or other members of your workgroup. When you share a set, its content is uploaded to Insider's servers and is automatically available in FontAgent 7 on other Internet-connected Macs belonging to you or to your workgroup members. You specify your workgroup's members at the Insider account dashboard.

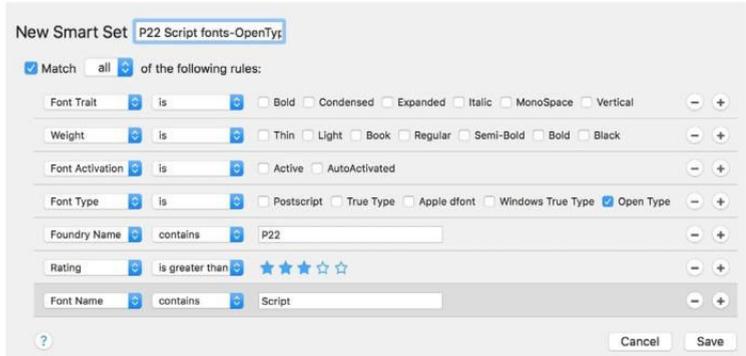
Sadly, you can't share a Smart Set, but you can create a regular Set from the content of a Smart Set and share that.

(Insider Software also offers a Connected Edition of FontAgent for larger organizations. It can use either a dedicated server in your organization or Insider's cloud server, with tools to administer permissions for both Mac and Windows users.)

## AUTO-ACTIVATION PLUG-INS

Plug-ins are included for Adobe InDesign, InCopy, Photoshop, and Illustrator CS3 through CC 2015, and QuarkXPress 5 through 2016. These plug-ins add a small bit of code to each document you open and save in these apps that lets FontAgent identify the exact fonts used in the document. When you re-open these documents, FontAgent can automatically activate those fonts.

Cleverly, when you first open a document whose fonts aren't active, if FontAgent has several possible matching fonts it presents a Conflict Resolver window. Using 37 criteria to identify the font, it ranks the relevancy of each possible match to help you choose the correct font (including font foundry, format, and version). If you've ever had to blindly choose the "correct" font to activate, you'll appreciate this powerful new feature.



**THIS SMART SET** will find all my fonts in OpenType format from the P22 type foundry, that I've rated 3 stars or higher, and whose name includes *Script*. I haven't decided on whether to also require that the font be activated, or include specific traits.

FontAgent Help

Q Search

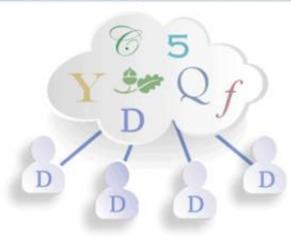
- Getting Started
  - Quick Links
    - FontAgent Overview
- The FontAgent Interface
  - User Interface Overview
  - Using the Toolbar
  - Selecting Fonts and Sets
- Managing Fonts
  - Importing Fonts
  - Deleting Fonts
- Sharing and Syncing Fonts
  - Sharing Fonts with Other Users
  - Syncing Fonts on Your Computers
- Using Sets to Organize Fonts
  - Using the Sets Sidebar
  - Working with Sets
  - Working with Smart Sets
  - Syncing Sets with Other Users
  - Using the Player Set
- Viewing Your Fonts
  - Viewing Your Fonts
  - List View
  - Table View
  - Player View
  - Compare View
  - Glyphs View
  - Properties Sidebar
- Searching for Fonts
  - Using Quick Search
  - Using Smart Search
- Activating Fonts and Sets
  - Activating Fonts
  - Activating Sets
  - Activating Fonts at Startup
  - Auto-Activating Fonts in Apps
  - Using Adobe and Quark Plugins
  - Resolving Font Conflicts
  - Setting Activation Preferences
- Printing and Exporting Fonts
  - Printing Font Sample Sheets

Using FontAgent, you can:

- Verify and **organize** your font files
- Preview, compare and select** the right fonts for your projects
- Activate and deactivate** fonts easily
- Create sets** to logically associate your fonts
- View and print font sample sheets**

The new Sync Edition of FontAgent also lets you:

- Share fonts** with others in your organization
- Sync fonts** across your computers
- Store your fonts** securely in the Cloud



Search

### QUICK LINKS

**Overview**

- FontAgent Overview
- User Interface Overview
- Mac OS X Fonts
- Glossary of Font Terminology
- Managing Your FontAgent Account

**Using Sets to Manage Fonts**

- Working with Sets
- Using the Sets Sidebar
- Working with Smart Sets

**Adding and Deleting Fonts**

- Importing Fonts
- Deleting Fonts and Sets

**Activating Fonts and Sets**

- Activating and Deactivating Fonts
- Auto-Activating Fonts
- Installing Auto-Activation Plugins

**Viewing Your Fonts**

- List View
- Table View
- Gallery View
- Player View
- Compare View
- Glyphs View
- Properties Sidebar

**Searching for Fonts**

- Using Quick Search
- Using Smart Search
- Searching for Fonts in Table View

**Sharing and Syncing Fonts**

- Sharing Fonts with Other Users
- Syncing Fonts Across Computers

**Printing and Exporting**

- Printing Font Sample Pages
- Exporting Fonts

powered by ProFonts

### CONTACT US

Can't find an answer?

**Product Questions**

**Email Support**

**Call Us**

+1 408-871-9944  
Monday through Friday  
9:00 AM to 5:00 PM  
US Central Time

**Sales Questions**

**Email Sales**

**Call Us**

+1 408-871-9933  
Monday through Friday  
7:00 AM to 5:00 PM  
US Pacific Time

## MORE FONT SUPPORT FEATURES

Any fonts you've acquired from font rental services such as Adobe Typekit or Monotype SkyFonts are available for use in Sets in FontAgent 7.

FontAgent 7 includes more than 1,350 free Google fonts, any of which you can choose to install. As with everything that's free, the value of these fonts is in the eye of the beholder.

**FONTAGENT 7'S HELP** system is comprehensive and, well, helpful.

Using a font manager can be confusing and complex. Kudos to Insider's team for making FontAgent 7's Help system so useful.

FontAgent 7 is bundled with Smasher 3, a utility that can “smash” complex multi-font suitcases into files that contain just one font each. It also has a font cache cleaning feature that removes the error-prone font caches created by Apple, Adobe, Quark, and Microsoft as well as leftover CUPS Spool Files. It can be set to automatically run whenever you log out, shut down, or restart, or to run every day, week, or month. For users who frequently activate and deactivate fonts, this feature can eliminate some of the problems working with fonts, as well as problems printing or generating PDFs. Think of it as “an ounce of prevention.”

## LICENSING

FontAgent 7 Sync is the first version to be available on a yearly subscription basis (at \$59 per year), and is required if you want to share font sets. The Standard single-user version is also available for a one-time \$99 fee. Users of FontAgent 6 can upgrade to either version for \$59.

## BOTTOM LINE

FontAgent 7 is the easiest way to share fonts among multiple Macs or within a workgroup. Current FontAgent users will appreciate version 7's greater accuracy in identifying fonts used in documents, Smart Sets that automatically update, and the elimination of Libraries. New users can feel confident that their fonts will import without duplicates, and in the location required by Apple in OS X El Capitan and macOS Sierra. ■



**THE INCLUDED SMASHER** utility can automatically clear font caches and CUPS Spool files manually or on a regular schedule.



AUDIO

## ADOBE AUDITION CC (2015.2): AUDIO EDITING BECOMES MORE USER-FRIENDLY

BY J.R. BOOKWALTER

**ALTHOUGH MOST VIDEO** editing software does a decent job with audio, there's nothing like using a tool dedicated to manipulating sound. Back in the day, one of my favorites was Soundtrack Pro, which Apple initially offered as a standalone product as well as part of the Final Cut Studio bundle.

It was a great match—if a particular piece of audio in a timeline needed more finesse than Final Cut Pro was capable of, you could

### AUDITION CC 2015.2



#### AT A GLANCE

Adobe Audition CC is a professional audio application designed for filmmakers, podcasters, and others to create, mix, edit, and analyze sound for broadcast or online distribution.

#### PROS

- Essential Sound consolidates most-used tools in one panel
- Direct export to Adobe Media Encoder CC
- More user-friendly for first-time or novice customers
- Free update for Creative Cloud subscribers

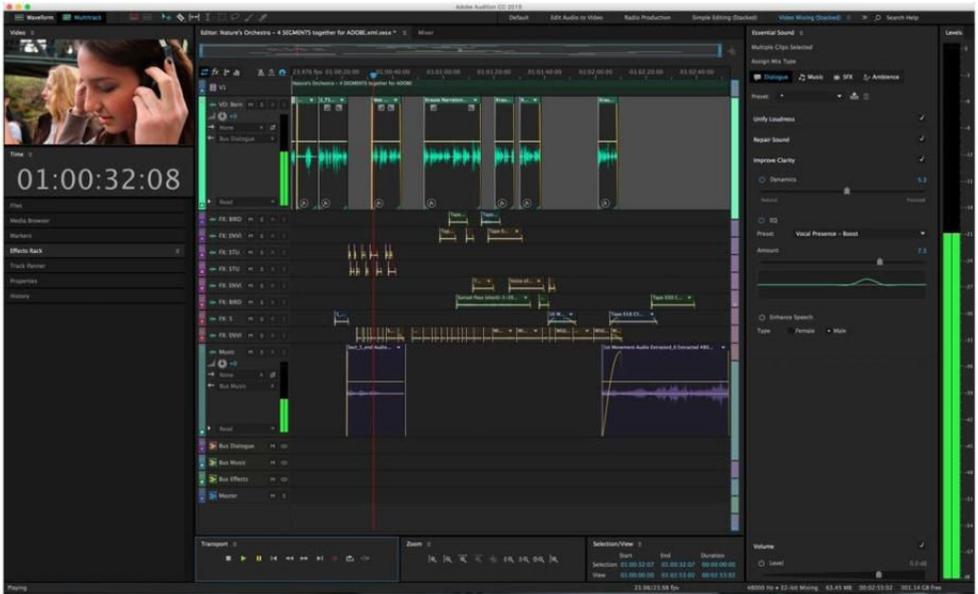
#### CONS

- Fewer new features than other Creative Cloud applications
- Still requires monthly paid subscription
- Better suited to post-production than music (no support for MIDI or virtual instruments)

#### COMPANY

[adobe.com](http://adobe.com)





Instead, we have Logic Pro X ([apple.com/logic-pro](http://apple.com/logic-pro); \$200 on the Mac App Store), which is geared more to musicians than post-production, or Adobe Audition CC, which costs \$20 per month as a single-app subscription, or \$50 monthly as part of a bundle with other pro video and creative apps. (There are alternatives including free, open-source software like Audacity, but I'm strictly focusing on commercially-available products.)

Former Macworld editor Christopher Breen expertly detailed the first iteration of Adobe Audition CC ([go.macworld.com/auditionccapp](http://go.macworld.com/auditionccapp)) in his exhaustive review three years ago ([go.macworld.com/auditioncc](http://go.macworld.com/auditioncc)), which praised the exhaustive depth of features while lamenting the then-controversial subscription pricing.

Since then, Adobe has been steadily improving the application with annual updates and frequent bug fixes, adding Dolby Digital import/export and dialogue normalization in 2014, along with remix, text-to-speech, and match loudness tools last year. Earlier this year, Adobe debuted the awkwardly-named "2015.2" update with two major new features, which I'll be focusing on in this review.

**THE SPRING 2016** update to Adobe Audition CC includes a new panel called Essential Sound, which provides an easier way for novices to get acclimated to the software.

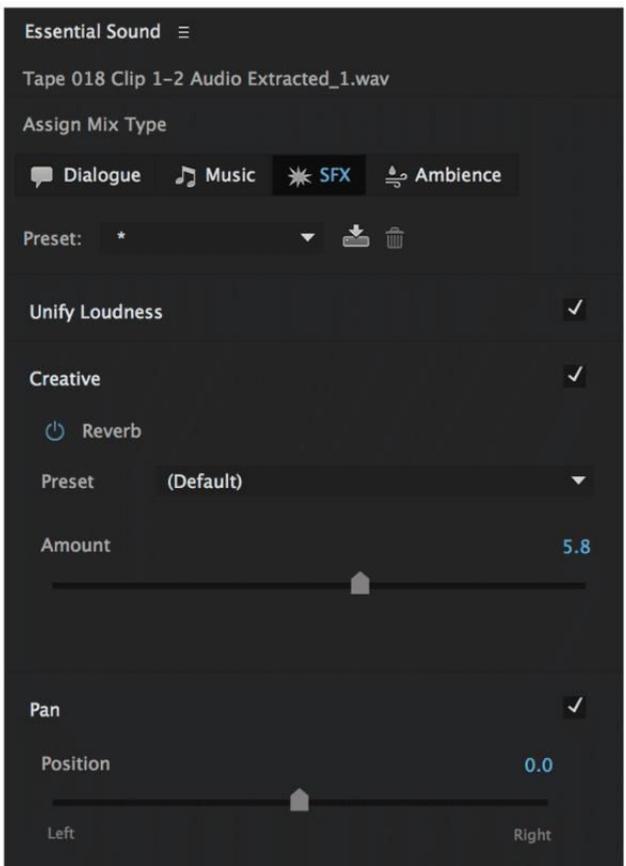
## ESSENTIAL SOUND

Despite offering a comprehensive arsenal of audio recording, mixing, editing, and repair tools, Adobe Audition CC has traditionally been daunting for first-time users. Like the company's other pro video applications, the user interface is split across multiple panels, each with tabs providing additional functionality. If you were just getting started, it wasn't the most user-friendly experience.

Adobe has remedied this situation with the introduction of yet another panel, Essential Sound, which consolidates the most commonly-used options in a single place. From here, novice users can balance audio for a more unified sound, clean up dialogue tracks by reducing noise, rumble, hiss, or high-frequency sibilance (that annoying "ess" sound), and much more.

It's super-easy to use: Select one or more tracks in a multi-track project, then choose the type of mix you're working on—Dialogue, Music, SFX, or Ambience. Each mix type includes only what's relevant to that category, although there is some overlap such as Unify Loudness, a tool designed to keep audio clip levels balanced.

Essential Sound also incorporates unique music tools that allow audio editors to stretch or remix tracks to fit a specific length without affecting the overall pitch or tempo. Best of



**ESSENTIAL SOUND CONSOLIDATES** only the most-used tools for multitrack dialogue, music, sound effects, and ambience in a single place.



**THE NEW EXPORT** with Adobe Media Encoder option saves video editors from having to send mixes back to Premiere Pro CC.

all, professional users can configure custom settings in a few clicks, or close the panel to work the way they're used to. Essential Sound doesn't offer new tools, but rather a new way of working, and a level of simplicity sorely missing in earlier versions.

## DIRECT EXPORT

The second new feature in Adobe Audition CC 2015.2 is also long overdue, considering it's been available in other members of the Creative Cloud video lineup for some time. Rather than exporting a final audio mix and importing it into Premiere Pro CC for output, Audition CC users can now directly export entire projects (complete with video) in the same step.

This is made possible by a new Export with Adobe Media Encoder option in the *File* → *Export* menu. When summoned, Media Encoder CC launches (assuming it's not already open), sharing available formats and presets with Audition. After clicking OK, the project is added to the Media Encoder queue, where it begins rendering automatically in the background.

If you're juggling several projects at once or want to export variations with specific tracks isolated, Media Encoder allows you to continue working in Audition or Premiere Pro while rendering. It's also easy to tell which projects originated in Audition, since the app's icon appears next

to the project name.

While Audition CC may not have received as much love in Adobe's Spring 2016 update as sibling applications, the workflow improvements are definitely welcome.

### **BOTTOM LINE**

Adobe Audition CC 2015.2 isn't a revolutionary update, but the Essential Sound panel makes it more user-friendly for those getting started with it. ■

# Hot Stuff

What We're Raving About This Month



## **NONDA HUB+ MINI**

If you have a 2015 (not 2016) MacBook, and you have a DisplayPort version of the Apple Cinema Display (models A1267 and A1316)—not the Thunderbolt version—then the Nonda Hub+ mini ([nonda.co](http://nonda.co)) fits your needs. If you want to drop \$150. For that price, you get a nice little package of brushed aluminum, available in three finishes. It comes with a short, removable USB-C host cable that's intentionally directional. One end (marked) fits into the dock very neatly and solidly; the other plugs as firmly into the MacBook as Apple's own charging cable. With a two-display setup streaming 4K video from YouTube to the Apple Cinema Display, performance went off without a hitch. —GLENN FLEISHMAN

# Hot Stuff

## WACOM BAMBOO SLATE

The concept is simple: If you like to take notes by hand—with pen and paper—and you're not above a few diagrams and doodles along the way, Wacom's Bamboo Slate smartpad ([us-store.wacom.com](http://us-store.wacom.com)) might be the most optimal way to convert your notes from analog to digital. It comes in two sizes—10x12.9 inches (which costs \$150) and 7.3x9.8 inches (\$130). Its companion pen has a traditional ink tip that is not a stylus, and it lets you jot down notes, upload them to the cloud, and edit and share them in various formats from your iOS devices. The Slate ships with a pad of paper, but when that's done, you can use whatever pad of paper you want—no special paper required. —**JACKIE DOVE**





## ELGATO'S EVE HOMEKIT LIGHTSWITCH

Smart light bulbs are a dime a dozen, but home device maker Elgato decided that another effective way to control your home lighting isn't a bulb and hub or bridge set-up—it's a smart light switch. The company's new \$50 Eve Light Switch ([elgato.com](http://elgato.com)) is the first HomeKit-compatible product of its kind, which means you can control your lights with just your voice. Thanks, Siri! The simple white Bluetooth wall plate replaces your standard single pole switch, which you can either swap out yourself or call in a professional. The best part is you can control your lights without outfitting your house with smart bulbs and a hub—though you can use the Eve switch to control those, too, if you already have Hue lighting installed. —CAITLIN MCGARRY



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



IWantToBeRecycled.org

SoftGozar.com



KEEP AMERICA  
BEAUTIFUL



## VIDEO

To view this video, go to [go.macworld.com/ip7plusportvid](http://go.macworld.com/ip7plusportvid)

## Photo shootout: We tested Portrait mode with an iPhone 7 Plus fashion shoot

Just for fun, we pushed Portrait mode to the limit and compared the results to a DSLR. The results made our photographer jealous.

BY SUSIE OCHS & ADAM PATRICK MURRAY

**T**he best camera is the one you have with you, the old cliché goes, and as we found in our experiment, if that camera happens to be an iPhone 7 Plus, you're going to be just fine. The dual-lens camera system lets it take better photos than any smartphone we've tried, and the Portrait mode in iOS 10.1—which was just recently pushed out—is a lot of fun to play with.

Adam, our staff photographer, was incredibly eager to see what the iPhone 7 Plus could do, so we hired a model to re-create the kind of fashion photo shoot that he would normally do with his trusty Sony a7R II with a Canon 50mm lens.

We shot indoors in low lighting as well as full light, then took the show on the road for outdoor shots in a couple of locations near the office. Our model, Alina Lee ([instagram.com/ohthumbelina](https://www.instagram.com/ohthumbelina)), did a wonderful job, and Adam came away more than a little impressed with what Portrait mode could do.

Now, we must note here that we tested Portrait mode while it was still in beta, and this isn't a formal, scored review—just an experiment we did for fun. We wanted to see how Portrait mode (this first version of it, anyway) would react to different lighting conditions, and how its method of keeping your subject in focus while blurring the background would compare to a full-frame DSLR. Plus, Adam is a dedicated Android user,



and he just wanted to see how far Apple has come with the iPhone 7 Plus. Who could blame him, right? Check out some of the results here.

We started in low light, indoors (photo 1). This is barely enough light to trigger the depth effect—you'll see a yellow Depth Effect label appear on the screen when you're at the right distance and lighting level to make it work.

In this shot, we're pushing the distance a little bit too—typically, Adam says, a portrait would be a little

tighter on her face. Since Portrait mode uses the 6.6mm “telephoto” lens on the iPhone 7 Plus, which has an f/2.8 aperture and no optical image stabilization, you can see some noise, but all in all this isn’t too bad for an indoor photo.

Another low-light, indoor shot (photo 2) and we still get the depth effect. In the depth effect shot on the right, you can see how some of the fine pieces of hair around her head get completely blurred out, but the blur effect also smooths out some of the noise on her arms.

Again, we’re pushing what Portrait mode is intended to do—this isn’t enough light for the best result, but it still looks interesting. And since the mode defaults to keeping both the original and blurred versions of each photo, you really don’t have much to lose by experimenting.

For our next set of photos, we stayed indoors but cranked up the lighting. In this shot, Adam was once again experimenting with how far he could get from Alina and still get the depth effect (photo 3). It seems like we got the best results inside of 8 feet, but it was possible to push it up to 12 feet and still get it to work. The blurring is pretty minimal in this image because she’s relatively close to the background.

Once we got close up (photo 4), we started to see how Portrait mode



works to isolate Alina's face. In this image, you can see how her entire face is kept perfectly in focus, like it would be if you masked it in Photoshop, while her hair (seen on the left side of the photo) is immediately very blurred even right next to the face.

Taking this same shot with a DSLR, we wouldn't expect her entire face to be in the same plane of focus. Her left eye, for example, and her nose are angled closer to the camera lens than her right eye, but the iPhone 7 Plus keeps them in the same focus. The strap on her dress is even closer to the camera lens, but it's blurred because the camera didn't isolate it to stay sharp along with her face. It's an interesting effect, just not what we would expect from a full-frame DSLR.

Then we went outside (photo 5), where we found an alley illuminated with beautiful afternoon light reflecting off the windows of the building behind us, almost like we'd planned it that way.

In this shot, you can see Portrait mode having some problems with the very outer edges of Alina's hair. (Sometimes you can control for that, if it's less windy or you load up on hair products, but for this experiment, the flyaways are our friends.) It does OK with the larger pieces, and it's understandable that it couldn't isolate every strand.

The depth effect also blurs the



texture of her shirt a little, and it's slightly odd how the background is equally blurred right behind her as it is all the way back. With a DSLR, the amount of blur would increase as you approach the horizon. Adam says that a talented Photoshop user could reproduce this blur effect with software, but it's pretty remarkable that the iPhone 7 Plus camera can do it for you, in real time as you're taking the photo.

During the shoot (photo 6), we started seeing a lens flare leaking in, but that actually lets us point out the way Portrait mode isolates just a person's face and blurs everything else. In this image, the flare appears in the foreground, but since it doesn't cross her face, Portrait mode still applies the blur effect.

In the next shot (photo 7), Adam managed to catch the flare across Alina's face. On the right, you can really see how Portrait mode masks her face. The flare actually widens on the top of her head, then snaps back to its original shape as it crosses her face.

The blur on her shirt is pretty noticeable in this pair too. Since it's just a texture, it's not a big deal here, but another time when I used Portrait mode to photograph my husband wearing a San Francisco Giants sweatshirt, it was a little odd to see the type in the logo become harder to read.

In photo 8, Adam included a couple of distracting elements in the background—the speed limit sign in the alley along with a couple of guys drinking beer or something. Portrait mode did a great job keeping the focus on Alina. We like how the brick wall on the photo's right side doesn't blur out too much, and her hair looks great. But we did lose a little bit of sharpness in her clothes—check out



the bit of zipper and the two snaps you can see on her jacket, for example.

Mostly we think of portraits (photo 9) being taken in portrait orientation, but it's worth mentioning that iOS 10.1's Portrait mode works in landscape orientation too. This is one of our favorite shots from the day.

While iOS 10 does support capturing and exporting RAW images,



**LEFT: THIS IS** a Portrait photo taken with the iPhone 7 Plus, then edited by Adam in Photoshop.

Apple’s own Camera app sticks with JPEGs as a rule. In fact, Adam noticed that the Portrait versions are about half the file size as the untouched photos, so the Camera

app is already making all the decisions about what data to keep and what to discard.

So it’s unlikely that we’ll see RAW support added to the Portrait mode

anytime soon, but it sure would make Adam happy. He exported the Portrait photo and edited the JPEG to get the final result, but naturally, a JPEG is already compressed and doesn't offer the editing flexibility that a RAW file would.

Sometimes, we found we liked the sharp image better than the depth effect version. This shot (photo 10) in front of the Bay Bridge is one of those times, but maybe we just don't have the heart to blur out such a notable landmark.

Adam did some edits on the Portrait version of the bridge photo (photo 11), to attempt to bring some sharpness back to Alina's sweater and the stitching on her jeans.

For a few images, Adam put an edited Portrait photo (photo 12) taken with the iPhone 7 Plus next to a photo taken with his Sony a7R II. Then we showed them to a bunch of people around the office and had them guess which was taken with the "real" camera and which was taken with the smartphone. Not everyone got it right!

This closeup in the alley (photo 13) is another one of our favorites, but since the background isn't so far from the subject, the blurring effect is somewhat subtle. You can still notice the effect having trouble with the edges of her hair, and adding a little too much blur to the texture of her

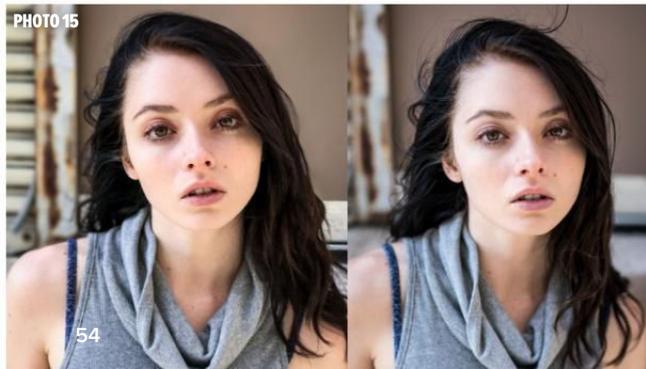


shirt, especially the collar.

But when Adam edited the Portrait mode version in Photoshop (photo 14), he was able to get some of that texture back.

The pairing (photo 15) showing the edited Portrait mode photo on the left, and a similar shot taken with the Sony a7R on the right, impressed everyone we showed it to. In fact, even a fellow camera geek on our video team was fooled, identifying the iPhone 7 Plus shot as being taken by a DSLR. If you know to look at the fine flyaways around her head, you might get it right. But otherwise, these are delightfully close.

In the end, Adam admitted he's more than a little jealous of the capabilities of the iPhone 7 Plus—even with the Portrait mode in beta. It's not perfect, and we are eager to see how Apple might improve it in future versions—now that the full release is out, we'll be doing some follow-up testing. But just the fact that you can do this with a smart-phone is incredibly cool. ■





## 6 more ways to make the most of Mail for iOS 10

Customize the Mailboxes screen, tinker with iOS 10's mail filter, pick new message-swipe options, and more.

BY BEN PATTERSON

**A**bout a year ago, we served up eight gotta-know tips ([go.macworld.com/8iosmailtips](http://go.macworld.com/8iosmailtips)) for iOS Mail users—everything from how to change the size of your message previews to how to dictate your mail messages.

Now, we’re back with six more ways to make the most of Mail for iPhone and iPad, including a couple of nifty tricks for iOS 10. For starters, we’ll show you how to tinker with the new mail filter, as well as how to tweak iOS 10’s threaded messages view. You’ll also learn how to customize the Mailboxes screen, pick your own message-swipe options, and more.

**CUSTOMIZE YOUR SWIPE OPTIONS**

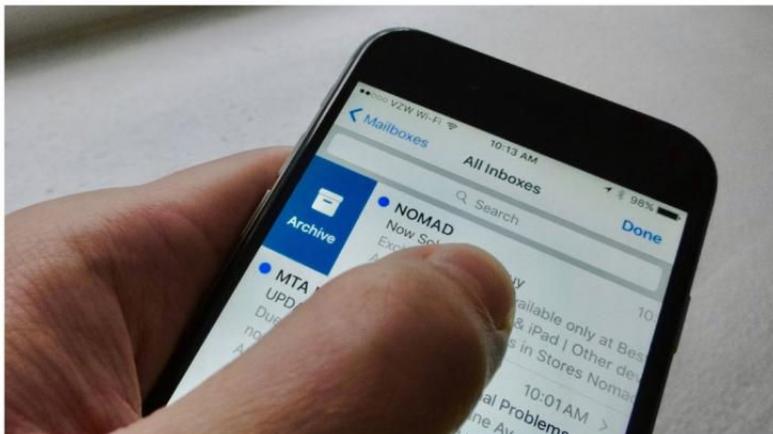
You don’t have to settle for Flag, Mark As Read, and Trash as your only choices when swiping inbox

messages to the left or right.

If you like, you can swap out one of your left- or right-swipe actions with Move Message (to file a message into a new folder) or Archive (which lets you toss a message into your All Mail pile).

The Trash option isn’t listed under the Swipe Options setting (Settings → Mail → Swipe Options), but you can, in fact, move the Trash action from Swipe Left to Swipe Right.

The trick: if you have Archive Mailbox selected as your default for “discarding” a message (tap Mail, tap the name of your account in the



**YOU CAN PICK** Archive as one of your “swipe right” options in Mail for iOS.

Accounts section, then tap Accounts → Advanced and choose your default action under the Move Discarded Messages Into heading), pick Archive as your Swipe Right option. When you do, Trash will (confusingly) appear when you swipe right, while Archive will be a swipe left option.

## CHANGE YOUR DEFAULT MAIL ACCOUNT

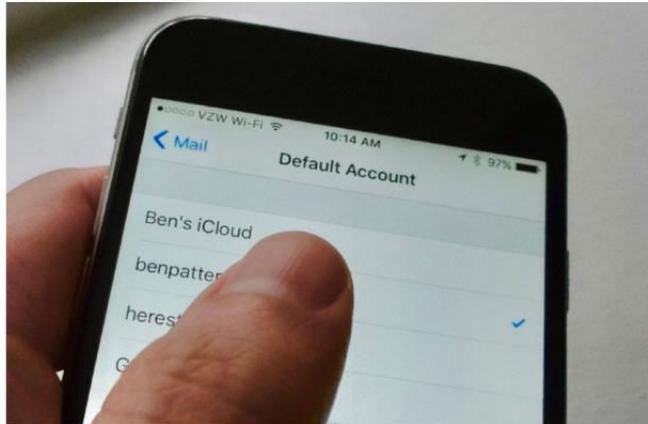
Left to its own devices (no pun intended), iOS will generally pick iCloud as your default mail account. If your main mail account is something other than iCloud, there's an easy way to pick a new default.

Tap Settings → Mail → Default Account, then pick a mail account. Once you do, the account you chose will be automatically selected in the From line of new messages.

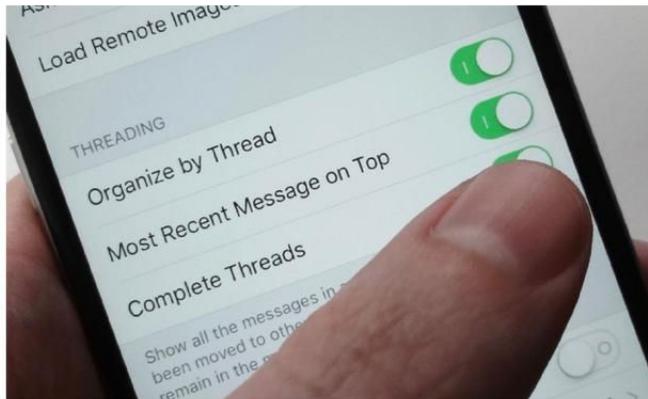
To change accounts on the fly, you can always tap From within a new message to send it from a different account; doing so won't change your default setting.

## CHANGE THE WAY THREADED MESSAGES BEHAVE

Thanks to iOS 10, you no longer need to tap on individual messages within a mail conversation; instead, you can simply scroll through the entire discussion on one screen. You may have also noticed that, by default, threaded messages in iOS 10



**IF YOUR PRIMARY** email account is something other than iCloud, you can set that account as the default.



**IF YOU DON'T** want the most recent message in a threaded mail conversation to appear at the bottom of a thread, try this setting.

start with the earliest message at the top, while the most recent sits down at the bottom.

To make your mail conversations start with the latest message at the top of the thread, try this: tap Set-

tings → Mail, scroll down to the Threading section, then tap Most Recent Message On Top.

**CUSTOMIZE THE MAILBOXES SCREEN**

If you back all the way up in the iOS Mail app, you'll arrive at the Mailboxes screen, which displays the inboxes for all your mail accounts and lets you drill down into specific mail folders.

Sitting in the top corner of the Mailboxes screen is an inconspicuous, easy-to-miss Edit button; tap it, and you'll be able to customize the Mailboxes view to your heart's content.

For example, you can add shortcuts that'll let you see all the inbox messages you've received today, or all your sent or trashed messages. Even better, you can tap Add Mailbox to pin any mail folder or subfolder to the Mailboxes screen.

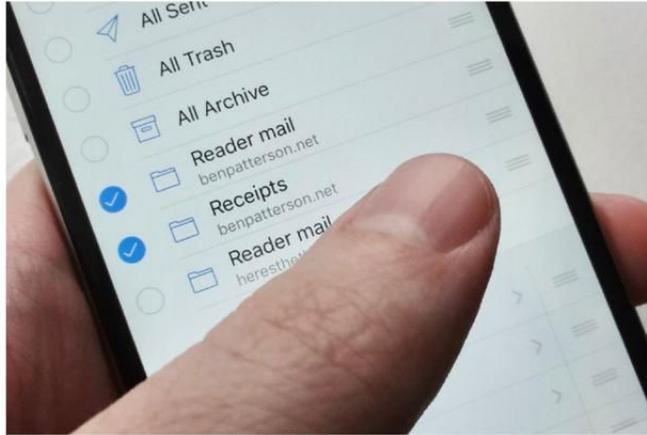
Once you've added new shortcuts and folders to the Mailboxes view, you can rearrange them; just tap, hold, and drag the three-line handles to the right of each item.

**CUSTOMIZE iOS 10'S NEW MAIL FILTER**

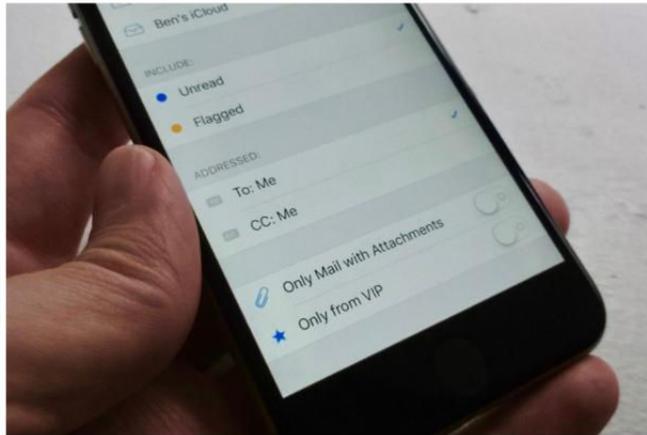
The new mail filter in iOS 10 does a nice job of paring your inbox down to only unread messages, but if you like, you can refine the filter even further.

You can set iOS 10's new Mail filter

to show you only messages with attachments, messages sent just to you, mail from your VIP's, and more.



**YOU CAN TAKE** charge of the Mailboxes screen in the iOS Mail app once you tap the Edit button.



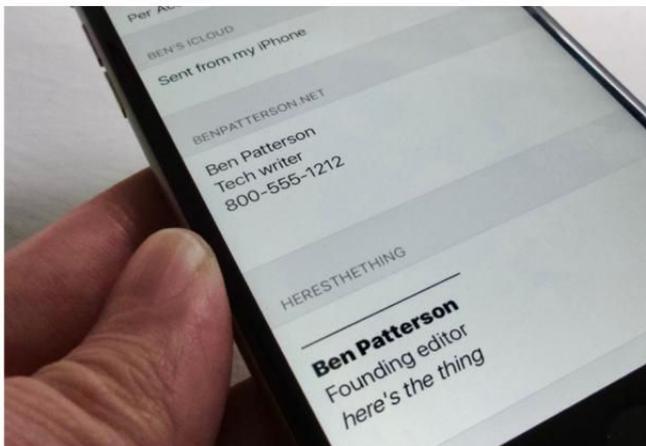
**YOU CAN ALSO** set the filter button to show just messages addressed to you, messages with attachments, or just messages from your VIP contacts.

Tap Filtered By next to the filter button and you'll see a bevy of options, including mail accounts you want the filter to include or exclude and whether filtered mail should reveal flagged or unread messages.

## USE DIFFERENT MAIL SIGNATURES FOR YOUR VARIOUS ACCOUNTS

Nope, you don't have to use the standard Sent From My iPhone email signature for all your mail accounts. If you wish, you can customize your "sig files" for each account, putting (for example) your home phone number in your personal Gmail account and your office number and job title in your work account.

Tap Settings → Mail → Signature, then select the Per Account option. When you do, new signature fields will appear for each of your mail accounts.



**BONUS TIP:** Don't forget, you can add formatting like bold, italic, and underline to your mail signatures. Just select the text you want to format, then tap the BIU button in the pop-up bubble. (You may have to tap the navigation arrows to find the right button.) ■

**YOU CAN ADD** customized signatures to each of your accounts in the Mail app for iPhone and iPad.

WHEN YOU see  
BULLYING,  
use THIS  
EM  JI  
TO do SOMETHING  
ABOUT it.



## **Tim Cook: Augmented reality will be an essential part of your daily life, like the iPhone**

“A significant portion of the population...will have AR experiences every day, almost like eating three meals a day.”

BY OSCAR RAYMUNDO

**A**pple CEO Tim Cook has a hunch about the future of augmented reality, and whether it will ever become mainstream.

Recently, Cook said that it will take some time for AR to become “acceptable.” But once that happens, AR experiences will be an integral part of our daily lives, comparing the emerging technology to the iPhone and eating three meals a day.

“I do think that a significant portion of the population of developed countries, and eventually all countries, will have AR experiences every day, almost like eating three

meals a day. It will become that much a part of you,” Cook said during his panel at a tech conference in Utah ([utahtechtour.com](http://utahtechtour.com)). Cook then admitted that there are technical challenges preventing AR from becoming a reality.

“AR is going to take a while, because there are some really hard technology challenges there,” he continued. “But it will happen, it will happen in a big way, and we will wonder when it does, how we ever

**VIDEO**

To view this video,  
go to [go](http://go.macworld.com/ip7plusavid).  
[macworld.com/  
ip7plusavid](http://macworld.com/ip7plusavid)

lived without it. Like we wonder how we lived without our phone today.”

This is not the first time that Cook has talked about augmented reality. During Apple’s quarterly earnings call this summer, the CEO said that the company ([go.macworld.com/appleq32016](http://go.macworld.com/appleq32016)) was “high on AR for the long run” and will continue investing in it.

Cook seems more optimistic about AR becoming mainstream over virtual reality, however. While VR could bring interesting opportunities in the education and gaming realm, Cook doesn’t think it will be as acceptable as everyday AR experiences.

“I can’t imagine everyone in here getting in an enclosed VR experience while you’re sitting in here with me,” he said in Utah. Business Insider ([go.macworld.com/tcookar](http://go.macworld.com/tcookar)) transcribed Cook’s full comments on AR. You can watch his panel discussion ([youtu.be/ZkV78RZ73Mw](http://youtu.be/ZkV78RZ73Mw))—the AR topic comes up at the 18:40 mark.

**Why this matters:** Even though Cook does not think augmented reality will become mainstream any time soon, Apple has started taking baby steps in adopting the technology. Apple’s latest iPhone 7 Plus sports a dual-camera system that could be used by developers to make AR experiences, like Pokémon Go, a lot better.

Eventually, the iPhone would need three or more cameras in order to be able to pull off the type of AR experiences that are being offered by Google’s Project Tango and Microsoft’s HoloLens. ■

**“I DO THINK THAT A SIGNIFICANT PORTION OF THE POPULATION OF DEVELOPED COUNTRIES, AND EVENTUALLY ALL COUNTRIES, WILL HAVE AR EXPERIENCES EVERY DAY, ALMOST LIKE EATING THREE MEALS A DAY.”**

**TEXTING  
AND DRIVING  
MAKES  
GOOD PEOPLE  
LOOK BAD.**

**STOPTEXTSSTOPWRECKS.ORG**



**NHTSA**

BLUETOOTH TRACKER

# TRACKR BRAVO: IT'S LIKE FIND MY iPhone FOR EVERYTHING ELSE YOU OWN

BY J.R. BOOKWALTER

**FOR MY SON'S FIRST CHRISTMAS**, his godfather gifted him a stuffed animal. Although the kid didn't immediately fall in love with that floppy-eared brown dog, within a few months the mutt we christened Biscuit became a more loyal companion than the family's real-life canine.

Soon, the two of them were inseparable—together while shopping with Mommy, playing with friends, or as a passenger on cross-country road trips. My son was so devoted, my wife and I feared the day would come when Biscuit could be accidentally left behind. That was exactly what happened a few years ago during a fateful McDonald's trip with grandpa. (He was found, but not before sufficiently terrifying the entire family.)

Nearly seven years later, Biscuit doesn't travel as much as he used to, but my son still requires his mandatory presence every night at

## TRACKR BRAVO



### AT A GLANCE

TrackR Bravo is a slim, keychain-friendly disc made of lightweight, anodized aluminum that can be used to find lost or misplaced belongings with the help of a connected smartphone app.

### PROS

- Slim, lightweight Bluetooth LE tracking device
- Two-way alerts
- Crowdsourced GPS tracking

### CONS

- Device alert is shrill and not quite loud enough
- Distance indicator isn't always very accurate
- Requires free TrackR Crowd GPS account

### PRICE

\$30



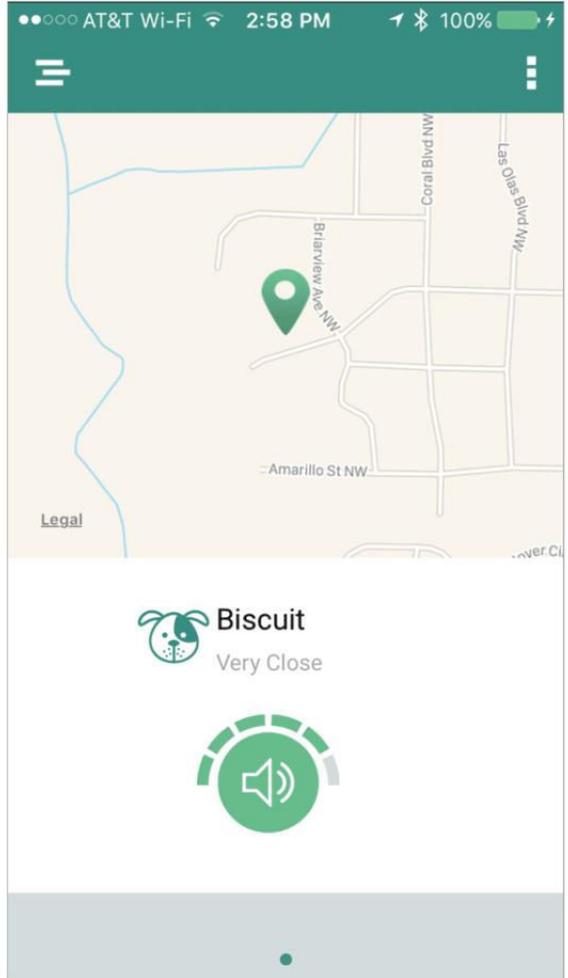
bedtime. But we usually wind up searching for the scrappy little guy, who my son casually tosses aside and promptly forgets exactly where. That's not much of an issue these days, thanks to a small gadget attached to his collar.

**FIND MY (WHATEVER)**

Measuring 31mm in diameter, TrackR Bravo (\$30 on Amazon [go.macworld.com/trackrbravoamz](http://go.macworld.com/trackrbravoamz)) is a small, coin-sized disc made from anodized aluminum that can be attached to almost anything using the included 3M VHB adhesive or key ring. Available in four different colors, the device uses Bluetooth 4.0 LE (Low Energy) to connect to a smartphone app that allows users to find lost items within a 100-foot range; up to ten devices can be tracked at once.

It's a lot like Apple's Find My iPhone, but Bravo is a whole lot more versatile since it can be attached to anything: keychains, backpacks, laptops, bikes, remote controls, or even the family pet (real or stuffed). At only 3.5mm thick, the device is slim enough to slip into most wallets, assuring you'll literally never again leave money on the table.

For those who habitually leave things behind, the app includes the option of enabling separation alerts, which trigger an audible notification whenever your phone and the paired Bravo become too far apart. Alerts works both ways: the app can be used to find the device, or to ring the iPhone instead by pressing the lone button on the device.



**A FREE SMARTPHONE** app connects to TrackR Bravo using Bluetooth LE so you'll never lose or misplace items again.

Bravo is powered by a CR1620 battery, which TrackR says lasts up to a year before needing a replacement. Thankfully, the process requires little more than inserting an unfolded paper clip into a small hole along the edge and prying out the battery. This requires a little more force than you might expect, but is easy enough for anyone to do.

**THE APP INCLUDES** a variety of icon categories, and each TrackR Bravo can be assigned a custom name for easy identification.

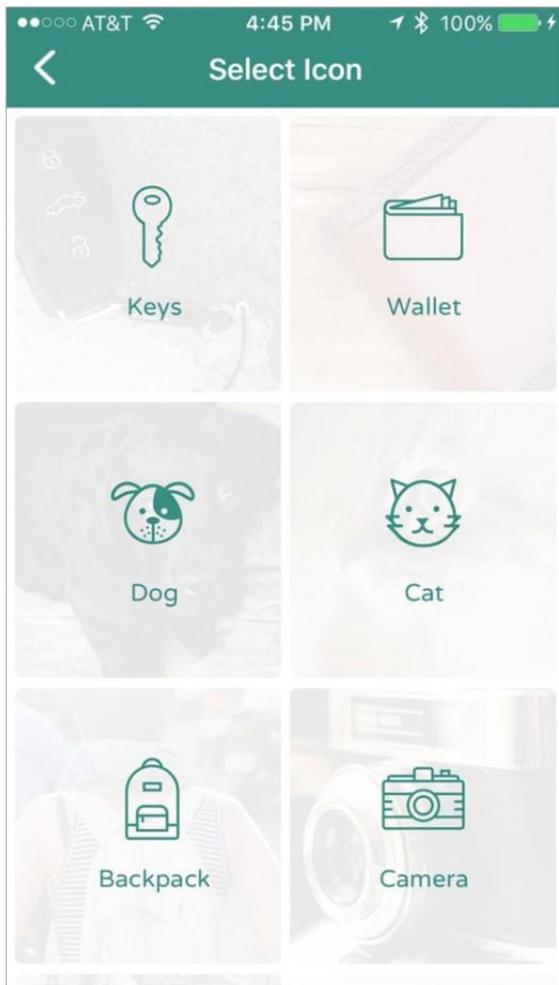
## LOST IN THE CROWD

Pairing TrackR Bravo with your iPhone or Android smartphone is a snap, but you'll first need to sign up for the free TrackR Crowd GPS service. This account casts a wider net when an item goes missing by enlisting owners of the company's over 2.5 million devices to help find yours.

Crowdsourcing works by sending a notification when another TrackR user comes within 100 feet of any lost item. You also have the option of paying an extra \$10 when placing an order to have a custom message laser engraved onto the back of the device. This can be anything from contact information to the name of your pet; Bravo's stylish good looks actually make a great replacement name tag, especially since it weighs only a fraction of an ounce.

For those more interested in finding lost items around the house, the TrackR app displays a map of the surrounding area, along with guidance on just how close you are to the selected Bravo. It wasn't pinpoint-accurate in my tests, but close enough to be helpful.

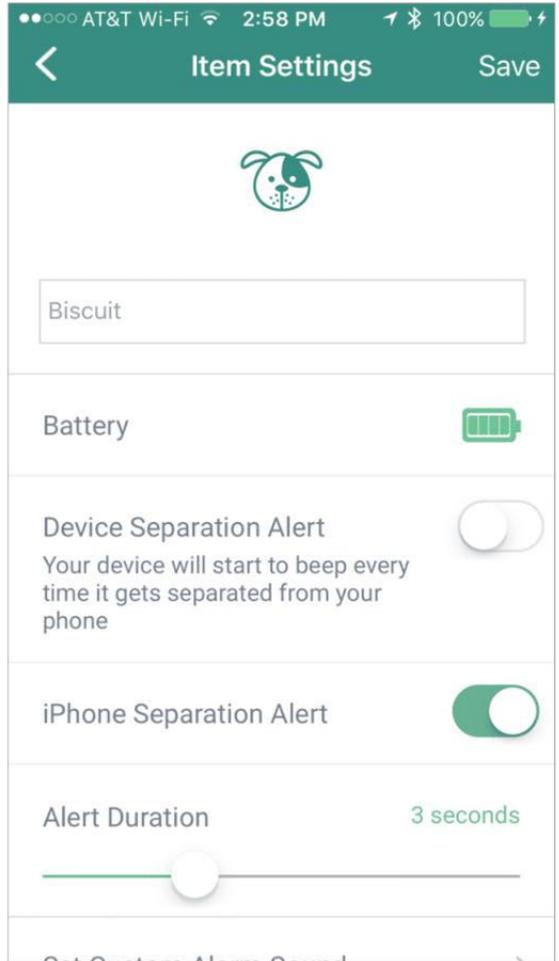
Although you can set custom alert



sounds on the iPhone using songs from your iTunes library, the tiny Bravo speaker only emits a shrill crescendo up to 86dB in volume. It's not nearly loud enough in noisy environments, but certainly stands out in the next room; a blue LED built into the button also blinks while the alarm is being triggered for visual assistance.

**BOTTOM LINE**

TrackR Bravo is Find My iPhone for everything else you own—including a kid's favorite stuffed animal—and GPS-based crowdsourcing adds a nice extra layer of protection for items misplaced away from home. ■



**UP TO 10** TrackR Bravos can be connected to a single iPhone, with individual settings for each.



ENTERTAINMENT

# REELGOOD: ONE APP, SO MANY STREAMING OR THEATRICAL MOVIES TO DISCOVER

BY J.R. BOOKWALTER

**WHEN I WAS A KID**, it didn't take much to get me to the movies. A promising trailer or article in one of my favorite genre magazines, and my butt was in the seat. Flash-forward a few decades, my busy schedule—and a decent home theater setup—means I'm far more selective about what I'll pay good money to see on the big screen.

## MOVIE TRACKER

Reelgood (free on the iTunes Store [go.macworld.com/reelgoodapp](http://go.macworld.com/reelgoodapp)) is an iPhone app designed with folks like me in mind. At launch, the

## REELGOOD



### AT A GLANCE

Reelgood makes it easy to find new movies to watch at the theater or on a wide variety of streaming services, complete with push notifications when titles in your Watchlist are released.

### PROS

- Keep track of theatrical or streaming movies from a single app
- Push notifications when Wishlist movies are available
- One-tap playback of purchased content in streaming apps

### CONS

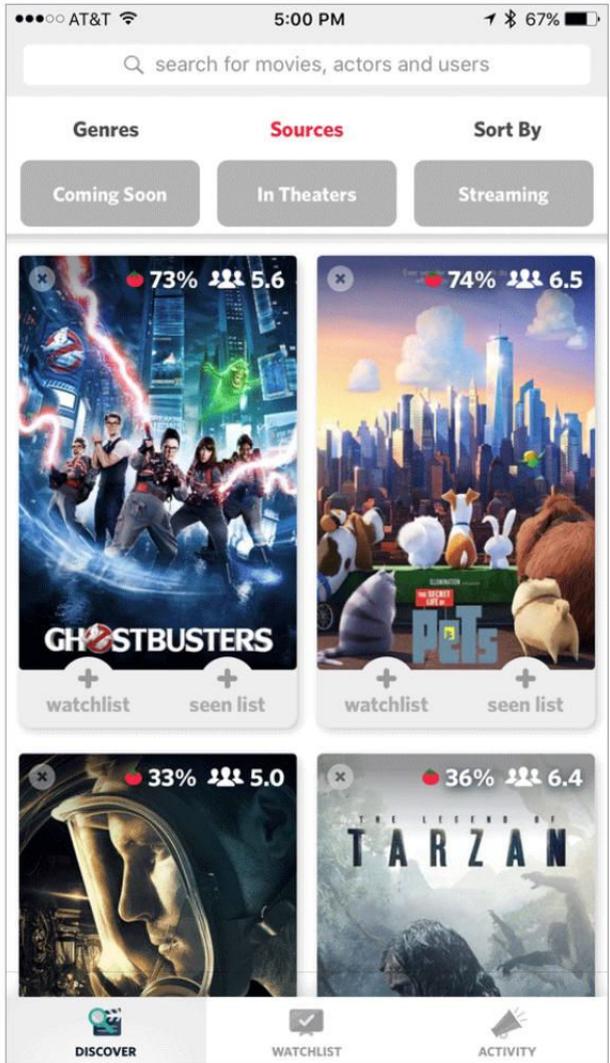
- Discover, Watchlist tabs can't be sorted by release date
- No option to purchase movie tickets
- Favors new and popular movies over classics

Discover view populates with gorgeous full-color poster art from current and upcoming theatrical movies. With a tap, you can quickly add the ones you're interested in to a Watchlist, or mark them already watched.

If you'd rather sit through a root canal than watch the *Ghostbusters* remake, you can also tap the upper left corner to banish titles you have no interest in seeing to your personal Phantom Zone. When a movie in your Watchlist finally hits theaters, Reelgood notifies you with a push notification, then helps find show times at the nearest multiplex.

In addition to artwork, movies are accompanied by a synopsis, cast and crew list, Rotten Tomatoes score, and other data as well as a trailer, which can be played full-screen in HD within the app. Like many services today, Reelgood also acts as a self-contained social network for movie lovers, where community members can post reviews and see what friends are up to.

Speaking of social, a Facebook account is the fastest way to get up and running with Reelgood, but it's not required. You can also create an account using an existing email address.



**BROWSE CURRENT, UPCOMING,** or classic movies with Reelgood, then add the ones you want to see to a Watchlist to be notified when they're available.

## NOW STREAMING

Reelgood remains useful long after a movie has cashed in or bombed at the box office. Users can filter out everything except what's available to watch from legal streaming services, including Amazon, Hulu, iTunes, Netflix, VUDU, YouTube, and cable providers like HBO Now or Showtime.

After making a selection, the detail page offers a list of preferred services (selected at first login) in place of show times. Stores specializing in digital rentals or purchases appear with current HD prices for comparison shopping; a tap on the logo opens the corresponding app, although only iTunes allows direct purchases. Buying from other services must be done from a web browser.

These buttons are also a great way to rediscover digital movies you already own. Tap the desired logo, and Reelgood launches that provider's app, where the selected title immediately begins playing. The same trick works for subscription-based services like Hulu as well.

My only real complaint is there's no way to sort by release date; this would be particularly useful in Watchlist, for viewing

AT&T 5:02 PM 67%

### Blair Witch (2016) SHARE

1 hr 30 mins **Unrated**  
Horror, Thriller  
95 want to see  
36% 4.0

**Movie Details** **Reviews & Buzz**

**IN THEATERS NOW**

**Cinemark Tinseltown USA and XD** North Canton  
SD 11:30am • 02:00pm • 04:25pm • 07:25pm • 10:10pm

**Regal Interstate Park Stadium 18** North Canton  
SD 12:40pm • 03:10pm • 05:40pm • 08:05pm • 10:30pm

[more theaters](#)

**SUMMARY**

A college student ventures with a group of friends into the Black Hills Forest in Maryland to uncover the mystery surrounding the disappearance of his sister years earlier, which many believe is connected to the legend of the Blair Witch. At first the group is hopeful, especially when a pair of locals offer to act as guides

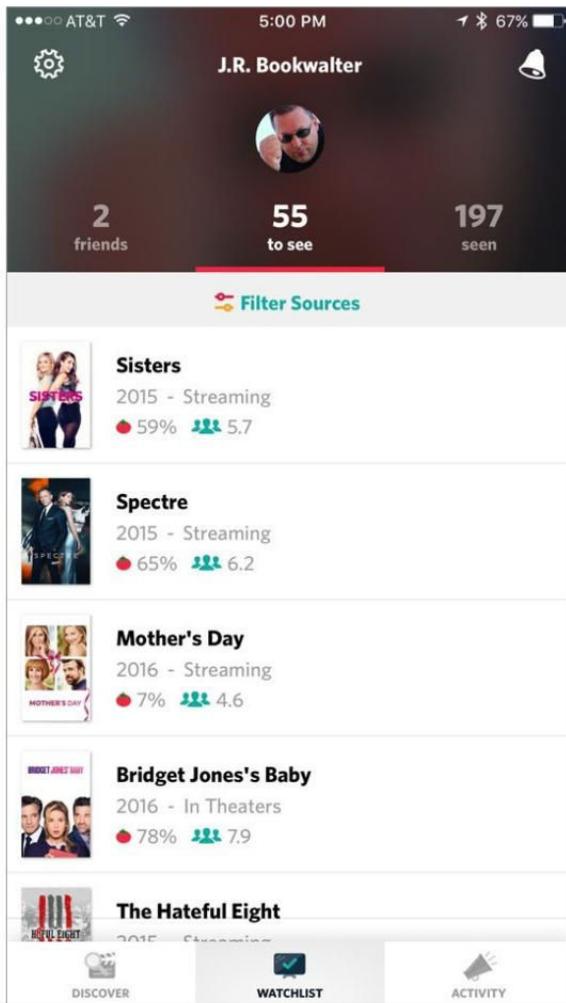
+ watchlist + seen list

**MOVIES STILL IN** theaters will display show times at your local multiplex, but there's no way to actually buy tickets.

current movies first, rather than having the list in alphabetical order or by date added. Also missing is the ability to purchase tickets inside the app. You'll still need Fandango or another service for that.

**BOTTOM LINE**

Reelgood makes it a snap to find a movie at your local theater or favorite streaming service. But tickets and digital purchases other than iTunes must be done elsewhere. ■



**REELGOOD'S WATCHLIST TAB** shows everything you've seen or are interested in seeing, but oddly movies can't be sorted by release date.

# What's new at the App Store



## LIP SYNC BATTLE

Lip Sync Battle ([spikeslipsyncbattle.com](http://spikeslipsyncbattle.com))—the show spun off from Jimmy Fallon’s “Tonight Show” gimmick—is now available in freemium app form for iPhone and iPad. Choose your favorite songs, add SnapChat-style masks if you like, then lip sync to the music. You can add effects and filters afterward, then share with your friends.

## Findo



Findo (freemium; iPhone and iMessage; [findo.com](http://findo.com)) searches for your emails, files, images, and notes in Gmail, Google Drive, Dropbox, Evernote, Outlook, OneDrive, Yahoo Mail, and more. You can find those files without leaving Slack, Facebook Messenger, Telegram or Skype—and when the right item is found, you can immediately share it within your messenger platform of choice.

## Blinq



Blinq (\$1; iPhone and Apple Watch; [hologramdesign.co/blinq](http://hologramdesign.co/blinq)) is billed as “easiest, quickest and most intuitive way to keep track of your finances.” The app makes it easy for you to enter expenses, helps you learn about your spending patterns, and alerts you if you’re about to go above your budget.

## Tinkerblocks



There are a number of apps created in the last year that combine game-play with teaching kids how to code. Tinkerblocks (\$3; [go.macworld.com/tinkerblocks](http://go.macworld.com/tinkerblocks)) is another one. The idea? To have fun while learning the basics about how to create and execute commands, parameters, functions, loops, conditions, types, and bug-fixing.

## Chartistic



Chartistic (free, iPhone only; [go.macworld.com/chartistic](http://go.macworld.com/chartistic)) lets you create and edit interactive bar charts, line charts, area charts, and pie charts for use in presentations, both in the boardroom and the classroom. Once you’ve created the chart, you can export it for use in emails, documents, spreadsheets, and social media. —JOEL MATHIS

# iOS Accessories

This month's roundup of iOS accessories includes a wireless smart thermometer, virtual keys, glucose meter, noise cancelling headphones and solar charger.

BY JOEL MATHIS

## SEN.SE

The ThermoPeanut ([sen.se](#); \$29 MSRP, same price on Amazon) is a “smart wireless thermometer”—place one in every room where you want to monitor the temperature, and the device will relay that info to your phone via Bluetooth. If a room gets too hot or cold, you’ll receive alerts on your phone.



## DARIO

Since previous iterations of this device used the iPhone’s headphone jack to help measure blood sugar, the Dario Glucose Monitoring System for iPhone 7 ([mydario.com](#); \$40 MSRP) is having to adapt. The new pocket-sized glucose meter will now be compatible with the phone’s Lightning jack. It ships in the first quarter of 2017.





## MUJJO

Winter's on the way! That means it's time for this company to unveil its annual Touchscreen Gloves Collection ([mujo.com](http://mujo.com); \$23 to \$93 MSRP), fleece-lined gloves that let you operate your iOS device outside in the freezing air without having to get your hands cold. The gloves come in a number of styles, including leather and wool, and in single- and double-layered varieties.

## BITEMYAPPLE

Solar Paper ([bitemyapple.co](http://bitemyapple.co); \$200 MSRP, \$124.62 on Amazon) is billed as "the world's smallest solar charger for the amount of potential wattage it can generate." The makers say it can recharge your iPhone in 2.5 hours on a sunny day. And the system is expandable; strong magnets mean you can string together a series of Solar Paper panels to generate even more backup power.



# iOS Accessories

## BESOUND

The Thunder ([igg.me/at/thunder-the-earphones](http://igg.me/at/thunder-the-earphones); \$149 MSRP through Indiegogo) noise-cancelling Lightning headphones are popular—the product has quintupled its crowdsourcing goal with two weeks left to go during its fund-raising period. Why? Maybe because it promises “powerful noise cancellation” without using too much power: Just 1 percent of a battery’s reserves per hour, “meaning you can kick back and relax and not worry about battery levels.”



## DOG AND BONE CASES

The Locksmart Mini ([dogandbonecases.com](http://dogandbonecases.com); \$69.95 MSRP) ditches keys and combination codes entirely, relying on your iPhone to unlock access to your precious valuables. Better yet, you can choose to share the virtual keys to your locks with friends and family, or to take them away. The lock is available in black, blue, and red.

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# HANDS-ON: THE MACBOOK PRO'S INNOVATIVE TOUCH BAR WILL GRAB YOU

APPLE'S NEWEST MAC PACKS A STRIP OF iOS-STYLE CONTEXTUAL CONTROLS INTO THE TOUCH BAR. THERE'S ALSO A NEW KEYBOARD AND FOUR THUNDERBOLT 3 PORTS. **BY SUSIE OCHS**





It's thinner, lighter, and smaller all around, but the new MacBook Pro ([go.macworld.com/buymacbookpro](https://go.macworld.com/buymacbookpro)) makes a big impression. The trackpad on the 15-inch version is downright ridiculous—twice as large as the trackpad on the previous generation—but I didn't look down and say, “Holy cow, that is a seriously huge trackpad,” until I'd been using it for a couple of minutes.

Because it's really all about that gorgeous Touch Bar.

Apple doesn't do touchscreen Macs, but the Touch Bar adds a strip of ultra-handly iOS-style contextual controls right where you need them, and the rest of the MacBook Pro got great updates too. After my limited hands-on time, I think it's got the right mix of power, portability, and ports to satisfy users of previous MacBook Pro and MacBook Air models. Let's dive right into my first impressions.

## TOUCH BAR

The Touch Bar, which replaces the row of Fn keys on top of the MacBook Pro's keyboard, enables new functionality like Touch ID to unlock the Mac and make Apple Pay purchases in Safari without needing to

authenticate with an iPhone or Apple Watch. It's made of smooth glass, so it feels great under your fingers, just like the trackpad itself.

The Touch Bar supports Multi-Touch, in case you need to tap or slide on more than one control at once. This would come in handy in some apps, like dJAY Pro, but since the bar isn't really tall enough for common multi-finger gestures like pinch-to-zoom, I was content to poke at it one finger at a time.

I love how you can customize the Touch Bar's default controls. Just pick View → Customize Touch Bar from the Finder menu, and you get a full suite of buttons you can drag right down to the Touch Bar. The

**THE TOUCH BAR** changes based on what you're doing, including predictive controls in some apps.





options are similar to what you see when customizing the toolbar in your Finder windows.

But the coolest part of the Touch Bar is how quickly it changes as you switch apps. I used it for scrolling through a full-screen album in Photos, as well as for scrubbing through the timeline in Final Cut Pro. Both were fast and responsive.

However, when I opened a new Mail message and started typing, the QuickType suggestions shown in the Touch Bar lagged behind my fingers. I had to consciously slow down to be able to see the predictions and

select them from the Touch Bar, so it was faster to just type the entire word with my fingers. Happily, pulling up the scrolling emoji menu in Messages and choosing an emoji from the Touch Bar is a million times faster than pressing Command-Control-Space and using the Characters menu, like I have to do on my MacBook Air today.

The other killer Touch Bar feature might be predictive suggestions in Mail. When you're looking at a list of messages in your Inbox, you'll see a button on the Touch Bar that says Move To Vacations or the name of



**JUST LOOK** at the size of that trackpad. (This is the 15-inch model.)

another folder the app thinks is suitable. Mail seems to be guessing based on context, such as the sender and content of the message, and I can't wait to see how well it does with the volume of email I get every day.

## THE NEW KEYBOARD

The new MacBook Pro models have a low-travel keyboard similar to the 12-inch MacBook, but Apple says it uses a second-generation butterfly mechanism to give the keys a better feel. They don't seem to travel physically further. Apple says it just used slightly different materials for a

different feel under your fingers. No haptics in the keyboard.

The keys feel about the same to me as they did on the MacBook. They don't wiggle back and forth if you happen to strike one off-center, and they make a deep clicking sound when you pound on them. But when I switched back to my trusty 2013 MacBook Air to write this hands-on, my fingers immediately preferred the bouncier mechanism of Apple's old laptop keys. I've never had trouble with the MacBook keyboard, and I'm sure I'll get used to this one too, but I do like the old kind better.



**DON'T EVER**  
leave us,  
audio port.

## PORTS ON BOTH SIDES

If you were worried Apple would ditch the headphone jack on the MacBook Pro, you can exhale now. (After all, Apple did ask its customers a while back if they were using it!) Every MacBook Pro model has a headphone jack on the right-hand edge.

You also get four Thunderbolt 3 ports on the 13-inch and 15-inch models (only two on the lower-end 13-inch MacBook Pro with Function Keys, but we're discussing the Touch Bar models here). Apple put two on each side, and it's kind of cool how all the ports can charge the laptop or connect to Thunderbolt, DisplayPort 1.2, and USB-C devices.

I'm used to having dedicated ports for each IO method, so the flexibility is appreciated, and it's a relief Apple went with four instead of, say, two.

You'll still need adapters for some things, like peripherals that use USB-A or Thunderbolt 2 ports, or an SD card reader, since that slot is gone. But having multiple ports might let you avoid picking up one of the USB-C docks that MacBook owners need if they want to connect more than one device at a time.

## ONLY FIRST IMPRESSIONS

The beautiful Retina screen is unchanged from that of previous generations, and with the new Mac lineup, every notebook Apple sells is now Retina. In our full review we'll dive more deeply into the performance of the updated processors and GPU, as well as Apple's promised 10-hour battery life. But from what I've seen so far, the updated MacBook Pro is going to be worth the wait. ■

# iPHONE 7 PLUS REVIEW: THE DUAL-LENS CAMERA MAKES IT A WINNER



Previously, a Plus-sized iPhone meant a bigger screen and that was about it. With the iPhone 7 Plus, the dual-lens camera is a major selling point.



**BY SUSIE OCHS**



**T**he iPhone 7 Plus ([go.macworld.com/iphone7plus](http://go.macworld.com/iphone7plus)) is the best iPhone money can buy, hands down. Like the iPhone 7, it's not an essential upgrade if you have an iPhone 6s Plus that you're happy with, or you want to hold out for the 2017 iPhone, which will be the 10th anniversary one and, rumor has it, the big switch to OLED ([go.macworld.com/iphone8rumors](http://go.macworld.com/iphone8rumors)). But thanks to the iPhone 7 Plus's beautiful screen, long battery life, and impressive dual-lens camera, it's hard to find fault with it today.

Hard, but not impossible: The 7 Plus has the exact same issues that I complained about in my iPhone 7 review (to review: the new Home button and the missing headphone jack), so I won't repeat myself here. Except, I will say that a couple weeks later, I'm still not used to the fused Home button, with its odd-feeling *ka-thunk* sensation when I tap it, instead of a crisper click of the old Home button.

But the iPhone 7 Plus just has more going for it—the battery lasts longer, and that dual-lens camera delivers impressive photos, with the still-in-beta Portrait mode acting as icing on the cake.

## SO BIG AND SO FAST

The screen is terrific, nice and bright, much easier to see in bright daylight than before. The speakers get suitably loud, making this a totally

**THE JET BLACK** color picks up fingerprints, but it's so pretty I don't even care.

### IPHONE 7 PLUS, 256GB



#### AT A GLANCE

The iPhone 7 Plus's dual-lens camera and long battery life give it the edge over the iPhone 7.

#### PROS

- Dual-lens camera takes great photos.
- Longest battery life of any iPhone.
- Water-resistant.

#### CONS

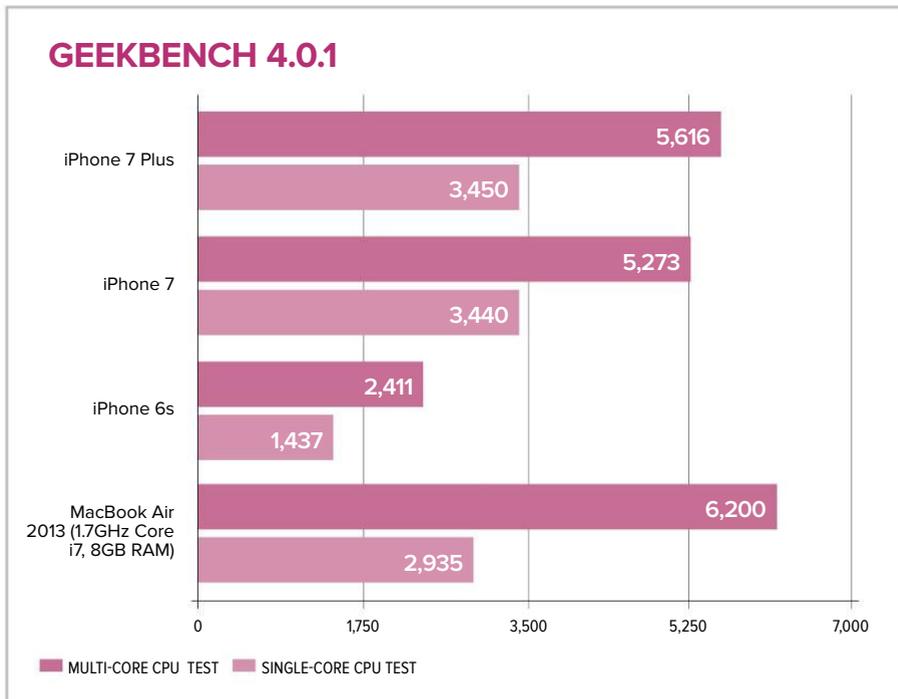
- No headphone jack, can't charge and listen to wired headphones at the same time

#### PRICE

\$969

#### COMPANY

Apple



worthy mini-phablet for watching videos. I didn't like how the speakers sounded when I cranked music from Spotify, but they were fine for listening to podcasts while puttering around the kitchen.

I haven't used a 5.5-inch iPhone on a regular basis before this one, and before the iPhone 7 launch I was very happy with the 4-inch iPhone SE. But now I'm slightly regretting going with the iPhone 7 over the iPhone 7 Plus. I like the smaller size when I'm carrying my iPhone, but

when I'm actually using it, the iPhone 7 Plus is just too sweet. After stretching out with a 5.5-inch screen, I was afraid the iPhone 7 and iPhone SE would seem like kids' toys, but while the SE felt a little cramped by comparison, the iPhone 7 didn't feel tiny compared to the 7 Plus.

Since they both have the A10 Fusion chip, both the iPhone 7 Plus and iPhone 7 clocked similar scores in Geekbench 4's CPU tests, with a slight edge for the 7 Plus. According to Geekbench 4, the 2.34GHz A10

Fusion in the new iPhones can even outperform my 2013 MacBook Air in the single-core test. Everything is fast on the iPhone 7 and 7 Plus, from running powerful image editors like Adobe Lightroom ([go.macworld.com/iphone7rev](http://go.macworld.com/iphone7rev)), to beautifully shaded games like CSR Racing 2 ([go.macworld.com/csrracing2](http://go.macworld.com/csrracing2)), to just installing a slew of updates from the App Store.

## THE CAMERA IS SUPERB

I'm not a camera expert. I have never owned an SLR, and while I have a basic understanding of things like aperture, shutter speed, and focal length, I'm always going to want the camera to do the work for me. I just want to point and shoot and wind up with a great photo. The iPhone 7 Plus gives me really great photos.

Low-light photos are so much better than they used to be, since the Camera app can combine data from both lenses, the optical image stabilization helps keep things steady, and the wide-angle lens's f/1.8 aperture lets in a lot more light than the f/2.2 lens in the iPhone 6s. (The telephoto lens has an f/2.8 aperture.)

The new Portrait mode coming to iOS 10.1 is a great example of what the iPhone 7 Plus's exclusive two-lens camera system can do. Since



this mode is still in beta (both the feature itself, and iOS 10.1, are in beta as of this writing), I didn't factor it into the review score. But the biggest factor in choosing the 7 Plus over the iPhone 7 is the camera, and Portrait mode sells that better than anything.

As with the rest of the Camera app's modes, Portrait aims to make

**NO CAMERA CAN** keep a wiggly kid in focus, but this very amateur snapshot has nice colors and not-too-terrible noise for being lit by a single lamp way across the room.

things simple for the user. When you enable the mode, the view switches to the zoomed-in, 56mm-equivalent, 6.6mm “telephoto” lens, and the camera will attempt to detect your subject, and then if the lighting conditions are right, you’ll see a live preview that keeps your subject sharp while blurring the background with a lovely bokeh effect. A little label pops up on the screen to say Depth Effect so you know you’ve got it, and you’ll get a warning if there isn’t enough light. It works better outdoors—inside, the photos can get noisy if you don’t have plenty of light.

We’ll be posting separately the results of an experiment we did using the iPhone 7 Plus for a fashion shoot with a model, indoors and outdoors. The results were impressive (here’s a sneak peek), but again since this feature is in beta, Portrait mode’s performance doesn’t factor into the score of this review.

The iPhone 7 Plus’s Camera app also has a button above the shutter that toggles between a 1x and 2x view, or can be adjusted to any zoom level from 1x to 10x. You might assume that shooting at 1x uses the wide-angle lens, while switching to 2x will

**PORTRAIT MODE IS** still in beta and didn’t affect the iPhone 7 Plus’s score. But we think it’s gonna be huge.



use the telephoto lens, and going above 2x will use digital zoom. Well, that's not exactly true. It turns out that the Camera app will use the wide-angle lens and apply 2x digital zoom in some situations, if that would produce a better result (less noisy or shaky, or lit better) than using the telephoto lens. Glenn Fleishman dove deep ([go.macworld.com/iph7zoom](http://go.macworld.com/iph7zoom)) into this phenomenon, but I'm happy to let the Camera app make those decisions since all I want is a good photo. Third-party camera apps like Obscura Camera ([go.macworld.com/obscura](http://go.macworld.com/obscura)) and Manual ([go.macworld.com/manualapp](http://go.macworld.com/manualapp)) let advanced shooters have more control, and can even export images in RAW.

## BATTERY LIFE

I have a terrible time getting an iPhone to last all day, especially considering my usage is heaviest in the afternoon and evening. But the iPhone 7 Plus has a huge battery, 2900mAh (11.1 watt-hours) according to iFixit's teardown ([go.macworld.com/ifixitip7plustear](http://go.macworld.com/ifixitip7plustear)), and with savings in iOS 10, it can go a very long time.

I charged the iPhone 7 Plus up to 100 percent, set it to 50 percent brightness and 50 percent volume, and played movies I'd previously downloaded from the iTunes Store to the Videos app until the iPhone reached 50 percent. That took a



whopping 7 hours, 55 minutes on the iPhone 7 Plus, but the iPhone 7 only lagged behind it by a bit, clocking 7 hours, 26 minutes.

Geekbench 3 also has a battery benchmark mode, and I used it to drain each iPhone from 100 to 80 percent. For the iPhone 7, that took 1 hour, 55 minutes, 8 seconds, for a Geekbench score of 1150. Running the same test on the iPhone 7 took 1 hour, 42 min, 11 seconds, for a Geekbench score of 1021. That makes sense since the iPhone 7 Plus's battery is larger than the

**THE LARGER BATTERY** in the iPhone 7 Plus provides more runtime than the iPhone 7, but maybe not as much more as you'd expect.

1960mAh (7.45 watt-hours) battery in the iPhone 7 ([go.macworld.com/ifixitip7tear](http://go.macworld.com/ifixitip7tear)).

So if you need more battery life, the iPhone 7 Plus is the longest-lasting iPhone, but I was still surprised that the iPhone 7 did so well matched up against it. Either way, you'll probably have to charge your new iPhone on more or less the same schedule that you charged your old one.

## THE LITTLE THINGS

Using the iPhone 7 Plus is a series of small delights. For example, while 3D Touch on the iPhone 6s felt more like a show-off trick than a useful feature, with iOS 10, it finally makes sense. Besides the camera, this is what

people ask me to show them on the iPhone 7 Plus—being able to not just peek at emails and messages from your Notification Center, but actually archive an email or reply to a message change, is a time-saver, it's true. But it's also a much more natural gesture-based way to navigate the iPhone 7 Plus's big screen with one hand.

Apple's glossy new jet black color is really nice, and feels more secure in my hand than the aluminum-backed models (rose gold, gold, silver, and matte black). It actually reminds me of my old unapologetically plastic pal the iPhone 5c, and I mean that as a compliment. After a couple weeks of use, I am seeing some very tiny scratches in the finish, mostly near the bottom corners, but I



**IF YOU CAN** bear to cover the iPhone 7 Plus, Apple's \$49 Leather Case is appropriately luxe.

think Apple is being fair to call them “micro-abrasions” because I have to squint at the phone from an inch away to see them.

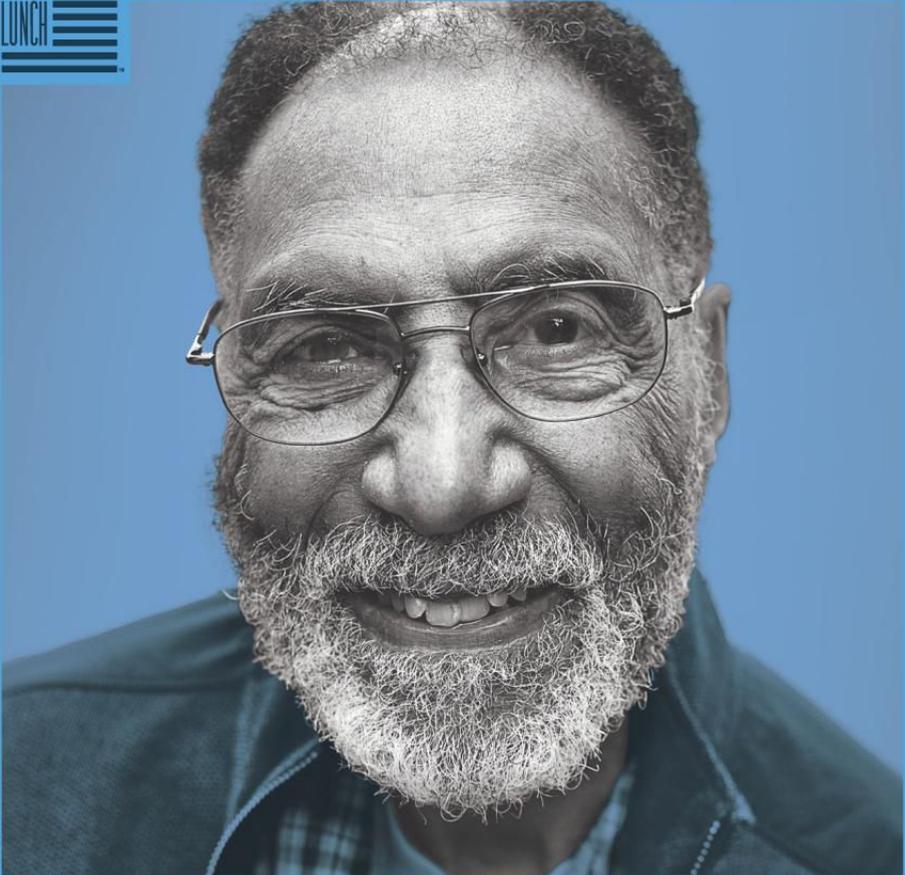
The jet black iPhone looks particularly great without a case, but it does pick up fingerprints and smudges quite easily. (I never kept my trusty Toddy cloth ([go.macworld.com/toddygearcloth](http://go.macworld.com/toddygearcloth)) quite so close at hand—it’s brilliant at wiping away oil smudges rather than just smearing them around.) Apple sent over its \$49 iPhone 7 Plus Leather Case ([go.macworld.com/ip7plusleathercs](http://go.macworld.com/ip7plusleathercs)), which has a very high-end feel. It has metal buttons for the volume and wake controls, which feel satisfyingly clicky to press while still blending into the case perfectly.

## BOTTOM LINE

The iPhone 7 Plus has such a great camera that it’s easy to recommend it over the iPhone 7, and the extra dash of battery life is nice to have too. While it isn’t without its drawbacks, it’s got power, speed, and a shiny new coat. It’s a little mean that Apple doesn’t offer the jet black color at the lowest capacity (32GB) and price, but any of the iPhone 7 Plus models should make you a happy Apple fan. ■



LUNCH 



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## How switching to Macs is paying off for IBM

IBM employees prefer Macs, which is actually saving IBM about \$543 per computer.

BY CAITLIN MCGARRY

Last year, IBM made a bold decision. The company let its employees choose between a Windows PC or a Mac for their own work machines. IBM staffers prefer Macs, so the company bought up 30,000 of them. This year, IBM has 90,000 Macs in use. But Macs are expensive, as we all know, so IBM must be spending a fortune on making the switch...right? Apparently not.

IBM said recently at the Jamf Nation User Conference that it's actually saving money on each Mac: \$273 to \$543 per Mac over four years, compared to a Windows PC over the same time period. And no, that's not because Microsoft is charging more. Fletcher Previn, IBM's vice president of workplace as a service (yeah, that's a real title), said Microsoft is giving IBM its best pricing ever. But Macs are still cheaper over their lifetime, and using them results in fewer service calls.

This is just one company's data, but IBM expects to have more than 100,000 Macs in use by the end of this year, so that's a pretty significant sample size.

The company is rolling out 1,300 Macs a week, and only five IT administrators are supporting all of those computers.

This shift is huge for Apple, which

has struggled to find footing in enterprise computing. In 2014, the company inked a deal with IBM to develop mobile-first enterprise apps for a variety of industries, a move that has been incredibly successful. The alliance may seem like a strange one to those who remember the early PC era when IBM and Apple were rivals, but IBM doesn't make

**IN 2014, THE COMPANY INKED A DEAL WITH IBM TO DEVELOP MOBILE-FIRST ENTERPRISE APPS FOR A VARIETY OF INDUSTRIES, A MOVE THAT HAS BEEN INCREDIBLY SUCCESSFUL.**

Windows PCs anymore and has bolstered Apple's enterprise presence. Clearly that move is paying off for IBM, too. ■



## PART 1

# How to set up the Calendar Service in macOS Sierra Server

macOS Sierra's Calendar support has robust features that may suit your needs.

BY JEFFERY BATTERSBY

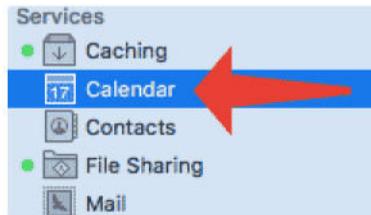
**S**erver's calendar service is one of my favorite features in the Server app and the one most likely to fly under your radar. This two-part series will help you set it up. When you think about hosted calendar services, your mind likely drifts to Google, iCloud, or Exchange. But the Server app's calendar service offers more features than you may be aware of and gives you the benefit of keeping your business' private calendar info secure and within the walls of your company.

In addition to the usual calendar fare, Server's Calendar service lets you manage resource schedules (say, conference rooms and projectors), delegate calendar responsibilities to surrogates, offers automatic schedule checking for all invited attendees, including resources, allows file attachments, private event annotations, and uses Apple's push notification services to update events. In short, it's a pretty robust hosted calendar that's likely to fit most of your needs.

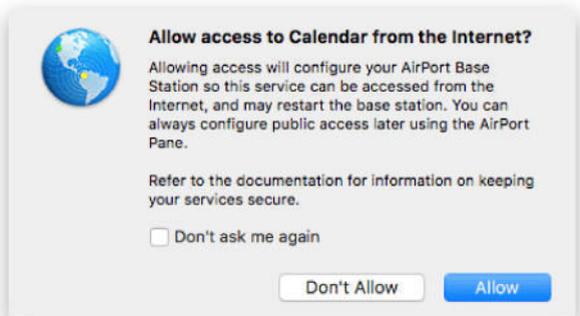
## TURN ON THE CALENDAR SERVICE

As is the case with so many of Server's features, the Calendar app is simple to get up and running.

1. Select the Calendar service in the sidebar of the Server app.
2. Turn the service on.
3. If you're using an Apple AirPort in your network and you set Server up to configure your AirPort to allow access to your server's services from



the Internet, you may see a message asking if you want Server to configure your AirPort. If you want access to your hosted calendar outside your network, click Allow. Otherwise click Don't Allow.



That's all that's necessary to get the Calendar service started, so let's see if it works.

## CONNECT TO YOUR CALENDAR SERVICE

Before you set up the calendar, you need to make a determination whether you want to access your calendar only from inside your private network or from anywhere on the Internet.

To access your server and calendar data from the Internet, you need to know your external IP address or fully qualified domain name (FQDN). Inside your network, if you're on the same subnet as your server, you don't.

To find your external IP address:

1. Select your server in the sidebar of the Server app.
2. Click the Overview tab.
3. Locate the Internet section.
4. Make note of the IP address your server says services are reachable at.



To connect to your calendar:

1. Open System Preferences.
2. Select the Internet Accounts preference.
3. Click the + button at the bottom of the Internet Accounts preference.
4. Scroll down to the bottom of the list of pre-configured services and

click Add Other Account.

5. Choose Server Account.”
6. Select your server from the list of available servers or click Other if you don't see your server in the list or if you want to access your server over the Internet.



7. Enter a user name and password (you will also need to add an IP address or FQDN if you selected Other).



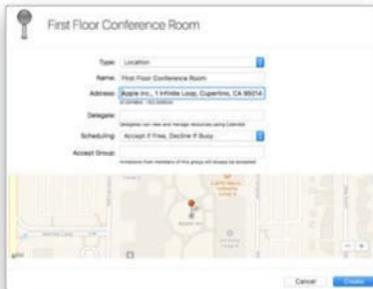
8. Select Calendars and Reminders from the list of your server's services.
9. Click Done.
10. Open the Calendar app and locate your server's calendar in the list of calendars.

Now that you're connected to your calendar, let's create some resources and create an event.

## MANAGING RESOURCES

To create calendar resources:

1. Select the Calendar service in the sidebar of the Server app.
2. Click the + button below the Locations And Resources window.
3. Choose Location from the Type menu.
4. Give your room a name.
5. Add an address and note that a map of the location appears.
6. Leave Delegate blank. (We'll talk about delegates in part 2.)
7. Select Accept If Free, Decline If Busy in the Scheduling field.
8. Leave Accept Group blank.
9. When you've entered all your information, click Create.

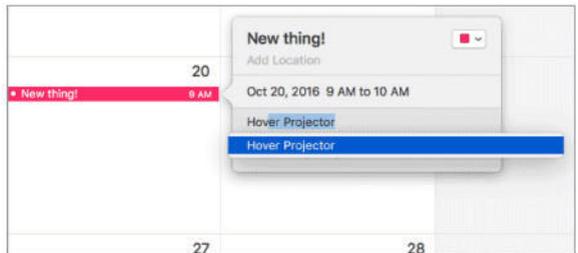


Next, create a new resource following the previous steps, but note that you don't need a location for a resource.

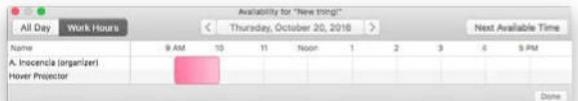
## CREATE AN EVENT WITH A RESOURCE

To create an event with your newly created resources:

1. Open the Calendar app.
2. Select your server's calendar in the sidebar of the Calendar app.
3. Double-click a calendar date to create an event.
4. Give the event a name.
5. Click the Add Invitees field.
6. Begin typing the name of one of your two resources and a list should appear with the name of your resource.



7. Click the Check Availability button and confirm that you and the projector are available on the time and date you selected.



8. Click Done.
9. Click the Add Location field underneath your event name.
10. Begin typing the name of the location you created.
11. Select your room from the list.
12. When you've completed entering all your information, click Send.



As soon as you click Send, your resource and room will accept your invite and be made unavailable to other users and your schedule will be blocked as unavailable for anyone who wants to schedule a meeting with you.

In part 2, we'll spend more time with the Calendar service and look at how to delegate other users to manage your calendar and how to handle more complicated resource scheduling. ■



For more safety tips visit [SmokeyBear.com](http://SmokeyBear.com)

ONLY YOU CAN PREVENT WILDFIRES.



## PART 2

# How to use the advanced Calendar Service features in macOS Sierra Server

Make adjustments to get the most out of macOS Server's Calendar Service.

BY JEFFERY BATTERSBY



In the first part of this series, we took an initial look at setting up the Calendar service in macOS Server. Now we'll look at some of the advanced features available to you within the Calendar service.

## MANAGING RESOURCE ACCESS

The default scheduling behavior for resources is Accept If Free, Decline If Busy. Which makes perfect sense in most situations. But in some cases you may want to make someone responsible for managing access to resources, particularly if you have someone or some group responsible for the devices and rooms used for meetings.

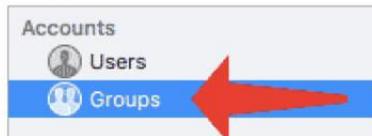
In order to use this feature effectively you'll need to have Open Directory set up on your server, which is something we covered in our Primer on Profile Manager ([go. macworld.com/profilemanager](http://go.macworld.com/profilemanager)) a few months ago. If you don't already have Open Directory set up on your server, you'll want to head over to that primer to learn how to get Open Directory going.

Once Open Directory is set up you'll want to create a group to manage your AV resources. As to the "why" for a group? Putting users into a group for managing resources makes it easier to manage who will be notified when resource requests are made and will make sure you're

not the only one managing resource requests while you're supposed to be vacationing in Barbados.

To set up the AV Room group:

1. Select Groups in the sidebar of



the Server app.

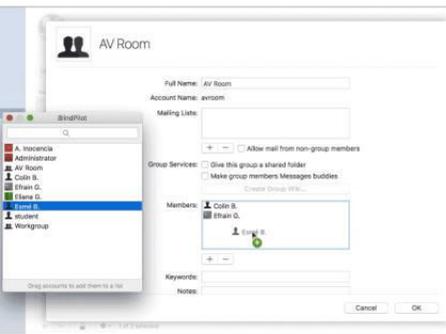
2. Select Local Network Groups from the Groups menu.
3. Verify that Local Network Groups is unlocked for editing; if not, click the lock at the bottom of the Groups window and authenticate as



the Directory Administrator.

4. Click the + button.
5. Create a new group named AV Room and click the OK button.
6. Double-click the AV Room group to edit it.
7. Open the Accounts Browser by pressing Command-B or by selecting Show Accounts Browser from the Server app's Window menu.
8. Drag any accounts you want to

be a part of the AV Room group from the Accounts Browser to the AV Room's Members window. You should not make the user you used to create an event (in part 1) a member of this group.



9. Click OK.

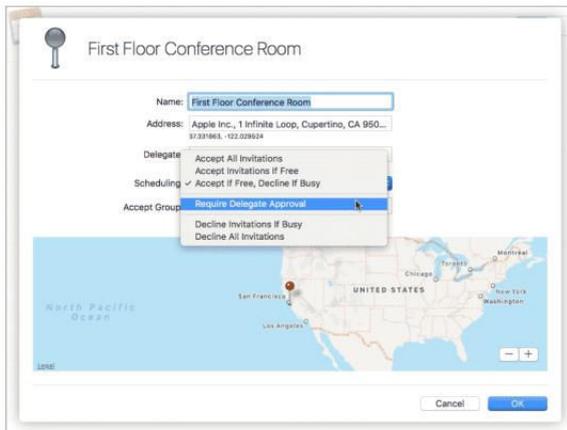
Now that you have the AV Room group set up, let's make them responsible for managing some resources.

## DELEGATING RESOURCE RESPONSIBILITIES TO A GROUP

Select the Calendar service in the sidebar of the Server app and double-click one of the resources you created in part 1. The Delegate field should be blank and the Scheduling field should be set to Accept if Free, Decline If Busy.

1. Click in the Delegate field and begin typing the name of the AV Group.
2. Select the AV Group from the list

of names that appears. Note: You can only add one group of individual users to this list.



3. Click the Scheduling menu and select Require Delegate Approval from the menu.
4. Click OK.

## ADD A CALENDAR FOR YOUR DELEGATE AND SCHEDULE AN EVENT

Before you create an event with your newly delegated resource, you'll need to add a calendar for one of the delegates to your Mac. Follow the steps in part 1 of this series to connect a new account to the Calendar service. Once you've added the account:

1. Open the Calendar app.
2. Open the Calendar menu and select Preferences.
3. Click the Accounts tab.

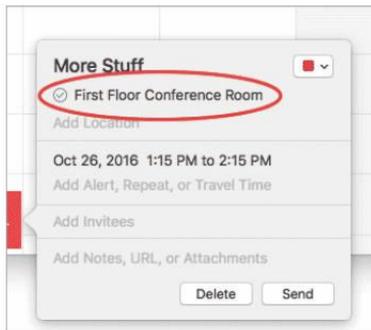
4. Select your delegate's in the list of accounts.
5. Click the account's Delegation tab.
6. Put checks in the box next to each of the resources you want to see in your calendar.
7. Close the Calendar preference.



Once you've added the second account and made the delegated resources visible, create a new calendar event using your updated resource.

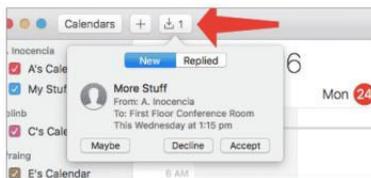
1. Open the Calendar app.
2. Create a new event using the calendar for a user who is not one of your delegates.
3. If your updated resource was a location, add that location in the location field.
4. If your updated resource was a physical resource such as a projector or iPad cart, add that resource as an Invitee.
5. Click Send.

After a few minutes you should



receive a push message in your delegate's calendar requesting use of the resource.

1. Click the schedule notification at



the top of the Calendar app.

2. Click the Accept button for the resource request.

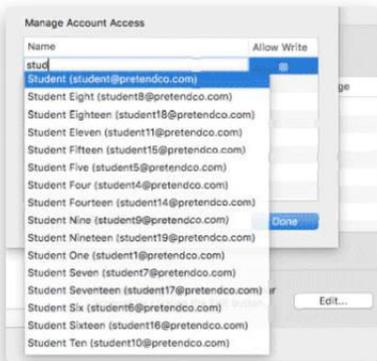
Once you accept the request, all invitees for this event will see that the resource is now scheduled for use at your event.

### BONUS DELEGATION

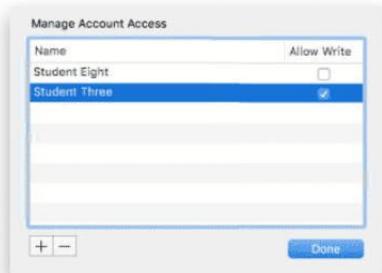
In addition to creating delegates for resources, you can also allow others to view and manage your calendar.

1. Open the Calendar app.
2. Click the Calendar menu.
3. Click Preferences.

4. Select the Accounts tab.
5. Select the account you want to delegate access for.
6. Click the Delegation tab.
7. Click the Edit button.
8. Click the + button.



9. Begin typing the name of an Open Directory user you've created that you want to have access to your calendar.



10. By default any user you add will have read access to your calendar, put a check in the Allow Write checkbox for anyone you want to be able to make changes to your calendar.

As was the case with resources, every user you give access to your calendar will need to open their Calendar preferences, click the delegation tab, and put a check in the Show box in order to see your calendar. ■



# How to bring back a physical Escape key on the new MacBook Pro with Touch Bar

No esc key? No problem. Just reassign its functionality to another key.

BY ROMAN LOYOLA

Apple showcased its new MacBook Pro recently and demonstrated the new Touch Bar, an OLED touchbar across the top of the keyboard that replaces the function keys. The Touch Bar can be customized to suit the app that your Mac is currently running. The problem is that you may not have instant access to one of the most important keys on your Mac: The Escape (esc) key.

The esc key isn't completely gone. If the Touch Bar is in another mode, you can hold down the fn key on the lower left of the keyboard. That will make the function keys appear on the Touch Bar, and that includes an esc key.

Maybe that's not good enough for you. Maybe you want a physical esc key you can access instantly. What you want to do is remap the Escape key to another key on your Mac. Here's how.

1. Go to *Apple menu* → *System Preferences*, and click on *Keyboard*.
2. Click the *Keyboard* tab if it's not active, and then click the *Modifier Keys* button on the lower right.
3. In the pop-up window that appears, select your keyboard from the "Select keyboard" pop-up menu at the top.
4. You'll see a list of four keys: *Caps Lock*, *Control*, *Option*, and *Command*. You can reassign one of those keys to act as the *Escape* key. You may not want to select the *Command* key, since it's frequently



used for keyboard shortcuts. You may not want to use *Control* or *Option*, either, for the same reason. In my example, I'm reassigning the *Caps Lock* key to be my new *Escape* key.

5. Pick a key you want to reassign, then click on the pop-up menu to the right of that key, *Select Escape*.
6. Click OK. You can also quit System Preferences. ■



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## Adobe Photoshop Elements 15 review: Image editor boosts its photo-manipulation features

Brand-new guided edits make changing facial features, creating text from images, and making multi-textured collages a snap.

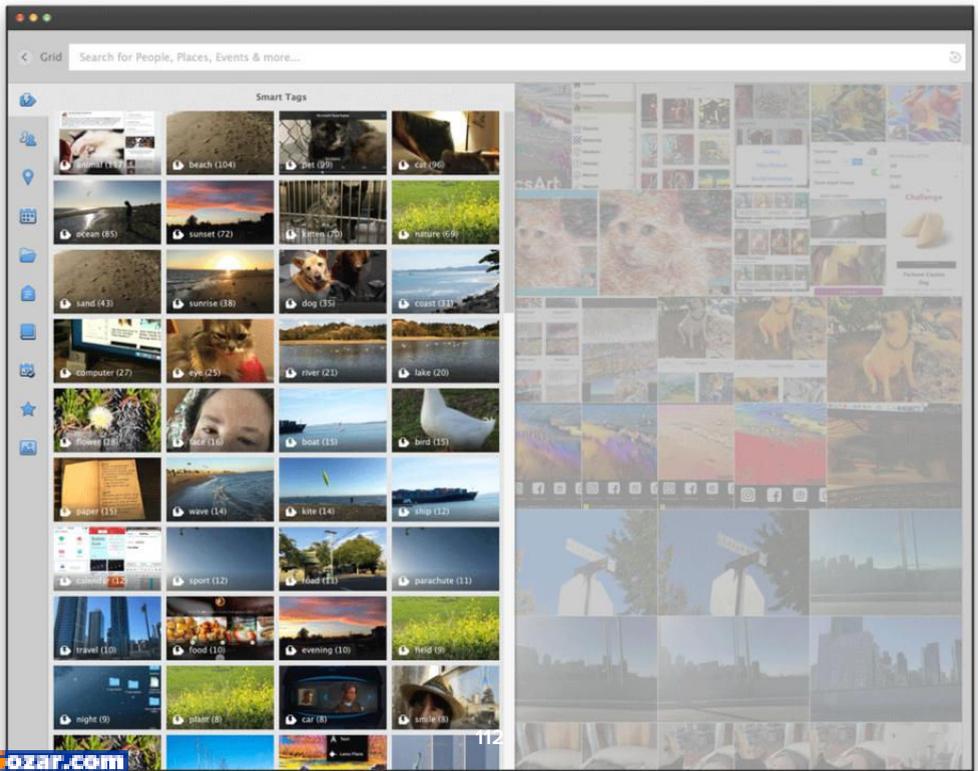
BY JACKIE DOVE

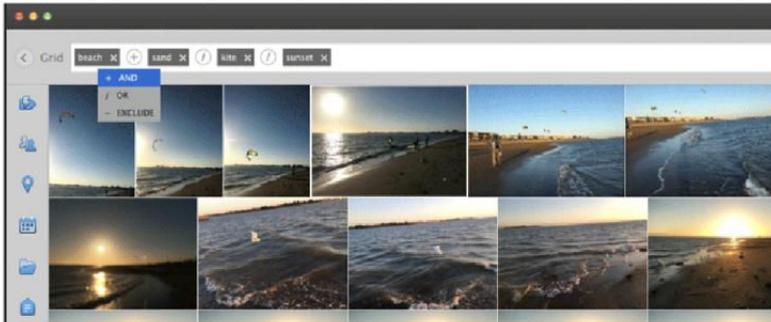
As smartphone cameras advance, offering features that rival and sometimes exceed the point-and-shoots of old, hobbyist interest in photography has surged, not only for documenting friends and family, but for recording a critical world view—similar to classic street or landscape photography. When Apple posts billboards of scenes shot by amateurs and pros using their iPhone, it's not hard to see where the inspiration comes from.

For those who want more visual tricks than Apple Photos offers (especially for composition and special effects) they turn to Adobe Photoshop Elements

([go.macworld.com/elementsapp](http://go.macworld.com/elementsapp)), an app designed for consumers who seek an easy way to achieve sophisticated special effects. Elements, now in its

**PHOTOSHOP ELEMENTS ORGANIZER** Smart Tag and visual search interface.





**TYPE IN OR** use Smart Tags to combine or exclude keywords in your search.

fifteenth iteration, is no Photoshop ([go.macworld.com/photoshopcc](http://go.macworld.com/photoshopcc)), but a good number of its advanced features are derived from the company's flagship app and namesake.

Adobe is wise enough not to mess too much with the basic formula and general interface of this app, preferring to enhance and add to its features. With version 15, the updated Organizer companion rocks brand-new search capabilities and batch processing, while a new crop of guided edits refresh the main editing package.

## ADOBE ELEMENTS 15 ORGANIZER

The Adobe Elements Organizer, an analog to Photoshop's Bridge, acts like a mini digital asset management system, keeping track of all photos and videos to make them accessible to the two main Elements apps, Photoshop Elements and Premiere Elements. Aside from import/export

and organizational functions like ratings and tags, the Organizer features face recognition, geo-tagging, and built-in maps. The Organizer is also the place for basic fixes like rotation and auto-correction. In version 15, it does a lot more.

The Organizer now has more intelligent capabilities, like its new Smart Tags feature. From the search interface you can see exactly what tags the app has placed on your images. Google Photos, Flickr, and Apple Photos already use artificial intelligence to automatically determine content for tagging photos. Adobe says that deep learning algorithms were used to develop the Smart Tags feature, but that there is no on-going AI technology running in the Organizer.

You can use the app's enhanced search functionality to quickly scroll by Smart Tags, People, Places, Date, Folders, Keywords, Albums, Ratings, and Media Types, whose icons run

down the left side of the window. You can choose from the icon or just type in search criteria in the box at the top of the window.

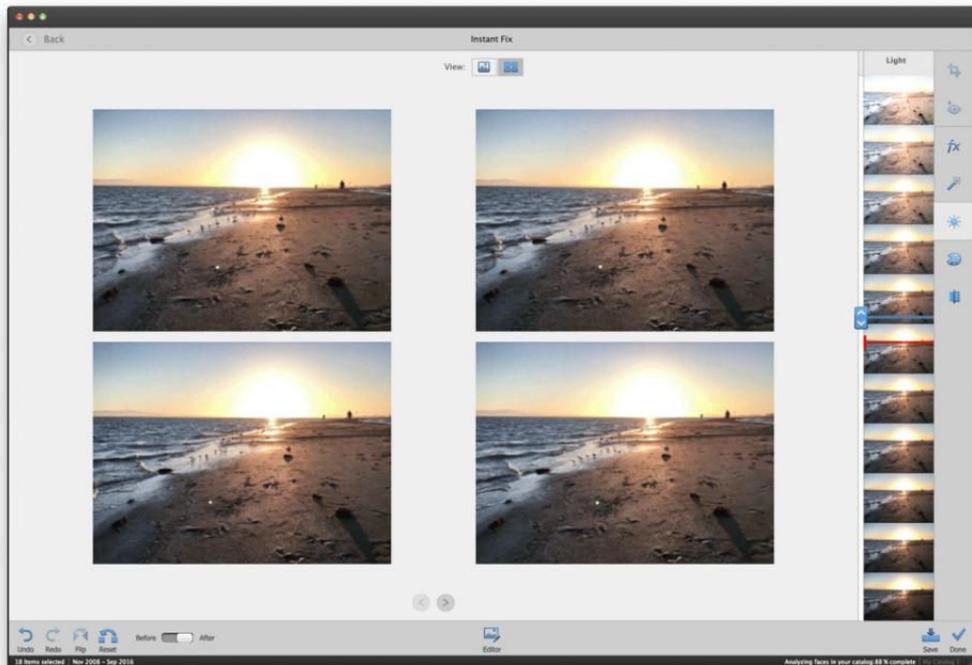
You can use the And or Or command to narrow down your search from thousands of images, video, audio, and projects to find the item you want. Note that each smart tag search builds on the previous one, so make sure the text box at the top reflects only your current search.

The Organizer's new Instant Fix update now lets you batch-correct

photos imported into the app. Just group together your chosen shots, and the new interface offers a set of adjustable sliders to fix them all simultaneously for clarity, color, light, brand-new special effects, and more.

## PHOTOSHOP ELEMENTS EDITOR

Adobe's famous Quick, Guided, and Expert editing modules lie at the heart of the Photoshop Elements Editor, making it the go-to app for amateurs seeking a more sophisticated but



**NEW BATCH PROCESSING** in the Organizer.

accessible alternative to Apple Photos. This new version debuts five new guided edits to perform complex tasks via step-by-step instructions. In this version, however, some were better than others.

### Picture text

While it can be a fairly straightforward task to accomplish that beloved classical postcard effect of filling in lettering with a landscape or other images, you need the proper tools and know-how. Elements' new Photo Text guided edit makes it drop dead simple to achieve. The feature lets you choose from the fonts within your system and even lets you add an embossed look and drop shadows for a pro finish.

Just choose the Type tool and start typing. You can select and cycle through all the selections to help you decide. After you choose your font, you can enlarge, fit, and apply some simple effects. Occasionally, this feature had glitchy performance; I'd choose a font and start typing without it registering any letters on the canvas. In that case, I cancelled and started over to achieve the advertised results.

### Art transformation

Creating art from photos is swiftly becoming a worldwide phenomenon.

**PICK FROM YOUR** own font collection; fat ones work best for stuffing in pictures.



Photoshop Elements' new Painterly module offers a nod to that by letting you add a canvas background or watercolor brush strokes to your photos. There are only five brush styles, but you can change their size and background color to alter the look. The module is aided by a minimal number of textures and effects.

I found this effect a little half-baked. It's understandable that

**PUT A PHOTO** inside your text for that old-time postcard look, or maybe a Springsteen album cover.



**ORIGINAL PHOTO ART:** Mask your photo, use textured brushes to reveal parts, layer texture in the background, and top off with a filter.



**THREE SPECIAL EFFECTS** in one.

Adobe wants to keep the tool simple, but in the future, I'd like to see more enhancements with additional brush shapes and textures as well as better ways to blend them.

### Multiple effects

The new Effects Collage guided edit allows you to construct an artistic presentation by carving up a single photo into several sectors, automati-



cally adding a different special effect to each one. It's an intriguing idea, but not every photo will lend itself to the limited number of effects combinations offered.

It would be nice if you could adjust the borders yourself, though there were quite a number of selections to choose from in each preset. It would be great to choose which effects go where rather than just having to use the built-in template. But that's a minor quibble with this cool feature, which dresses up mundane pictures in a pleasing way.

I also noted that this feature caused the fans on my Mac to whirl, and that the application of the effects was not instantaneous.

## Camera, action

Say you don't know how or were unable to catch a cool motion shot?

Or maybe the scene should have had more action than it really did? The new Speed Pan guided edit adds a motion blur behind your subject to create a feeling of movement. Just select the subject and let the software do the rest.

## Original frames

Photoshop Elements always shipped with many assets, including picture frames for scrapbookers and blog posters. Version 15 gives you Frame Creator, a new way to create your own custom frames instead of having to choose the app's pre-made ones. The idea is to give users headroom to expand the capabilities of the software without having to use the built-in artwork. These new frames can be saved in the app's frame format and used with any photo, plus

## **A NATIONAL PARK**

Service horse carries a ranger through Central Park.

you can share them with friends.

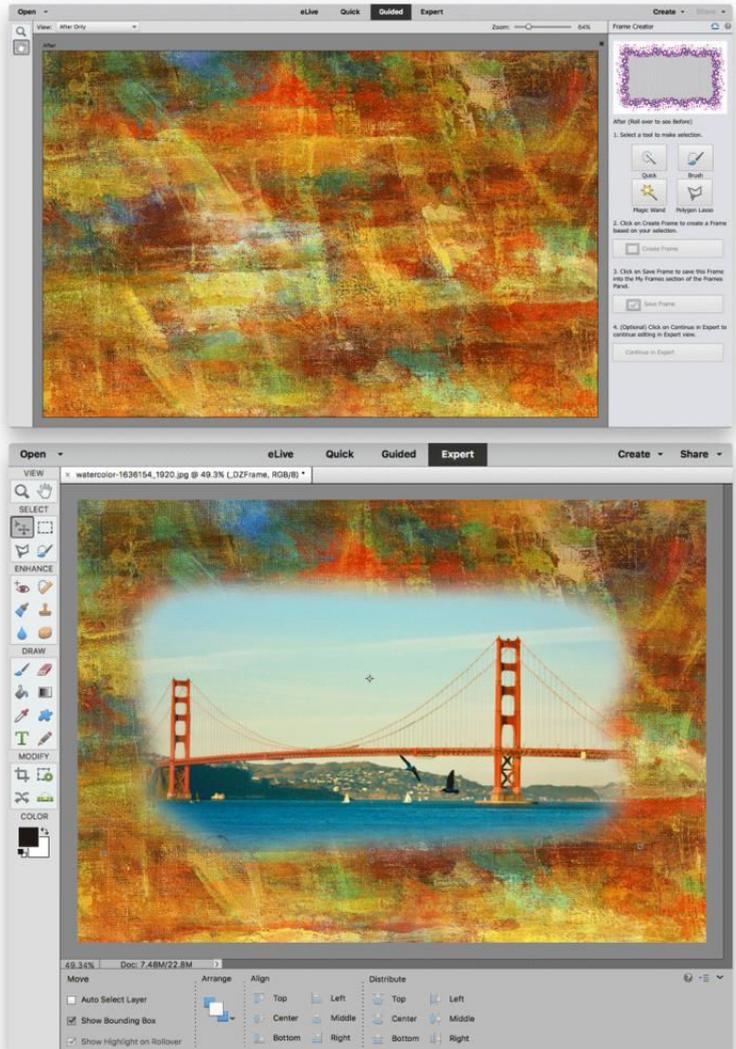
I found this to be one of the least intuitive guided edits. Despite the instructions accompanying each frame were hard to visualize and involved too much experimentation for a reasonably quick result. It would have been easier had Adobe included some shapes in this module with ways to tweak the edges instead of depending on user sleight of hand.

## ATTITUDE ADJUSTMENT

Photoshop Elements' new Adjust Facial Features tech first originated in Photoshop Fix, and then migrated to Photoshop CC as the Face Aware Liquefy feature. Making faces look friendlier has come into vogue for everything from social media portraits to group shots and selfies. While I'm not

a huge fan of enhancing people's faces, some photos do benefit from that slight transformation of a neutral

**WHY USE BUILT-IN** frames when you can create and share your own unique ones?



expression into a smile. But that's not all you can do.

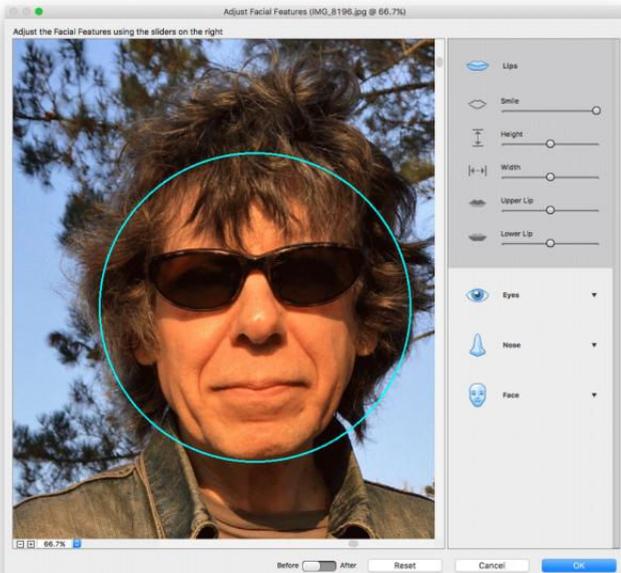
You may want to correct a squint that goes with that frown, or otherwise make slight cosmetic changes to lips, nose, and even the shape of the face. But don't go crazy, because applying these effects can distort the natural looks of your subject.

While the defining blue circle does not move and you can't resize it—and on at least one image I tried—it cut right in the middle of the face, enlarging the image helps to rectify that issue. Also it would be helpful if each eye could be adjusted separately, as squints (and faces) are not necessarily symmetrical.

## BETTER FILTERING

Filters are a great way to try on new looks for special or not-so-hot photos, and an updated Filter Gallery not only lets you choose a cool filter but also fine-tune the details. You can easily try out each filter by clicking it, where it will apply directly onto the open photo, and then use individual controls

**TOP:** Neutral expression.  
**BOTTOM:** Smiling face looks pretty natural, when nothing but a smile will do.



to tweak. While the main filter was applied in real time, the advanced filter sometimes appeared in a small preview box that was harder to see.

## BOTTOM LINE

Adobe Photoshop Elements 15 is a mature product that gets new and enhanced features on a yearly basis while keeping an elaborate and engaging interface consistent and easy to use. If you are a photo enthusiast who seeks special effects goodness without the learning curve, Photoshop Elements is the ticket.

While I found at least two of the new guided edits less than compelling, improvements to the Organizer were uniformly useful.

For the very most part, Photoshop Elements 15 performed well without lag time on most operations, but occasionally I encountered glitches or intermittent buggy behavior. Adobe says that it recommends Elements for macOS Sierra, and despite a crash here and there, the app functioned as expected.

You can purchase Photoshop Elements together with Premiere



**MORE AND BETTER** filters.

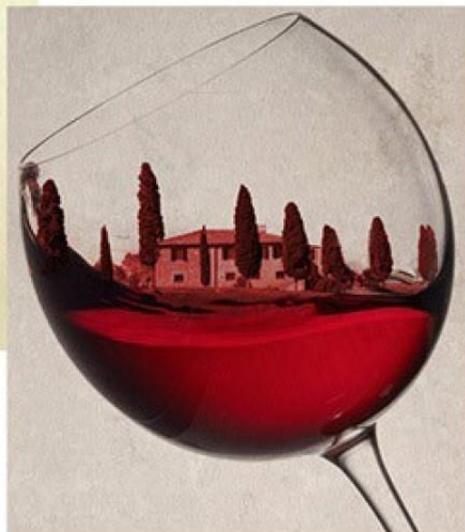
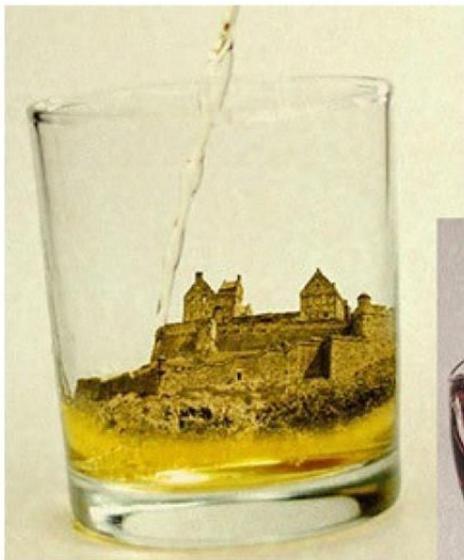
Elements, its video-editing companion, for \$150 ([go.macworld.com/elementsapp](http://go.macworld.com/elementsapp)), or buy it alone for \$100 ([go.macworld.com/photo-shopcc](http://go.macworld.com/photo-shopcc)). A free 30-day trial version is available. If you have version 14, and the new guided edits are not compelling for you, it would be an easy call to wait it out until next year to

pay for an update. The upgrade policy is always the same: Any user with a previous version can upgrade for \$80, or \$120 for the bundle. If the new guided edits are something you will use frequently, or you have not upgraded for several iterations, you will be happy enough with the new version to lay down some cash. ■

# How to use Photoshop Elements to combine images like a pro

Learn how to use Photoshop Elements to combine photos to create a cool effect.

BY LESA SNIDER





One of the most exciting projects you can tackle in image editing software that supports layering—Adobe Photoshop, Photoshop Elements, Pixelmator, etc.—is to combine images in interesting ways.

Whether you're crafting a surreal piece of art or swapping heads, the process is similar in each program. In this column, you'll learn how to use Photoshop Elements to combine a photo of an Italian villa and a glass of red wine in order to create a version of Italy you can drink.

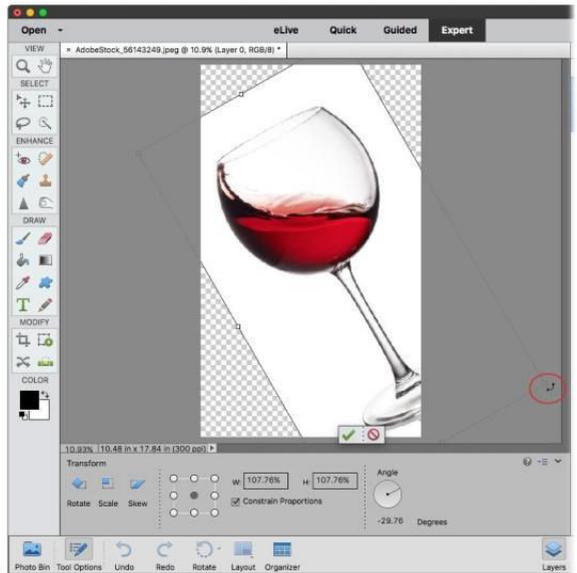
## COMBINE THE IMAGES INTO A SINGLE DOCUMENT, ROTATE AND RESIZE

1. Fire up the Elements Editor and click the Expert button at the top of the workspace.

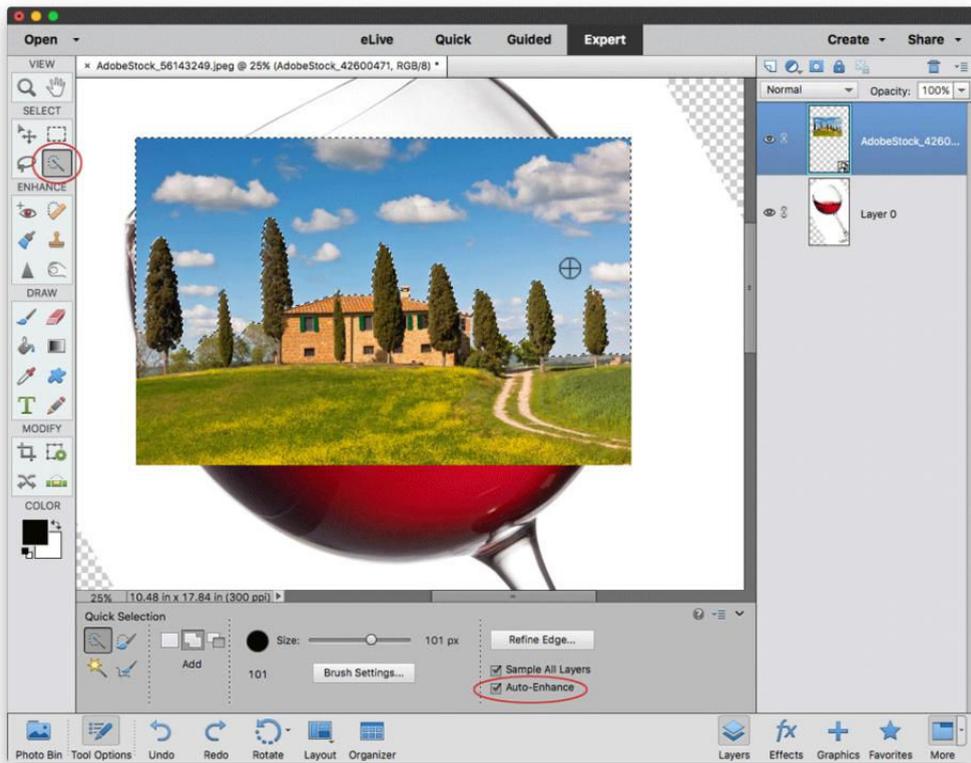
2. Choose File → Open and locate the image you want to base the composite on, such as the wine glass shown here.

3. Summon the Layers panel by clicking the Layers button at the bottom of the workspace.

4. If the image needs rotating, choose Image → Transform → Free Transform. Point your cursor near one of the corner handles and when it turns into a curved arrow (circled), drag to rotate the image to your liking. To reposition the image, click and drag inside the box. When you're finished, click the green checkmark beneath the image to accept the transformation (or press the Return key on your keyboard).



5. Add another image to the document by choosing File → Place. Navigate to where the other image lives on your hard drive and click Place.



6. When the image opens, Photoshop Elements surrounds it with resizing handles. If you need to resize it, peek in the Tool Options panel and make sure Constrain Proportions is turned on, and then drag any corner handle to resize the image. Drag within the box to reposition the image if necessary. Click the green checkmark beneath the image when you're done.

## MASK AND ADJUST COLOR

To hide a portion of an image you can use a layer mask. In this example, we'll hide the sky in the villa image. Sometimes it's easier to select what you don't want and then invert the selection in order to select what you do want.

1. With the proper layer active, grab the Quick Selection tool from the Toolbox (circled).
2. In the Tool Options panel, adjust

brush size and turn on Auto-Enhance (also circled).

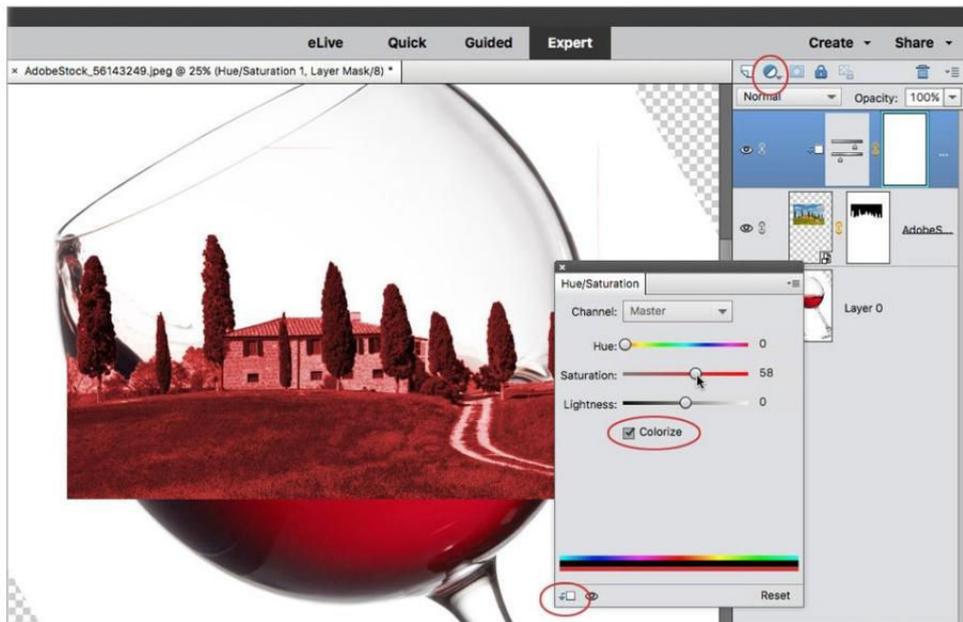
3. Mouse over to the image and click, or click and drag, across the area you want to hide (the sky). The size of the area Elements selects is directly related to your brush size. If you select too much, Option-drag across that area to subtract it from the selection.

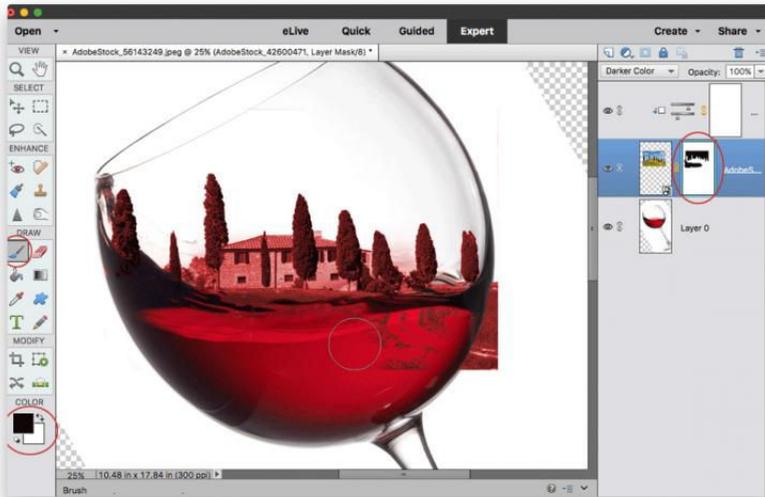
4. Flip-flop the selection by choosing Select → Inverse and then add a layer mask by clicking the circle-within-a-square icon at the top of your Layers panel. When you do, Elements hides the selected area.

5. To adjust the color of one layer

so it looks more like the other layer, click the half-black/half-white icon at the top of your Layers panel (circled) and choose Hue/Saturation. In the panel that opens, turn on Colorize (also circled) and then adjust the Hue slider to your liking. You can also use the Saturation slider to adjust color intensity. To restrict the color change to one layer down, click the icon at the bottom left of the panel (it's circled, too). Now the color change only affects the villa layer.

You can also use layer blend modes to control how colors on each layer blend or cancel each other out. To make as much of the grassy





foreground disappear as possible, activate the villa layer and from the menu at the top of the Layers panel, choose a different blend mode. Darker Color was used here as it looks at the colors on all layers and keeps only the darkest ones; it doesn't blend any colors together.

Since the wine is darker than most of the foreground, a chunk of it disappears but that's easy to fix.

1. Click the mask you created earlier (circled) and activate the Brush tool in the Draw section of the Toolbox.

2. Take a peek at the color chips at the bottom of the Toolbox (also circled) and press D to reset them to the default values of black and white, and then press the X key to flip-flop them so that black is on top.

3. In the Tool Options panel, pick a soft-edge brush from the Brush menu, adjust brush size, and then set opacity to 100 percent. Mouse over to the image and brush across the areas of the image that you want to hide. If you mess up and hide too much, press the X key to flip-flop your color chips so that white is on top and then brush back across that area. Remember, in the realm of the layer masks, painting with black conceals and white reveals.

## ADD TEXTURE

Texture is a great way to make multiple images look like they go together, and Elements has a slew of textures built into the program.

1. To access them, click the Graphics button at the bottom of the workspace

and scroll down until you find one you like (Oh So Dusty was used here). Single-click a thumbnail to download and add it to your document.

2. Click the Layers button at the bottom of the workspace to reopen your Layers panel. Locate the texture you added and then drag it to the top of your layer stack.

3. Use the menu at the top of the Layers panel to change the texture layer's blend mode. If the texture seems too dark, ensure that layer is active and then adjust the Opacity setting at the top of the Layer panel. In this example, doing so reveals a couple of empty corners in the document created by rotating the image earlier. To fix that, click the half-black/half-white circle at the top of the Layers panel and choose Solid Color. In the Color Picker that opens, pick white and then click OK. Drag the fill layer to



the very bottom of your layer stack.

If you're happy with the composition, great. If not, continue adjusting color by double-clicking the Hue/Saturation adjustment layer's thumbnail to reopen the Hue/Saturation panel and/or experimenting with different blend modes for each layer.

The final piece is above, along with the Layers panel.

As you can see, compositing takes time but the results can be well worth the effort. ■

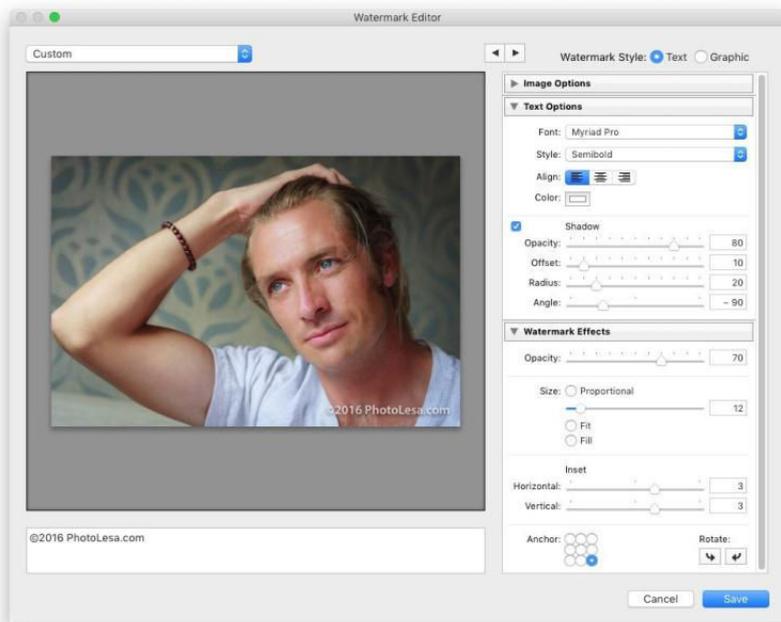


# How to watermark multiple photos in Lightroom

Protect your photos and promote your services at the same time.

BY LESA SNIDER

**W**atermarking your photos is a fantastic branding opportunity. It can also deter photo theft, and including your URL in the watermark ensures anyone who sees the image online can easily find you and book a session.



If you use Adobe Lightroom, you can create graphic or text-based watermarks quickly and easily, even though in Photoshop it takes far more effort. In this column, you will learn how to make a simple text-based watermark in Lightroom and then apply it using the Export command.

## CREATING A WATERMARK

To create a watermark, choose Lightroom → Edit Watermarks. In the resulting dialog box, turn on Text. In the field below the image, enter some text and be sure to include your URL. To copyright the photo, add a copyright symbol by pressing Option-G and then enter the year

you took the photo followed by your URL.

Next, use the settings in the Text Options panel to format the text (you don't even have to highlight it first). Turn on Shadow so the watermark can still be read if it lands atop a white background.

In the Watermark Effects panel, set Opacity to around 70. Choose Proportional in the Size section and use the slider to pick a size (say, 12). The Proportional option instructs Lightroom to resize the watermark so it looks the same no matter what dimensions you export the photo at.

Scoot the watermark away from the edges of the photo by entering 3 into the Horizontal and Vertical fields in the Inset section, and then use the Anchor icon to position the watermark wherever you want. If you'd like, use the Rotate buttons to swing the watermark around so it runs up the side of your photo.

Click Save and in the resulting dialog box, enter a descriptive name, such as **2016 photolesa .com 12pt BR** and click Create. From this point forward, your watermark preset is available in the Slideshow, Print, and Web modules, as well as the Export dialog box, which is discussed next.

Here the watermark name includes point size and location—*BR* for "bottom right."



## EXPORTING PHOTOS

When you use the Export command, Lightroom generates a copy of the photo(s) with all your edits intact. You can use it to rename, resize, change file format (say, from raw to JPEG), sharpen, and add a watermark to photos en masse. To do that, select several thumbnails by Shift- or Command-clicking them and then choose File → Export or, if you're in the Library module, click the Export button at lower left.

In the dialog box that opens, expand the Export Location section of the dialog by clicking its title bar and then choose where you want the exported photos to go. Turn off Add To This Catalog to keep Lightroom from importing the exported copies into your catalog (the master file is already in your catalog, from which you can output other copies). Set the Existing Files menu to Ask What To Do.

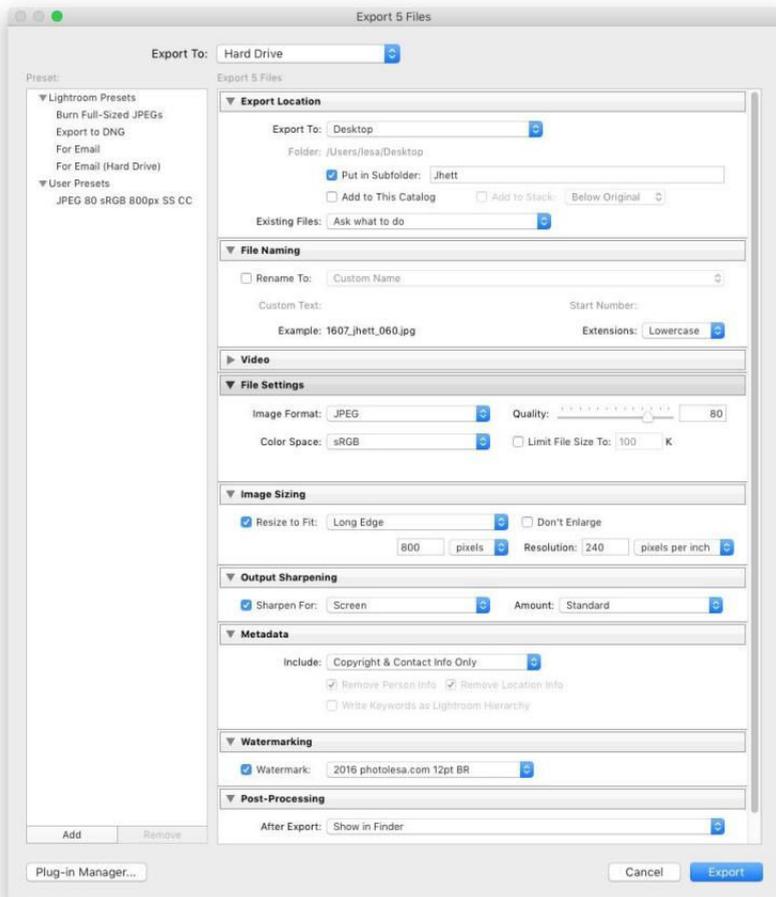
In the File Naming section, turn on Rename To and pick the filename convention you want to use from the menu to its right or leave the name(s) as is. In the File Settings section, choose JPEG from the Image Format



menu and, if you're exporting high-quality files for your client or submitting them to an online printing or stock photography service, set Quality to 100; otherwise, set Quality to 80. Pick sRGB from the Color Space menu (it's the Internet standard) and the one used at most

printing services.

If you want to resize the image, expand the Image Sizing section and turn on Resize To Fit. A handy option here is Long Edge, as it lets you resize both landscape and portrait oriented images at the same size. If the image is bound for the web, set



the measurement field to Pixels and enter 800 to export an image that is 800 pixels wide on its longest edge, whether that's height or width, and then leave Resolution at its default value. If you're preparing photos for print, preserve the photo's pixel count by leaving Resize To Fit turned

off and then enter a resolution that's best for your printer—300 pixels per inch (ppi) is adequate for most desktop inkjet printers and online printing labs. That said, if you're preparing photos for inclusion in National Geographic magazine, ask them what resolution is best to use.

When you're exporting images for online use, resolution doesn't matter because it refers to the number of pixels per printed inch.

In the Output Sharpening section, turn on Sharpen For and choose Screen from the menu to its right and then set the Amount menu to Standard. When you resize a photo, it becomes a little less sharp, so extra sharpening is a good thing. When exporting a photo for print, choose either Sharpen For → Matte Paper or Sharpen For → Glossy Paper, depending on the kind of paper you'll use.

In the Metadata section, choose Copyright & Contact Info Only from

the Include menu. In the Watermarking section, turn on Watermark and pick the watermark you made from the menu. In the Post-Processing section, choose Show In Finder to have Lightroom open the location of the exported files when the export is complete. If you'll use these settings again, click Add at the bottom of the Preset column to save them as a preset. Last but not least, click Export and Lightroom prepares your photos—you don't even have to wait until it's finished to do something else because exporting takes place in the background.

As you can see, it's a snap to watermark photos in Lightroom. ■

# SHELTER PET & LIFE OF THE PARTY

Amazing stories start in shelters and rescues. Adopt today to start yours.

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HAMILTON 75K+ Instagram Followers

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**Start A Story. Adopt**  
[theshelterpetproject.org](http://theshelterpetproject.org)



## Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN



### How to troubleshoot a swollen Photos cache folder

**Q:** I have a massive Photos library and use iCloud Photo Library stored on an external HD to maintain a local backup of all pictures. However, my wife and I use a large number of shared albums to share our pictures with each other, and these keep eating up space on my MacBook Pro in `com.apple.cloudphotosd`. My MacBook Pro keeps filling up, rendering Photos completely unusable.

— Michael McKissack

**A:** You're not alone in experiencing this! And it's definitely a loose thread in how Apple manages photo storage. The `~/Library/Containers/com.apple.cloudphotosd` folder is a cache, not part of your Photos library. It's used both for temporary storage, as images are synced and transferred to

your library, and as local storage for shared iCloud images.

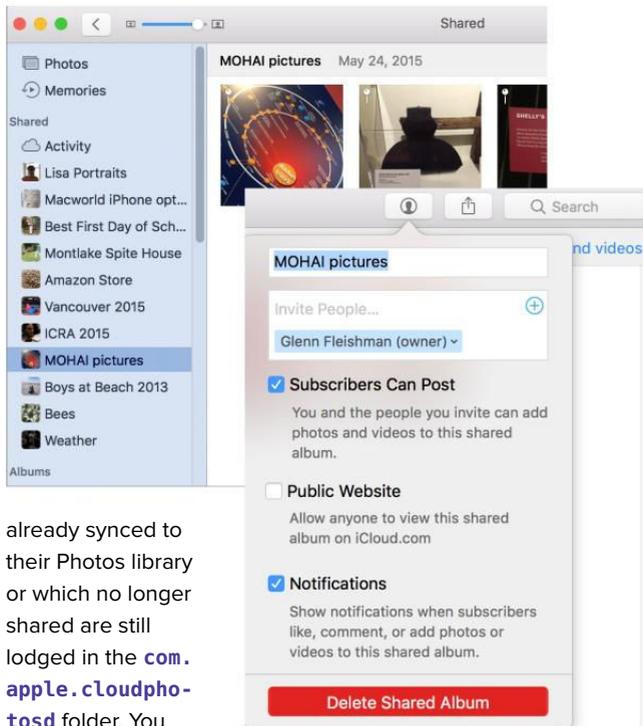
For most people, shared iCloud albums don't add up to much. But because you and your wife are sharing a lot of images—and I'd guess you might even be shooting and syncing in a raw photo format, which makes files even bigger—your cache is enormous.

Even if you have Photos set to optimize images and videos (in Photos → Preferences → iCloud) instead of storing full-resolution media, shared iCloud album remain cached at full resolution. For a less-frequent iCloud Photo Sharing user, this folder only consumes about 1.5GB of my startup volume.

The bad news is that this is a design flaw, rather than a bug. Apple intentionally stores data there. As long as you're sharing lots of images, this will remain a problem.

You can reduce the number of shared albums to reduce the storage consumed. Select any shared album and click the strangely named People button at upper right (it's a silhouette of a person with a circle around it). You can then click Delete Shared Album, which empties the local cache without deleting the photos you shared, and disables sharing to other people.

Some users have reported on forums a related problem: that files



already synced to their Photos library or which no longer shared are still lodged in the [com.apple.cloudphotosd](https://www.apple.com/cloudphotos/) folder. You

need to delete that folder to refresh the cache, apparently; that worked for many of those who tried it.

**Warning!** This requires temporarily disabling iCloud Photo Library. If you have a large library synced with iCloud, disabling and later re-enabling it will cause a complete re-sync, even if no new images need to be uploaded. Consider your bandwidth use and the amount of time it will take.

To delete the folder:

**REMOVING ICLOUD-SHARED LIBRARIES** reduces cached data on your startup disk.

1. In Photos → Preferences → iCloud, disable all options.
2. Quit Photos.
3. Select Go → Go To Folder in the Finder and paste in `~/Library/Containers` and click Go.
4. Delete the `com.apple.cloud-photosd` folder.
5. Empty the trash.
6. Launch Photos and re-enable your options.

Any shared albums will be re-downloaded and cached as before.

## How to fix two-factor authentication problems with apps that don't use iCloud

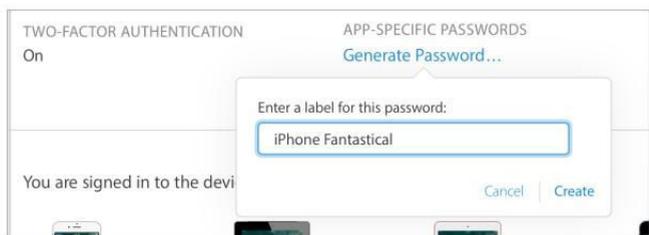
I've heard some confusion and frustration from people who use calendar, contact, and email software that isn't set up through iCloud, and they turned on Apple's two-factor authentication (2FA). There's an easy solution, but it requires a little planning and fuss to put it in place.

The more modern 2FA system Apple explicitly labels "two-factor authentication" replaces its previous "two-step verification," which was a stop-gap put in place two years ago. The new 2FA is deeply integrated into iOS and macOS, and was introduced on a slow rollout to users about one year ago with iOS 9 and El Capitan.

Many people have apparently turned 2FA on for the first time with

macOS Sierra or iOS 10 possibly because it's required to use the watchOS 3 feature that lets you unlock your Mac with your Watch.

The point of friction, however, is with software that Apple hasn't tied into iCloud. So that includes BusyCal



and Fantastical, third-party email clients, and contacts apps other than Apple's Contacts. Those can't yet (or maybe will never be able to) use Apple's 2FA to let you validate a login. With Apple's system, whenever you log in using an Apple ID protected by 2FA, all of your associated iOS and macOS devices pop up a tiny map of the rough location and a pair of buttons to allow or reject the login. Tap or click Allow, and the device on which you've done so displays a six-digit code you have to enter to complete the login.

For services and software that isn't tied in that way, you need to generate an app-specific password, which was also the case with the older two-step method. If you turned off two-step and turned on two-factor, all your previous

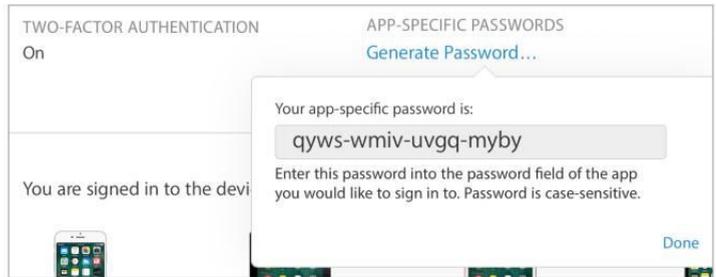
**NAME YOUR APP-SPECIFIC** password so you can recall which service is using it if you need to revoke it later.

app-specific passwords were wiped out! This is a shame, but you're starting with a clean slate, so apps and sites you approved long ago and no longer use are no longer a potential threat, too.

To create an app-specific password, follow these steps:

1. Log in to your account at [appleid.apple.com](https://appleid.apple.com), which will include the map popup and a six-digit code.
2. In the Security section under App-Specific Passwords, click Generate Password.
3. Label the password so you can remember it later if you need to disable it, and click Create.
4. In the next screen, copy and paste or refer to the password and enter it in the app or service with which you need to use it. The password can *never* be viewed again, but it's stored.
5. Click Done.

You can manage the passwords you've created in order to revoke them, too. Click the Edit button next to the Security section, and then you can click View History under App-Specific Passwords. The list shows the creation date of each password, and you can click the x



box to the far right to revoke any of them. You can also click Revoke All and wipe out all your app-specific passwords if you're concerned about any of your software or Web-based services being hacked. This doesn't affect your 2FA login at all.

I'll note that Apple only shows the creation date of these passwords, while Google more helpfully in its 2FA Web support shows the last time each was used! Much more useful, and I wish Apple would move to that approach.

## How to merge iPhoto and Photo libraries on a Mac

**Q:** How can I know whether the pictures in the iPhoto library are also in the Photos library? How can I move a portion of the older images away while keeping the last few years on the laptop?

— Christoph Stork

**I CAN SHOW** you this app-specific password, because I immediately revoked it. That's one of the advantages of this kind of password.

**A:** Christoph Stork's photo libraries are overflowing. He owns a MacBook Pro with a 750GB drive, but has an iPhoto library that weighs in at 190GB and a Photos library that takes up 250GB. His drive is almost full and he's not sure how to proceed.

If you followed the steps to import your iPhoto library into Photos whenever you started using Photos, all of the library's full-resolution images weren't duplicated. Instead, Apple chose to use "hard linking," which Jason Snell explained ([go.macworld.com/photososxtricks](http://go.macworld.com/photososxtricks)) back in April 2015. Instead of creating a copy of the iPhoto media, hard links just allow the same file to be linked in two or more places. Unlike an alias, which has a special icon and just points to another file, the hard link reference looks and acts exactly like it is a file.

This means that, in this case, the 190GB and 250GB iPhoto and Photos library likely contain a whole lot of overlap. Thumbnails, modified images, and other internal data structures aren't duplicated from iPhoto, and take up separate space in each library. New images imported into Photos would explain its larger size.

My suggestion for proceeding in this and similar cases is to get an external 1TB (or larger) USB 3.0 drive, which are relatively cheap. Copy the iPhoto library there before deleting it. (Deleting a file that's hard linked in

other places only deletes a reference; the original file remains in place for its other uses, so don't worry about that.)

For as long as older versions of iPhoto continue to work, you can open any library on a mounted volume by holding down Option at launch, and then navigating to the library and selecting it. The same is true for Photos, although Photos continues to be updated, and should work across many, many future macOS releases.



If you want to archive part of your Photos library, get PowerPhotos (\$30; [go.macworld.com/powerphotos](http://go.macworld.com/powerphotos)), a third-party app that has a lot of features missing in Photos. It will let you create a new library and copy images over, rather than using an awkward export method.

To find just older images, I suggest creating a Smart Album with the criteria for the date range you want, and then selecting all the images in the Smart Album and creating a regular

album from it. You can then use PowerPhotos to create a new Photos library, copy that regular album and all its contents to the new library, and delete the album and associated media from your main Photos library.

PowerPhotos includes a license for iPhoto Library Manager, which has similar features. Both apps can identify duplicates within a library to reduce a library's size if you have many images that were imported multiple times or duplicated internally.

I highly recommend making more than one backup of the photos and libraries you migrate off your main drive. It can be cheap to store data you don't plan to modify at Amazon S3, or you can use Google Drive, iCloud Drive, or other options. ■

## Ask Mac 911

We've compiled a list of the most commonly asked questions we get, and the answers to them: read our super FAQ ([go.macworld.com/mac911faq](http://go.macworld.com/mac911faq)) to see if you're covered. If not, we're always looking for new problems to solve! Email us at [mac911@macworld.com](mailto: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.