



A Publication of the Silicon Mountain Macintosh User Group

Preparing for a Possible Apple “Face ID” Technology

by Rich Mogull

Colorado Springs Metro Area

September '17

Volume 33 Issue 9

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While it seems as though we’ve had fingerprint sensors on our iPhones and iPads forever, Apple released Touch ID just four short years ago, forever changing our expectations for how we unlock our devices. (For more details about how fingerprint scanners work, see my article [“Q&A about Fingerprint Scanning,”](#) 10 September 2013.) Touch ID was a sneaky little innovation that improved security for everyday iPhone users with an option that was as easy to use as picking up your phone.

The real innovation with Touch ID wasn’t in adding a fingerprint reader to a smartphone — Apple was far from the first to do that — but in how Apple tied Touch ID to the iPhone’s hardware, keychain, and long passcodes. Touch ID doesn’t replace passcodes; it supplements them. In essence, your fingerprint “unlocks” your passcode, which in turn unlocks both your iPhone and the keychain that stores all your app passwords.

All this is managed and protected by special security hardware built into the Secure Enclave coprocessor that’s integrated into the A7 and later A-series chips to handle encryption and key management. Your fingerprint never leaves your device — heck, it *can’t* leave your device — and the fingerprint itself is never needed or used outside the Secure Enclave.

The result is that iOS users can have the security of a strong passcode with the convenience of no passcode at all. Yes, Apple does require users to enter their passcodes occasionally and under certain conditions, but overall, in day-to-day use, you don’t have to worry about entering six or more characters every time you want to unlock your iPhone to respond to a text message. The main downside of Touch ID is that it requires physical space on the front of the iPhone that could be used for screen real estate.

While it’s usually risky to comment on hypothetical Apple products, Apple recently, and undoubtedly accidentally, [released the firmware for its upcoming HomePod](#) smart speaker. Filled with references to other upcoming products and technologies, the firmware release makes it reasonably probable that Apple will release an updated iPhone that relies on facial recognition, rather than a Touch ID sensor.

Facial recognition is an entirely different kind of biometric technology that’s historically far more difficult to implement than a fingerprint reader. While fingers do get wet, dirty, or scratched, modern sensors rely on more than just the ridges and whorls, and devices like iPhones can store multiple fingerprints.

As anyone who has looked in a mirror in the morning can tell you, faces change throughout the day. We wear glasses, move into different lighting conditions, and some men don’t shave on a regular basis. Worse, in this age of selfies, there is no shortage of high-resolution photographs of our faces on the Internet, and many people have high-quality printers. Hackers [recently defeated Samsung’s facial recognition system](#) with a photo and a contact lens.

I have no idea how a potential “Face ID” might work, but I do know what I’m going to look for if Apple adds facial recognition to its iOS security arsenal. If we consider how Apple usually handles these transitions, we can make certain assumptions about what it might look like. The key is to evaluate *equivalence*, rather than *exactness*. We don’t care whether Face ID (we’ll roll with that name for now) works exactly like Touch ID — we just need it to be close enough, or even better in other ways.

Before you start panicking about a world in which someone can unlock your iPhone by holding up an iPad with a picture of you on screen (let’s be honest, that’s the first hack we’ll all try), let’s think through the problem and what to look for if Apple does indeed release Face ID.

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Silicon Summit is a monthly publication of the Silicon Mountain Macintosh User Group, Inc.

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SIG NEWS

The Saturday SMMUG Special Interest Group (SIG) will meet from 10:00 AM to 12:00 Noon, Saturday, September 9, 2017, in the Fire Station 18's meeting room at: 6830 Hadler View (a map is located at the end of this NL). The meeting will be divided in to two parts.

The First part starting at 10:00 will focus on iOS, helping everyone become both comfortable and proficient with their iPhone, iPad, and iPod mobile devices. Starting at 11:00 we will focus on Apple Finder's: Dictation, Finder Preferences, and Screen Capture.

All are invited, but new users are especially encouraged to attend this free meeting. Bring your tips and tricks, questions and suggestions.

For more information about Special Interest Groups (SIGs), go to the [SMMUG website](#).



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MEETING DATES

Our regular monthly meetings are on the second Monday of every month. Upcoming meeting dates are as follows:

September 11, 2017
October 9, 2017
November 13, 2017
December 11, 2017

Join/Renew

MISSED AN ISSUE?

You can find the previous issues of the Silicon Summit posted in PDF format at the [SMMUG website](#).

THIS MONTH AT SMMUG

September 11, 2017
6:00 Q&A Session
6:45 Networking Break
7:00 Productivity & integrated apps by 3rd parties by Jim Johnson
8:00 Adjourn

Future Meetings

Oct: High Sierra, iOS 11
Nov: Rich Voelker
Dec: Election

Club News

Announcements

Pizza Party recap

We had a nice turnout for our annual pizza party. Those that came has a lot of fun, fellowship, and good pizza.

Door Prizes For The September Meeting:

- AliveColors (Home version) - Graphics/Photo editor
- 3 copies of Sparkle - web design software
- \$10 iTunes card, iHome Tablet accessories, iPhone cases, USB charger & sync cable
- 5 Mini stylus, Blue tooth converter, Screen protector, Duracell Stereo jacks

The Joy of Tech™

by Nitrozac & Snaggy



Is Face ID as Secure as Touch ID? -- The answer to that question is more than a simple yes or no. When I look at the security of Touch ID today, I can see three aspects to consider if Face ID appears:

- **Does it cost as much to circumvent?** Touch ID isn't perfect — there are a variety of ways to create fake fingerprints that can fool it. The financial cost is not prohibitive for a serious attacker, but the attacks are time-consuming enough that the vast, vast majority of iPhone users don't need to worry about them. I'm sure someone will come up with ways to fool Face ID, but if doing so requires taking photos from multiple angles, computing a 3D model, 3D printing the model, and accurately surfacing it with additional facial feature details, I'll call that a win for Apple. It will make an awesome presentation at a hacking conference, though.
- **Does it have an equivalent false positive rate?** In security, the "false positive rate" is the number of times the system will accept a fingerprint (or face) as being the right one when it's the wrong one. If you let 100 people in a room try to unlock your iPhone and one stranger's fingerprint actually works, the false positive rate is 1 percent. From what I see, Touch ID's false positive rate is low enough to be effectively zero in real-world use. As long as Face ID is about the same, we'll be good to go.
- **Does it use a similarly secure hardware/software architecture?** As noted above, one of the most important aspects of Touch ID is how it ties into the Secure Enclave. I would be shocked if Apple didn't keep this model, but you should expect changes to support the different kind of processing and the multi-purpose nature of underlying hardware such as cameras. If Apple releases Face ID, my guess is that it will use some sort of dedicated processor tied to multiple sensors so its security is at least as good as that of Touch ID.

Is Face ID as Capable as Touch ID? -- As I mentioned, the genius of Touch ID was that it enabled consumers to use a strong password with the same convenience as no password at all most of the time. This was one of the biggest differentiators between Touch ID and previous phone-based fingerprint approaches — the harmonization of the fingerprint with the passcode. In terms of ease of use, you should focus on four criteria:

- **Is it as fast?** The first version of Touch ID was pretty fast, taking a second or less. Today's second version is so fast that you barely notice it most of the time. Face ID has to be close enough to the speed of Touch ID that the average user won't notice a difference. If I need to hold my iPhone steady in front of my face while a little capture box pops up with a progress bar saying "Authenticating face...", it will be a failure. But we all know that isn't likely to happen.
- **Does it work in as many different situations (at night, while walking, etc.)?** Touch ID is far from perfect. I work out regularly and, awesome athlete that I am, I sweat like [the evil Moist from Dr. Horrible's Sing-Along Blog](#), and Touch ID doesn't work well with sweaty fingers. Face ID doesn't need to work in *exactly the same situations*, but it must work in *an equivalent number of real-world situations*. For example, I use Touch ID to unlock my iPhone when it's sitting on a table to pass off to one of the kids, and I use it while lying sideways in bed with my face mashed into a pillow. Face ID will probably require me to pick the phone up and look at it. In exchange, I'll probably be able to use it with wet hands in the kitchen. Tradeoffs are fine as long as they are insignificant, net neutral, or positive. Since the HomePod firmware [indicates that the Face ID sensor may be infrared](#), it will likely work in the dark as well.
- **Is it as reliable?** The key phrase here is "false negative rate." As I noted previously, the false positive rate represents the number of times a sensor accepts the wrong biometric as being valid. On the flip side, the false negative rate is the number of times the sensor rejects the correct biometric. Even second-generation Touch ID can be fiddly at times, as in my workout example above, and some people have real problems with Touch ID working reliably. Face ID will have to handle things like changing facial hair, lighting conditions, moving, and so on. This question ties into a number of situations where Face ID works, but instead asks "Is Face ID as reliable as Touch ID within its supported scenarios?" This is one area where I could imagine some significant improvements over Touch ID.
- **Does it offer an equivalent set of features?** My wife and I trust each other and share access to all our devices. With Touch ID, we enroll each other's fingerprints. Touch ID also supposedly improves over time. Ideally, Face ID will work similarly, allowing multiple enrollments and improving, rather than degrading, as time and gravity take their toll on our faces.

Determining Success -- If Face ID becomes a reality, plenty of articles will focus on all the differences from Touch ID. Plenty of people will complain that it doesn't work exactly the same. And plenty of security researchers will find ways to circumvent it. But what really matters is whether Face ID hits the same goal, which is to:

Allow a user to use a strong password with the convenience of no password at all, most of the time.

Face ID doesn't need to be the same as Touch ID — it just needs to work reasonably equivalently in real-world use. I won't bet on Face ID appearing in a future iPhone, but I will bet that if it does, Apple will make sure it's just as good as Touch ID overall. In the event that it ships, I think Face ID will be as hard or harder to fool, will tie into the Secure Enclave, will be extremely fast, and will work in most of the real-world situations that have stymied previous attempts at smartphone-based facial recognition.

iOS, watchOS, & tvOS

iOS 11 to Bring Do Not Disturb While Driving

by Josh Centers

Once you install iOS 11, which is available now in [public beta](#) form and will likely ship for everyone in September 2017, you may notice that your iPhone gets a lot quieter in the car. That's due to a new feature in iOS 11 called Do Not Disturb While Driving that Apple enables by default.

In short, Do Not Disturb While Driving activates automatically when you're driving a car, blocks notifications on your iPhone, and makes it so you can't do much with your iPhone until you park.

Take a look at [distracted driving statistics](#) and it becomes obvious why Apple came up with this feature. The U.S. National Highway Traffic Safety Administration estimates that 660,000 drivers use cell phones while driving during the daytime. In 2015 alone, 391,000 people were injured and 3477 killed in distracted driving incidents. Given the iPhone's 30 to 40 percent share of the smartphone market, it arguably bears some blame for over 100,000 injuries and 1000 deaths in just that year. That's a far more tangible problem than many tempests in the tech industry press teapot.

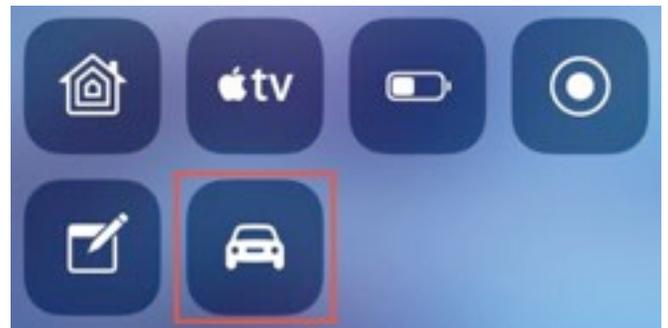
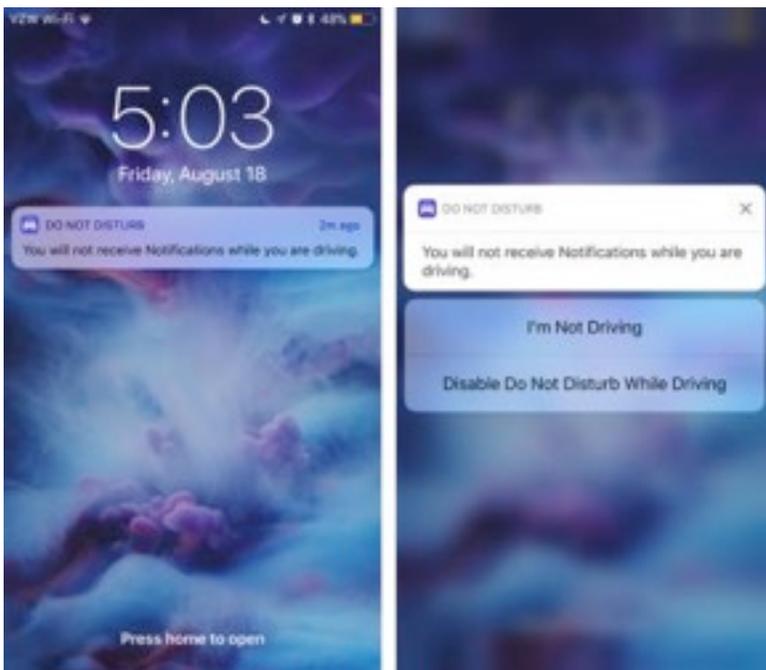
When Apple first announced Do Not Disturb While Driving at WWDC (see "[iOS 11 Gets Smarter in Small Ways](#)," 5 June 2017), I was a bit skeptical due to Apple's spotty record with automotive features. CarPlay has yet to take off, and even when it's available, it's kind of a mess (see "[CarPlay Offers Limited, Glitchy iPhone/Auto Integration](#)," 18 January 2016). In theory, Maps can automatically help you find your car in a parking lot, but that only works if you have a car with built-in Bluetooth — it doesn't work with aftermarket devices.

To my surprise and delight, Do Not Disturb While Driving activated automatically during my first car trip with the iOS 11 beta on my iPhone 7 Plus. The feature relies either on a Bluetooth connection or the Doppler effect with Wi-Fi signals to detect motion.

You can change how the feature activates under Settings > Do Not Disturb > Activate. You can set it to Automatically (which enables Do Not Disturb While Driving when the iPhone detects motion), When Connected to Car Bluetooth, or Manually. If you and your spouse both have iPhones and often drive together, you may need to play with the settings to see what makes the most sense for the passenger.

To turn on Do Not Disturb While Driving manually, Apple provides an optional button in Control Center, though it's not present by default. To add that button to Control Center, go to Settings > Control Center > Customize. (I'll cover the new Control Center in detail in my upcoming "Take Control of iOS 11.")

While Do Not Disturb While Driving is enabled, you can't do much with your iPhone, but Siri still works. You'll see only a single notification, informing you that the feature is on. To disable the feature, tap that notification and choose either "I'm Not Driving" or "Disable Do Not Disturb While Driving."



Alternatively, if you're a passenger, you can press the Home button and tap "I'm Not Driving." But that's about it: once Do Not Disturb While Driving is on, not only will your iPhone not receive notifications, you also can't access the Home screen, Widget screen, Control Center, or camera.

However, if you start audio playback before starting your trip, you can still control that with the Lock screen media controls. Turn-by-turn directions will also work normally — Google Maps as audio-only directions, while Apple's Maps app offers Lock screen visuals in addition to audio directions. But if you need to make any adjustments while driving, you'll have to turn off Do Not Disturb While Driving.

If you use CarPlay, [it will reportedly still work](#), though notifications will be blocked. None of my cars support CarPlay, so I can't verify this.

If someone messages you while you're driving, they will receive an

automated reply that, by default, says:

I'm driving with Do Not Disturb While Driving turned on. I'll see your message when I get where I'm going.

(I'm not receiving notifications. If this is urgent, reply "urgent" to send a notification through with your original message.)

You can change the first line of this message in Settings > Do Not Disturb > Auto-Reply. However, the second line cannot be changed.

As the second line says, if the other party replies with "urgent," the original message will be forced through the cone of silence.

By default, Messages replies automatically only to favorite contacts (to add someone, navigate to their contact in Contacts or Phone, scroll down, and tap Add to Favorites), but you can change that in Settings > Do Not Disturb > Auto-Reply To.

This loophole seems to work only for iOS's built-in Messages app — for both SMS and iMessage — but perhaps in the future, Apple will let developers integrate support for it in other messaging apps.

Overall, I've found that Do Not Disturb While Driving doesn't interfere with my usual activities much. In fact, it has made driving more peaceful by sparing me from notifications that are almost never urgent — it's not so much getting the notification that's a problem as thinking about what it might require me to do. And since I can't do anything about such notifications safely while driving, it's totally fine to have them flow in only once I've arrived at my destination.

What's most important, though, is that Do Not Disturb While Driving could reduce the number of injuries and fatalities on the road by helping both you and other drivers focus on the road. We're looking forward to seeing if those horrible distracted driving statistics drop once iOS 11 becomes widespread.

T-Mobile Offers Discounted Cellular Plans to Those Aged 55 and Up

by Josh Centers

The ever-aggressive T-Mobile is at it again, this time targeting potential customers aged 55 and over with [T-Mobile ONE Unlimited 55+](#). (For more on T-Mobile ONE, see "[T-Mobile and Sprint Announce Unlimited Data \(for Higher Prices\)](#)," 19 August 2016 and "[T-Mobile Tweaks T-Mobile ONE](#)," 31 August 2016.)

T-Mobile customers who are 55 or older can now get one line of T-Mobile ONE for \$50 per month, taxes and fees included, and add a second line for \$10 per month — that's with \$5-per-line Autopay discount. T-Mobile ONE includes unlimited talk, text, and 4G LTE data, though data throughput may be throttled if you exceed 26 GB of usage in one month.

The deal is limited to two lines but still applies if you have only one line (as confirmed by [T-Mobile on Twitter](#)). Also, only the primary account holder has to be aged 55 or older.

The usual price for T-Mobile ONE is \$70 for one line and \$100 for two lines, so this is a significant discount: 28.6 percent and 40 percent, respectively.

In its [press release](#), T-Mobile explains the business logic:

With today's announcement, T-Mobile is taking the fight to one of the carriers' last strongholds. Among Americans age 55+, Verizon and AT&T collectively control nearly 81 percent of the postpaid wireless market. In contrast, just 8 percent of this group are with T-Mobile, compared to the Un-carrier's 18 percent of all U.S. wireless customers.

T-Mobile also offers some interesting data about Baby Boomers and smartphones:

Right now, there are more than 93 million Americans in the U.S. over age 55, and the vast majority (74 percent) of them have a smartphone. And that number keeps growing. In addition, Boomers spend an average of 149 minutes a day on their smartphones — about as much as smartphone-obsessed Millennials at 171 minutes per day. In fact, the majority of those 55+ say a smartphone is the #1 way they connect with family and friends.

If you're old enough and live in an area where [T-Mobile's coverage](#) is sufficient, this is a tough deal to beat. New customers can sign up by visiting a T-Mobile store — be sure to bring ID. Existing customers can visit a store, call 1-800-TMOBILE, or log in at [t-mobile.com](#).

Apple's 10.5-inch iPad Pro Aims for the Sweet Spot

by Julio Ojeda-Zapata

When I heard about the new 10.5-inch iPad Pro in June (see "[iPad Pro Gets More Professional](#)," 5 June 2017), I (and [many others](#)) christened it Goldilocks because of how it fit into Apple's iPad Pro strategy, which has evolved over the past two years.

In late 2015, Apple initially released a 12.9-inch iPad Pro that impressed many users with its lovely, generously sized display and roomy add-on physical keyboard (see "[iPad Pro Shows the Promise of iOS Productivity](#)," 23 December 2015) but struck others as unwieldy given its mammoth dimensions.

Then, in early 2016, Apple trotted out a 9.7-inch version of the iPad Pro with improved portability but a display and add-on keyboard that some found uncomfortably cramped for long productivity sessions (see "[Apple Shrinks iPhone and iPad for Latest Releases](#)," 21 March 2016).

Apple has now discontinued the 9.7-inch iPad Pro and is positioning its 10.5-inch successor as a compromise — not too large, not too small, arguably juuuuuust right, as the flaxen-haired fairy-tale protagonist might gush.

The new iPad is only a tad heavier than its precursor, since the added screen real estate is achieved mostly via bezel shrinking. The keyboard is less cramped, as well.

There is much more going on here than size tweaking, of course. The new iPad boasts a bevy of significant improvements that include upgraded screen tech, a faster processor, better cameras, speedier charging and data transfer, and an updated Touch ID sensor.

All these improvements also appear in the updated version of the 12.9-inch iPad Pro, giving the small and large iPad Pro models feature parity, at long last. Before, the 9.7- and 12.9-inch variations were each superior in some ways and inferior in others, causing headaches for those weighing which to purchase (see “[Comparing iPad Pro Technologies and Intangibles](#),” 28 July 2016).

In this article, I’ll focus on the 10.5-inch iPad Pro because it’s new in both form and function. I’ve been using it for weeks – much of that time on vacation as my primary computing device – and it’s my favorite Apple tablet to date. It’s a powerful and versatile mobile computer that lets me get a lot done – writing, photo editing, collaborating with colleagues, even light video editing – on the go.

Such a mobile workstation is not for everyone, of course, and many will prefer a notebook computer. The iPad Pro is bound to give many prospective purchasers pause because of its steep cost and what buyers get for the money compared to similarly priced notebooks.

This calculus gets more complicated with the upcoming iOS 11, which promises new features that make the iPad Pro more of a productivity dynamo (see “[iOS 11 Gets Smarter in Small Ways](#),” 5 June 2017). A physical keyboard further enhances work scenarios, with greater comfort than more-cramped input accessories for the 9.7-inch iPad Pro, but adding one increases the total cost.

Models and Pricing – The 10.5-inch iPad Pro starts at \$649 for 64 GB of storage, goes up to \$749 for 256 GB, and tops out at \$949 GB for 512 GB. Adding cellular capability bumps prices to \$799, \$899, and \$1229, respectively.

Color-wise, the 10.5-inch iPad Pro is available in silver, space gray, gold, and rose gold. Oddly enough, the rose gold shade is not available to buyers of the 12.9-inch iPad Pro.

Size Comparisons – The size difference between the 9.7-inch iPad Pro and its 12.9-inch sibling is dramatic. Comparing the 10.5-inch model to its 9.7-inch predecessor is far less startling. In fact, you might have to put the two tablets atop of each other to appreciate the differences.

In height, width, and depth, the 9.7-inch iPad Pro is 9.45 x 6.7 x 0.24 inches (24 x 17 x 0.6 cm). By comparison, the 10.5-inch model is 9.8 x 6.8 x 0.24 inches (24.9 x 17.3 x 0.6 cm). Pretty close. So is the weight: 0.96 pounds vs. 1.03 pounds (437 g vs. 469 g). That’s for the Wi-Fi-only models; the versions that add cellular capabilities are 8 grams heavier.

Screen dimensions are more significantly different. Apple crams a much larger display into roughly the same physical space via clever bezel shrinkage. There is less bezel on the top and

bottom, and the difference left and right is even more pronounced.

With the 10.5-inch iPad Pro, this translates into a 2224 by 1668 pixel screen versus 2048 by 1536 on the 9.7-inch model. Both are at 264 pixels per inch with a traditional 4:3 aspect ratio. That’s 20 percent more pixels, a welcome upgrade that makes using the machine less claustrophobic. You can really see and feel the difference.

Screen Technology – The 10.5-inch iPad Pro’s screen also packs in a bunch of tech upgrades that make the previous iPad Pro seem somewhat dated.

Most notably, the new display boasts greater responsiveness courtesy of hardware technology Apple is calling ProMotion. It lets the iPad’s display refresh more readily, scroll more fluidly, and have stuff move about on it more smoothly.

ProMotion supports screen refresh rates up to 120 Hz, compared to 60 Hz on the 9.7-inch model. The new iPad can dynamically adjust refresh rate upward or

downward, too, depending on how it’s being used: higher for doodling with the Apple Pencil, say, and lower for reading ebooks or watching video. To preserve battery life, the iPad cranks up the refresh rate to 120 Hz only when necessary.

Video on a ProMotion-capable iPad looks a bit better since the screen refresh rate adjusts to match the footage’s frame rate.

YouTube has lots of [demo-style videos](#) showing the older and newer iPads side by side under tightly controlled testing conditions – with 120 Hz on the new iPad version translating into butter-smooth swiping, scrolling, and other screen actions, compared to jerkier performance with the old model at 60 Hz. This isn’t as easy to appreciate with casual observation, but you eventually feel it. Although the differences are subtle, it’s a bit painful for me to use the 9.7-inch iPad now that I have grown used to ProMotion.

ProMotion is particularly welcome when you’re wielding the Apple Pencil since you experience far less latency when drawing or writing. Apple claims Pencil latency “has been reduced to an imperceptible level.” I wouldn’t go that far – it’s still nowhere near the equivalent of pencil on paper – but it’s less noticeable.



The 10.5-inch iPad Pro's display has other welcome attributes:

- It's brighter, at 600 nits, a 20 percent boost over the 9.7-inch iPad Pro. (The 12.9-inch iPad Pro is 50 percent brighter than its predecessor, with both current iPad Pro models now having the same brightness.)
- It has low reflectivity, at 1.8 percent, thanks to a special anti-glare coating.
- It supports high dynamic range for video as well as still imagery. HDR video provides a better balance between highlights and shadows (as with pictures), assuming you can find HDR footage. There isn't much of such video available yet.

Better Performance – Apple repeatedly claims that the iPad Pro is a legitimate laptop replacement, with performance to match. Its new 64-bit A10X Fusion processor with six cores, Apple says, outperforms most notebooks. Apple claims that the A10X Fusion is over 30 percent speedier than the A9X and graphics performance is 40 percent faster.

This oft-repeated boast presents the usual problem. There are too few pro-grade, full-featured iPad apps – compared to what is out there for regular laptops – making it difficult to devise tests that would compare an iPad against a MacBook Pro, for instance.

But, yeah, the new iPad feels fast. I have yet to throw anything at it, including relatively big 4K video-editing projects, that it hasn't been able to handle with aplomb.

Faster Charging and Data Transfer – The large and small iPad Pro models used to have a glaring, galling difference: the 12.9-inch model provided zippy USB 3.0 data transfer via its Lightning port, while the 9.7-inch model slogged by with only the slower USB 2.0.

This reliance on USB 2.0 was irritating for photographers who needed to move high-resolution photos from cameras or flash-storage cards to the small iPad Pro as rapidly as possible, among others. TidBITS's own Jeff Carlson [detailed this problem on his personal site](#) early last year.

With the addition of USB 3.0 to the 10.5-inch model, both iPad Pros have feature parity in data transfer speed.

This change brings an extra capability: faster charging, provided the 10.5-inch iPad Pro is connected to a USB-C power brick such as Apple's own [87-watt USB-C Power Adapter](#). Throw in Apple's [1 m](#) or [2 m](#) USB-C to Lightning Cable, and you're all set to charge at blazing speeds.

It's a shame, then, that Apple *still* doesn't include USB-C charging gear in the box (see ["iPad Pro Charges Faster with MacBook Adapter and New Cable,"](#) 27 April 2016).

Updated Cameras – The old 9.7-inch iPad Pro had an advantage over its 12.9-inch sibling in one regard: better photography hardware.

Apple has now upgraded the cameras on both the smaller and larger iPad Pros, providing full parity. Both incorporate the equivalent of an iPhone 7 rear-facing camera (but not the dual-lens, optical-zoom setup on the iPhone 7 Plus) with a 12-megapixel sensor capable of 4K or 2160p video shooting at 30 frames per second, slow-mo capture at up to 240 frames per second, optical image stabilization for smoother video, panoramas of up to 63 megapixels, and more. The front-facing camera is 7 megapixels.

Unfortunately, you'll still look like a dork shooting photos or video with an iPad. I'll stick with my iPhone 7 when I can.

A New iOS – Users of any recent-model iPad look to take a quantum leap with the release of iOS 11, which is jam-packed with features to make the tablets more flexible and useful. This will be especially true of iPad Pro users because the iOS 11 enhancements are focused on productivity. Such improvements include:

- A turbo-charged (and more Mac-like) Dock that can hold up to 16 app icons and be brought to the fore with an upward swipe even when an app is on the screen.
- Drag-and-drop functionality to move text, photos or files from app to app; a killer capability when combined with Split View. You can move more than one thing at once, too.
- An App Switcher that no longer shows overlapping cards but a tidier grid of windows and even window groupings — that is, it remembers your multitasking combinations.

All of these features and others were functioning well on my 10.5- and 9.7-inch iPad Pro tablets, via the public beta of iOS 11, as I wrote this.

The one question I will pose for this article: Is the 10.5-inch iPad Pro any better at running iOS 11 than other iPad models?

Sort of. Split View (not new, but tweaked for iOS 11) is most relevant here, and the split-screen appearance can be very different depending on which iPad Pro you use. On the 12.9-inch model, you can accommodate the equivalent of full-size iPad mini screens side by side, which is great for productivity. On the 9.7-inch model, you only get narrow side-by-side screens with scrunched content, which is a bit of a pain.

What about the 10.5-inch model? Sorry, no full-size windows here, only scrunched ones, though they are a bit bigger, thanks to the iPad screen's larger dimensions, and provide a bit more info, courtesy of the slightly greater pixel density. It's an improvement, but a marginal one at best, as you can see in the photo below. In other words, those using a 9.7-inch iPad Pro shouldn't think of iOS 11's changes as a reason to upgrade.

Accessories – The iPad Pro can't reach its full productivity potential without add-on accessories for



getting work done more quickly and effortlessly. Such accessories include the Apple Pencil for tapping into the iPad touch screen's full capabilities, along with a physical keyboard for faster and far more comfortable typing than the on-screen keyboard allows.

It is with keyboards that the 10.5-inch iPad Pro has particular importance compared to its older, slightly smaller sibling. Touch typing does not feel as cramped because keys are spaced out a bit more. Apple's Smart Keyboard is the obvious example of this: The version for the 9.7-inch iPad always felt a bit too scrunched, and this is less the case with the Smart Keyboard for the 10.5-inch iPad. Yet, as previously noted, the 10.5-inch tablet has about the same portability as its predecessor and is less of a burden to carry around than the 12.9-inch model. It's a total win, as my not-sore fingers and shoulders will attest.

As I wrote this review, I had available only one third-party keyboard-case alternative to the Smart Keyboard, but it's a nice one: [Logitech's Slim Combo Keyboard Case](#). The Swiss accessory manufacturer has traditionally been fast out of the gate with iPad Pro accessories, presumably with help from Apple, and this release is no exception.

The Slim Combo, like the Smart Keyboard, attaches to the iPad Pro via its Smart Connector, which means the keyboard never needs to be charged on its own and is always ready to go without bothersome Bluetooth pairing.

The Slim Combo has two pieces, a case for the tablet, and a Smart Connector-attached keyboard that's a protective cover when it's not being typed on, much like Apple's Smart Keyboard. The Slim Combo keyboard is very comfortable, and it's backlit. To keep the iPad upright in a landscape orientation for typing sessions, the case features a flip-out kickstand that resembles those on Microsoft's Surface Pro mobile computers (see "[Microsoft Surface: A Tale of Two Computers](#)," 11 March 2014).



The Slim Combo stand also holds the iPad upright in a portrait position – without the keyboard attached – for video conferencing and other scenarios.

The Slim Combo case includes a loop on one side for stashing an Apple Pencil when it's not in use. The Pencil seems a bit too exposed to me, with the danger that its charging-prong cover will fall off and get lost, or its tip will get damaged as the bundle is continually shoved in backpacks or bags – though neither happened to me during my relatively brief testing period.

The Slim Combo is not exactly "slim," adding more bulk than the Smart Keyboard, and has a plasticky feel. Overall, though, it's a winner, protecting the iPad fully, front to back, which Apple's Smart Keyboard doesn't do.

A related note: Apple no longer offers a companion Silicone Case for a total-protection package, as it did for older iPad models. It has even discontinued the Silicone Case for the 12.9-inch iPad Pro. The absence of such a case bothers me because it, along with the Smart Keyboard, made my 9.7-inch iPad Pro review unit a ruggedly portable package I could toss in my bicycle bag without any concern. Doing that with only the Smart Keyboard attached is out of the question.



Apple does have a new full-protection approach, of a sort, in its new \$129 [Leather Sleeve](#). The sleeve, which comes in a range of colors and with a soft microfiber lining, is spacious enough for the Smart Keyboard along with the iPad. It also has a snug compartment at the top for storing an Apple Pencil, which is far better protected (with the tip tucked out of sight and the charging-prong cover recessed so it is almost impossible to dislodge) than it is on the Slim Combo from Logitech.

The iPad with the Leather Sleeve is a slimmer bundle than Logitech's keyboard case, but it's more of a hassle to pull the tablet out of the protector to deploy it with the Smart Keyboard (a First World Problem, I know). Be forewarned that the iPad



can easily slip out of the sleeve if it's in there by itself, without a case or keyboard cover attached. It's a pretty tight fit with the Smart Keyboard, on the other hand, though the sleeve seemed to stretch somewhat as I used it over several weeks, making the iPad easier to insert and remove.

iPad Pro vs. MacBook -- An iPad Pro is a substantial investment, much more so than buying Apple's recently refreshed entry-level 9.7-inch iPad with its starting price of only \$329, compared to the base 10.5-inch iPad Pro's \$649 (see "[Apple Replaces iPad Air 2 with New 9.7-inch iPad](#)," 21 March 2017).

Add accessories like the Smart Keyboard, the Apple Pencil, and the Leather Sleeve, and you'll exceed \$1000. And that doesn't even count AppleCare+. The total sum is similar to the cost of a MacBook Air, though a bit less than an entry-level MacBook.

It probably goes without saying that most people would not buy both an iPad Pro and a MacBook of any variety for productivity work. There's just too much overlap in capabilities, at a too-steep cost. If so, I'd wager that most would go for the MacBook in favor of the iPad Pro (possibly adding a cheaper iPad for entertainment).

A potentially better argument for an iPad Pro can be made for people like me who work on desktop Macs and need a satellite device while on the go. An iPad Pro arguably fits the bill better, rather than a somewhat redundant MacBook, but it's still a costly proposition.

With the iPad Pro, Apple seems to have set its sights on a different, somewhat distant scenario: a world in which iPads better match up with the Mac's capabilities, causing many to choose an iPad over a Mac notebook with little or no hesitation. Developments this year clearly point in this direction. The upcoming iOS 11 vastly improves the iPad's power and flexibility for work scenarios. We haven't reached rough point of capability parity with the Mac yet, but it's arguably in sight.

The 10.5-inch iPad Pro is another piece of that puzzle. Its new dimensions, a departure from the long-standard 9.7-inch size from the original iPad, create a subtle yet substantial upgrade for those wanting a good balance of portability and screen real estate — as well as a conceivable alternative to a Mac for at least some people.

For most people, would I recommend an iPad Pro over a Mac notebook? No. But ask me that question again in five years, and I might give you a different answer.

What's Wrong with the Touch Bar

by Josh Centers

Last October, when Apple unveiled the redesigned MacBook Pro, I wanted one immediately (see "[New MacBook Pros Add Context-sensitive Touch Bar](#)," 27 October 2016). Practically speaking, I needed a second Mac, and a portable one at that. But I was mostly lured in by the Touch Bar, both for its novelty factor, and because, as a technology writer, I like to have experience with each unique Apple device to inform our articles.

Alas, closing in on a year later, I've found that I don't use the Touch Bar much. I was forced to confront this unhappy fact when Adam suggested that I write an article about interesting uses of the Touch Bar. After some research, we agreed that there wasn't enough there to warrant an article. Although there was a flurry of fascinating developer projects after launch, nothing significant ever shipped.

I'm not saying the Touch Bar is useless, because that isn't true. At least in theory, it's more capable and more flexible than a row of physical keys. And Touch ID is fantastic for logging into my MacBook Pro and authenticating 1Password. But if you were to ask me today if you should spend the \$300–\$400 extra on a MacBook Pro with a Touch Bar, I would say no for two reasons:

Per Apple's own [Human Interface Guidelines](#), no functionality should be exclusive to the Touch Bar. That makes sense because Touch Bar-equipped Macs are a small minority, but the flip side is that the Touch Bar provides no additional functionality apart from Touch ID. That wouldn't be terrible if using the Touch Bar was faster than using other interface elements, but it's not, because of the second problem.

The Touch Bar offers no tactile feedback, and it's impossible to use it without looking, as you can do with the function keys. On my iMac, my keyboard of choice is the Apple Wireless Keyboard. If I need to adjust volume or pause audio playback, I just tap the appropriate key, generally without looking. On my MacBook Pro, I have to take my eyes off the screen to find the right button on the Touch Bar, and then in the case of volume (as of macOS 10.13 High Sierra), adjust the slider accordingly.

Those two factors alone make the Touch Bar largely pointless. Here's a simple example: in Microsoft Word, the Touch Bar offers shortcuts to items in the toolbar. Let's say you want to bold some selected text. On a Touch Bar-equipped MacBook Pro, you have three main (there are others, but they're even slower) ways to do this:

Press Command-B on the keyboard, which lets you keep your hands on the keyboard and eyes on the screen.

Click the Bold button in Word's toolbar, which takes your hands off the keyboard but keeps your eyes on the screen.

Tap the Bold button on the Touch Bar, which takes your eyes off the screen *and* your hands off the keyboard.

In most cases, the Touch Bar is the *slowest* way to perform an action! It's a cool-looking racing stripe that slows you down in many cases, and even worse, eliminates useful physical keys that you probably reach for reflexively, like Esc.

That's not all. The screen is too small to be useful in some cases. For instance, you can use the Touch Bar to switch tabs in Safari, which looks cool, but you can barely make out what's in each tab.



The upcoming macOS 10.13 High Sierra doesn't do much for the Touch Bar. You can double tap its volume button to mute your Mac's audio, and you can swipe to adjust both volume and display brightness. It also adds buttons to activate Night Shift and send audio and video to an AirPlay receiver (most likely an Apple TV).

Should Apple abandon the Touch Bar concept? I'm not ready to go that far, but Apple needs to do some work if it's to become useful.

Making the Touch Bar Useful – There are a handful of potentially useful Touch Bar applications, but they're hampered by Apple's restrictions. As far as I know, and this is [backed up by Keyboard Maestro's Peter Lewis](#), there's no Apple-approved way for an app to add actions to the Touch Bar without being in the foreground. Eliminating that restriction would go a long way toward making the Touch Bar more practical.

If background apps could present Touch Bar icons, automation utilities like Keyboard Maestro could allow users to trigger custom macros from the Touch Bar without requiring a potentially obscure key combination. Was it Command-Shift-Option-M or Control-Shift-Option-M?

I always struggle with this, because it's challenging to create memorable keyboard shortcuts that don't conflict with existing shortcuts. Here at TidBITS, we have a Keyboard Maestro macro that runs a BBEedit text factory in any app to fix things like non-curly quote marks. Another macro we use combines iPhone screenshots. But I often have trouble remembering their key combinations, particularly for the second one, which I use much less frequently. Being able to activate those from the Touch Bar would make the Touch Bar instantly useful for me.

Some developers have figured out how to hack an extra button into the Control Strip — the handful of controls that are always visible on the right side of the Touch Bar by default. [BetterTouchTool](#), [Mute Me](#), and [TouchSwitcher](#) all add a fifth button to Control Strip, but they're ugly hacks. You can't configure these buttons in System Preferences > Keyboard > Customize Control Strip, and if you have more than one of these apps running, they fight over which one gets that fifth spot.

Even most regular apps that support the Touch Bar now just replicate basic functionality in it, rather than allowing users to choose which commands to show there. Command-B is faster than tapping a Bold button, but if you were in a word processor and had defined a custom character style, accessing it from the Touch Bar might be faster than finding it in a contextual menu or palette that isn't always visible. Apple should set an example here and implement some non-obvious uses of the Touch Bar in its apps.

Giving the Touch Bar some level of tactile feedback would help too. The near-mythical [Optimus Maximus](#) keyboard did this by putting little OLED displays on each key. I can't see Apple doing that, but Apple might be able to use its Taptic Engine technology to simulate gutters between buttons while still letting a slider remain smooth as you run your finger along it. Given how convincing the software Home button in the iPhone 7 is, I think this could be an effective solution.

In the here and now, if you're looking at a new MacBook Pro and can't decide if you want the Touch Bar, I don't think it, by itself, is worth the money. Of course, buying decisions are never that simple, since the Touch Bar-equipped models add a few other niceties, such as two more Thunderbolt 3 ports, faster CPU options, and faster Wi-Fi, that might make it worthwhile. And Touch ID is nice. But until Apple opens the Touch Bar up to developers, don't assume that it will increase your productivity.

ExtraBITS

[Apple Reportedly Spending \\$1 Billion on Video Content](#) – Variety reports that Apple has budgeted \$1 billion to spend on 10 TV shows. That may sound like a lot of money, but in the next year, Netflix is expected to spend \$7 billion on original content, Amazon \$4.5 billion, and HBO \$2 billion. Hopefully, Apple can produce something more compelling than “Planet of the Apps” and “Carpool Karaoke.”

[Botched Firmware Update Bricks Smart Locks](#) – Home automation can be great, but it's not without downsides, as owners of the LockState RemoteLock 6i have discovered. An errant software update rendered the remote control aspects of their locks inoperable, although the locks can still be unlocked with a key. Airbnb hosts are particularly affected because RemoteLock locks can be integrated directly with Airbnb to manage and monitor Airbnb properties remotely. The worst part? To fix the problem, users must ship their locks to LockState to replace the firmware, which takes 5 to 7 days, or LockState can send a replacement lock, which will take 14 to 18 days. Either way, owners of these locks must physically remove them to address this digital problem.

[Ulysses Writing App Moves to Subscription Pricing](#) – The latest high-profile Mac software — joining TextExpander and 1Password — to move to subscription pricing is the cross-platform writing app Ulysses.

[CZUR M3000 Is an Inexpensive, Reliable Book Scanner](#) – The CZUR M3000 is a (relatively) inexpensive way to digitize your physical books. Marc Zeedar discusses its pros and cons, and offers some tips for scanning books as efficiently as possible.

[Google Adds Phishing Warnings to Gmail for iOS](#) – If you use the Gmail app for iOS, Google has added a new feature that warns you about phishing attempts. If you're reading an email message and tap a link that Google thinks leads to a phishing site, a dialog pops up to alert you to the danger. You can still open the link if you wish. Google is rolling the feature out over the next 15 days, and you don't need to update the app to get it.

Reviews



by L. Davenport

If you are in the market for a good graphics and photo editing program or would like to get away from Adobe Photoshop with its unending subscription fees, then you should take a look at Akvis' new AliveColors.

AliveColors is a full-featured graphics and photo editing program. It has been designed to support the needs and user levels from the beginner to the pro user.

AliveColors comes in three versions: A limited Free version, A Home version that has most, but not all of the tools and effects, and the Pro version that has full functionality. You can buy a Perpetual (lifetime) license or a subscription license - your choice. FYI: This review will be based on the Pro version.

The Interface

If you have used Photoshop in the past, you will feel right at home with AliveColors. The user interface and tools are very similar. But don't get me wrong, AliveColors has a lot of its own bells & whistles. More about that later. AliveColors' user interface/window defaults to a light grey look, but there are options to change it to medium or dark looks.

AliveColors has a preference that you can turn on that shows (in the AliveColors window) the images/photos that you have previously opened (Figure 2). They can be displayed as thumbnails or as text that lists the path to the image.

At first I didn't like these thumbnails being there, but after having to reopen my test images multiple times for this review - I learned to appreciate the convenience of having them right in the AliveColors window for quick access. You simply click on a thumbnail and it opens. You can also turn on the "Enable Learn Panel" option and around 10 thumbnails will line the bottom of the window (bottom of Figure 2). These are links to AliveColors' video tutorials.

Panels

Along the right side of the AliveColors window are the familiar: Layers, History, Navigator, Color, Actions, Channels, etc. panels/tabs. Here is an in-depth explanation for a couple of the Panels:

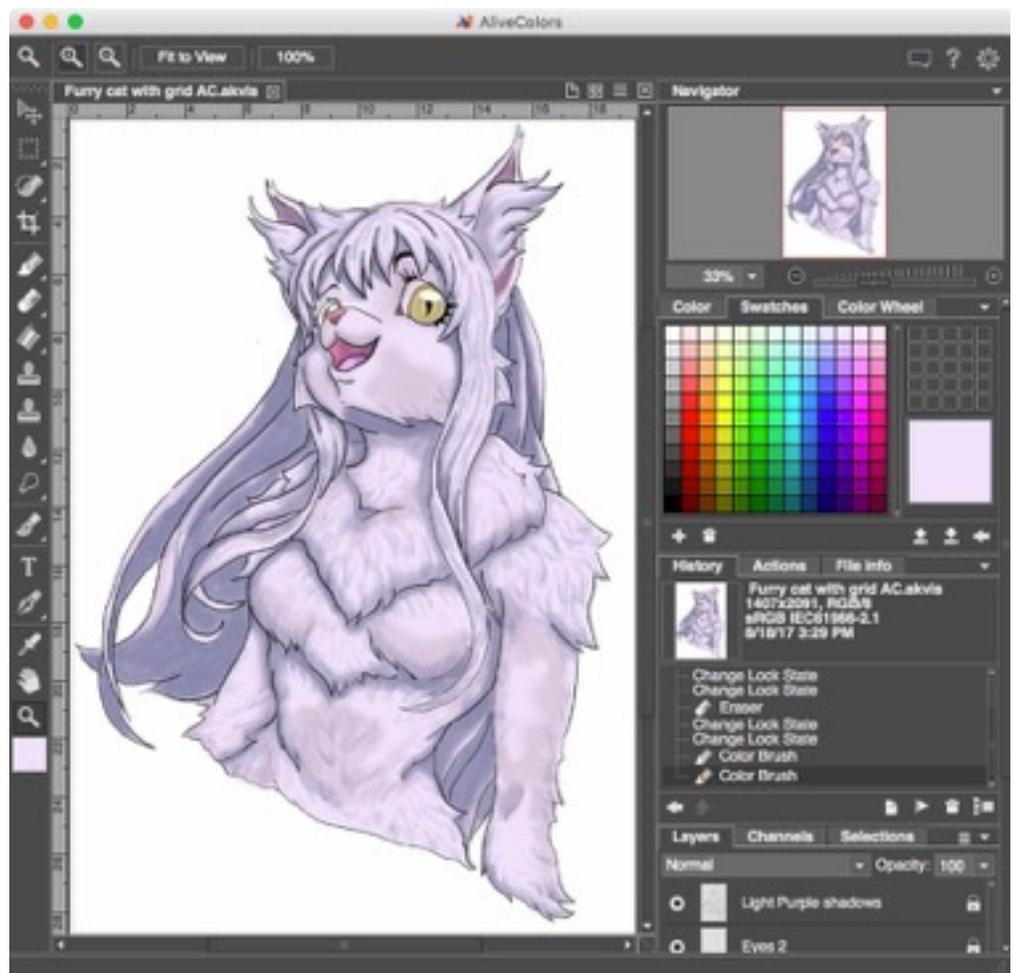


Figure 1. This is the AliveColor user interface sporting the gray "Interface Theme". This image was a test to see if AliveColors could open Photoshop documents along with its layers. So I created the black line-work in Photoshop and then opened and colored it in AliveColors (using my Wacom tablet and stylus). All of the Photoshop layers were present and still modifiable, so it passed my first test.

Layer Panel

The Layers Panel can be used to organize your work into grouped items, re-order your objects, etc. For example, in my drawing shown in Figure 1 - I used a layer for the black line drawing and different layers for each shade of purple that I used. This way, if I made a mistake and wanted to erase it, it wouldn't erase the other underlying line-work or colors.

There are five different layer types that you can choose from when you are working on your document:

- **Raster:** A Raster Layer is a basic layer type which allows applying standard brushes and effects. Other layers can be rasterized by using the Rasterize Layer command.
 - **Artistic:** The Artistic Layer is designed for drawing and painting using the Artistic Brushes (Figure 6). More about these brushes later.
 - **Shape:** The Shape Layer is used to create and edit vector shapes. This layer is created automatically when using the Shape tool.
- The available shapes are: Pie, Rectangle, Rounded Rectangle, Ellipse, Polygon, Star, Freeform (this allows you to create a variety of shapes by adding anchor points with a mouse click), and Freehand.

- **Adjustment Layer:** You can correct and enhance your images using nondestructive Adjustment Layers - meaning you can turn them on or off at any time. There are Adjustment Layers for Curves, Levels, Black and White, Brightness/Contrast, Hue/Saturation, Invert, Threshold, and Posterize.
- **Text:** The Text Layer is created automatically when you use the Text tool.

Actions

AliveColors includes an Actions feature. For those that aren't familiar with Actions - they are like a script where you tell AiveColors to do one thing to your photo, e.g. Reduce its size, then tell it to do another step - like change the image from RGB to black & white, etc. Actions are a timesaver if you are constantly doing the same adjustments to your photos. On top of this, you can select a folder with multiple images and use the Batch Processing feature to run the same Action on all of the images at once (Figure 4).



Figure 2. AliveColors remembers the images and photos that you have previously opened. They can be displayed as thumbnails or as text that lists the path to the image. At first I didn't like them being there, but after having to reopen my test images multiple times for this review - I learned to appreciate the convenience of having them right in the AliveColors window for quick access (so I decided not to turn that feature off in the preferences). You simply click on a thumbnail and it opens. You can also turn on the "Enable Learn Panel" option and around 10 thumbnails will appear at the bottom of the window. These are links to AliveColors' video tutorials.



Figure 3. You can create your own multi-colored gradient or use one of the predefined Gradients.

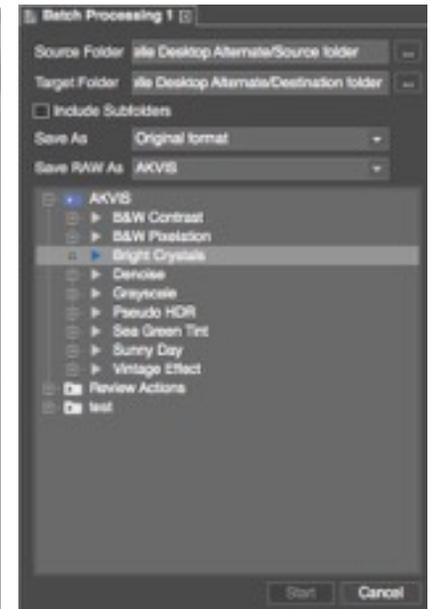


Figure 4. You can use AliveColor's Batch Processing option to run an Action on a folder full of images.

Tools

Along the left side of the Image Window are the tools which include the typical Selection, Crop, Brush, Pencil, Spray Tool, Eraser, Bucket, Clone, Blur, Sharpen, Smudge, Text, and Eyedropper tools.

Here are a few of AliveColors' other tools:

Chameleon Brush: This is similar to the Clone Stamp, but instead of making an exact replica of the area that is cloned from, this preserves the characteristics of the underlying image that you are cloning to/over.

In a test, I picked an area from the middle of a pink and white Dahlia and then cloned it to the green grassy area next to the flower. The duplicate/cloned flower turned to shades of green - matching the grass' colors.

Artistic Brushes: The Artistic brushes and filters allow you to stylize photos and create images from scratch. Here is a short explanation of each Artistic Brush:

- **Oil Brush:** This brush was designed to imitate painting with an oil brush by painting strokes with a relief. The density of the stroke varies across the entire line (Figure 6).
- **Roller:** This brush leaves flat, porous strokes and its paint's density varies along the line's length.
- **Felt-tip Marker:** This brush leaves constantly flowing paint and it draws smooth, elegant, translucent lines.
- **Chalk:** The Chalk brush draws soft, textured lines with porous edges.
- **Artistic Pencil:** This brush draws flat smooth lines with sharp boundaries.
- **Artistic Spray:** This brush simulates spray painting on an image. It applies paint in raised drops, scattered along the stroke.
- **Artistic Smudge:** This tool is designed for mixing different colors on artistic layers and changing the relief of painted strokes.
- **Artistic Eraser:** This brush changes the transparency of pixels and removes the relief of paint.

AutoSave

There is a background AutoSave that will protect against loss due to unexpected shutdowns. The user can set the frequency/interval of the auto saves.

Gradient fills:

I really like that the Gradient tool not only lets you specify the start and finish colors, but you can also add additional colors (points) to the gradient. So you can make a slow transition between two colors or make a multicolored gradient resembling



Figure 6. The "Artistic" Oil Brush imitates painting with an actual paint brush, e.g. it leaves raised strokes (reliefs) versus leaving a flat color. The image on the right was taken from the [AliveColors](#) web site. It is a good example of using the Artistic Oil brush.



Figure 5. AliveColors supports Raw Photo Processing.



Figure 7. The built-in Coloriage plug-in can colorize black & white photos or change the existing color of objects, like this house's exterior.

a rainbow (as seen at the top of Figure 3). The Gradient's colors can be set manually or you can choose from a wide variety of preset gradients (as seen in the lower 2/3 of Figure 3). You can choose from: linear, elliptical, radial, and conical gradient fills.

Channels

You can view and edit image color channels or work with the image alpha channels.

Effects

AliveColors comes with a wide variety of Effects which are fully modifiable, plus you can see a real-time preview of the results before applying them.

- Noise: The Noise menu allows to add or remove graininess in your image.
- Shadows & Highlights: The Shadow & Highlight effect allows the user to reveal details in bright and dark areas of an image and reduce contrast.
- Sharpen: The Sharpen menu lets you increase the sharpness and enhance the image detail.
- Glamour: The Glamour effect helps you process your portrait photos. It allows you to brighten and even the skin tone, get rid of wrinkles, conceal minor flaws, etc
- Two Keys : The Two Keys effect lets you use two key colors to change the color tints, replace colors, adjust contrast and brightness etc.
- Page Curl: The Page Curl effect creates a page curl on an image.
- Drop Shadow: The Drop Shadow effect adds a perspective shadow to the selected area.
- Blur: You can use the Blur menu commands to blur the entire image or just a selected area, reduce its sharpness, reduce the amount of noise, as well as create a variety of effects.
- Distortion: The Distortion effects are used for creating geometric distortions of the selected layer or area, e.g you can increase/decrease an object's width or height, Twirl the image, Ripple it, Extrude it, etc.
- Channel Mixer: This effect lets you change the image's color tones, saturation, contrast, lightness, etc. using the: Red, Green and Blue channels.
- Pixelate: The Pixelate effects merge neighboring pixels of the image into small monochrome cells. There are two styles: Mosaic - which groups the neighboring pixels into square blocks and Crystalize, which changes them into various polygon shapes.



Figure 8. You can use the built-in AirBrush plug-in to make stunning airbrushed color or black & white images from your photos FYI: the top two images were taken from the Akvis web site and all of these screenshots look a lot more impressive when seen at full size.

Built-in Plug-ins

Quite a few Akvis plug-ins (that can be bought

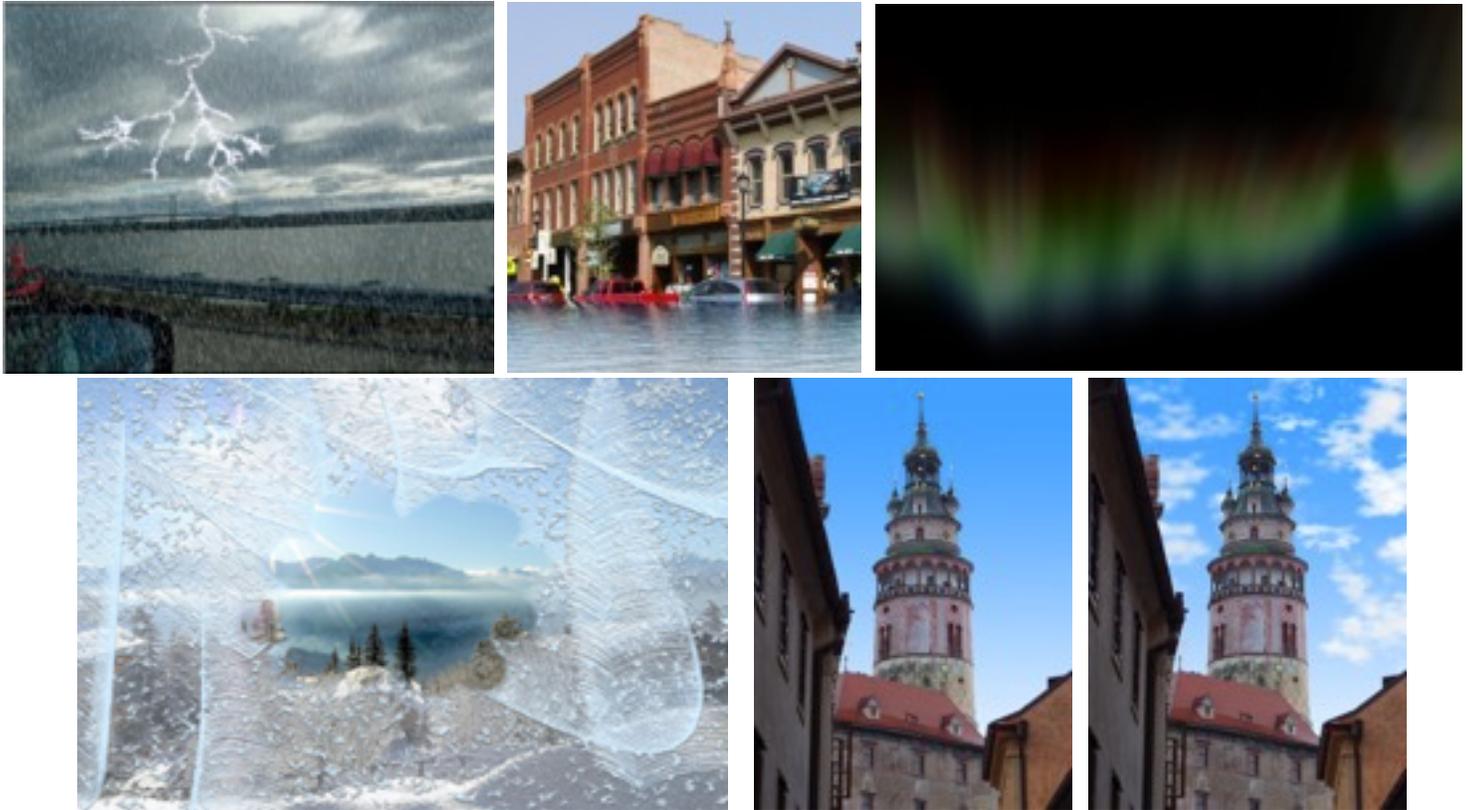


Figure 9. The NatureArt built-in plug-in lets you add a variety of natural effects to your photos, e.g. Rain & lightening, Bodies of water (like my simulating a downtown area being flooded), Auroras, Frost, and Clouds. Effects not shown are Fire, Sun, Ice, and Rainbows.

separately) are included in the Home and Pro versions.

Akvis AliveColors Home license's included plugins:

- **Enhancer:** AKVIS Enhancer is image enhancement software that offers a fast method to fix a dark picture, improve detail on an image, increase contrast and brightness, and adjust tones.
- **HDRFactory:** You can use the HDRFactory plug-in to create High Dynamic Range images from single or multiple photos, plus it can be used for photo correction, e.g. it will make the details more pronounced in the light and dark areas, and exaggerate the colors from photos taken with different camera exposures, to make a more detailed and vibrant image than the original (Figure 12).
- **MakeUp:** Have you noticed that models or actresses in magazine photographs seem to look a lot better in print versus seeing them in person? This is usually attributed to airbrush touch up done on their photos before printing them. The average person can now do the same thing with his/her photographs using the MakeUp plug-in. Gone are the wrinkles, acne, pock-marks etc. after only a few minutes of tweaking (Figure 16).
- **Noise Buster:** The Noise Buster is a Digital Noise Reduction plug-in that reduces noise and grain in your images.

- **SmartMask:** Have you ever tried to remove a person/animal/item from one photo so that you can superimpose it over another photo - to make it look like you were someplace that you never were, or to create a collage? What a pain! Trying to



Figure 10. Using the built-in SmartMask plugin and with only a few strokes, (one red for delete and a blue stroke - for keep), I was able to quickly remove the background and then replace it with another background.

select all of those uneven edges. Well that's where the SmartMask plug-in becomes an invaluable tool. It simplifies the selection and masking process for both simple or complex images (Figure 15).

Akvis AliveColors Pro license. In addition to the above mentioned plug-ins, the following plug-ins are also available:

- **AirBrush:** The AirBrush plug-in lets you transform your photos into works of airbrushed art (Figure 8).
- **Coloriage:** The Coloriage plug-in is designed to convert black and white photographs into color. Why would we need this since now-a-days with the advent of inexpensive color digital cameras, it is very seldom that people are taking black and white photos? This is true, but I bet you have a shoebox of old family photos collecting dust in the attic. Wouldn't it be nice to colorize them as keepsakes (left side of Figure 7).
- **LightShop:** AKVIS LightShop helps you create amazing light effects: flares on the sun, lights from distant planets and stars, a colorful rainbow over a city, reflections in raindrops, fireworks, etc.
- **MakeUp:** The AliveColors Pro version also includes the Mask Editing tools.
- **NatureArt:** In a perfect world you would be able to get that "perfect" shot/photo every time. But this isn't a perfect world, so sometimes your photo needs a little tweaking to get the look that you want. That's where the NatureArt plug-in comes in handy. Need a rainy sky with magnificent lightning bolts - no problem. Need a burning field or fire for your camp fire pit - again no problem. NatureArt can add these plus many other nature effects to your photos: Sun, Auroras, Fire, Rain, various Cloud shapes, Lightning, Rainbows, Water, Frost, and Ice.
- **Neon:** The Neon plug-in lets you create amazing glowing line effects. The software transforms a photo into a neon image that looks like it was drawn with luminescent ink (Figure 13).
- **Points:** The Points plug-in lets you transform your photos into paintings using the technique called pointillism. Pointillism is characterized by applying separate brush strokes in the form of dots or spots. A complex hue is decomposed into individual colors, which are displayed on the canvas as dotted strokes, small dabs of paint of pure color. The optical mixing of these dots gives us the visual perception of an entire painting (Figure 14).
- **Retoucher:** The Retoucher plugin can be used to remove a few scratches & wrinkles from a photo, or restore a badly damaged photo (Figure 11)
- **SmartMask:** The AliveColors Pro version includes additional SmartMask features:
 - Chroma Key: The Chroma Key mode allows you to quickly and accurately remove a monochrome background so you can combine multiple images into a single composition.
 - Refine Edges: The Refine Edges feature is extremely helpful for quickly editing the edges of selections or cutout objects.
 - History Palette: The History palette shows the list of every change made to a file. You can revert the file to a previous state by clicking on an item in the list.

External plugins

AliveColors supports ".8bf" formatted plug-ins, e.g. plug-ins that work in Photoshop. So you can add any of the



Figure 11. The Akvis Retoucher plugin can be used to remove a few scratches & wrinkles from a photo (top image), or restore a badly damaged photo (bottom image).



Figure 12. The built-in HDRFactory plug-in can create High Dynamic Range images from a single or multiple photos.



Figure 13. The Neon plug-in lets you create amazing glowing line effects. The software transforms a photo into a neon image that looks like it was drawn with luminescent ink.

AKVIS plugins (that are not already included in the AliveColors software package) or other “.8bf” formatted third-party plugin-ins. BTW: You can also add external plugins in the Free version of AliveColors - I didn't expect that.

Testing: I was able to successfully add a couple of Akvis plugins that I own, but which aren't included in AliveColors - they worked perfectly. I was also able to get two out of four of my 3rd party Photoshop plugins to work in AliveColors (Since their installers don't currently recognize/install directly in AliveColors I had to point AliveColors to the Photoshop Plug-ins folder to get them to load). The third & fourth plug-ins didn't work because it obviously needed the installer to place files in places other than the plugin folder. Hopefully these and other vendors will start making installers for AliveColors in the near future.

Color Modes:

When you create a new document, you are able to choose the color format. The choices are: RGB, Grey, CMYK, and LAB. You can also choose from 8, 16, or 32 bits/channels.

Languages and Ultra HD Resolution

AliveColors supports several interface languages: English, German, French, Italian, and Russian. You can change the language at any time in the Preferences. AliveColors also supports 4k & 5k displays.

Compatibility

AliveColors has its own Akvis file format which works just fine. But for those who need it, AliveColors also supports the following file formats:

- **Import formats:** PNG, JPG, TIFF, PSB, RWA, High Dynamic Range Image files, Windows Bitmap. AliveColor can also open Photoshop's PSD files. Camera specific formats for Canon, Panasonic, Olympus, Nikon, Sony, Samsung, Pentax, Fujifilm, Kodak, and Mamiya are also supported.
- **Export formats:** Documents can also be saved/exported as: Akvis file format, PNG, JPG, TIFF, PSB, .HDR (High Dynamic Range image) and Photoshop's PSD formats.

Graphics Tablet Support

You can use a Graphics Tablet for creating or editing your images. You can dynamically change the appearance of your strokes based on how much pressure you apply to your stylus when drawing as well as how you tilt and rotate your stylus. You can also use a stylus to perform mouse functions such as tool selection, color selection, and parameter changes.

Testing: I like being able to vary the width of my strokes. So I took out my Wacom tablet and started drawing strokes with differing pressures and tilts. I am happy to say that my line's width did vary throughout the strokes.



Figure 14. The Points plug-in lets you transform your photos into paintings using the technique of pointillism, e.g. small, distinct dots of color are applied in patterns to form an image.



Figure 15. This is an example from the Akvis web site. It shows how thorough SmartMask was at removing the background from all of the nooks and crannies of this ladies' flowing hair.



Figure 16. I was able to use the MakeUp plugin to smooth out this girl's face by: 1. I used the smoothing tool to remove most of the bumps (you can't see it at this image size - but her face is full of bumps), 2. I used the Spot Remover to remove several of the remaining (larger) bumps, and 3. I slightly increased the color saturation to give her a more pleasing facial tone.

Collage Creating - coming soon

Akvis is planning on adding their Chameleon plug-in to AliveColors. This will offer several exclusive collage creating algorithms that will let you combine your photos into amazing collages (according to them) in just a few minutes (Figure 17).

Since I don't already own it, I can't review it. But you can get more information about the Chameleon plug-in from the Akvis [web site](#).

Illustrated Tutorials

Akvis offers a comprehensive online [Manual](#) for AliveColors that guides you through the entire workflow. In addition to the manual, you can also watch their [video tutorials](#).



Figure 17. According to Akvis, their Chameleon plug-in will be incorporated into AliveColors in the near future (*these images were taken from the Akvis web site*).

The Skinny

Evaluation: I like that AliveColors has many similar tools and a somewhat similar look to Photoshop. It makes transitioning to AliveColors very easy. All-in-all I think for a brand new piece of software, AliveColors is off to a good start. I look forward to its updates and improvements as it matures over the months and years to come.

I like that twelve of Akvis' External plugins are built into the AliveColors program. I already owned seven of these plug-ins and I was pleased to see that the built-in ones were not crippled versions. They were 99.9% the same as the ones that I owned. I attribute the few differences to the fact that some of my versions were older than the current versions. So I took this as an opportunity to not only get AliveColors, but to also get the latest versions of my seven plugins. The only difference between the built-in plug-ins compared to the separately bought plug-ins is that the separately bought plug-ins can be immediately updated whereas the built-in plug-ins will have to wait until AliveColors is updated for the plug-ins to be updated at the same time. But I can live with this limitation.

The Actions feature is good, but it isn't quite as robust as Photoshop's - yet. But when I asked if a particular set of actions (that I created in Photoshop) were possible in AliveColors, I was told that my request was sent to the techs and they would work on getting those Action steps to work in AliveColors. - I was pleased. BTW: The tech support people were very helpful when I had a question or problem.

If you are in the market for getting a graphics/photo editor or if you are interested in cutting the cord to Photoshop - I suggest that you take AliveColors for a test run to see if all of the features that you need are included in the program. If they are, it's a no-brainer -- dump your Photoshop subscription and get AliveColors!

Requires: 64-bit Mac OS X 10.9 - 10.12; Minimum: Intel, 4 Gb RAM; Recommended: Intel, 16 Gb RAM, NVIDIA CUDA AMD [ATI] - Stream/App

FYI: I installed and tested AliveColors on my 2013 (cylinder) Mac Pro running OS X 10.12.6. But since I have the AliveColors Pro version that allows me to install it on two computers - I also installed AliveColors on my old 2009 Mac Pro running OS X 10.11.6 - AliveColors work perfectly on both Macs.

Company: [Akvis](#)

Prices: Free (*with limited functionality*)

AliveColors Home: \$49 (*this Perpetual license that never expires, it is good for only one computer; some filters and effects are not available; it is only for non-commercial use*)

AliveColors Pro: \$160 (*this Perpetual license that never expires, it is good for two computers; includes all of the filters and effects; commercial use is allowed*)

Senior & Academic Discount: 30% off

Subscription Option: AliveColors Home: \$2 month / \$18 year

AliveColors Pro: \$5 month / \$45 year

(*A subscription license allows software updates at no additional charge.*)

BTW: If you bought all 12 of the built-in plugins separately, they would cost around \$738. So you can see that buying the AliveColors Pro version (that includes all 12 plug-ins) at \$160 is quite a savings.

[Available 10 day trial](#)

Tidbits

[Click on the blue titles to read the whole story]

[**Disney Cutting off Netflix to Launch Streaming Service in 2019**](#) – Disney currently has an exclusive agreement with Netflix to stream its content, a deal that was made in 2012 but didn't take full effect until last year. Now Disney is withdrawing. In 2019, its content will disappear from Netflix when Disney's own streaming service joins another planned streaming service from Disney subsidiary ESPN. The announcement raises a few questions: How many of these streaming services are people willing to pay for? Will Netflix's original TV shows and movies be sufficient to make up for the content it's losing from competitors with ties to the major studios and networks?

[**AR Glasses from Apple May Not Appear for Several Years**](#) – Apple's impressive ARKit developer framework has sparked speculation about the company developing a pair of smart glasses along the lines of Google Glass. In a post on Medium, augmented reality expert Matt Miesnieks explains why Apple-branded smart glasses are likely still several years away. There are numerous technical challenges to overcome, but the biggest obstacle is miniaturizing all the necessary technology into a pair of glasses people would want to wear all day. Miesnieks thinks Apple could introduce the first limited pair of smart glasses with a heads-up display (think of them as an Apple Watch on your face) as soon as late 2018, though he doesn't see full ARKit-capable glasses appearing before 2021.

[**CrashPlan Discontinues Consumer Backups**](#) Code42 Software has announced it's discontinuing the CrashPlan for Home backup service, and will focus exclusively on the business and education markets in the future. Joe Kissell explains why he's angry about this news and now hesitates to recommend CrashPlan even to businesses.

[**Apple releases six new videos covering iOS 11 iPad features**](#) – Apple has shared a series of new 'how to' videos for iPad features that come along with the newest software.

[**Send and Receive Faxes Cheaply with the Right iOS App**](#) – Apps proliferate for sending and receiving that antiquated form of document transfer, the fax. Pick the right app to keep costs down.

[**DirecTV Now Gains CBS Networks**](#) – AT&T's live TV service DirecTV Now has reached an agreement to live stream content from CBS Networks, including local CBS stations and The CW in several markets, as well as (on premium tiers or for additional fees) CBS Sports Network, Pop, and Showtime. CBS is notoriously reluctant to join streaming services, generally preferring its own solutions, like CBS All Access.

[**AT&T and Verizon Networks Slow Down after Unlimited Plans**](#) – According to a report by OpenSignal, Verizon's and AT&T's 4G LTE download speeds have gotten slower in the months since the carriers brought back unlimited data plans. Between OpenSignal's February 2017 and August 2017 reports, AT&T's average speed fell 6.8 percent to 12.92 Mbps while Verizon's fell a whopping 11.7 percent to 14.91 Mbps. OpenSignal doesn't suggest that there's anything nefarious happening, only that increased demand is resulting in overall slower speeds. Interestingly, both Sprint (by far the slowest carrier) and T-Mobile (the faster carrier), which have offered unlimited data for years, saw an increase in their average speeds during this period: 8.6 percent for Sprint and 4.8 percent for T-Mobile.

[**Virgin Mobile Offering \\$1 Service without iPhone Purchase**](#) – The Sprint subsidiary Virgin Mobile USA recently switched to being an iPhone-only carrier, offering a full year of service for \$1 when purchased with an iPhone. Now the company has opened that offer to everyone who ports an existing iPhone to Virgin Mobile. Until 29 September 2017, Virgin Mobile will give new customers SIM cards for free, after which they will be \$25. Service after the initial year will cost \$50 per month, but you'll get an additional 6 months of service for \$1 every time you upgrade your iPhone.

[**Verizon Wireless Throttling Video for New Unlimited Customers**](#) – When Verizon Wireless announced the return of unlimited data plans earlier this year, we were afraid it was too good of a deal. Verizon now offers an unlimited plan for \$75 per month (\$5 less than before) but will throttle video streams so that they cannot exceed 480p (DVD) resolution on phones and 720p on tablets. Those resolution limits will also apply to mobile hotspots, which will also be capped at 600 Kbps. Verizon has also announced a new \$85-per-month Beyond Unlimited plan that lets you stream video in HD resolutions and includes 15 GB of 4G LTE data for tethering per month, throttling data to 600 Kbps after 15 GB. The good news is that if you currently subscribe to Verizon's previous \$80-per-month unlimited plan, you get the benefits of Beyond Unlimited for the same price as before.

[How Some Thunderbolt 3 Cables Underperform with USB-only Drives](#) -- AppleInsider found a mismatch with certain Thunderbolt 3 cables and USB-C drives that support only USB standards. We checked it out and were able to confirm AppleInsider's results.

[iMac 1 TB Fusion Drives Have Smaller SSDs](#)

by Adam C. Engst

While I was at MacTech Pro in New York City recently, I learned an interesting fact while chatting with one of the consultants in attendance. When you buy a 2017 iMac — either the 21.5-inch model or the 27-inch model — you can configure it with a 1 TB Fusion Drive for storage, but the hardware specs of that particular drive might give you pause.

Apple's [Fusion Drive](#) combines hard disk and SSD storage in a drive that appears to the operating system as a single volume. Hard disks provide a lot of storage for a low cost per gigabyte, but they're relatively slow. SSDs — solid-state drives — are much faster but can cost over 5 times more per gigabyte. By fusing the hard disk and SSD into a single volume, a Fusion Drive provides a lot more storage than an SSD with far better performance than a hard disk. macOS achieves this performance by storing operating system files, commonly used apps, and your most frequently used data on the SSD. Adjusting data storage locations happens behind the scenes, so you don't (and can't) know what data is stored where — some files may even be stored in both places.

Personally, I don't need that much storage, so I stick with SSDs on my Macs, but the Fusion Drive is a good compromise for many iMac buyers.

I'd heard rumors that Apple had at some point reduced the amount of SSD storage in the 1 TB Fusion Drive, but I didn't know where to confirm the amounts until hearing about it at MacTech Pro. Strangely, Apple doesn't mention the sizes of the hard disk and SSD in the Fusion Drive on the Tech Specs page for the Macs that have it as an option (the iMac and the Mac mini). Instead, you can find the information only by configuring a Mac for purchase, and clicking the "How much storage is right for you?" link above the storage options. That displays a pop-up with the details.

There you'll learn that, although the 1 TB Fusion Drive in the Mac mini includes a 1 TB hard disk and a 128 GB SSD, as did the original 1 TB Fusion Drive in the iMac, the 1 TB Fusion Drive you can purchase with any current iMac model includes only a 32 GB SSD. However, the 2 TB and 3 TB Fusion Drives available for the 27-inch iMac with Retina display both include 128 GB SSDs. Apple even recommends that iMacs with 32 GB of RAM be configured with at least a 2 TB Fusion Drive; I wonder if that's due to temporary operating system files, such as virtual memory swap files and the file that stores the contents of memory when the Mac goes to sleep, taking up too high of a percentage of the SSD.

What I hadn't realized before researching this article is that the 32 GB SSD in the current 1 TB Fusion Drive is actually an improvement because [in 2015, Apple reduced the size of the SSD](#) in the 1 TB Fusion Drive from the original 128 GB to just 24 GB.

Regardless, the practical upshot of this information is that I would encourage anyone considering an iMac to avoid the 1 TB Fusion Drive. Instead, you could spend an extra \$100–\$200 on a 256 GB SSD and get an inexpensive external hard disk to hold large amounts of data. Alternatively, you could pay an extra \$200 or \$300 and get either the 2 TB or 3 TB Fusion Drive.

Whatever you do, don't get an iMac with just the 1 TB hard disk. I think it's a big mistake to configure any Mac with just a hard disk these days because the Fusion Drive and particularly SSDs are so much faster. An SSD or Fusion Drive provides the most performance gain you can get for your buck.

The image contains two screenshots of Apple's storage configuration pop-up windows. The left screenshot is titled "Storage" and shows the following text: "Your Mac mini comes with a 1TB Fusion Drive. You can upgrade to a 2TB Fusion Drive, or choose flash storage for even greater performance." Below this, there are two sections: "About Flash Storage" which states "For maximum performance, you can configure your Mac mini with up to 1TB PCIe-based flash storage instead of a traditional hard drive. Flash storage delivers up to 5x the performance of a traditional drive* — speed you'll notice when you start up your Mac mini, launch an app, or browse your photo library." and "About Fusion Drive" which states "Fusion Drive contains 128GB of superfast flash storage with a traditional hard drive. And it's up to 4x faster than a 5400-rpm hard drive** It automatically and dynamically moves frequently used files to flash for quicker access. With Fusion Drive in your Mac mini, booting up, copying files, and importing photos are faster. Over time, as the system learns how you work, Fusion Drive makes your Mac experience even better. All while letting you store your digital life on a traditional, roomy hard drive." The right screenshot is also titled "Storage" and shows: "Configure your iMac with a large Serial ATA hard drive, choose ultrafast SSD storage for incredible performance, or get the best combination of speed and capacity by selecting Fusion Drive." Below this are two sections: "SSD Storage" which states "SSD storage delivers significantly improved performance compared to a traditional hard drive — speed you'll notice when you start up your iMac, launch an app, or browse your photo library. SSD storage also uses no moving parts, so it operates silently. For maximum performance, you can configure up to 1TB of storage on the 21.5-inch iMac or up to 3TB on the 27-inch iMac." and "Fusion Drive" which states "Fusion Drive combines speedy SSD storage with a high-capacity hard drive. macOS intelligently manages what goes where, using the SSD storage for files you access frequently and keeping the rest of your digital life on the roomier hard drive. Over time, the system learns how you work, so it tailors management of Fusion Drive to work best for you. You can choose a Fusion Drive of up to 1TB on the 21.5-inch iMac and up to 3TB on the 27-inch iMac." At the bottom of the right screenshot, there is a small note: "Based on 1TB or 128GB Serial ATA and 1TB or 128GB Serial ATA, which supported capacity limit."

HOW TO FIND US

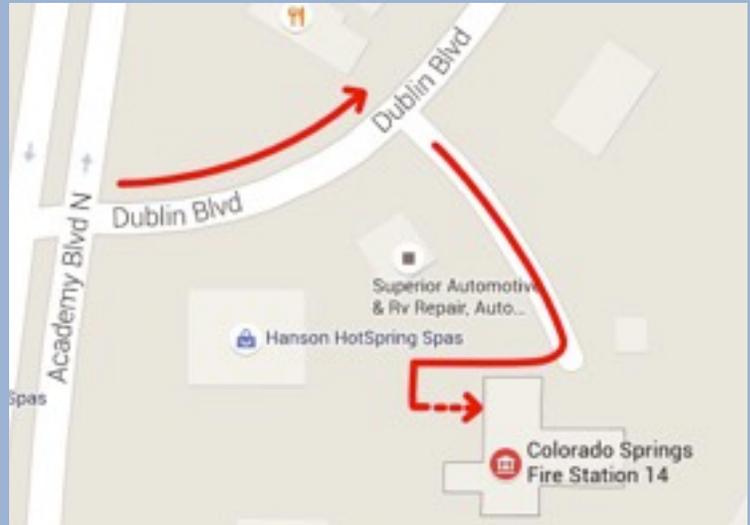
General meeting:

SMMUG General Meetings are held on the SECOND Monday of each month at Fire Station 14 located at 1875 Dublin Blvd (at the intersection of North Academy and Dublin).

Directions:

From Academy, go east on Dublin and then turn right on the very first street. There is parking on the west and south sides of the Fire Station (with additional parking located to the north and further west of the Fire Station). The entrance is on the west side of the building.

Smoking is not permitted on the premises.



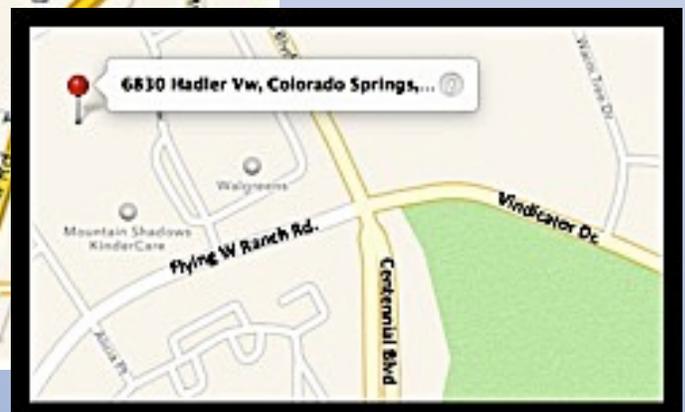
Sig meeting:

The SIG Meetings are held on the SECOND Saturday of each month at Fire Station #18's meeting room - located at: 6830 Hadler View [the fire station is behind Walgreens].

Directions:

#1) Take I-25 to Garden of the Gods Rd (head west), turn right on Centennial, left on Flying W Ranch Rd., right on Hadler View.

#2) (This route is bumpier and probably not the best for winter travel) Take I-25 to E. Woodman/W. Rockrimmon Blvd., turn right on Vindicator (at the Safeway intersection), and then right on Hadler View.



About Us

The Silicon Mountain Macintosh User Group, Inc. (a nonprofit educational corporation) was formed in Colorado Springs, Colorado in 1985, and is one of the oldest Macintosh User Groups in the United States. SMMUG, Inc. is dedicated to helping members enjoy and learn about their Macintosh computer, iPhone and iPad devices.

Club membership is open to everyone and you are cordially invited to visit our free monthly General Meeting on the second Monday of each month, at 7:00 PM. For those new to the Macintosh, we have a Question & Answer session at 6:00 PM, where our collective expertise can help answer your questions.

All members receive a monthly newsletter, published on [our web site](#), see great reviews of software and hardware, or can participate in the monthly door prize drawing. Each member gets one vote during annual Officer Elections. No corporate memberships are granted.

Our officers are volunteers and receive no pay. All funds raised are used for the cost of operating the club and its meetings.

Membership Application Form

Membership entitles you to access to our online forums, participation in prize drawings, and access to the bargains in the members area of the SMMUG website at www.smmug.org. SMMUG renewal membership dues (\$30) apply to the calendar year and are paid each December for the following year. Use the following table for NEW MEMBERSHIP ONLY:

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APR 1 to JUN 30 - \$20.00

JUL 1 to SEPT 30 - \$15.00

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