

printout

Keystone MacCentral Macintosh Users Group ❖ www.keystonemac.com

Keystone MacCentral October Meeting

Please see your membership email for the links to this month's Zoom meeting or email us at KeystoneMacCentral@mac.com.

During our program this month we plan to discuss

- ImageRanger: catalog and sort your photos -
Use facial recognition
- How to merge photo libraries
- Using external editors in Photos App



We have virtual meetings via Zoom on the third Tuesday of each month.

Emails will be sent out prior to each meeting. Follow the directions/invitation each month on our email – that is, just click on the link to join our meeting.

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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 © 2022, Keystone MacCentral, 310 Somerset Drive, Shiresmanstown, PA 17011.

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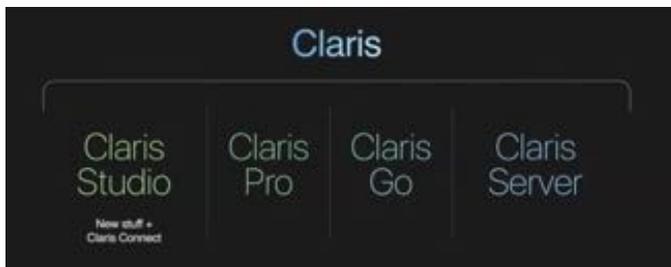
Tom Bank II

By Adam Engst

Claris's Plans for FileMaker Bode Well for Individual Users

I'm not deep into the FileMaker development community, but some [announcements from Apple subsidiary Claris](#) a few months ago generated [quite a bit of interest on TidBITS Talk](#) and should be coming to fruition in the next few months. These changes may be particularly interesting if you have a long history of using FileMaker for personal projects, something that has been tricky to maintain and justify as Claris has priced FileMaker to match its focus on professional developers.

Claris will rename [FileMaker Pro](#), [FileMaker Go](#) (for deploying FileMaker apps on the iPhone and iPad), and [FileMaker Server](#) (for hosting multi-user FileMaker apps) to Claris Pro, Claris Go, and Claris Server. A new Web-based development environment called [Claris Studio](#) will join and integrate with the other products to provide a modern, cloud-based system. Claris Studio can—among much else—host public-facing forms that pipe data from anonymous Web users into Claris Pro and create tables, graphs, and dashboards using data from Claris Pro.



The more important change for longtime individual FileMaker users is that there will be a freemium version of Claris Pro with free access to Claris Studio (and presumably Claris Go). Its only restriction is that databases created with the freemium version are restricted to a single user—but there are no size or time constraints. The apps are also free for professional developers, who will pay a single, as-yet-unspecified Claris Platform licensing fee only when they wish to deploy a solution to additional users. Since Claris is wholly owned by Apple, deployment could even mean putting an app on the Mac App Store. Those with existing licenses can continue to rely on them but won't get access to Claris Studio without switching to a Claris Platform subscription.



Claris promised that all of this would start to be available “this fall,” so we should soon be able to see if the freemium model provides the capabilities needed by those who have relied on single-user licenses of FileMaker Pro for years. Signs are good that it will, but it's never helpful to make too many plans based on pre-release software. 🗑️

How to Customize Your Lock Screen in iOS 16

iOS 16 is here, and the first thing you'll notice is the new customizable Lock Screen. You can now create multiple Lock Screens, each with its own wallpaper, clock font, and widgets, and cycle through them much like Apple Watch faces. Beyond being able to increase the visual diversity of your iPhone experience, you can tie a Lock Screen to a Focus and switch your Focus by swapping Lock Screens. Similarly, the Lock Screen will automatically change to match if the Focus switches on its own, such as due to a time-based trigger.

Each Lock Screen can hold up to five monochromatic widgets. These are distinct from the Home Screen and Today View widgets, and they more closely resemble Apple Watch complications. They can display information like upcoming Calendar appointments, Apple Watch charge level, Activity rings, and temperature, and they can also offer shortcuts to actions in particular apps. Third-party developers can create Lock Screen widgets, but the selection is limited right now, and there are some bugs we'll discuss.



Before you can customize a Lock Screen, you must create a new one by touching and holding the Lock Screen until it appears in the Lock Screen switcher, and then tap the blue plus button. (On an iPhone 14 Pro with the Always-On display, you have to make sure the screen is awake before you touch and hold, which Adam says is quite annoying.)



Later, you can return here and tap Customize to alter that Lock Screen's settings. But let's first talk about how to create a new Lock Screen.

Select a Lock Screen Wallpaper

When you first install iOS 16, you're given only the regular default Lock Screen, which cannot be customized, though it does pick up your existing Lock Screen wallpaper. (That lack of customization is confusing numerous people; we wouldn't be surprised to see an update to iOS 16 change it.) After tapping the blue plus button described above to create a new Lock Screen, you must first select a wallpaper type.

If you find the wallpaper selection Screen confusing, you're not alone. Along the top is a horizontally scrolling list of buttons for the main types of Lock Screen wallpapers: Photos, People, Photo Shuffle, Emoji, Weather, Astronomy, and Color. Below that is a vertically scrolling gallery of

Lock Screen wallpapers, some preconfigured with widgets. Confusingly, the Collections category is available only in the gallery, not among the buttons.



I encourage you to play with all the wallpapers and their options because the combinations are nearly endless. If you decide you don't like a wallpaper, tap Cancel in the upper-left corner to try a different one. However, you can do this only while creating a new Lock Screen. If you're returning to customize an existing Lock Screen, you can't change the Lock Screen wallpaper type—you must instead create a new one.

Let's look at each of the categories:

- **Photos and People:** Although Apple provided separate buttons for these, they're actually the same, only with different photo-selection filters applied. Tap either one, and you'll see the filters along the top: All, Featured, People, Pets, Nature, and Cities. Select anything other than All, and Apple's machine learning system will suggest associated images that will likely work well on the Lock Screen. (The Suggested Photos category in the gallery below pulls out a few of these photos—it's just a visual preview that's otherwise the same.) Why isn't this sort of automatically filtered view available in Photos itself for identifying your best shots?



Once you've chosen an image, you can swipe left or right to apply several image filters and see random sample fonts (which you can change later). The photo button in the lower-left corner lets you choose another photo. The ●●● button in the lower-right corner lets you turn the Depth Effect on or off and sometimes make additional tweaks.



- **What is Depth Effect?** A problem with Lock Screen wallpapers is the clock often covers a key portion of the wallpaper. Apple again tapped into its machine-learning capabilities to make people's

heads float over the clock while keeping the time readable. However, this illusion disappears if you add widgets beneath the clock. You can also control it manually. (Or at least that’s the theory and what works for Adam—I couldn’t bring the depth effect back to the Lock Screen wallpaper above after adding and then removing widgets; the menu item remained disabled.) Depth Effect works with any suitable photo, not just those captured in Portrait Mode, though Portrait Mode photos offer a few more options.

- **Photo Shuffle:** The concept of Photo Shuffle is simple: you select some photos, and your Lock Screen cycles through them every so often. However, there are a lot of settings here. First, you can choose categories of photos: People, Pets, Nature, and Cities. Tap Choose in the People line to select which people you want to show up in your photos.



- You can adjust the shuffle frequency from Hourly to On Tap (whenever you tap the Lock Screen), On Lock (as soon as your iPhone locks), or Daily. Alternatively, you can tap Select Photos Manually to do it all yourself. If you’re going to head down

that path, I recommend making and populating an album for Lock Screen images in Photos first, since it’s awkward to work in the All view. However you select the photos (up to 50), tap to flip through them to make sure they work for you. If one doesn’t, tap the ●●● button in the bottom right to remove a photo from the rotation—it also provides an alternative way of setting the shuffle frequency. You can again swipe left and right to change image filters. And, if necessary, the photo button on the bottom left lets you refine which photos are selected.

- **Emoji:** The Emoji wallpaper lets you add up to six emojis to use as a background—it’s surprisingly effective given Apple’s attention to the artistic quality of many of the emojis. Once you’ve done that, you can swipe to change the pattern, choosing among several grid sizes and layouts. Tap the smiley in the lower left to choose different emoji or the ●●● button in the lower right to change the background color.



- **Weather:** The Weather wallpaper shows an animated background reflecting the weather conditions in your current location.



- **Astronomy:** Space buffs will appreciate this wallpaper, which lets you swipe right to left to cycle through Earth, Earth Detail, Moon, Moon Detail, and Solar System.



- **Color:** For those who don't want Lock Screen distractions, the Color wallpaper lets you choose a background color gradient from the color picker. Swipe left and right to try different lighting effects.



- **Collections:** The Collections category, which appears only in the gallery, offers Apple-designed Lock Screen wallpapers like Unity, the classic Apple color stripes, the clownfish wallpaper from the original iPhone, and the iPhone 14 Pro wallpaper.



Choose the Clock Font and Color

Once your wallpaper is dialed in, tap the clock to bring up a panel that lets you choose the font and

color. Apple offers only eight font options. A limited set of color options appear below the font choices; swipe all the way to the right to tap the color wheel that lets you choose whichever color you want with the Grid, Spectrum, or Slider pickers. You can tap the globe icon in the upper left to switch from standard Arabic numbers to Arabic Indic or Devanagari.



Add Widgets

The Lock Screen becomes more functional when you add widgets, which has never before been possible. iOS 16 provides two distinct widget zones, a short one above the clock and a taller, wider spot below it. The two aren't interchangeable—the widget zone above the clock holds only a single line of text or other controls, and it always displays alongside the date (which shrinks to make space) rather than replacing it.

To add up to four more widgets below the clock, tap the zone below it (conveniently labeled Add Widgets). I say “up to” because these widgets come in two sizes: small ones that take up one slot and large ones that occupy two slots. You can mix and match any way that fits—four small widgets, two large widgets, two small and one large—and there's no requirement that you fill all four slots.

iOS 16 suggests widgets at the top of the Add Widgets panel but does not describe what each does. Instead, scroll down to view widgets by app, where tapping one offers a description of what it does. Many apps provide multiple widgets—swipe left to see more—and add the desired widget by tapping it or dragging it into the desired slot.



Once your widgets are in place, you can further configure them:

- Drag the widget to the desired location—if you're lucky. As with Home Screen widgets, this can be funky. When I have a large widget on the left and two small ones on the right, I can't move the large widget to the right, although I can swap the two small widgets. If you get frustrated, delete the widgets and add them back in the desired order.
- Some widgets have additional options, accessible by tapping the widget itself after you've placed it. For instance, tap the Stocks widget to choose which tickers to display or the City Analog widget clock to choose the timezone.
- Tap the minus button in the upper-left corner of a widget.

Something Broken with Widgets?

If you don't see the third-party widgets you expect, it's not your fault—there are bugs Apple has yet to stamp out. Many users and app developers are reporting that they do not see newly added widgets.

I tested with two iPhones, both running iOS 16 with the same set of up-to-date apps. On the iPhone 11 Pro, I saw [Things](#) as a widget option, but not [Todoist](#). On the iPhone 14, I saw [Todoist](#) but not [Things](#). Then I installed [Flighty](#) on both iPhones, but its widget option did not appear on either.

The [developers of Hello Weather suggested](#) uninstalling and reinstalling the app. I tried that but saw no difference. I also tried restarting both iPhones. That helped somewhat on the iPhone 11 Pro, with [Todoist](#) appearing alongside [Things](#). But it made things worse on the iPhone 14, causing [Todoist](#) to vanish. The [Halide team suggested](#) temporarily changing your language in Settings > General > Language & Region to refresh the Lock Screen. I had no success with that workaround either. Adam Engst didn't experience any of this weirdness, with the [Agenda](#), [CARROT Weather](#), [Fantastical](#), [Flighty](#), and [Todoist](#) widgets all appearing on his iPhone 13 Pro and iPhone 14 Pro once their apps were updated.

If you have problems, first make sure all your apps have updated in the App Store app—tap your avatar in the upper-right corner and then tap Update All. It's also worth trying all the suggestions above. But you may just have to wait until Apple releases a fix.

Customize Your Home Screen Wallpaper

Once you've customized the Lock Screen as you like, tap Add in the upper-right corner. That presents you with one last step: choosing between Set as Wallpaper Pair and Customize Home Screen. The first option sets both your Lock Screen and Home Screen wallpaper and usually works well, although the Home Screen wallpaper may be pretty bland.



If you tap Customize Home Screen, you're presented with four options:

- The Home Screen wallpaper Apple has chosen based on your Lock Screen wallpaper
- A single solid background color
- A single color with a subtle predefined color shift along the gradient
- A custom photo from your library. As with the Lock Screen, iOS 16 suggests images for you and provides the same controls as the Photo wallpaper picker.

If you chose a photo, you can tap the Blur button to choose whether or not to blur it down to a single background color. I prefer the blur because it prevents the photo from detracting from app icons and text, but its utility depends on your chosen image.

Link a Focus to a Lock Screen

I'll save a deep dive into Focus in iOS 16 for another time, but for now, let's briefly discuss how you can link a Lock Screen to a Focus. After setting up a custom Lock Screen, touch and hold the Lock

Screen to open the switcher. (If necessary, switch to a different Lock Screen; you can't link a Focus to your default Lock Screen.) You should see a Focus button toward the bottom. Tap it, and you're presented with a list of your Focus modes—tap one to connect it to that Lock Screen.



One Lock Screen must remain unlinked; that's the one that becomes active if no Focus is engaged.

Remember, when you link a Focus to a Lock Screen, it's a two-way street: switching to that Lock Screen activates that Focus, and activating that Focus switches to that Lock Screen.

Switching Lock Screens

We see two likely scenarios for creating and switching among multiple Lock Screens. First, just as with the Apple Watch, you may enjoy the visual diversity that the feature provides. Second, if you rely on Focus, you'll likely both switch Lock Screens manually and discover that Focus has switched them for you automatically.

To switch between Lock Screens manually, touch and hold the Lock Screen until the switcher appears, swipe to the one you want to use, and tap it to make it active. Remember, if you have linked a Focus to a Lock Screen, switching to that Lock Screen automatically activates that Focus, so make sure that's what you want.

Customizing Lock Screens Later

Everything we've done so far has been in the context of adding new Lock Screens. But you don't have to get everything right on your first pass. When you touch and hold the Lock Screen to enter the switcher, you can tap **Customize** to tweak a Lock Screen's settings, which include changing photos, selecting different widgets, and adjusting the font and color of the clock.

What you can't do is change a Lock Screen's wallpaper type, so if you're customizing an Astronomy Lock Screen, for instance, you can switch among the different views of the Earth and Moon, but you can't turn it into an Emoji Lock Screen. That's a minor limitation, but it's easy enough to delete a Lock Screen and create a new one.

Delete a Lock Screen

Speaking of which, deleting a Lock Screen is simple:

1. Touch and hold the Lock Screen to open the switcher.
2. Swipe left or right until you're at the Lock Screen you want to delete.
3. Swipe up, much as you do in the App Switcher, to force-quit a frozen app.
4. Tap the red trash button.
5. Tap **Delete This Wallpaper** 

By Glenn Fleishman

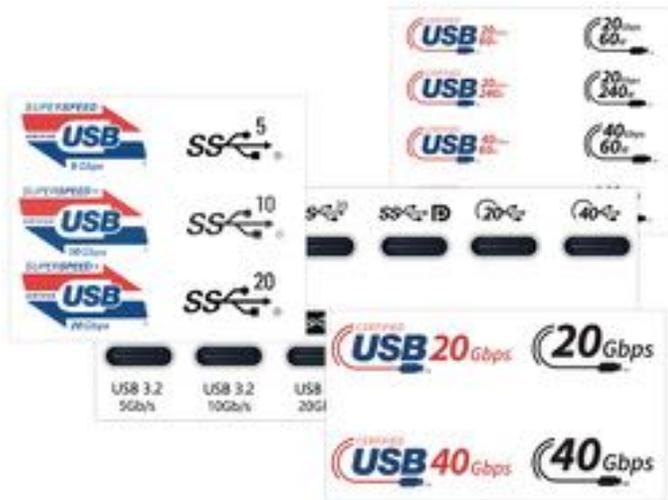
USB Simplifies Branding but Reintroduces Active Cables

Every time the USB Implementers Forum posted a new set of logos describing ever more USB speeds, electrical power possibilities, and display parameters, it resulted in an outpouring of confusion, ridicule, and anger—yes, anger. See, for instance, “[USBefuddled: Untangling the Rat’s Nest of USB-C Standards and Cables](#)” (3 December 2021). But at long last, the USB-IF has finally made things better, with a simplified set of USB logos!

At the same time, however, a somewhat hidden aspect of USB4 cables comes to the fore with the announcement of an upcoming 80 Gbps version of USB4. Yes, it’s the return of having to worry about the distinction between passive and active cables—or is it? I explore below.

A Fresh, Simple Look Focused on Data Rates

Years of multiplying USB standards led to a proliferation of labels and combinations of marks like those shown below.



Intel’s competing Thunderbolt group even sometimes openly poked fun at USB’s labeling profusion on USB-C cables.



From Thunderbolt marketing materials, an honest joke about USB labeling across the USB-C connector.

Now, at least for future products, we can move on. With little fanfare, the USB-IF has updated [its USB Enabling Connections site](#) with a new approach.

Instead of forcing consumers to use versioning terminology such as USB 3.2 Gen 2×2 or messing around with marketing terms like “SuperSpeed+,” the USB-IF has simplified things so you can now write something like “USB 20Gbps.” The version details still exist and have meaning for developers and engineers, but most of the consumer-level branding now boils down to just the following four packaging labels, indicating the maximum supported data rate.



The new, simple USB standards graphics for packaging and marketing

Behind the scenes, here’s what those labels correspond to:

- USB 5Gbps: USB 3.0 and 3.1 Gen 1
- USB 10Gbps: USB 3.1 Gen 2, 3.2 Gen 2×1, and 3.2 Gen 1×2

- USB 20Gbps: USB 3.2 Gen 2×2
- USB 40Gbps: USB4’s initial version as currently shipping

A future update to USB4, announced by the technical part of the USB-IF as “USB4 2.0,” will almost certainly be publicly labeled “USB 80Gbps.”

A similar set of logos will appear on cable plugs. For the two fastest current USB4 flavors, the USB-IF created a grid to show how they would appear on packaging (left column) and on ports, cables, and chargers (right two columns).

Brand Name	Packaging Logo	Port & Cable Logo	USB Type-C Charging Triplet Logo
USB4™ 20Gbps			
USB4™ 40Gbps			

As USB data rates and standards’ names became more complicated, the options for charging wattage have been distilled down to just two: 60 watts and 240 watts, with future USB chargers using the logos below.



Not listed is the 100W charging rate that’s also the minimum wattage for a Thunderbolt 3- or 4-compatible cable. Apparently, a cable needs only a very minor upgrade to handle 240W, and it makes sense to support that new maximum performance for upcoming USB-C-connected gear. 100W cables will continue to be recognized and offer up to that wattage; less-expensive cables generally not intended for laptop charging can instead opt for 60W.

A spokesperson for the USB-IF, Joe Balich, wrote via email that the group had just recently pushed out these updates after years of changing and expanding branding and labeling. With these changes, USB-IF drops its now-obsolete SuperSpeed label.

Balich said, “We encourage our members and manufacturers overall to follow our updated Language Usage Guidelines when describing and marketing their Certified USB solutions to general consumers.” The membership group itself doesn’t enforce branding because it doesn’t have any big sticks it can wave: the group is run by a collection of nearly all the major computer, mobile, cable, charger, and peripheral manufacturers, and they don’t impose those sorts of rules on themselves. The value of simple, consistent marketing is supposed to be its own reward.

You can see the old labeling in action on the Mac Studio. Apple describes the desktop machine as having “four Thunderbolt 4 ports,” which it then defines as supporting “Thunderbolt 4 (up to 40Gb/s), DisplayPort, USB 4 (up to 40Gb/s), USB 3.1 Gen 2 (up to 10Gb/s),” plus “two USB-A ports (up to 5Gb/s).” (The reason for that very specific language? Those ports support USB 3.1 Gen 2, which offers a maximum of 10 Gbps, not 3.2 Gen 2×2, which would allow 20 Gbps. A slightly different controller would have been required for the 20 Gbps variant of USB 3.x.)

If Apple adopted the new USB guidelines, it could trim these definitions and say the Mac Studio had four USB-C ports that support Thunderbolt 4, USB 40Gbps, USB 10Gbps, and DisplayPort, plus two USB-A ports with USB 5Gbps. That seems simpler to me! Apple could leave the “40 Gbps” parenthetical on Thunderbolt 4 or footnote the rate. (The fact that Apple supports either 10 Gbps over USB 3.1 Gen 2 or 40 Gbps over USB4, which is backward-compatible to 20 Gbps rates over USB4, is a whole other bit of confusing circuitry in the Thunderbolt/USB controller chips.)

After writing an entire book about cable and standards complexity, [Take Control of Untangling Connections](#), I can’t express how glad I am to see a straightforward story: a single number, simplified logos, and less frustration for users.

Active Cables Make a Return, Along with Improvements

There's one remaining nit with USB standards surrounding *passive* and *active* cables, with changes that appeared with USB4 and another upcoming change in the recently announced USB 80Gbps. Compared to passive cables, active cables have additional circuitry that makes it possible to maintain the cable's maximum possible throughput over longer distances. In the past, you could purchase either passive or (more expensive) active Thunderbolt 3 cables, but you would be hard-pressed to look at the two kinds side by side and know which was which—and thus which could perform better.

Thunderbolt 3 was the first version of that standard to introduce the distinction of active and passive cables; USB had avoided it by having a single cable definition for USB 1.0 through 3.2. In Thunderbolt 3, passive cables supported the full 40 Gbps over cables of no more than 0.5 meters (20 inches); longer passive Thunderbolt 3 cables dropped to a maximum of 20 Gbps. A more expensive active cable could maintain Thunderbolt 3's full 40 Gbps over distances greater than 0.5 meters. (The passive/active difference could also cause significant confusion if you connected two USB 3.x devices with a Thunderbolt 3 cable. A passive Thunderbolt 3 cable supported USB 3.1 at up to 10 Gbps, but an active Thunderbolt 3 cable shunted USB to separate wires in the port and cable, limiting the data rate to USB 2.0's measly 480 Mbps.)

All Thunderbolt 4 cables are required by spec to carry the maximum 40 Gbps data rate: shorter ones are passive and longer ones are active, but they aren't labeled that way—there's only a "Thunderbolt 4" cable type. They also all implicitly support USB4 because USB4's 20 Gbps and 40 Gbps flavors are effectively a version of Thunderbolt 3. (USB-IF used Thunderbolt as the basis for most of USB4.) A Thunderbolt 4 cable can carry both Thunderbolt 3 and 4 at 40 Gbps and USB4 at 40 Gbps.

However, the existing flavors of USB4 can't access the "active" benefits: you can get 40 Gbps only using cables up to 0.8 meters (31.5 inches) in length.

That's a small improvement over Thunderbolt 3's 0.5 meters. (Some makers [claim they have 1-meter active USB4 cables](#), but I haven't tested any yet.) Beyond that length, what we should properly call a Thunderbolt 4/USB4 cable remains limited to the same 20 Gbps as Thunderbolt 3. If you knew that, pat yourself on the back—I had missed that distinction partly because there aren't many USB4 40 Gbps devices on the market, and I own none.

When we start getting USB4 80 Gbps controllers—the hardware in computers and peripherals that handles communication—they come with a magic upgrade: your existing Thunderbolt 4/USB4 cables will suddenly carry 40 Gbps between two 80 Gbps controllers as long as they're 2 meters (6.6 feet) or shorter. The new controllers are more efficient at carrying data over longer distances without having to tap into the active circuitry in long Thunderbolt 4 cables. You get a cable upgrade without changing your cable. This kind of free improvement to existing hardware is unusual.

If you want USB4's full 80 Gbps over cable runs longer than 0.8 meters, you will have to purchase new active USB4 cables for that updated standard. These new cables will be compatible with Thunderbolt 4.

Cable Matters [announced a 3-meter \(9.8 feet\) active USB4 cable](#) in January 2022 that's supposedly fully Thunderbolt 4-compatible, but as of now, [the \\$69.99 cable is marked out of stock](#), and I can't find any evidence it ever shipped. Possibly, the cable will be retooled or relabeled for USB4 at 80 Gbps.

At the moment, the gold standard for the greatest compatibility and least fuss remains the Thunderbolt 4/USB4 cable, which is technically active for Thunderbolt 4 and passive for USB4 (see "[OWC Releases Affordable Thunderbolt 4 Cables](#)," 17 March 2022). You'll get the highest throughput with that cable compared to any other in nearly every case. A standard Thunderbolt 4 cable will carry Thunderbolt 4 at 40 Gbps at any length, USB4 at 40 Gbps if up to 0.8m, and USB4 at 20 Gbps at longer runs. If you need 80 Gbps over USB4 in the future, you'll have to budget for more expensive cables when it arrives. 🗑️

Apple Updates

watchOS 9 Sept 12, 2022

watchOS 9.0.1

This update includes improvements and bug fixes for your Apple Watch Ultra.

- Audio could be distorted during phone calls using speakers

watchOS 9

watchOS 9 brings great new ways to keep you active, healthy, and connected with Apple Watch. You have more ways to train and measure your workouts, a completely redesigned compass app, a new app to track your medications, more powerful sleep tracking with sleep stages, and better insights and support for your heart health if you have been diagnosed with atrial fibrillation.

Watch Faces

- Astronomy now displays current cloud coverage and star map
- Lunar includes a Chinese, Hebrew, or Islamic lunar calendar wrapped around a moon with a live rendering of moon phases
- Playtime includes animated numbers designed by Chicago artist Joi Fulton with editing options for background colors
- Metropolitan features a type-driven watch face with numbers that dynamically change in style and weight as you turn the Digital Crown
- Nike Analog, Nike Bounce, Nike Compact, Nike Digital, and Nike Hybrid, all with a tappable Nike Swoosh that launches Nike Run Club, are now available for more models of Apple Watch
- Rich Complications, Chinese script options, and background color editor available on Breathe, California, Modular, Typograph and more
- Portraits now supports portraits of dogs and cats and landscapes with the ability to customize the color of the background or entire photo

- Ability to choose the watch face displayed when a Focus is active

Workout

- Ability to customize and scroll through multiple Workout Views during a workout including Splits, Segments, Activity Rings, and more
- Heart Rate Zones view uses max and resting heart rate to create personalized zones and shows time spent in each zone
- Elevation view displays current elevation and elevation gain and visually maps your elevation progress during Outdoor Run, Outdoor Cycle, Outdoor Wheelchair Run Pace, Hiking, Outdoor Walk and Outdoor Wheelchair Walk Pace
- Running Power view, measured in watts, shows an instantaneous measure of how much power is generated during your run (Apple Watch SE and Apple Watch Series 6 and later)
- Running Form Metrics including Stride Length, Ground Contact Time, and Vertical Oscillation available in Workout Views to monitor and trend running efficiency (Apple Watch SE and Apple Watch Series 6 and later)
- Custom Workout enables you to create Workouts with repeating sets of intervals that can be based on a time, distance or an open goal with automatic or manual advancement to your next set
- Pacer provides a training experience to help you sustain a desired pace using alerts and a dedicated workout view
- Multisport Workout supports duathlon or triathlon training with automatic detection of Open Water/Pool Swim, Indoor/Outdoor Cycle, Indoor/Outdoor Run, and transitions to the next leg
- Workout alerts can be customized for metrics like pace, power, cadence, and heart rate zones

- Pool Swim workouts automatically detect kickboard
- SWOLF swimming efficiency metric calculated as stroke count plus time to complete lap

Fitness+

- Trainer guidance displayed on-screen including targets for Intensity, strokes per minute for Rowing, revolutions per minute for Cycling, and incline percentage for Treadmill
- Trainer guidance and personal fitness metrics displayed on-screen for compatible third party TVs and devices

Compass

- Redesigned compass app with more in-depth information and zoomable views (Apple Watch SE and Apple Watch Series 5 and later)
- Primary face supports both an analog compass dial and a digital view of current bearing and direction
- Zoomed view provides analog view of bearing plus your elevation, incline and coordinates
- Compass Waypoints allow you to mark your position or point of interest (Apple Watch SE and Apple Watch Series 6 and later)
- Backtrack uses GPS to track your historic path in case you get lost or disoriented (Apple Watch SE and Apple Watch Series 6 and later)

Sleep

- Sleep stage tracking using data from the accelerometer and heart rate sensor to detect time spent in REM, Core, and Deep sleep, as well as awake
- Comparisons chart provides a view of heart rate and respiratory rate alongside time asleep in the Health app on iPhone

Medications

- Capabilities to log as-needed and scheduled medications, including the amount and time taken
- Ability to view medication schedule and what you have logged for the day
- Reminders to log scheduled medications
- Medications complication to see your schedule or quickly open the app

AFib History

- Weekly notifications with estimate of the percentage of time spent in atrial fibrillation during previous calendar week
- Highlights show which day of week and time of day when AFib is highest
- Tracking of lifestyle factors that may influence time spent in AFib including Exercise, Sleep, Weight, Alcohol Consumption, and Mindful Minutes in the Health app on iPhone
- Sharable PDF for richer conversations with healthcare providers
- Support for users 22 years or older with diagnosis of atrial fibrillation

Family Setup

- Podcasts app is now available and includes ability to search, download, follow shows, and explore curated content
- Third party email support extended to Yahoo and Outlook
- Editing and sharing contact photos now available

Accessibility

- Expanded Quick Actions with AssistiveTouch for play and pause in Now Playing, pause and resume in Workout, take a photo using Camera Remote, and toggle between map view and turn-by-turn directions in Maps
- Bluetooth keyboard pairing with Apple Watch

- Apple Watch Mirroring lets you control Apple Watch remotely from your paired iPhone via AirPlay with support for assistive technologies like Voice Control or Switch Control as an alternative to tapping the Apple Watch display

Other features and improvements:

- Low Power Mode maintains core features of Apple Watch while temporarily disabling select background features such as always on display and heart health notifications to extend battery life
- Support for international roaming allows you to stay connected to your cellular network while traveling abroad (Apple Watch SE and Apple Watch Series 5 and later)
- Expanded keyboard languages including French, German, Italian, Japanese, Portuguese, and Spanish available on Apple Watch Series 7 and later
- Communication safety setting in Screen Time gives parents the ability to enable warnings for children when they receive or attempt to send photos that contain nudity in Messages
- Cycle deviation notifications alert you if your logged menstrual cycles show a pattern of infrequent periods, irregular periods, prolonged periods, or persistent spotting
- New Cardio Recovery metric estimated by Apple Watch available in the Health app
- Reminders app updated to support editing so you can add key details like location, tags, and due times
- Calendar app redesigned to support creation of new calendar events with ability to switch to day, list, and week views
- Enhanced Podcast experience with support for search, ability to follow and unfollow shows, and discover new content in Listen Now
- Dock updated to show apps running in background at the top

- Notifications redesigned with streamlined slimline banner when actively using Apple Watch

iOS 16 Sept 12, 2022

iOS 16.0.2

This update provides bug fixes and important security updates for your iPhone including the following:

- Camera may vibrate and cause blurry photos when shooting with some third-party apps on iPhone 14 Pro and iPhone 14 Pro Max
- Display may appear completely black during device setup
- Copy and paste between apps may cause a permission prompt to appear more than expected
- VoiceOver may be unavailable after rebooting
- Addresses an issue where touch input was unresponsive on some iPhone X, iPhone XR, and iPhone 11 displays after being serviced

iOS 16.0.1

This update is recommended for all iPhone 14 and iPhone 14 Pro users and provides important bug fixes including the following:

- iMessage and FaceTime may not complete activation
- Photos may appear soft when zooming in landscape orientation on iPhone 14 Pro Max
- Enterprise single sign-on apps may fail to authenticate

iOS 16

Lock Screen

- Redesigned Lock Screen gives you all new ways to personalize your Lock Screen by showcasing

favorite photos, customizing font styles, displaying widgets, and more

- Multiple Lock Screens can be created and you can easily switch between them
- Lock Screen gallery offers personalized suggestions along with Apple curated collections for your Lock Screen
- Font and color options for customizing the look of the date and time on your Lock Screen
- Widgets on the Lock Screen display information at a glance like the weather, battery levels, upcoming calendar events, and more
- A new effect places the subject of the photo in front of the time (iPhone XS and later)
- Photo styles change the color filter, tinting, and font style of photos on the Lock Screen to complement each other
- Notifications appear at the bottom of your Lock Screen and can be displayed in an expanded list view, stacked view, or count view

Focus

- Lock Screen linking connects your Lock Screen to a Focus, so you can activate a Focus by switching to the corresponding Lock Screen
- Focus filters hide distracting content in apps like Calendar, Mail, Messages, Safari and third party apps
- Streamlined setup makes it easier and faster to get started with Focus, with personalized Lock Screen and Home Screen suggestions that include apps and widgets that are relevant to the Focus you're setting up

Messages

- Edit a message for up to 15 minutes after sending it and recipients see a record of edits
- Undo send allows you to recall any message for up to 2 minutes after sending it

- Mark as unread makes it easy to come back to a conversation later
- SharePlay in Messages lets you enjoy activities like watching movies, listening to music, playing games, and more with friends while messaging
- Collaboration provides a simple way to invite others to collaborate on a file via Messages and get activity updates in the thread when someone makes an edit to a shared project

Mail

- Improved search delivers more accurate, complete results and provide suggestions as soon as you begin to type
- Undo send allows you to cancel delivery of a message within 10 seconds of hitting send
- Scheduled send for sending an email at a specific day and time
- Follow-up surfaces sent emails that have not been replied to, to the top of your inbox so you can quickly follow-up
- Remind me lets you schedule a date and time to be reminded about an email

Safari and Passkeys

- Shared Tab Groups let you share a set of tabs with others and see the Tab Group update instantly as you work together
- Tab Group start pages can be customized with different background images and favorites for each Tab Group
- Pinned tabs in Tab Groups enable you to pin frequently visited websites for each Tab Group
- Safari web page translation adds translation for web pages in Turkish, Thai, Vietnamese, Polish, Indonesian, and Dutch
- Passkeys offer support for an easier and safer sign-in method to replace passwords
- Passkey syncing through iCloud Keychain makes your passkeys available across all your Apple

devices while keeping them end-to-end encrypted

Live Text

- Live Text video support allows you to interact with text in a paused video frame so you can copy, translate, lookup, share, and more (iPhone XS, iPhone XS Max, iPhone XR and later)
- Quick actions let you take action on data detected in photos and videos with a single tap, so you can track flights or shipments, translate foreign languages, convert currencies, and more (iPhone XS, iPhone XS Max, iPhone XR and later)

Visual Look Up

- Lift subject from background isolates the subject of an image so you can copy and paste it into apps like Mail and Messages (iPhone XS, iPhone XS Max, iPhone XR and later)
- Visual Look Up adds recognition of birds, insects, spiders, and statues in your photos (iPhone XS, iPhone XS Max, iPhone XR and later)

Siri

- Easy Shortcuts setup makes it possible to run shortcuts with Siri as soon as you download an app with no upfront setup (iPhone XS, iPhone XS Max, iPhone XR and later)
- A new setting allows you to send messages without Siri asking you to confirm before sending
- “Hey Siri, what can I do here?” helps you discover Siri capabilities in iOS and apps just by asking (iPhone XS, iPhone XS Max, iPhone XR and later)
- Call hang up option for ending Phone and FaceTime calls with Siri by saying “Hey Siri, hang up.” (iPhone XS, iPhone XS Max, iPhone XR and later)

Dictation

- All-new Dictation experience supports using your voice and keyboard together to enter and edit text (iPhone XS, iPhone XS Max, iPhone XR and later)

- Automatic punctuation inserts commas, periods, and question marks as you dictate
- Emoji support lets you insert emoji using your voice (iPhone XS, iPhone XS Max, iPhone XR and later)

Maps

- Multi-stop routing supports adding up to fifteen stops along your driving route in Maps
- Transit cards in Maps let you see low balances and replenish your card when you add transit cards to Wallet, all without leaving Maps
- Transit fares show you how much your journey will cost in the San Francisco Bay Area, London, New York, and San Diego

Apple Pay and Wallet

- Apple Pay Order Tracking allows you to receive detailed receipt and order tracking information in Wallet for Apple Pay purchases with participating merchants
- ID cards in Wallet lets you share verified information with apps that require identity verification (iPhone 8 and later)
- Apple Account supports topping-up your account balance from your Apple Account card in Wallet

Home

- Redesigned Home app makes it easier to navigate, organize, view, and control your smart home accessories
- Home tab now integrates all your accessories, rooms, and scenes into a single tab for a whole-house view, allowing you to see your entire home at a glance
- Categories for lights, climate, security, speakers and TVs, and water let you quickly access all the relevant accessories organized by room, and displays more detailed status information

- New camera view displays up to four cameras front and center in the Home tab, scroll to see any additional camera views in your home
- Redesigned accessory tiles feature more visually recognizable icons that are color-matched to their category, and new behaviors for more precise accessory controls

Health

- Medications feature helps you track and manage your medications, vitamins and supplements by creating a list, custom schedules and reminders, and then viewing logging over time
- Add medications using your iPhone camera (iPhone XS, iPhone XR and later)
- Interaction alerts inform you if there is a critical interaction when you add a new medication
- Cycle deviation notifications alert you if your logged menstrual cycles show a pattern of infrequent periods, irregular periods, prolonged periods, or persistent spotting
- Invitations for Health Sharing allow loved ones to easily and securely share their health data with you
- Health Sharing reminders give you transparency and control over the health data you are sharing with loved ones

News

- My Sports enables you to easily follow your favorite teams and leagues and watch highlights right in the News app
- Favorites give you easy access to the channels and topics you read the most, in a consistent place near the top of your Today feed
- New homepages deliver visually updated and easier to navigate topic feeds for local news locales, sports teams and leagues, and more

Family Sharing

- Improved child account setup makes it easier to create an account for a child with the right

parental controls, including age-appropriate media restrictions

- Device setup for a child lets you use Quick Start to easily set up a new iOS or iPadOS device for your child with your selected parental controls in place
- Screen Time requests in Messages make it even easier to approve or decline requests from your child
- Family Checklist gives you tips and suggestions like updating a child's parental control settings, turning on location sharing, or just reminding you to share your iCloud+ subscription with everyone

Safety Check

- Safety Check is a new section in Settings to help people in domestic or intimate partner violence situations quickly reset the access they've granted to others
- Emergency reset lets you quickly take action to reset access across all people and apps, including disabling location sharing via Find My, resetting privacy permissions for apps, and more
- Manage sharing and access helps you review and customize which apps and people can access your information

Accessibility

- Door detection in Magnifier locates a door, reads signs and symbols around it, and gives you instructions for how to open the door (iPhone 12 Pro and iPhone 13 Pro)
- Apple Watch mirroring provides full control of Apple Watch from iPhone and supports use of Switch Control, Voice Control, or any other assistive features on iPhone to get the most out of your Apple Watch
- Live Captions (beta) automatically converts audio into text for users who are Deaf or hard of hearing to follow along more easily with calls and media content (iPhone 11 and later)

- Buddy controller helps users with cognitive disabilities get support from a caregiver or friend while playing a game, by combining inputs from multiple game controllers into one
- VoiceOver is now available in over 20 new languages and locales, including Bangla (India), Bulgarian, Catalan, Ukrainian, and Vietnamese
- Voice Control spelling mode gives you the option to dictate names, addresses, or other custom spellings letter by letter

This release also includes other features and improvements:

- Fitness app lets you track and meet your fitness goals even if you don't yet have an Apple Watch, using iPhone motion sensors to give you an estimate of your calories to contribute to your daily Move goal
- AirPods Pro (2nd generation) support
- Personalized Spatial Audio uses the TrueDepth camera on iPhone to create a personal profile for Spatial Audio that delivers a more precise and immersive listening experience on AirPods (3rd generation), AirPods Pro (1st and 2nd generation), AirPods Max
- Handoff in FaceTime allows you to move FaceTime calls seamlessly from your iPhone to your iPad or Mac, and vice versa



- Memoji updates include more sticker poses, hairstyles, headwear, noses, and lip colors
- Quick Note adds support for taking a note in any app on your iPhone and adding links to create context and easily find content
- Translate camera lets you translate text around you using the camera in the Translate app
- Duplicate detection in Photos identifies duplicate photos so you can quickly clean up your library
- Foreground blur for portrait photos in Camera blurs objects in the foreground for a more realistic-looking depth-of-field effect (iPhone 13, iPhone 13 Pro, and iPhone 13 Pro Max)
- Pinned lists in Reminders helps you quickly navigate to your favorite lists
- Search on the Home Screen enables Spotlight to be accessed directly from the bottom of the Home Screen, making it easy to open apps, find contacts, or get information from the web
- Automatically send messages in CarPlay to skip the confirmation step when sending messages
- Rapid Security Response gets important security improvements to your devices even faster, as they can be applied automatically between standard software updates 🗑️