

# printout

Keystone MacCentral Macintosh Users Group ❖ [www.keystonemac.com](http://www.keystonemac.com)

## Keystone MacCentral May Program May 18, 2021 06:30 PM

### Join our Zoom Meeting

The link is provided on our email.

Jim Carey will discuss “Smart Phone Photography: What’s the best camera? The one you have with you” and sharing albums in Photos.

We are making some changes to our meetings:

- We are suspending dues for the foreseeable future . (There’s no cost\$ with Zoom meetings.)
- If you membership has lapsed, you may re-enroll by emailing us your name and email address (so we can send notifications of the meeting.)
- We plan on having very informal meetings during the summer months – no planned programs, just get-togethers to discuss information of interest. 🗑️

We have virtual meetings via Zoom  
on the third Tuesday of each month  
*except for summer vacation.*

Emails will be sent out prior to each meeting.  
Just follow the directions/invitations each month

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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 © 2021, Keystone MacCentral, 310 Somerset Drive, Shiresmanstown, PA 17011.

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By Josh Centers & Adam Engst

# Use Emergency Bypass to Circumvent Do Not Disturb for VIPs

**Here's** a common problem: you're settling down to watch a movie and don't want your iPhone interrupting you with unnecessary updates that can wait. But you also want to receive potentially important calls and messages—perhaps from an elderly relative. Or maybe you're out for the evening and don't want to be distracted from your phone... unless it's the babysitter. Here's how to meet those contradictory goals.

## Enable Do Not Disturb to Block Notifications

We assume that all TidBITS readers are generally familiar with Do Not Disturb, but if not, let's review the basics. It's a feature that silences your iPhone temporarily so you aren't interrupted by the constant cavalcade of notifications. The easiest way to access it for occasional use is through Control Center—it's the button with the moon icon.



Tap the button to turn Do Not Disturb on and off. If you press and hold the button, you see options to turn Do Not Disturb off automatically, which we covered in depth in [“Inside iOS 12: Do Not Disturb Learns to Turn Itself Off”](#) (19 September 2018).

You can also enable Do Not Disturb from Settings > Do Not Disturb, but more important are the additional options there. Most necessary are the scheduling options, which let you automatically turn Do Not Disturb on and off at certain times. Everyone should set a schedule to avoid having sleep disrupted by random notifications.

There are other useful options here, like Do Not Disturb while Driving (see [“iOS 11 to Bring Do Not Disturb While Driving,”](#) 21 August 2017), but we mostly want to draw your attention to the Allow Calls From setting, which lets you allow calls from a certain group of contacts to punch through the Do Not Disturb wall. But what about text messages? That's where Emergency Bypass comes in.

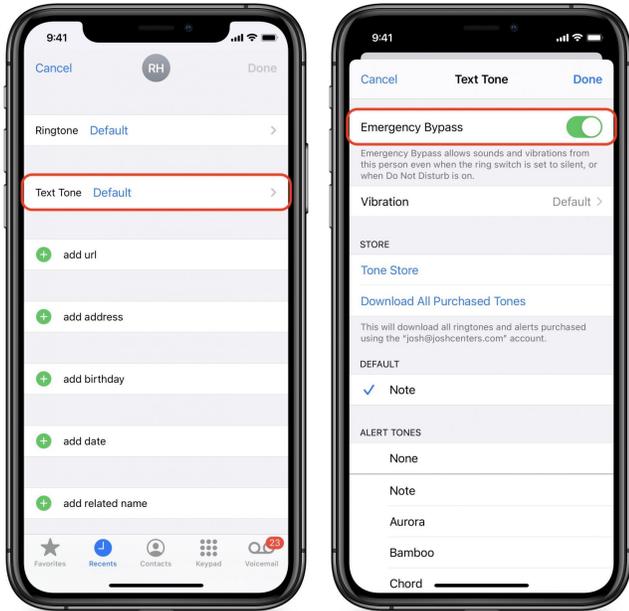
## Use Emergency Bypass to Circumvent Do Not Disturb

What's the difference between Allow Calls From and Emergency Bypass? In essence, you can use Emergency Bypass to allow both calls and text messages. However, it's not as straightforward as Allow Calls From. There's no mention of Emergency Bypass in the Do Not Disturb settings, you have to find and enable it for individual contacts, and you shouldn't confuse it with the unrelated Emergency Contacts used for Medical ID notifications.

Here's how to enable Emergency Bypass for phone calls or text messages:

1. Open a contact card in either the Contacts app or the Phone app.

2. Tap Edit in the upper-right corner.
3. Tap Ringtone or Text Tone.
4. Enable Emergency Bypass.
5. Tap Done.



There is one potentially unexpected caveat. If your Mac is awake and running Messages, it will likely capture text messages before they're sent to your iPhone. In most situations, that's sensible—you don't want text message notifications to make sounds on every Apple device you own if you're actively using your Mac. Obviously, if you're away from your Mac, it should be sleeping, but if that's not true for some reason, it could prevent messages from arriving on your iPhone regardless of Emergency Bypass.

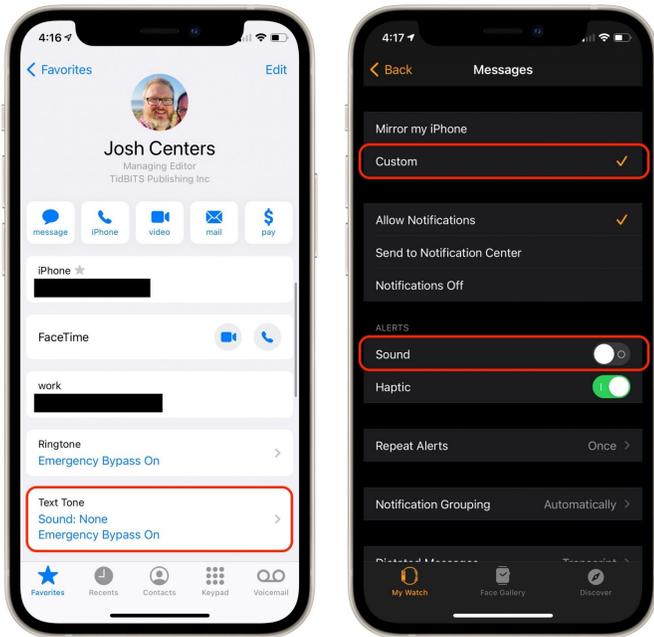
### What about Overriding Emergency Bypass on Occasion?

The only thing to keep in mind is that Emergency Bypass will cause your iPhone to make sounds even if Do Not Disturb is on and the ring/silent switch is enabled. That's the point, of course, but there are situations where silence is essential—a recital, a play, a meditation class. In other words, if Emergency Bypass overrides Do Not Disturb, how can you override Emergency Bypass every so

often? Editing individual contact cards is clearly too much work. We found two levels of workaround:



- **Silence Everything:** If it's imperative that your iPhone and Apple Watch not make any sound, the brute force workaround is to use Control Center to turn on Airplane Mode and turn off Wi-Fi—both are necessary. That will cut your iPhone off from the outside world, ensuring that no notifications can cause it to make sound. You'll still want Do Not Disturb enabled to avoid sounds caused by alarms, timers, and apps.
- **Silence Text Messages:** If you're worried only about text messages making sounds, when enabling Emergency Bypass for a contact, set their Text Tone to None, and make sure you've selected a Vibration instead. That will guarantee that text messages don't generate iPhone sounds. For those who also have an Apple Watch, you must also go to Watch > My Watch > Messages, turn on Custom notifications and disable Sound. That's necessary because the Apple Watch doesn't honor the contact's Text Tone of None when Emergency Bypass is enabled.



## Room for Improvement

In our testing, we discovered that Emergency Bypass is finicky and complicated. Apple could reimplement Do Not Disturb and Emergency Bypass in a much more streamlined way.

For starters, it's virtually impossible to manage which contacts have Emergency Bypass enabled, because there's no central list. You would be well-served to add all your Emergency Bypass contacts to a group in Contacts, purely so you could more easily disable the setting for those people in the future without having to dig through all likely contacts.

We suggest that Apple should replace the superfluous Allow Calls From feature and replace it

with a Settings > Do Not Disturb > Emergency Bypass section or screen. That interface should provide a master switch to enable or disable Emergency Bypass entirely, plus separate options to specify which contacts qualify for Emergency Bypass for calling and texting. The master Emergency Bypass switch, when enabled, would let the specified contacts break through Do Not Disturb's cone of silence. When disabled, Do Not Disturb would apply to everyone equally.

It makes sense to separate those contacts who can break through Do Not Disturb by calling you from those who would instead text you. You might have a contact who texts you constantly but would call only in an emergency. And we all know people who call randomly without texting, so it would make sense to force those people to text first if there was something urgent.

Finally, as long as we're making suggestions surrounding Do Not Disturb, it would be helpful if it was possible to set up an auto-reply for Do Not Disturb that works like the auto-reply feature for Do Not Disturb While Driving. It would be handy for informing contacts that you're using Do Not Disturb instead of letting them worry that you're just ignoring them. Additionally, a contact could then respond with "urgent" to break through.

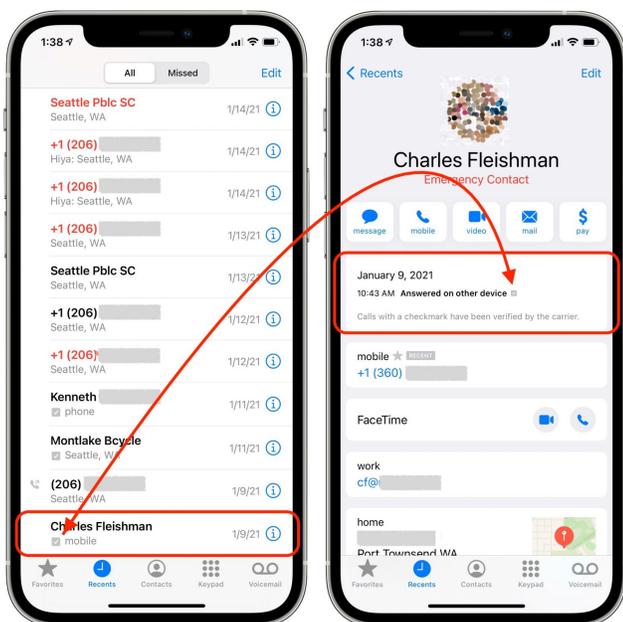
In the end, how you control the extent to which your iPhone can interrupt you has evolved organically, from the simple ring/silent switch to Do Not Disturb to Emergency Bypass contact settings, and it's time for Apple to revisit the interface and user experience. 🗑️

By Glenn Fleishman

# Caller ID Authentication May Tame the Scourge of Spam Calls

This morning, my iPhone rang five times. Because I pay [Hiya](#) for reverse Caller ID lookups, each number lit up with a name I didn't know, along with the originating city and state: three from Florida and two from Connecticut. I didn't answer any of the calls because I didn't recognize any of the names. When I checked later, I found they lacked a relatively new indicator that I watch out for: a tell-tale checkmark. While tiny, it's a harbinger of better things to come, particularly with a looming deadline in June 2021 for major phone carriers and Internet telephony providers.

You may not even notice this checkmark—it's truly very tiny—but it appears in the Recents list in the Phone app on an iPhone and in call details. On some Android phones, a verified indicator appears on the incoming call screen, and telephone carriers [have asked Apple to add it there on iPhones](#), too. Only in the call detail do you get an explanation from Apple: "Calls with a checkmark have been verified by the carrier."



## What Are Those Tiny Checkmarks?

These marks started to appear in iOS 13 in the third quarter of 2019, but usage has accelerated as carriers want to block spam calls from ever reaching their customers. Spam calls cause huge headaches for those who run phone networks. They consume network resources, don't produce revenue (spammers don't pay a receiving phone network for the calls they place), and irritate the heck out of a carrier's customers. Those customers, in turn, spend a lot of time complaining to customer-service operators, on forums, and to the US Federal Communications Commission and Federal Trade Commission.

Those two federal agencies have targeted these spam calls, as they want to [reduce the number of people who lose money to scams](#). These calls might waste a moment of your time, but scammers can exploit vulnerable people in cognitive decline or those with too much trust in others to the tune of hundreds or even tens of thousands of dollars. It's a rare regulatory initiative that started under the previous hands-off presidential administration.

These tiny checkmarks appear on calls that pass through a new standard implemented on major telephone networks starting in 2019 and gradually being rolled out by smaller ones since. The standard, known as SHAKEN, is an amusingly named expansion of an earlier plan called STIR, and the two are often spoken of together as STIR/SHAKEN. (Best said with a James Bond intonation.) What they do is establish a cryptographic chain of trust for the originating number that you see as a Caller ID message. (If you want to know what they stand for, take a deep breath: STIR is Secure Telephony Identity Revisited; SHAKEN is quite absurdly squeezed into its acronym from Signature-

based Handling of Asserted Information Using toKENs.)

Larger companies involved in plain old telephone service (POTS), a loose term for the network that handles phone numbers for calling, must implement STIR/SHAKEN by 30 June 2021. There are a lot of exceptions, [as noted in this industry briefing article](#), but any carrier with 100,000 or more lines has to be ready to go by then. (Smaller carriers have until 30 June 2023.) As we approach that date, we should see a few effects at varying levels:

- **Fewer spam and scam calls:** Pundits often predict this desirable result whenever there's a major enforcement action or carriers make changes. But in the past, fraudsters just adapted because call-based financial crimes are low-hanging fruit with little risk. STIR/SHAKEN will bump up the cost of doing business, so crime won't pay as well.
- **More checkmarks:** We can train ourselves and vulnerable members of our families, friends, and colleagues to identify recent calls with no checkmark. Apple might not yet put the mark on the incoming call screen, but we can check in the Recents list before treating the source as eventually legitimate. About one-third of my regular incoming calls already have a checkmark.
- **Better automated call-blocking:** With STIR/SHAKEN as a signal, carrier software—like T-Mobile's free tier of [ScamShield](#)—and third-party apps could more accurately predict unwanted calls. Carriers normally are required to pass all calls placed through to a recipient, but the FCC made clear a few years ago that as long as a telco is appropriately looking for spam signals, they can block these. STIR/SHAKEN provides even more data for that purpose. (Verizon claims it has [blocked nine billion unwanted calls as of December 2020](#) through various techniques that include STIR/SHAKEN.)
- **Greater accountability:** Because STIR/SHAKEN will force spammers who keep plying their trade to rely more heavily on legitimate originating phone numbers, it will make them (or their providers) a lot more vulnerable, trackable, and

arrestable. It could help authorities shut down boiler-room operations much more quickly, too.

## How STIR/SHAKEN Will Help

STIR/SHAKEN essentially rectifies a historical failure that resulted from extending phone system technology that assumed few participants who trusted one another, much like email. It's harder to forge Caller ID than the return address on an email, but Caller ID has been spoofable for decades. You probably already knew that, because you've received so many illegitimate calls. In recent years, scammers would even engage in "prefix spam," calling your number with a fake Caller ID number that used the same three-digit prefix that follows the area code. (That prefix remains tied to local phone exchanges with wireline numbers and regional assignments with wireless carriers.)

Originally, businesses and other institutions could set Caller ID via a PBX (corporate phone exchange), which made sense first when companies were managing oodles of internal lines and later when they started using Voice over IP (VoIP). Back in the late 1990s and early 2000s, when I freelanced for the New York Times, I knew I was getting a call from an editor there when Caller ID reported 1 (111) 111-1111, the number the Times spoofed to protect their internal phone numbers. ([The Times changed that a decade ago.](#))

VoIP carriers have long had the broader capability to set a unique phone number for any outgoing call because their calls don't originate in the plain old telephone system, and carriers had to offer that flexibility to allow Caller ID to work for VoIP calls at all. While hundreds of millions of VoIP-based calls made with correct identification occur every day, spammers also make [a reported 100 million-plus illegitimate calls daily](#). How do you avoid throwing the baby out with the bathwater?

A call may need to make multiple hops across different carrier and third-party networks from the caller to the person answering. STIR and SHAKEN—the latter technically an implementable and broader version of the former—use public-key cryptography to identify which phone numbers are assigned to which originating parts of the phone

network. When a call is placed, it has to pass cryptographic tests that are checked at each hop and that can validate that the number identified from Caller ID originated from the right point in the phone system. (For more technical details, see [my 2019 Fast Company article](#) on the early stages of STIR/SHAKEN.)

While STIR/SHAKEN should allow carriers to block the passage of calls that lie about their originating numbers, questions remain unanswered about other elements of the system. How will it affect calls that aren't properly tagged? How should carriers and smartphone manufacturers present such calls to the dialing public? Although Apple's display is tremendously subtle right now, I expect more prominent marking and signaling over time, including adding a verified message to the incoming call screen. Validated Caller ID should eventually help legitimate calls evade blocking techniques that snag the unproven.

How long will this take? We can probably draw a lesson from the Web's fairly rapid switchover from

mostly non-secured HTTP sites to nearly all HTTPS-secured ones. While the transition started slowly, once browser makers decided on schedules, they began to identify sites without HTTPS with increasingly aggressive labeling that warned of the lack of security. That changeover was combined with significantly easier and cheaper systems for creating and managing the necessary security certificates, like [Let's Encrypt](#). Having both the carrot of easy upgrades and the stick of browser warnings prompted site owners to upgrade their security.

Ultimately, companies and carriers will find their calls dropped or blocked unless they fully embrace STIR/SHAKEN as it's adopted by mobile phone operating systems and the rest of the phone network. For those who have built businesses on unethical practices, we hope STIR/SHAKEN will spell the end for them. Good riddance, and we look forward to the day when we can once again answer the phone without worrying that we're being targeted by a scammer. 🗑️

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By Adam Engst

## Apple Watch Series 3 Update Workarounds

**The** GPS-only model of the Apple Watch Series 3 has just 8 GB of onboard storage. Even for people who install relatively few apps, that limited storage can cause problems when installing updates to watchOS 7. Users report getting errors in the Watch app, telling them that there isn't enough free space to install the update. The problem appears to be specific to the Apple Watch Series 3—I haven't seen reports of it bedeviling owners of newer Apple Watch models.

There appear to be at least two possible workarounds for the problem: updating directly on the watch itself and unpairing and re-pairing the watch. (See the comments for a third that we haven't had a chance to confirm.)

### Update Directly on the Apple Watch

The standard way to update watchOS is to start in your iPhone's Watch app, navigate to My Watch > General > Software Update, and install the update from there.

However, if that approach fails due to a lack of space, try this alternative method, which several users have used successfully. Thanks to [David Weintraub on TidBITS Talk](#) for tipping me off to this technique, which I was then able to use successfully on my mother's watch.

1. Press the Digital Crown on the Apple Watch to display your apps.

2. Scroll down and tap the Settings app. (If you see the nearly unusable grid view, switch to the list view by opening the Watch app on your iPhone and going to My Watch > App View > List View.)
3. Tap General, then Software Update to see details about the update.
4. Scroll down in the Software Update screen and tap Download and Install.
5. If prompted to accept terms and conditions, tap OK and accept the terms on your iPhone.
6. The update won't install until you've put the Apple Watch on its charger, it's charged to at least 50%, and Wi-Fi is available. It's easiest to start the process whenever you usually charge the Apple Watch.

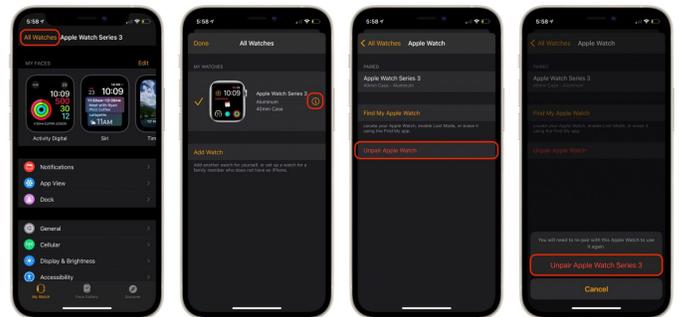


## Unpair and Re-pair the Apple Watch

Although several users have reported success with the previous method, if it doesn't work for you, there's another option. It's annoying and time-consuming, and is thus best left for when you have plenty of time. In essence, you need to [unpair the watch](#), which has the effect of erasing it and clearing space for the update, and then pair it again, restoring from backup. Follow these steps

while keeping your iPhone and Apple Watch close together:

1. In the Watch app's My Watch tab, tap All Watches.
2. Tap the info button next to the watch you want to unpair.
3. Tap Unpair Apple Watch. If you're prompted to keep or remove your cellular plan, keep it—you'd want to remove it only if you were selling or giving away the watch.
4. Tap Unpair Apple Watch again to confirm. Another backup is made, and then the erase process starts.



When the Apple Watch has been reset to factory defaults, you can [pair it again](#) by holding it close to your iPhone, tapping Continue when asked to set up the Apple Watch, and scanning the pairing animation. When prompted, choose Restore from Backup and if you're asked, let it update to the latest version of watchOS (since that's the goal).

Let us know how these approaches work for you! 🗨️

By Glenn Fleishman

# An External SSD Gave My iMac a New Lease on Life

My work life centers around my Macs. With a few delightful exceptions that involve [printing history and letterpress](#), I spend most of my day looking at a screen, tapping away on a keyboard, and

manipulating a mouse. When I purchased a quad-core 21.5-inch iMac with Retina display in 2017 and added a secondary 4K display, I felt that I had spent the right amount of money relative to my

needs. But it took me until two weeks ago to truly unleash its power.

When I bought the iMac, I unfortunately cheaped out in one important regard. While I had configured it with 32 GB of memory, I opted for a 1 TB Fusion Drive, Apple's combination of a fast, low-capacity SSD with a slow 5400 rpm, high-capacity hard drive. At the time, spending \$300 for a 512 GB SSD didn't make sense because I needed more storage, and \$700 for the 1 TB SSD upgrade was too dear for my budget. However, Apple had just shifted to including substantially smaller SSDs in Fusion Drives, which I believe ultimately became a huge liability. (See "[iMac 1 TB Fusion Drives Have Smaller SSDs](#)," 7 August 2017.)

I didn't notice the performance tradeoff most of the time. The Fusion Drive initially suited me well with macOS 10.12 Sierra and seemed to sail through 10.13 High Sierra without causing me grief. It was only once I upgraded to 10.14 Mojave that I found myself waiting seemingly forever for apps to launch and disk-intensive tasks to finish.

As I grew increasingly frustrated, 10.15 Catalina appeared in late 2019, and I had two critical 32-bit apps I wanted to keep using indefinitely. A shift to Catalina would require additional resources to run a virtual machine effectively so I could keep Mojave available for those two apps (see "[Moving to Catalina: Keep Your 32-Bit Mac Apps Running with Parallels](#)," 18 September 2019). I chose the cheapest path again, which was upgrading to 64 GB of memory and selling my previous 32 GB to a friend.

The extra RAM helped, but not enough. Parallels Desktop requires heavy disk usage, and it was a slug alongside other apps, even with so much memory available. I soldiered on for another 18 months, through the Catalina release and then macOS 11 Big Sur, upgrading my Mac laptop to each in turn for researching and writing.

Purchasing an M1-based MacBook Air finally pushed me over the edge. Do you remember first seeing a Retina display? I remember glancing at one and thinking, "Oh, no, I must *not* get used to this, or my current screen will seem like it's

composed of giant blocky pixels." Eventually, my budget let me move to Retina.

The M1 chip had the same effect. Despite having just 16 GB of memory, the M1 MacBook Air runs measurably far faster than my iMac. Worse, even when using Rosetta 2 emulation for Adobe Creative Cloud apps like Photoshop (before the recent release of an M1-native version), the MacBook Air swept the floor with my iMac. I began using screen sharing to avoid waiting several minutes for Adobe InDesign or Photoshop to launch; they launched in about 10 seconds on my MacBook Air.

The solution was obvious—I needed faster storage on the iMac. With a couple of previous Mac minis, I had switched to an affordable 512 GB external startup drive that used an external SSD in a SATA III format and connected via USB 3. Such SSDs package flash memory in a 2.5-inch drive case but are limited by the SATA III throughput rates. SATA III SSDs top out just below 600 MBps (around 5 Gbps, USB 3's base-level speed), which is a few times faster than even a 7200 rpm hard drive.

Since then, however, technology and pricing have improved by leaps. SSDs these days rely on NVMe Express, a standard built on top of PCI Express, which can offer up to 10 times the rate, challenging the top rates offered by Thunderbolt 3. I purchased a Thunderbolt 3 external SSD from Other World Computing, [the 1 TB model of the Envoy Pro EX](#), for just under \$300, which is rated at 2800 MBps. (As a gauge of SSD price drops, you can buy a SATA III-packaged 8 TB SSD for under \$800, or nearly what I would have paid for a 1 TB SSD upgrade option in 2017. The step up is an [8 TB NVMe SSD blade is \\$1349 from OWC](#) that fits into a [\\$79 Envoy Express Thunderbolt 3 enclosure](#).)

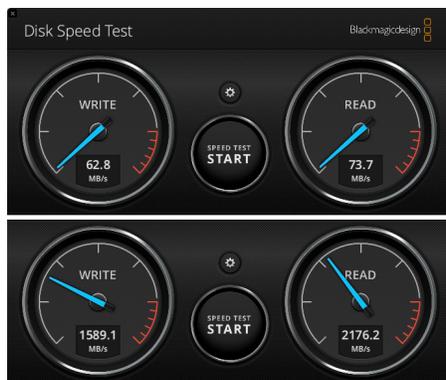


Here's how I upgraded:

- Using a Thunderbolt 3 port, I connected the SSD and formatted it as APFS, without encryption.
- With [Carbon Copy Cloner](#), I made a complete copy of my Mojave startup volume to the SSD.
- I set System Preferences > Startup Disk to boot from the cloned SSD.
- I restarted into macOS Recovery (hold down Command-R at startup) and installed Big Sur onto the SSD. I wanted to leave my internal Fusion Drive on Mojave as a backup position.
- When installation was complete, I restarted into Big Sur using the external SSD.
- I launched the latest version of Parallels Desktop and tested its performance virtualizing Mojave. It worked as I had hoped—everything worked essentially as fast as comparable actions on the host Big Sur operating system managing my Mac.

In my interactions with the iMac, it now feels like I had a major hardware update, particularly with Big Sur as the startup system, which makes it seem like a different machine altogether.

In testing with Blackmagic Disk Speed Test, my Fusion Drive initially showed hundreds of MBps for read and write, but after a few tests clearly shifted operations from the SSD to the hard drive, rates dropped to just above 60 MBps for writes and a bit above 70 MBps for reads. On the external Thunderbolt 3 SSD, I consistently measured nearly 1600 MBps on writing and almost 2200 MBps on reading.



*Fusion Drive performance, top.  
Thunderbolt 3 SSD performance, bottom.*

This performance improvement made a huge difference with drive-intensive apps. In particular, I found that my love of audio editing for podcasts returned. I had standardized on Adobe Audition years ago, and Audition hits the drive hard. It used to take minutes to launch and load a project, editing performance was often poor, and exporting mixed-down files was sluggish at best. Now it runs like butter. I was able to edit a 90-minute recording session with five other people into six episodes of a show I host, [Pants in the Boot](#), in a few hours, compared with at least twice that time and a lot of irritation for a previous similar batch a year ago. It was delightful.

None of us are made of money, and when I purchased this iMac in 2017, I had just suffered a second Mac mini failure in as many years. I was desperate to get back to work without breaking the bank. The decision to skimp on a Fusion Drive instead of an SSD didn't seem regrettable initially, though it was eventually painful.

But the wait was worthwhile. The performance of a Thunderbolt 3 SSD is effectively as good as if I'd paid Apple for an internal SSD. If anything goes south with this volume, I can simply replace it, instead of [cutting open the iMac](#). Or, in a year or two, I could upgrade it to 2 TB or maybe even 8 TB—SSD prices continue to fall. For now, I'm happy about having earned myself a few more years of satisfaction with one of my favorite Macs, now that I'm no longer unintentionally throttling its true performance. 🗑️

# Apple Updates

Security Update 2021-003 (Mojave)  
Apr 27, 2021 – 1.79 GB

System Requirements  
macOS 10.14

macOS Mojave Security Update 2021-003 is recommended for all users and improves the security of macOS.

Security Update 2021-002 (Catalina)  
Apr 27, 2021 – 1.79 GB

System Requirements  
macOS 10.15

macOS Mojave Security Update 2021-002 is recommended for all users and improves the security of macOS. 

