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Keystone MacCentral Macintosh Users Group ❖ www.keystonemac.com

Keystone MacCentral
August 20th 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

❖ Traveling with your iPhone
camera

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.

Contents

By Adam Engst

The Real System Requirements for Apple's 2024 Operating Systems

Apple has released developer betas of macOS 15 Sequoia, iOS 18, iPadOS 18, watchOS 11, tvOS 18, and visionOS 2, with public betas available now (turn them on in System Settings/Settings > General > Software Update > Beta Updates) and releases likely in September or October of this year. Will your current hardware run the new operating systems, or is it time to consider an upgrade? Once again, the news is generally good: Apple has deprecated only two MacBook Airs from 2018 and 2019, no iPhones, three iPads from 2017 and 2018, and three Apple Watch models from 2018 through 2020.

As always, some new features work only on newer, more powerful devices. Apple Intelligence is the most notable example, being limited to iPhones with an A17 Pro chip or later and Macs and iPads with M-series chips.

macOS 15 Sequoia Requirements

Here are the Macs that can run macOS 15 Sequoia. Apple has dropped only two older models, the 2018 and 2019 MacBook Air, though the short-lived Intel-based MacBook Air from 2020 is still supported. (It was released in March 2020 and replaced just eight months later in November 2020 by the first M1-based MacBook Air.)

Mac	Introduced
iMac	2019 and later
iMac Pro	2017
MacBook Air	2020 and later
MacBook Pro	2018 and later
Mac Pro	2019 and later

Mac	Introduced
Mac Studio	2022 and later
Mac mini	2018 and later

iOS 18 Requirements

For the iPhone, the compatibility story for iOS 18 is even better. It supports every model released since 2018, and there are no changes from the iOS 17 support matrix. The table includes the chip powering each iPhone for later reference.

iPhone	Introduced	Chip
iPhone 15/Plus/Pro/Pro Max	2023	A16 Bionic / A17 Pro
iPhone 14/Plus/Pro/Pro Max	2022	A15 Bionic / A16 Bionic
iPhone 13/mini/Pro/Pro Max	2021	A14 Bionic
iPhone 12/mini/Pro/Pro Max	2020	A14 Bionic
iPhone 11/Pro/Pro Max	2019	A13 Bionic

iPhone	Introduced	Chip
iPhone SE (2nd–3rd generation)	2020, 2022	A13 Bionic, A15 Bionic
iPhone SE (2nd–3rd generation)	2018	A12 Bionic

iPadOS 18 Requirements

iPadOS 18 drops support for three of the oldest and least powerful models supported in iOS 17: the iPad (6th generation) from 2018, the iPad Pro 12.9-inch (2nd generation) from 2017, and the iPad Pro 10.5-inch from 2017. Interestingly, the deprecation isn't based purely on the chip since the supported iPad (7th generation) relies on the same A10 Fusion chip as the unsupported previous model. These old models will continue to work with iPadOS 17, so they should retain basic functionality for some time.

iPad	Chip	Chip
iPad Pro 11-inch/13-inch (M4)	2024	M4
iPad Pro 12.9-inch (3rd–6th generation)	2018, 2020, 2021, 2022	A12X Bionic, A12Z Bionic, M1, M2
iPad Pro 11-inch (1st–4th generation)	2018, 2020, 2021	A12X Bionic, A12Z Bionic, M1
iPad Air 11-inch/13-inch (M2)	2024	M2
iPad Air (3rd–5th generation)	2019, 2020, 2022	A12 Bionic, A14 Bionic, M1
iPad (7th–10th generation)	2019, 2020, 2021, 2022	A10 Fusion, A12 Bionic, A13 Bionic, A14 Bionic
iPad mini (5th–6th generation)	2019, 2021	A12 Bionic, A15 Bionic

Although Apple held the system requirements stable from watchOS 9 to watchOS 10, we're paying for it with the move to watchOS 11, which drops support for the Apple Watch Series 4, Apple Watch Series 5, and Apple Watch SE (1st generation). That means that these Apple Watch models can upgrade.

Apple Watch	Introduced
2 Apple Watch Ultra 2	2023
Apple Watch Ultra	2022
Apple Watch Series 9	2023
Apple Watch Series 8	2022
Apple Watch Series 7	2021
Apple Watch Series 6	2020
Apple Watch SE (2nd generation)	2022

A few watchOS 11 features won't be available on all models. Ultra Wideband home keys, which will let you unlock a smart lock without having to hold your watch to the lock—due in 2025—aren't available with the Apple Watch SE (2nd generation). Also, the Tap to Cash feature, which lets you exchange Apple Cash with someone by putting your Apple Watch next to their watch or iPhone, doesn't work on the Apple Watch Series 6.

tvOS 18, HomePod Software 18, and visionOS 2 Requirements

There's no worry about compatibility with Apple's secondary operating systems—tvOS, HomePod Software, and visionOS. Every release of these has supported the devices that were initially available, which means that tvOS 18 will run on all Apple TV models since 2015's Apple TV HD, HomePod Software 18 will run on all HomePod models, and visionOS 2 will, unsurprisingly, support the current Apple Vision Pro.

Compatibility By Feature

Not all devices that can install these operating systems can avail themselves of all features. Carving these features out of the support matrix creates a bit of additional confusion, but it's better than dropping support entirely. Here are the promised features that have more specific hardware requirements.

Note that I'm calling out only features coming in Sequoia, iOS 18, iPadOS 18, and watchOS 11 below. Some current features mentioned in "The Real System Requirements for Apple's 2023 Operating Systems" (19 June 2023) and "The Real System Requirements for Apple's 2022 Operating Systems" (9 June 2022) still won't be available on older devices.

Apple Intelligence

In particular, Apple Intelligence (see "Examining Apple Intelligence," 17 June 2024) requires too much processing power and memory to work on Intel-based Macs, older iPads, and all but the most recent iPhone 15 Pro and iPhone 15 Pro Max. Apple was upfront about these system requirements during the WWDC introduction. Apple Intelligence queries or tasks that require even more processing power will be sent to the secure Private Cloud Compute service (see "How Apple Intelligence Sets a New Bar for AI Security, Privacy, and Safety," 1 July 2024).

The big question revolves around Siri, which Apple promises will get less stupid. Will talking to Siri on a HomePod, Apple Watch, Apple TV, or Vision Pro change once an Apple Intelligence-enhanced Siri becomes available? Those devices lack the necessary hardware capabilities but could presumably hand requests off to Private Cloud Compute. Would that be sufficiently responsive for a voice assistant we expect to respond nearly instantly?

iPhone Mirroring

The new iPhone Mirroring feature lets you interact with your iPhone in a window on your Mac. It presumably requires an iPhone running iOS 18, although Apple says nothing about that. On the Mac side, you'll need an Apple silicon Mac or an Intel-based Mac with a T2 Security Chip. As far as I can tell, that disqualifies only the 21.5-inch and 27-inch iMacs from 2019.

Live Audio Transcription in Notes

Only Macs with Apple silicon can take advantage of live audio transcription in Notes. On the iPhone, Apple only says that you'll need an iPhone 12 or later, but I think that also disqualifies all generations of the iPhone SE—Apple isn't clear. Apple says nothing about limitations for iPads, which is surprising given that several supported models use older chips than the iPhone 12's A14 Bionic. I wouldn't be surprised if this is an accidental omission on Apple's part.

Messages via Satellite

Magic doesn't come for free. Being able to use Messages to communicate via satellite requires an iPhone 14 or later. I can't tell you how much I look forward to trying this feature.

Enhance Dialogue

To help you better hear what's being said onscreen on recent iPhones and iPads, Enhance Dialogue uses machine learning and computational audio to increase vocal clarity when using built-in speakers, wired headphones, AirPods, and other Bluetooth-connected speakers and headphones (what else is there, Apple?). On the iOS 18 preview page, Apple says the feature requires an iPhone 11 or later (presumably not an iPhone SE) and works with the iPad. However, Enhance Dialogue doesn't appear on the iPadOS 18 page, so there's no telling which iPad models won't support it. Given that the iPhone 11 has an A13 Bionic chip, I would guess that the oldest models in each iPad family may not have sufficient power.

Hands-Free Unlock

If you get an Ultra Wideband-compatible lock—Apple says they'll start being available in 2025—you'll need an iPhone 11 or later (not including any iPhone SE) to unlock your door just by walking up

to it. It will also work in watchOS 11 with any Apple Watch other than the Apple Watch SE (2nd generation).

Smart Script

On an iPad with an Apple Pencil, Smart Script can recreate your handwriting style from your notes and lets you paste typed text into your handwriting. These two features work only on the more powerful iPads: the iPad Pro (M4), iPad Pro 12.9-inch (5th generation and later), iPad Pro 11-inch (3rd generation and later), iPad Air (M2), iPad Air 10.9-inch (4th generation and later), iPad (10th generation), and iPad mini (6th generation).

Apple implies that other Smart Script features, like correcting spelling inline, using touch and drag to reflow text for more space, and scratching out writing to erase it, will be available on all supported iPads.

Accessibility Eye Tracking and Music Haptics

In a feature that feels transplanted from visionOS, iOS 18 and iPadOS 18 will introduce Eye Tracking, which makes it possible to control an iPhone or iPad using just your eyes. On the iPhone, you'll need at least an iPhone 12 or later or an iPhone SE (3rd generation). On the iPad side, you'll need an iPad Pro (M4), iPad Pro 12.9-inch (5th generation and later), iPad Pro 11-inch (3rd generation and later), iPad (10th generation), iPad Air (M2), iPad Air (3rd generation and later), or iPad mini (6th generation).

Another iOS 18 accessibility improvement comes from Music Haptics, which "syncs the iPhone Taptic Engine with the rhythm of songs so those who are deaf or hard of hearing can enjoy the Apple Music catalog." It requires an iPhone 12 or later.

Guest Access in Home

The Home app in Sequoia, iOS 18, and iPadOS 18 will let you manage how guests can enter your home. It works on all Macs, iPhones, and iPads but requires a HomePod or Apple TV acting as a home hub. Apple also says, "Setting a schedule for guest access via hands-free unlock with home keys, tap to unlock with home keys, or PIN codes requires a Matter lock that supports schedules."

Game Mode and Personalized Spatial Audio for Gaming

In iOS 18 and iPadOS 18, the new Game Mode promises reduced audio latency, but it works only with the second-generation AirPods Pro. Sequoia calls out a similar requirement without using the term Game Mode.

Apple is allowing game developers to use personalized spatial audio to increase the sense of immersion. Doing so will work only with the third-generation AirPods, AirPods Pro, or AirPods Max, leaving out the first- and second-generation AirPods. Both of these features work on all supported iPhones, iPads, and Macs.

By Adam Engst

14 Compelling Features Coming to Apple's Operating Systems in 2024

Apple's was even more rapid-fire than usual, so much so that an Assassin's Creed game demo was the most relaxing part after the initial 90-second skydiving gag. It's tough—Apple presentations typically focus on a hardware product or three, but because WWDC is all about software, the company has to figure out which of the many new features merit a mention or demo. All too often, the presenter would introduce a feature, talk about it for a few seconds, and then switch gears entirely, just as I

expected more detail or another feature in the same app.

In part, Apple's hurry came from trying to get through six different platforms before devoting a hefty chunk of time to Apple Intelligence, the company's name for a collection of AI features that will be rolling out over the next year. Apple said Apple Intelligence features would start being available "this summer," which probably means during the public betas of the operating systems starting in July, and would be broadly available in beta "this fall," or likely mid-September. However, Apple's footnotes acknowledged that "some features, software platforms, and additional languages will come over the course of the next year," probably well into 2025. Apple Intelligence will also require recent Apple silicon—it will run only on the iPhone 15 Pro, iPhone 15 Pro Max, and iPads and Macs with M1 or later chips. Apologies to our international friends, but Apple Intelligence will require Siri and the device language to be set to US English in the early releases. We'll look more deeply at Apple Intelligence in future articles.

Apple's six platforms now include macOS, iOS, iPadOS, watchOS, tvOS, and visionOS. Two notes: First, macOS 15 will be called Sequoia, which will undoubtedly become easier to type with practice. It's unclear if Apple meant to name it after Sequoia National Park or the iconic redwoods. Second, although Apple briefly talked about tvOS, the "platform" in question was called "Audio & Home" and seemed to encompass AirPods, HomeKit, and more. There was no mention of the HomePod.

I couldn't cover all the features Apple highlighted in the keynote, much less the many others it describes in preview pages on its website. Instead, I focus here on the features I look forward to trying or find generally compelling, in no particular order. For lists of everything coming in 2024's operating systems—and Apple's descriptions of the features below—see Apple's preview pages for:

- macOS 15 Sequoia
- iOS 18
- iPadOS 18
- watchOS 11
- visionOS 2
- tvOS 18

All these operating systems are now available in beta form for developers, will appear in public beta form for everyone soon enough, and should ship in the usual September/October time frame.

Messages via Satellite

First in "Testing Emergency SOS and Find My via Satellite" (21 November 2022) and then in "Five Unexpected Announcements from Apple's Wonderlust Event" (12 September 2023), I suggested Apple should allow sending location via satellite in Messages. The company went one better, providing Messages via satellite, linked to the existing iMessage and SMS networks. Conversations are end-to-end encrypted. The feature works only on the iPhone 14 and later, of course, and Apple said nothing more about charging for it, meaning that it's still free through at least November 2025 (see "Apple Extends Free Emergency SOS via Satellite for iPhone 14 Users for Another Year," 15 November 2023). I will be curious to see how well Messages via satellite works when both iPhones have no cellular service, as happens for me relatively frequently while working on trail races.

Siri Gets a Brain

Most of what Apple shared about Apple Intelligence was relatively vague hand waving. But we all know and love/hate Siri. Like the Scarecrow in The Wizard of Oz, Apple Intelligence will give Siri a brain. Or at least that's the promise, but I have high hopes because large language models are so much better than the token-based albatross of an architecture that has long dragged Siri down. Tonya and I rely heavily on Siri after going all-in on HomeKit—see "HomeKit for the Holidays (And Home Troubleshooting Tips)" (15 January 2021) and "Reflections on a Year with HomeKit" (17 December 2021)—and we've found Siri's responsiveness and accuracy getting worse with time. If we say, "Siri, it's time for dinner," our Dinner scene usually triggers, but if we slip up and say, "Siri, it's time to eat dinner," we get restaurant recommendations. Apple promises that Siri will let us speak more naturally and understand us even if we make mistakes. My main worry is that because Apple Intelligence requires an A17 Pro or M-series chip on an iPhone, iPad, or Mac, Siri on the HomePod will remain as dumb as before.

Break Free of the Home Screen Grid

In iOS 18 and iPadOS 18, you'll be able to customize the Home Screen far more than in the past. Previously, you couldn't leave blank spaces between icons, but now you can arrange icons and widgets however you like, perhaps to allow your Home Screen wallpaper to shine through. Plus, you'll be able to change the size of icons and widgets, and even apply color tints. I can't tell if you can color icons separately or if they all (on a

particular screen?) have to take on the same coloration, but we'll find out soon enough.

Passwords Becomes a Real App

It's about time. Over the past few years, Apple has been beefing up its built-in password management features, but to work with your saved credentials, you had to wade through the morass of Settings/System Settings or Safari's settings. In iOS 18, iPadOS 18, and Sequoia, Apple has finally given us a standalone Passwords app. If nothing else, it will let us stop tripping over the iCloud Keychain and iCloud Passwords terminology and just call it Passwords. As I wrote in "Using Apple's iCloud Passwords Outside Safari" (1 April 2024), Apple's password management features are well above the bar, even if they aren't as complete as something like 1Password.

Automatic Window Tiling in Sequoia

In Sequoia, when you drag a window to the edge of the screen, it will offer to tile the window intelligently, suggesting a size and position that makes sense for the content. It could be a wonderful way to maximize the usage of your

screen real estate. With this feature, Apple is Sherlocking an entire category of utilities, like Amethyst, BetterTouchTool, Magnet, Moom, Rectangle, and Yabai, but I gather that everyone has different and firmly held opinions on exactly how window tiling should work. So, if you like the idea of window tiling, you have lots of choices. Personally, I've found that having two 27-inch screens and keeping my apps in the same positions most of the time meets most of my needs, so I'll be curious to see if I find Apple's tiling helpful.

Control Center Construction Kit

Apple has overhauled Control Center in iOS 18 and iPadOS 18. It features groups of controls you can access with a single, continuous swipe down on the Home Screen. Along with the familiar Control Center controls, Apple showed a media player and a collection of Home tiles, and you can create your own groups. The new Controls gallery displays all the possible controls in one place, now including controls added by third-party apps, and you can mix and match them any way you want, even resizing them. It's hard to visualize exactly how this will work, but once Control Center reflects what you want, it may become a significantly more important aspect of the iPhone and iPad experience.

Mirror Your iPhone on Your Mac

Do you find yourself regularly digging your iPhone out of your pocket even when you're working at your Mac? If so, you might appreciate the new Continuity feature that mirrors your iPhone in a window on your Mac. You can interact with the mirrored iPhone window as you would the actual iPhone, with your Mac's pointing device and keyboard working inside the iPhone interface. Audio from the iPhone comes through the Mac, and you can even share data between the Mac and iPhone using drag and drop. While the iPhone is being shared, it remains on its Lock screen or in StandBy. iPhone mirroring will require a Mac with Apple silicon or an Intel-based Mac with a T2 chip, along with the usual Continuity requirements with regard to Apple ID, Bluetooth and Wi-Fi, and proximity. A similar Continuity feature lets you get iPhone notifications on your Mac, and if you're mirroring your iPhone, click them to open the associated iPhone app.
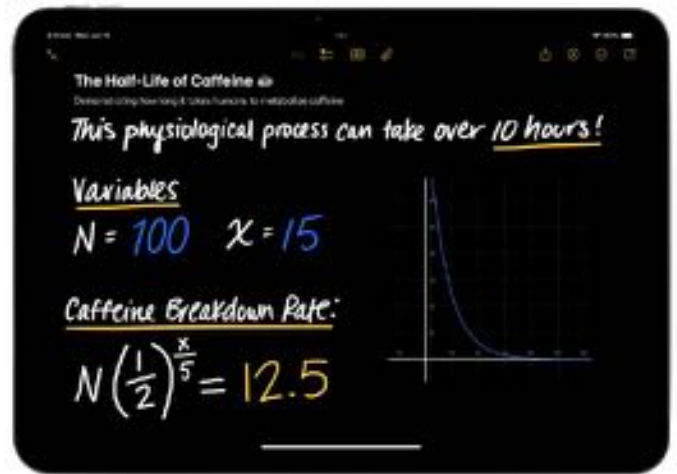
visionOS 2 Gains Panoramic Mac Virtual Display

One disappointment of the initial release of Vision Pro was that it was limited to a single 4K virtual Mac display. Yes, you could put additional visionOS apps around the Mac display to increase the information density of your environment, but it couldn't simulate a Mac with two displays. visionOS 2 promises an expandable, ultrawide, wraparound screen that provides the equivalent of two 4K displays side-by-side. It falls into the "coming later this year" category and sounds like it will work only with a Mac running Sequoia.

Math Notes in the iPad's New Calculator App

In another "about time" feature, Apple has finally brought the Calculator app to the iPad, refactoring it for the iPad's larger screen. But Apple didn't stop there, adding history and unit conversion to both versions. The most compelling addition is Math Notes, which demos best on an iPad with an Apple Pencil. You can handwrite equations, and as soon as you draw an equals sign, Calculator solves the equation. It supports variables, and if you edit an equation, the results change on the fly. (Sorry, Soulver!) You can even add graphs. I doubt I'll use Math Notes because I switch to a real spreadsheet when I have to go beyond simple math. However, I can see students relying heavily on the feature as they explore the mathematical underpinnings of various academic disciplines. Math Notes is also available within the Notes app, and that appears to be the only way you can use it on a Mac.

Smart Script Improves Handwriting

While we're on the topic of the Apple Pencil, iPadOS 18 will provide Smart Script, which improves the appearance of your handwriting as you write, making your lettering smoother, straighter, and more readable while maintaining your handwriting style. You can even paste text in and have it look like you wrote it. Spell checking fixes mistakes inline, and scratching out text with the Apple Pencil erases it. My handwriting is mediocre at best, and one of my irritations with the Apple Pencil was that what I wrote wasn't all that legible—perhaps Smart Script would help. Realistically, handwriting is too slow—I'll always revert to typing when taking notes.

Notes Gains Audio Recording and Transcription

Here's a feature I'll use in every talk I attend from now on. The Notes app on all platforms will record audio and create live transcriptions. In fact, for Apple's WWDC keynote, I set up Rogue Ameoba's Audio Hijack to record and transcribe the audio. It did a fine job, and I searched through the transcript several times while writing this article to remind myself of specific quotes. You'll notice a Summarize button in the iPad screenshot below, and while I tried to feed all 88 KB of the WWDC keynote transcription to various free chatbots for summary, only Claude and Perplexity took it. In neither case was the summary particularly helpful because Apple's keynote script was already so concise, so the summary ended up skipping most things. Claude did a much better job when I asked it to list all the features, categorized by operating system. We'll see how helpful Apple's summarization is, but transcription alone is a big win. I hope the feature doesn't cut into Rogue Amoeba's market too much, but I assume few Audio Hijack users use it solely for its transcription capabilities.

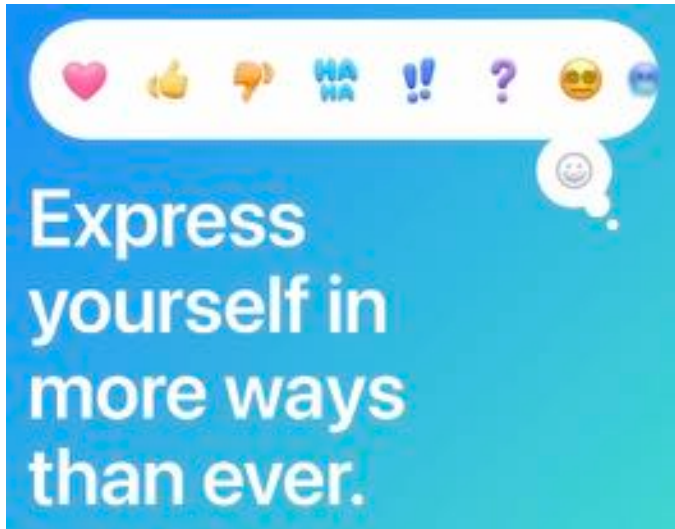## AI Provides Safari Highlights and Reader Summaries

Although these features aren't enough to tempt me away from Arc and Arc Search, devoted Safari users might find them helpful. Using AI, Safari's Highlights feature will automatically detect and display relevant information on a page—directions, biographical information, and details about popular media. No more searching for the address just to get directions to a restaurant. Plus, Safari uses AI to generate a table of contents and high-level summary for articles you add to Safari Reader.

Tapbacks Get Funky

I'm fond of tapbacks, the little icons you can use in Messages to respond subtextually. Currently, we're limited to a heart, thumbs up and down, laughter, exclamation points, and a question mark. Those cover a lot of instances of "Your message evoked an emotion, but I don't have anything else to say," but in the next set of operating systems, you'll be able to use any emoji or sticker for a tapback response. Eventually, with Apple Intelligence, you'll be able to create Genmoji with textual descriptions ("a penguin wearing sunglasses") and use them anywhere you use emoji, including in tapbacks. Messages will also allow text formatting (bold, italic, and underline) and provide text effects that look about as cheesy as gestural reactions in video.

Lock and Hide iPhone Apps

We've all got something to hide. When you hand your iPhone to a friend to look at a photo or read a Web page, you probably don't want them poking around further. New privacy features in iOS 18 and iPadOS 18 will let you lock apps so they require Face ID or Touch ID for access, and information from them won't show up in search results or notifications. You can also move apps to a hidden folder in the App Library that can't be opened without Face ID or Touch ID.