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Keystone MacCentral November Program

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This month we will have a presentation of Canva and we will talk about podcasts.

Canva is a graphic design platform, used to create social media graphics, presentations, posters, documents and other visual content. The app includes templates for users to use. The platform is free to use but offers paid subscriptions like Canva Pro and Canva for Enterprise for additional functionality.

Kendra Hepler, a co-worker of Eric, has agreed to do a short presentation on Canva. Kendra is the Communications Specialist for the Pennsylvania Restaurant & Lodging Association. She is part of the communications department for the PRLA. She spends much of her time on various social media platforms informing members of the hospitality industry about important legislative issues and spreading good news about industry events and happenings.

Also we will be talking about **Podcasts** — how to find and listen to them and recommendations from members on what to listen to/watch. If you have any favorites, we would like to hear about them!

We have virtual meetings via Zoom on the third Tuesday of each month.
Just follow the directions/invitations each month –
that is, just click on the link.
They will be sent out prior to each meeting. Just follow the directions as outlined.

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Keystone MacCentral is a not-for-profit group of Macintosh enthusiasts who generally meet the third Tuesday of every month to exchange information, participate in question-and-answer sessions, view product demonstrations, and obtain resource materials that will help them get the most out of their computer systems. Meetings are free and open to the public. *The Keystone MacCentral printout* is the official newsletter of Keystone MacCentral and an independent publication not affiliated or otherwise associated with or sponsored or sanctioned by any for-profit organization, including Apple Inc. Copyright © 2020, Keystone MacCentral, 310 Somerset Drive, Shiresmanstown, PA 17011.

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The Apple Watch as a Pandemic Peripheral

Communicating^{with} my

beloved wife when she is away from the house has become a bit trickier because of the COVID-19 pandemic, but I can't blame her.

COVID-19 has made navigating the outside world stickier and ickier because of the worry about touching potentially contaminated surfaces and a resulting desire to disinfect continually as protection from the coronavirus.

Keeping your hands clean is chore enough, but you also need to worry about your iPhone. "If a mobile phone isn't exactly an extension of the human hand, it should be treated like one during COVID-19," [Hartford HealthCare recently said](#), in advice I've seen echoed repeatedly online. "Your phone, like your hand, is a bacteria and virus magnet."

To be fair, the US Centers for Disease Control [no longer considers surface transmission to be a primary vector of infection](#), saying:

It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about how this virus spreads.

WebMD also has an article from 3 September 2020 discussing [the low likelihood of surface transmission](#). Nevertheless, the CDC still recommends daily [disinfection of frequently touched surfaces](#), including phones, and for electronics [refers users](#) to the manufacturer's instructions. With regard to the iPhone, [Apple says](#):

Using a 70 percent isopropyl alcohol wipe or Clorox Disinfecting Wipes, you may gently wipe the exterior surfaces of your iPhone. Don't use bleach. Avoid getting moisture in any openings,

and don't submerge your iPhone in any cleaning agents.

Unsurprisingly, when she's doing errands, my wife has become reluctant to dig her iPhone out of her handbag to check text messages or answer a call. This makes her irritatingly but understandably difficult to reach.

It recently dawned on me that the Apple Watch may be the solution. My wife has never used or expressed any interest in using one. But if I persuaded her to do so, I reasoned, I would have a better shot at getting in touch with her while she was out and about. All she'd have to do is tap the watch screen with her pinkie when I texted, called, or started a [Walkie-Talkie](#) conversation with her.

Hardware hygiene would be easier, too. A quick swipe with a disinfectant wipe would do it. [Apple's advice for disinfecting an Apple Watch](#) is similar to that for the iPhone:

Using a 70 percent isopropyl alcohol wipe or Clorox Disinfecting Wipes, you may gently wipe the exterior surfaces of your Apple Watch, Sport Band, or metal band. Don't use on fabric or leather bands. Don't use bleach. Avoid getting moisture in any openings, and don't submerge your Apple Watch in any cleaning agents.

Coronavirus-Fighting Features

This got me thinking about how the Apple Watch can be a helpful—even essential—piece of personal technology during the COVID-19 pandemic.

In some ways, this is obvious. For instance, the Apple Watch now [nags you about washing your hands](#), a highly recommended way to protect yourself from viruses (see "[watchOS 7 Introduces Sleep Tracking, Handwashing Detection, and More](#)," 22 June 2020). The Handwashing Timer

feature prompts you to scrub for the recommended 20 seconds. A companion capability called Handwashing Reminders nudges you to wash your hands after you get home. Enable them in the Watch app, in My Watch > Handwashing.



I really need the Handwashing Timer since I am otherwise prone to wash for only five seconds or so, as my stopwatch-wielding wife has informed me. The feature needs work, though. As my household's designated dishwasher (a duty I adore since it's my tech-podcast listening time), I'm irritated at how the timer keeps kicking in as I wash up from dinner.

Handwashing Reminders also is helpful. More than six months into the pandemic, I still forget to wash my hands upon getting home some of the time, so I definitely appreciate the nudge. But it too isn't perfect—if I've merely been out for a walk around the neighborhood, there's no real need to wash, not that a few extra washes are a problem.



Blood oxygen tracking in the Apple Watch Series 6 could be another boon for pandemic-perturbed users (see "[Apple Unveils Apple Watch Series 6 and Apple Watch SE](#)," 15 September 2020). I've been told repeatedly to invest in a basic fingertip pulse oximeter since blood-oxygen monitoring is a way to monitor for the possible onset of COVID-19, but procrastination is one of my superpowers. How awesome is it that I now have that capability on my wrist?

But we should reserve judgment on this capability for the moment. Apple doesn't [market the Apple Watch as a medical device](#), and rigorous studies of how its blood-oxygen monitoring compares to medical-grade gadgetry are scarce. A Washington Post reviewer recently said he [is not impressed](#) by the feature, and the IEEE Spectrum site [urges caution for now](#).

Other Useful Features During a Pandemic

Time-tested Apple Watch features have potential utility in these confusing times as well. If your goal is to reduce the need to touch surfaces in public—notably credit card payment terminals, along with your iPhone—the Apple Watch has much to offer.

Casual users are often unaware of these features, as I've come to learn after numerous conversations with such people.

Tap-to-pay with [Apple Pay](#) is an important one. It involves using your iPhone or your Apple Watch to make purchases at brick-and-mortar establishments simply by bringing the device into close proximity with an NFC-enabled payment terminal. The payment tech has particular resonance during a pandemic since you typically touch nothing (including your iPhone if you have set up your watch for Apple Pay) during such a transaction.

Apple has done a good job of popularizing Apple Pay, but barriers to greater adoption remain. Some people worry that it is less secure than paying with a card, which is entirely incorrect—Apple Pay is far more secure. To this day, I cannot get my wife to consider it. Apple might want to promote the security and zero-touch nature of Apple Pay in a pandemic context.

Also, Apple Pay can be a pain to set up, and Apple doesn't score any points by having iPadOS nag you to set it up even on an iPad you'll never take out of the house. (You can use it for some in-app and online payments, which is why Apple does this.) Setting up Apple Pay with my credit union was a nightmare, but I've heard that the process is getting easier. Your experience will likely vary depending on which financial institution you use—the larger the bank, the more likely they've eliminated unnecessary signup hurdles.

Because of the pandemic, I have taken a closer look at other Apple Watch features lately. Although I'm far more iPhone-focused than my wife, I've found numerous ways where I've migrated my on-the-go usage patterns over to the watch, including:

- **Responding to texts and other messages:** Before the pandemic, I rarely replied to incoming messages on my watch using an emoji or a quick text reply via voice dictation, and now I'm amazed I neglected these features.
- **Answering voice calls:** There's a cool [Dick Tracy](#) vibe to this capability, but I have worried about seeming rude to those around me, so I've

generally abstained. I still worry about that, but the pandemic is prompting me to use the feature in brief spurts.

- **Managing tasks:** I'm a recent convert to the Reminders app. I invariably interact with it through Siri on my Apple Watch.



- **Managing notes:** I noted a while back how my preferred notes app Google Keep had gained Apple Watch support (see "[Google Keep Now Supports the Apple Watch, Apple's Notes Still AWOL](#)," 18 April 2019), and I'm using this feature a lot more because of the pandemic.
- **Queuing up podcasts:** Podcast management on the Apple Watch is another feature I've written about (see "[Overcast and Apple's Podcasts Make the Apple Watch a Decent Podcast Player](#)," 15 October 2018). I haven't used it as much as I'd like because [Overcast](#), my preferred podcatcher, hasn't quite nailed its Apple Watch support. But, because of the pandemic, I'm making more of an effort.



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- My family tends to order the exact same Domino's pie every time, so the pizza chain's Apple Watch app comes in handy. It's basically just a button that triggers my standard pickup order. Nice!

Speaking of My Wife

My theory that my wife would be more available when away from the house if she wore an Apple Watch is just that, a theory. To test it, I've taken delivery of a 40mm Apple Watch SE for her.

I honestly have no idea how this will go. My wife is far from a tech power user, tending more towards the Luddite end of the spectrum. While she's fond of her iPhone, she takes advantage of only a tiny fraction of its capabilities, and she likes it that way. She has only one third-party app on it, Google Photos, which I installed so it would automatically upload her photos for safekeeping.

She does seem abstractly interested in the Apple Watch's communication capabilities, but she also seems averse to having something other than a loose bracelet on her wrist, and she has not used a traditional watch in a decade. Still, she is being a good sport about participating in my little experiment. We all need amusements during these dark and confusing days, and this is apparently one of them for her. 🍷

By David Shayer

Four Reasons Why We Won't See Third-Party Apple Watch Faces (And What Apple Is Doing Instead)

Apple Watch users have wanted third-party watch faces since Apple unveiled the watch in 2015, and developers have wanted to create custom watch faces for just as long. But despite the pleas of users, developers, and a [well-known podcaster](#), they're probably not coming.

As an Apple software engineer, I worked on the first two releases of watchOS, so I'm familiar with many of the Apple Watch's internal trade-offs.

While I don't have any inside information about current versions of watchOS and Apple Watch hardware, there are at least four reasons to think Apple won't support third-party watch faces any time soon, if ever.

Reason #1: Battery Life

The main reason Apple doesn't allow third-party watch faces is battery life. On the Apple Watch Series 5 and Series 6, the watch face is displayed

almost all the time. It's vital that the code driving the watch face consumes as little power as possible. Apple engineers go to great lengths to ensure the watch face code is power-efficient.

These efforts go well beyond simple tricks like hiding the second hand when the face dims since animation takes more power than a static display. Apple engineers have intimate knowledge of how watchOS displays graphics and how the Apple Watch's GPU works, and for better or worse, this information is proprietary. They know which graphics techniques use the least power. Their animation techniques are the most energy-efficient possible. They have access to private graphics APIs that aren't available to third-party developers. And they have internal testing and measurement tools that the company doesn't provide to third-party developers.

The Apple Watch doesn't achieve all-day battery life by accident. Apple engineers spend thousands of hours fine-tuning the code to be power-efficient. Every night, Apple's automated build system creates a new build of watchOS, called the daily build, using the latest code changes checked into source control. (This is true for all Apple operating systems; see "[How to Decode Apple Version and Build Numbers](#)," 8 July 2020.) Apple engineers use the daily build, so they're all running the latest version of watchOS.

The daily build is also loaded onto a rack of Apple Watches in the power testing lab. They run through a set of scripts that simulate normal use to see how long the batteries last. The results are published to an internal Web dashboard that tracks battery life for every watchOS build. If battery life goes down, engineers are assigned to find out why and to fix it. Battery life is an obsession with the Apple Watch team.

No matter how capable or diligent they might be, third-party developers simply won't have the internal graphics knowledge, the private API access, or the test tools to be as rigorous about battery life as Apple demands. If Apple were to open up watch-face development to third-party developers right now, battery life would almost

certainly decline, which would make for a worse Apple Watch experience for users.

Reason #2: Buggy Code

The watchOS code that drives the watch face runs 24 hours a day, for months on end. It must be as utterly bug-free as possible. It's unacceptable to glance at your watch and find the face has frozen, crashed, or has a visible glitch. The Apple Watch team does a tremendous amount of testing on watch code. Those engineers run automated tests, manual tests, and recruit thousands of Apple employees to use beta copies of watchOS and report any problems.

In my years working at Apple, I developed a deep respect for Apple's Software Quality Assurance (SQA) engineers. They do a tremendous job. When software ships with bugs, it's usually not because SQA didn't report a problem, but because the schedule didn't allow time to track it down and fix it (see "[How to Report Bugs to Apple So They Get Fixed](#)," 17 June 2020).

Only the largest third-party developers, like Microsoft and Google, have equivalent testing resources. Smaller developers probably can't guarantee the quality required for watch face code. And even if they could, it wouldn't be economically feasible for them to spend that much time testing watch faces, which would quickly become a commodity in the App Store. Nor does Apple want to take on that level of testing itself as part of allowing third-party watch faces into the App Store.

Reason #3: Apple's Image

It's an understatement to say Apple is highly image-conscious. Apple obsesses over every detail of its public persona, from the Mac Desktop background to iPhone colors, and even extending to the exact shade of wood in Apple store tables. Steve Jobs examined dozens of shades of white cables before selecting the particular shade of white in the iconic iPod and iPhone earbuds.

The watch face is the public facade of the Apple Watch. It's what everyone sees when they spot

someone wearing an Apple Watch. It must be beautiful, contemporary, and polished.

There are certainly some third-party developers who create beautiful apps. However, as you browse through the App Store, you also find plenty of apps whose design is uninspiring and many more that are outright ugly.

Apple does not want the Apple Watch sporting a gaudy, grating, or downright dissonant face, even if that's what you might like. Nor does Apple want to be in the business of deciding which watch faces are stylish enough to appear on the watch. Apple thinks its own designers do a fine job of creating a wide range of highly customizable faces, and it adds more faces with each watchOS update.

Reason #4: Copyright Worries

If there's one department within Apple that you don't mess with, it's Apple Legal. Apple doesn't want to waste time and money fighting copyright infringement lawsuits over watch faces. Many classic watch faces, like the Hermès face that Apple licenses for the Apple Watch Hermès, are copyrighted. Vintage faces were also designed before smartwatches existed, so licensing such faces for digital use means negotiating with a copyright owner that may not understand the issues involved in digital licenses. Worse, the App Store supports dozens of countries, and the copyright owner could be different in each country. It's a legal nightmare.

Apple is all too familiar with watch face copyrights. Years before the Apple Watch existed, the company had to [pay the Swiss Federal Railway service \\$21 million](#) for a license after "adapting" its iconic Mondaine watch face for iOS 6.

Apple could require the developer to certify that they had a legal right to sell each watch face. But the company has no easy way to verify that the developer is telling the truth, and Apple would inevitably be named in any copyright infringement lawsuit because Apple has deep pockets.

When Apple originally started the iTunes Music Store, it took a small army of lawyers to acquire the legal rights to sell all those songs, in all the

countries in which Apple operated. One reason it took so long for Apple Music to offer song lyrics is that written lyrics are licensed separately from the music.

Complications to the Rescue?

Apple thinks it has a feature that will satisfy users' desire to customize their watch faces: third-party complications. The term *complication* comes from the world of mechanical watches, where it refers to extra information that's displayed in addition to the time. [Common mechanical watch complications](#) include the date, the day of the week, and the time in another time zone.

The Apple Watch's complications allow a third-party app to display additional information—usually a tiny amount of text and graphics—on one of Apple's watch faces. watchOS provides several different shapes and styles of complications, and most watch faces can show several different complications.

What complications don't show is the time—that's reserved for the watch face proper. A popular Apple Watch complication is the weather, showing the temperature and a small icon for the current conditions.

Complications are part of an app, but they have special restrictions. The complication's code gathers data, like the weather prediction for the day, and passes it to watchOS in a static data structure with details about when to display each data record. watchOS displays one data record at a time, updating the display over time until it's time for the complication to load more data. The system is ideal for predictable, slowly changing data, like weather, ocean tides, or the phase of the moon. It doesn't work well for data that needs to be frequently refreshed, such as stock prices.

Apple designed third-party complications this way to save battery life. The complication's code only runs for a few seconds, several times an hour, which prevents it from sucking too much power. Most of the time, watchOS is just showing the complication using static data. That usually works

well, but it does limit what can be represented well in a complication.

watchOS 7 Expands Customization

With watchOS 7, you can see just how much Apple wants to answer the desire for third-party watch faces without actually going that far. Changes include multiple complications from the same app, watch face sharing, and quite a few new faces.

- Allowing multiple complications from the same app in a single watch face may sound relatively minor, but it gives apps a lot more flexibility, presenting more data across multiple complications, and it lets users arrange those complications however they like.
- Watch face sharing may also seem somewhat unimpressive, but users spend a lot of time customizing watch faces, including the complications. It can take quite a bit of effort to get things just so, and if you're showing off your customized watch face to a friend, you can now share it with them easily.
- Apple added seven new watch faces in watchOS 7. The new faces this time around include Artist, Chronograph Pro, Count Up,

GMT, Memoji, Stripes, and Typograph. As you can see, Artist, Memoji, and Typograph are relatively bare-bones, but the rest of them offer lots of complication slots and other opportunities for customization.



These new features let users make their watches more personal than ever before. I'm sure Apple has additional customization options planned for future versions of watchOS as well. But third-party watch faces are probably not on the horizon. 🗑️

By Adam Engst

The iPhone 12: Here's What You Need to Know

At its "Hi, Speed" announcement, Apple did what industry watchers were expecting and introduced not one, not two, not three, but four iPhone 12 models. In addition to the expected iPhone 12, iPhone 12 Pro, and iPhone 12 Pro Max, Apple unveiled a diminutive iPhone 12 mini that at long last acknowledges that not everyone has large hands or pockets.



Apple's pre-recorded event was jam-packed with hero shots and technical specs, all edited with such quick cuts that taking notes was nigh-on impossible. The details are all now available, but when managing editor Josh Centers and I talked it through, we didn't see any way that we could convey that information as well as Apple. So, instead of a traditional "speeds and feeds" article, we're going to take a slightly different tack.



First, let's get you the numbers you'll want to pore over to evaluate the four models. Check out these pages:

- [iPhone 12 and iPhone 12 Pro main pages](#)
- [iPhone 12 and iPhone 12 mini tech specs](#)
- [iPhone 12 Pro and iPhone 12 Pro Max tech specs](#)
- [iPhone comparison tool](#)
- [Apple trade-in values](#)

Now, here's what you need to know about the iPhone 12 lineup.

Industrial Design: It's Hip to Be Square

Perhaps the most significant aspect of the iPhone 12 lineup is that it passes the Goldilocks test: you can finally choose from three different sizes. The iPhone 12 Pro Max is the Papa Bear, with a 6.7-inch screen. That's a hair taller than the iPhone 11 Pro Max, which had only a 6.5-inch screen. In the Mama Bear spot, the iPhone 12 and iPhone 12 Pro are identical twins, featuring a 6.1-inch screen that's the same size as last year's iPhone 11, but in a case that's a bit shorter. But the gold star goes to the new Baby Bear

model, the iPhone 12 mini, which shoehorns a 5.4-inch screen into a case that's just 8 mm taller and 6 mm wider than the first-generation iPhone SE that had a 4-inch screen and was the last truly small iPhone.

With the iPhone 12 models, Apple has also returned to the squared-off industrial design last seen in the first-generation iPhone SE. That's a huge deal in its own right, since that industrial design was widely praised for being easier to hold and less slippery. I never used an iPhone case during that era because the design made me so much less likely to drop my iPhone. If you do drop one of these new iPhones, it will be up to four times more likely to emerge with the front glass unscathed thanks to a Ceramic Shield glass that Apple developed with Corning.



The similarity in materials ends there. The iPhone 12 and iPhone 12 mini have a glass back and aluminum design, and they come in five colors: black, white, green, blue, and Product(RED). The iPhone 12 Pro and iPhone 12 Pro Max sport a textured matte glass back and a stainless steel design. Their colors include silver, graphite, gold, and a snazzy new Pacific Blue.



Finally, it's worth noting that all the iPhone 12 models have the notch on the screen and rely on Face ID for authentication. The notch isn't a big deal—you get used to it quickly—but Face ID isn't a big win when you're wearing a mask. We had hoped that Apple would bring the Touch ID sensor that it integrated into the top button of the recently announced fourth-generation iPad Air to the iPhone 12 (see "[Apple Redesigns iPad Air, Updates Base-Model iPad](#)," 15 September 2020). It may not have been technically feasible, or Apple may not have had time to revamp the internals once it became clear that we'd be wearing masks while out and about for the foreseeable future.

5G: Bandwidth Game Changer or Spectrum Snake Oil?

Apple made a big deal of the fact that all these models support 5G wireless connectivity, even bringing in Hans Vestberg, CEO of Verizon Communications, to talk about how wonderful it will be. The specs are impressive, with up to 4 gigabits-per-second download speeds under ideal conditions, although Apple admitted that typical conditions would see only 1 gigabit per second. Upload speeds could be up to 200 megabits per second. Verizon claimed that "5G just got real," in part thanks to its 5G Ultra Wideband service and its use of millimeter-wave spectrum. Plus, the company said it is now turning on its 5G Nationwide Network (which presumably doesn't use the millimeter-wave spectrum), claiming that it will reach 200 million people across 1800 cities and towns.



Color us skeptical. We have doubts that 5G will produce the kind of real-world performance that Verizon is touting. Coverage is also a question—Verizon says 5G Ultra Wideband is in New York, Los Angeles, and Chicago, and will be expanding to 60 cities around the US by year-end. We're not sure what Verizon's 5G Nationwide Network entails in terms of technology—is it something real or just rebranded LTE? Regardless, what are the 5G plans for AT&T and T-Mobile in the US, or for carriers throughout the rest of the world? And given the short range of 5G, which requires more base stations, we strongly suspect it will be a long time in coming to people who don't live in dense urban areas. No 5G service, no 5G benefits.

Even if you can get 5G, will you care? More bandwidth is always welcome, but apart from those who stream video regularly, we're betting most people won't notice. Don't misunderstand—we're always in favor of better networking, and there will undoubtedly be uses for it in the future, like augmented-reality glasses, but for now, we'd suggest that most people shouldn't upgrade for the 5G alone. Regardless of its networking utility, 5G won't give you cancer (see "[Worried about 5G and Cancer? Here's Why Wireless Networks Pose No Known Health Risk](#)," 6 December 2019).

Cameras: Pro Means Pro

We'll admit to glazing over somewhat during Apple's explanation of just how amazing the cameras are on the iPhone 12 models. So many numbers, spoken so quickly! The practical upshot is that the iPhone 12 and iPhone 12 mini have a dual 12-megapixel camera system with ultra wide and wide cameras with 2x optical zoom. They have optical image stabilization and support Night mode and Deep Fusion, which are essentially Apple marketing terms for computational photography features that provide better photos, particularly in low-light situations. Night mode and Deep Fusion are also now available on the front-facing camera. For video, they offer 1080p and 4K recording at up to 60 frames per second and introduce HDR video recording with Dolby Vision at up to 30 fps. Again,

that just means higher quality video, particularly in challenging lighting.

We're feeling intimidated by the iPhone 12 Pro model cameras. Like last year's iPhone 11 Pro, they feature a triple 12-megapixel camera system with ultra wide, wide, and telephoto cameras. Along with everything the plain iPhone 12 models can do, the Pro cameras boast a better optical zoom: the iPhone 12 Pro has a 4x zoom range from 0.5x to 2x, whereas the iPhone 12 Pro Max has a 5x zoom range from 0.5x to 2.5x.



A new LiDAR Scanner gives the iPhone 12 Pro models faster autofocus in low light, Night mode portraits, and improved AR experiences. They also support a new Apple ProRAW format that provides professional photographers with the benefits of Apple's computational photography combined with the flexibility of a raw image format. In terms

of video, the Pro models bump that HDR video with Dolby Vision to 60 fps. The iPhone 12 Pro Max also features something Apple calls "sensor-shift optical image stabilization for both photos and video—which is supposedly better than the regular optical image stabilization in the iPhone 12 Pro.

Finally, I'm going to slip another significant fact in here—all the iPhone 12 models use Apple's new A14 Bionic chip, which the company announced with the fourth-generation iPad Air last month (see "[Apple Redesigns iPad Air, Updates Base-Model iPad](#)," 15 September 2020). Apple geeked out on its many capabilities, but in the real world, I suspect the main utility of the A14 comes in powering the computational photography capabilities behind every image taken by a modern iPhone. It's probably good for fancy gaming too, if small-screen games without physical controllers float your boat, or for editing those snazzy HDR videos with Dolby Vision.

So let me put all that in context. The iPhone 12 Pro model camera system is almost certainly the best iPhone camera ever. If you're a pro or want pro-level photos and videos from your iPhone, buy one right away. The harder questions come if you're not a pro and need to choose between models, with some attention paid to cost. How does the iPhone 12 camera compare to the iPhone 12 Pro and Pro Max cameras? And how do they stack up against the iPhone 11 Pro? We're not pro photographers, so we're not even going to attempt such an evaluation. We're sure photo sites and photography-involved Mac sites like John Gruber's Daring Fireball will be publishing side-by-side comparison images soon enough.

Magnets and Batteries, Oh My!

Magnets feature heavily in the iPhone 12 with the return of Apple's MagSafe name. Previously, MagSafe referred to the magnetic break-away charging cables Apple laptops relied on before the move to USB-C and Thunderbolt 3. (We will all now pause for a minute of silence to mourn the passing of MagSafe in laptops.)

The new MagSafe is a magnetic coupling and charging technology built into the back of each of the iPhone 12 models. It's a ring of magnets inside the case, coupled with a magnetometer and an NFC sensor. An Apple [MagSafe Charger](#) (sold separately for \$39) snaps onto the back for wireless charging at up to 15 watts. Qi wireless charging is still supported as well, at up to 7.5 watts. Ironically, MagSafe could eliminate the positioning problems that caused Apple to cancel its AirPower wireless charging mat (see "[Apple Cancels AirPower, Can't Take the Heat](#)," 29 March 2019).



On the wired charging front, all the iPhone 12 models have Lightning ports and are fast-charge capable, which means they can achieve a 50% charge in 30 minutes with a 20-watt or higher charger. But don't expect that 20-watt charger in the box. The new iPhones will include a Lightning to USB-C cable, but say goodbye to included wall chargers and earbuds. Speaking from the rooftop of Apple Park (and looking just a touch nervous about the height), Apple's vice president of Environment, Policy, and Social Initiatives Lisa Jackson spun this as an environmental change that will spare the world from some electronic waste and make shipping more efficient, which is undoubtedly true and good, but it also saves Apple a lot of money that it's not passing on to the customer. A win-win for Apple, if not the rest of us.



The MagSafe technology also enables an entire ecosystem of accessories. Apple sells [several cases](#) that rely on it, along with a leather card wallet that just snaps onto the back. If I left the house more frequently these days, that would be compelling. We expect to see lots of other accessories—Apple previewed a MagSafe combination charger that could charge an iPhone 12 and an Apple Watch at the same time and noted that Belkin has several MagSafe charging accessories in the works as well. We hope MagSafe is a huge hit and Apple builds it into the iPad and MacBook lines in the future.



Finally, it's worth noting that although we expect all the iPhone 12 models to have decent battery life in real-world use, the iPhone 12 mini has the shortest estimated battery life, and the iPhone 12 Pro Max the longest. Apple's benchmarks give only relative impressions, since it's unhelpful to know that the iPhone 12 Pro Max could play video for up to 20 hours, whereas the iPhone 12 Pro and iPhone 12 could do so for only 17 hours, and the iPhone 12 mini for only 15 hours. If you regularly binge the full 15.5-hour [Berlin Alexanderplatz](#) in one go, I apologize for my presumption.

Pricing and Availability

Here's where numbers matter, since everyone understands dollars and cents. It's worth noting that the second-generation iPhone SE, iPhone XR, and iPhone 11 remain for sale to provide an even ramp up on price points, so we've included them for comparison's sake.

Model	64 GB	128 GB	256 GB	512 GB
iPhone SE	\$399	\$449	\$549	—
iPhone XR	\$499	\$549	—	—
iPhone 11	\$599	\$649	\$749	—
iPhone 12 mini	\$699 \$729	\$749 \$779	\$849 \$879	—
iPhone 12	\$799 \$829	\$849 \$879	\$949 \$979	—
iPhone 12 Pro	—	\$999	\$1099	\$1299
iPhone 12 Pro Max	—	\$1099	\$1199	\$1399

What's the deal with the two prices for the iPhone 12 and iPhone 12 mini? It turns out that Apple has swung some sort of deal with AT&T, Verizon, T-Mobile, and Sprint such that the price is \$30 less if you activate the iPhone with one of those carriers. Apple says that all iPhones are still unlocked, except for those sold on AT&T installment plans. Nevertheless, this is being widely seen as a sneaky price increase, especially since there's no word on whether the \$30 discount is a limited-time offer or permanent.

It's also worth noting that the iPhone 12 is \$100 more expensive than last year's iPhone 11—the iPhone 12 mini has taken over the \$699 price slot.

Pre-orders for the iPhone 12 and iPhone 12 Pro started at 5 AM Pacific on 16 October 2020, with delivery and in-store availability beginning on 23 October 2020.

In contrast, the iPhone 12 mini and iPhone 12 Pro Max will be available for pre-order at 5 AM Pacific on 6 November 2020, with delivery and in-store availability on 13 November 2020.

Upgrade Decisions

Based on what we could see during Apple's announcement, along with the published specs, I can confidently say that the iPhone 12 Pro and iPhone 12 Pro Max are the fastest, most capable iPhones ever. This is an unsurprising assessment, given that it has also been true of every top-of-the-line iPhone model Apple has ever announced. But if you want the best, buy one of those two, with the choice between them based on physical size, optical zoom, battery life, and price.

For those for whom small size is the key variable about an iPhone, it's an easy decision to get the iPhone 12 mini, which at long last fills the hole left by the first-generation iPhone SE as a phone for those with smaller hands and pockets. Thank you, Apple!

It's harder to provide upgrade advice from other older iPhones. For instance, what about the iPhone 11 and iPhone 11 Pro? There's no question the new models are more capable, but are they enough more capable for the price? Neither Josh nor I currently plan to upgrade from the iPhone 11 Pro because there just doesn't seem to be enough bang for the buck. The iPhone XR and iPhone XS might fall into the same category, although the iPhone X could be old enough for an upgrade to be attractive.

The iPhone 8 and the second-generation iPhone SE certainly don't have the processing power or camera capabilities of the iPhone 12 models, but they have one key advantage that might give some people pause when pondering an upgrade: Touch ID. Given that the earliest estimates I've seen for widespread availability of a vaccine for the SARS-CoV-2 coronavirus are the middle of 2021, people with Touch ID-based iPhones might want to stick with them until mask-wearing is no longer necessary in public spaces.

Nevertheless, everyone's decision will be driven by combinations of variables, and I sincerely doubt

that anyone who can afford the upgrade will feel let down by any of the new iPhone 12 models. 🗑️

By Adam Engst

Five Tips for Easier Rearranging of iOS Apps

After Josh Centers wrote “[iOS 14’s App Library: The FAQ](#)” (9 September 2020), we got a great response in the comments. Several people noted that they have long relied on a technique not dissimilar to the App Library, in that they devote one or more Home screens to a carefully organized set of folders that contain all their less-used apps. I admire such attention to detail, and in an ideal world, I’d use a similar approach.

However, I have 352 apps installed (check your number in Settings > General > About). Since the loss of the organizational tools in iTunes, the immense effort in dragging hundreds of icons around has dissuaded me from cleaning things up. Adding Home screen widgets in iOS 14 can also mess up app organization—something I did while playing with widgets deleted about half of my folders on one Home screen. So I was stoked to read [John Clark’s post](#) explaining how to move multiple apps at once. Even better, as soon as I started using multiple fingers, I discovered yet another app rearrangement tip that makes life much easier.

So, as welcome as iOS 14’s App Library may be for many of us, particularly alongside being able to hide Home screens, here is a collection of tips that will help anyone rearrange their app icons more easily, regardless of iOS version or device.

The Basics

First, let’s make sure we’re all on the same page.

- To move an app, start by touching and holding it. In recent versions of iOS, you can start dragging the app as soon as you feel a click, or you can pause until you see a popover, in which you can tap Edit Home Screen. In earlier versions of iOS, you’d touch and hold until you entered jiggle mode. (Interestingly, the Apple Style Guide is clear that it’s not “wiggle mode.”) Drag the app to the desired location.
- To put the app on a different Home screen, drag to the left or right edge of the screen and pause briefly to switch screens.
- To create a new folder, drag one app on top of another and pause briefly. Rename the folder as desired.
- To put an app in a folder, drag it into the folder. If you pause over the folder, it opens, and you can drag the app into place within the folder or even to other pages within the folder.
- To delete a folder, drag all the apps in it to another folder or Home screen.
- When you’re done, press the Home button or swipe up from the bottom of the screen to leave jiggle mode.

Want to see a demo of this? Josh Centers whipped up this [quick video](#).

Clear Space on the Dock and Use It as a Temporary Holding Zone

This tip isn’t new, but it’s worth repeating. If you’re doing a lot of app cleanup across multiple

Home screens, dragging the app a long distance can be tiring and frustrating, particularly if you end up hovering over another app just slightly too long and invoking the folder creation process.

But if you think about it, you can save yourself a lot of the stress of moving apps by moving one or more of your Dock apps to a temporary spot and then using the Dock as a holding zone. You can then put some number of apps on the Dock, navigate to the desired Home screen, and drag them out in multiple small steps, without having to keep your finger down the entire time.

It's much faster than moving each app, one a time, especially if you have a lot of Home screens.

Josh made another [short video](#) to show how this works.

Move a Stack of Apps All at Once

John Clark's tip takes the idea of working with multiple apps to a higher level, letting you assemble a stack of apps and put them in a new location with a single drop. Here's how.

Start by moving one app. Once you've picked it up, I recommend dragging it to the lower-right corner of its Home screen. That's not necessary, but it makes seeing what you're doing easier. Without letting go of the app you've picked up, using another finger (from your other hand, most easily) to tap additional apps that are jiggling. Each app you tap is added to the stack you're holding, and a blue badge increments to tell you how many are in the stack. Repeat as many times as you like—I found no limit to the number of apps you can stack up like this. You can also drag the stack to other Home screens to add icons from them as well.

Once you've assembled your stack, drag it to the desired location and lift your finger to drop the icons. They'll fill in the destination folder or Home screen from left to right, top to bottom, in first-in/first-out order.

This snazzy tip would be great just for dumping apps in folders quickly to reduce the number of Home screens you have.

For a demonstration of how this works, see [Josh's video](#).

Swipe to Change Home Screens While Dragging

John's tip got me started using both hands to rearrange apps, something I'd never done before. But once I did, I stumbled on a tremendously useful and painfully obvious (well, it is now, anyway) tip.

Dragging an app or a stack of apps from Home screen to Home screen is slow and error-prone. All too often you end up hovering too long over another app, which causes iOS to try to create a folder. The only way out is to drop the app in the folder, pick it up again, and drag it out.

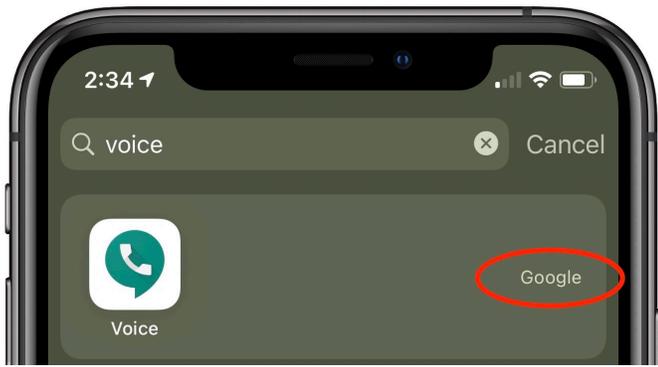
Maddening!

But here's the thing. If you start dragging an app or a stack with one hand and then use a finger on the other hand to swipe left and right to move between Home screens, it's vastly easier. In essence, you're moving the Home screen underneath the app or stack you're holding. If you hold the app or stack in the lower-right corner, it's easy to see everything that's on each Home screen you reveal, and there's no worry about hovering over another app or accidentally entering a folder.

Is this not quite clear from my description? [Josh's video](#) will give you a preview.

Search for an App's Full Name to Find Its Folder

John Clark turned me on to this little fact as well. I hadn't realized that, when you search for an app by swiping down on the Home screen and typing in the Search field, if your search reveals only a single app, iOS will also display the name of the folder that contains the found app. That gives you a better chance of being able to find the app, assuming you can find its enclosing folder.



Obviously, this trick has its limitations. If the app you want to find is strewn among your Home screens but not in a folder, no folder name appears. And if you can't narrow the search to a single result (I have too many apps whose names start with "Weather"), you're out of luck.

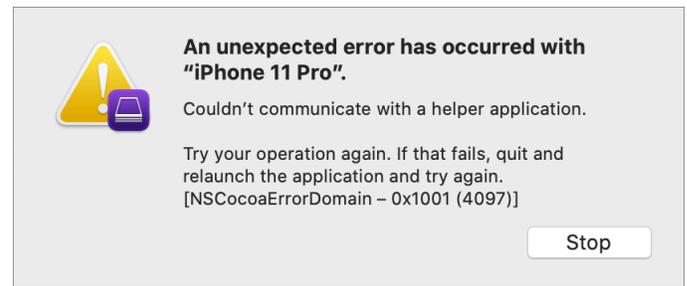
It's also unnecessary if you've upgraded to iOS 14 because you can always find the app and move it to a new Home screen location from within the App Library. But for those who haven't yet upgraded, or who are working in iPadOS, it might be helpful.

(Don't) Use Apple Configurator 2 to Rearrange Apps from Your Mac

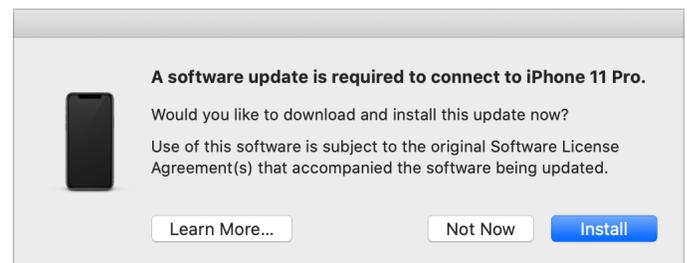
There is one last way that you can theoretically rearrange apps more easily—by using [Apple Configurator 2](#) to do it from your Mac. Apple Configurator 2 is designed to help IT admins create and install profiles on multiple Apple devices at once in an institutional setting, but it also lets you rearrange the icons on your iPhone or iPad from the comfort of your Mac.

Or at least it's supposed to. I include the instructions below in case Apple releases an update that addresses the problem, but whenever I tried to save my changes by clicking the Apply button, I got this error dialog, and my changes were ignored. Apple released version 2.13.1 of Apple Configurator 2 just a few days ago, so I would have expected it to be compatible with iOS 14, but perhaps not. Plus, it does have quite a few reviews for previous versions suggesting that the Home screen layout feature doesn't work even when this error doesn't appear. So don't waste your time, or if you're testing a new version of Apple Configurator

2, verify that it works by moving a single icon before spending much time on it.

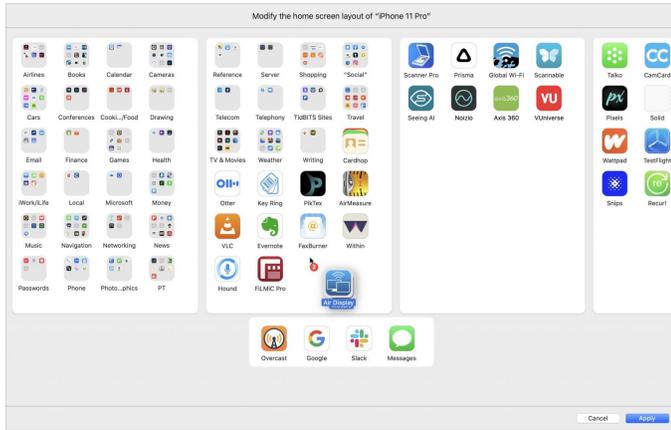


Should it ever work, here's how the process should go. To get started, [download Apple Configurator 2](#) from the Mac App Store. When you first launch it with your iPhone connected via USB, you may get one of those inscrutable Mobile Device Updater dialogs that indicates your Mac lacks the software necessary to communicate with the version of iOS on your device. Unfortunately, [Apple's support note](#) is useless, apart from confirming that it is an official alert and that there's no problem with installing.



Once you have Apple Configurator 2 and any necessary updates installed and your iPhone connected via USB, follow these steps:

1. On the first screen of Apple Configurator 2, click your device to select it.
2. Choose Actions > Modify > Home Screen Layout.
3. In the sheet that appears, drag the app icons to rearrange them.
4. When you're done, click Apply.



Although it's relatively apparent what to do, the interface has a few hidden quirks.

- There's no indication that this is true, but the sheet displaying all your Home screens is resizable in every direction, which lets you make it much larger and easier to work with. Click and drag from any edge.
- No scroll bars appear, but you should be able to scroll left and right with trackpad or Magic Mouse 2 gestures, or with a scroll wheel. You can also drag an icon to the edge of the sheet to scroll.
- You can select multiple icons at once by Shift-clicking or dragging a rectangle around them, as you'd expect from a Mac-like icon view.



- You cannot move more icons to a Home screen than will fit on it. In other words, if you select four icons, Apple Configurator 2 won't let you drop them on a Home screen with fewer than four open spots.
- Just as on an iPhone or iPad, drag one icon on top of another to create a folder.
- To open a folder without adding an icon to it, double-click it.
- To navigate out of a folder, click anywhere in the gray area around the white folder outline, or click the X button in the upper-left corner. Or press the Escape key.
- To remove an icon from a folder, drag it to the X button in the upper-left corner. 

