

printout

Keystone MacCentral Macintosh Users Group ❖ <http://www.keystonemac.com>

February Meeting

Dennis will discuss the RAVPower FileHub. This device appears to be a very valuable tool for travelers. The FileHub

- is a travel router
- provides wireless storage backup for your phone or tablet
- supports reading usb hard drives up to 3TB and sd /sdhc /sdxc cards up to 256GB
- provides one key backup from sd card to usb hard drive

Jim will tell us about having Costco print your photos. Costco delivers the best photos around. Jim will have a caveat or two about outsourcing your printing needs.

We will have a raffle for an App Store & iTunes gift card. 🗑

Meet us at

Bethany Village Retirement Center

Education Room

5225 Wilson Lane, Mechanicsburg, PA 17055

Tuesday, February 18th 2020 6:30 p.m.

Attendance is free and open to all interested persons.

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

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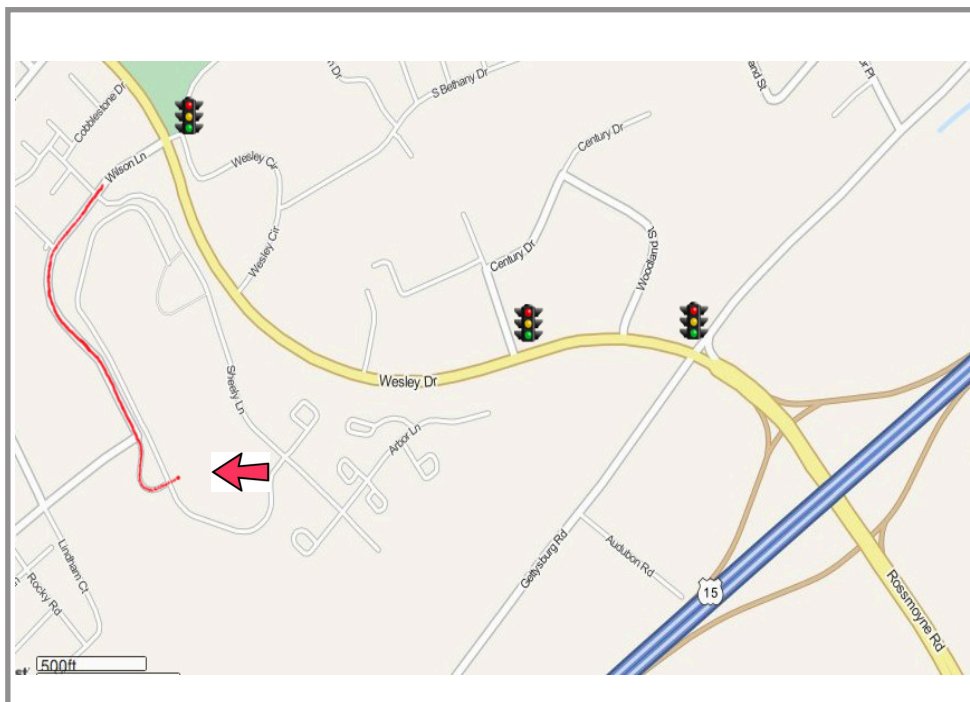
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By Adam Engst

The New York Times Reveals How Completely Our Every Move Is Tracked

If it were up to me, I'd be nominating the New York Times article "[Twelve Million Phones, One Dataset, Zero Privacy](#)" for a Pulitzer Prize.

Anonymous sources provided the Times with a dataset from a single location data company that contained 50 billion pings from the phones of more than 12 million Americans over several months in 2016 and 2017. With the data, Times reporters Stuart A. Thompson and Charlie Warzel were able to track numerous people in positions of power, including military officials, law-enforcement officers, and high-powered lawyers. They were able to watch as people visited the Playboy Mansion, some staying overnight, and they could see visitors to the estates of Johnny Depp, Arnold Schwarzenegger, and Tiger Woods. Once they identified any particular phone, they could track it wherever it went. Imagine what that data could be used for in the wrong hands.

The Times has done an impressive job of showing both the scope of the data — with interactive images showing all the location pings at the Pentagon, for instance — and also diving down to the specifics, with a Microsoft employee who made an unusual visit to an Amazon office and a month later, took a job there. Might employers want to keep tabs on employees with access to confidential information? That's just one example — the article includes others, some speculative, some not (like one random Los Angeles resident who was found traveling to roadside motels multiple times and staying for a few hours each time).

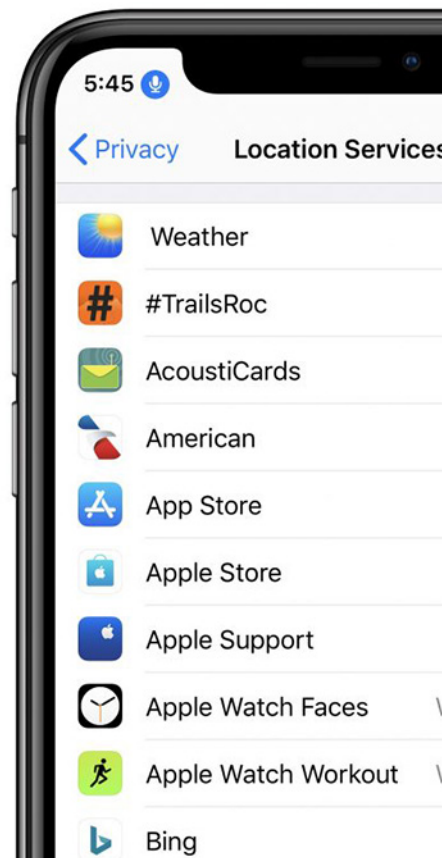
Go read the [Times article](#) and the additional pieces that the paper has published:

- [Protect Yourself](#)
- [National Security](#)
- [How It Works](#)
- [One Neighborhood](#)
- [Protests](#)
- [Solutions](#)

It's a sobering look at just how little control we have over our privacy and how little oversight there is over an industry that knows more about us than our own families. Even if we assume good intent on the part of the companies

collecting this data, there's no guarantee it can be kept out of the hands of foreign governments or organized crime. The Times has put the spotlight on this industry; it's up to us to make sure we convey our opinions of this situation to our elected representatives.

What You Can Do to Protect Your Privacy Now



In the meantime, go to Settings > Privacy > Location on your iPhone and set every app to Ask Next Time unless you know what it's doing with the location data. For instance, the Camera app needs the While Using the App setting to geotag your photos, and Maps needs it to give you directions. The Ask Next Time setting ensures that you'll get a chance to decide the next time you actually use the app. Also, set any apps you don't (or shouldn't) trust, like Facebook, to Never, and make sure no app is set to Always unless you trust it implicitly. You might be surprised by which apps want to track you and which are set to Always.

There's no guarantee that restricting your location sharing settings will prevent these companies from tracking your location because there's no way to know which apps are abusing their privileges (well, other than weather apps). The only way to be certain it's not happening would be to turn off location services entirely, but that would severely

reduce the utility of the iPhone. Even setting every app to Never would be problematic, eliminating Maps and Google Maps, Lyft and Uber, and photo geotagging in all camera apps. That's why we recommend the approach above — everyone's level of concern will differ, and only you can determine how perturbed you are by this tracking. 🗑️

By Jeff Porten

CES 2020: Tech Trends to Watch

Greetings from CES 2020. CES was formerly known as the Consumer Electronics Show and remains an annual gathering of 300,000 of my closest friends, all here to demo their upcoming gadgets, show their Pinocchio-prototype seeking funding to become a real boy, or be the people forking over venture capital. (2020 was formerly known as a year that was [completely science fiction](#).)

Sunday kicked off the media-only part of the conference, with Tuesday being the official start. It's held at literally a dozen venues all over Las Vegas, with today's sessions at Mandalay Bay, where the Onion has once again met reality, with a Starbucks being nearly opened [inside another Starbucks](#).

The first session was the usually interesting Trends to Watch presentation, by the Consumer Technology Association, the people who run CES. The speakers were the CTA's Steve Koenig, VP of Research, and Lesley Rohrbaugh, Director of Research. (With titles like those, I assume they arm-wrestle to determine who decides what to research.)

What makes the Trends talk interesting is not only the data presented, but also which parts of the talk are filled with more optimism than an eight-year-old riding a unicorn over a rainbow. What CES organizers and exhibitors never seem to understand is that [truly revolutionary products don't need hype](#). So when you hear hype at CES, it's an indication that someone is covering for something. I enjoy this talk for its information, but also for pointing out what I've become skeptical of after attending CES on and off for thirty years.

It's Always about Bandwidth

This year, the talk was called "Into the Data Age," as it seems there's always one era or another we're just starting. Case in point, Koenig opened by declaring that the past decade was about the Internet of Things (abbreviated "IoT"), but now "IoT" is all about the Intelligence of Things: devices that are not only connected but also have embedded artificial intelligence. But this statement is vastly premature based on all the IoT promises we've heard before, when every piece of clothing and all food in the fridge would have ubiquitous smart chips talking to each other. This is supposed to be a big selling point of 5G cellular because it's built to handle hundreds of thousands of small devices within tower range. The promise of the

original Internet of Things is still years off; it's odd for Koenig to come not to praise it, but to bury it. Or at least, to replace it with new words for the same abbreviation. But it's true that many IoT devices previously planned to be dumb sensors are now getting embedded smarts.

Koenig called 5G networking an "ingredient technology," precisely because current cell networks can't handle so many devices. In 2019, only 1% of cell phones in use were 5G-capable; this is expected to rise to 12% in 2020, over 50% in 2022, and over 75% by 2023. But unlike previous network rollouts, where consumer demand drove the market, Koenig said that enterprise purchases would drive 5G, as companies seek to use 5G's capability to network massive numbers of single-purpose devices and leverage its high speeds and low latency for more complicated applications.



Koenig pitched this corporate-driven adoption as a positive thing, but I'm fairly certain it isn't, at least not for consumers. I've been bullish on 5G technology but skeptical of 5G implementation for years (see "[Ideas from CES 2017: 5G in Your Future](#)," 19 January 2017), because we're dealing with companies that sell limited "unlimited" data, with various charges when we use our phones too much. Is it a good thing that the United States will have six different companies building 5G networks, the only country with so many? Or is that ample opportunity to pay an extra \$30 because you downloaded a movie while roaming? South Korea, which has the [fastest mobile data in the world](#), is happy with three competitors; Canada, in third place, is proceeding with a regulated monopoly for now. (The United States ranks 30th in this comparison.)

When Verizon's and AT&T's bread is buttered mostly by companies of the same size they are, how responsive do you think they'll be to consumer demand?

Big agriculture is expected to be a major user of 5G and IoT, and for good reason: the [global population is expected to hit nearly ten billion](#) in 30 years, and it would be nice to feed them all. A large number of small sensors can be used to micro-target areas of farmland, getting maximum yield while minimizing needed water resources. In a slide labeled "precision agriculture," red areas indicate crops that need more water while other regions are perfectly fine. This "farm of the future" is literally so, because Koenig said that farmers would be able to raise needed capital by selling into futures markets, with confidence they can meet their targets.



But notably, while the rest of the slide showed massive self-driving John Deere tractors and drones a-plenty, it depicted only a single farmer, the one examining the image above and presumably planning on [cornering the orange juice market](#). There are 2.2 million farms in the United States and 3.2 million farmers; it sounds like the 750,000 people who work on farms but aren't family members should be looking for other lines of work.

AI Everywhere

Similar impacts will come from AI. Machine learning and interfaces that anticipate your needs will show up in smart TVs, smart speakers, smart ovens, and smart doorbells; later in the day, I saw a smart bathmat. These technologies will be even more ubiquitous outside the home. Koenig waxed rhapsodic about McDonald's running "McD Lab," the R&D department that is developing AI to take your drive-thru order. This, he said, means the employee can focus on customer service, making sure the order is right, and taking payments more efficiently. But all of those things have already been automated elsewhere — making you wonder just why a human would be there at all. [McDonald's has 1.9 million employees](#), and it sounds like most of them should be joining the farmers at night school.

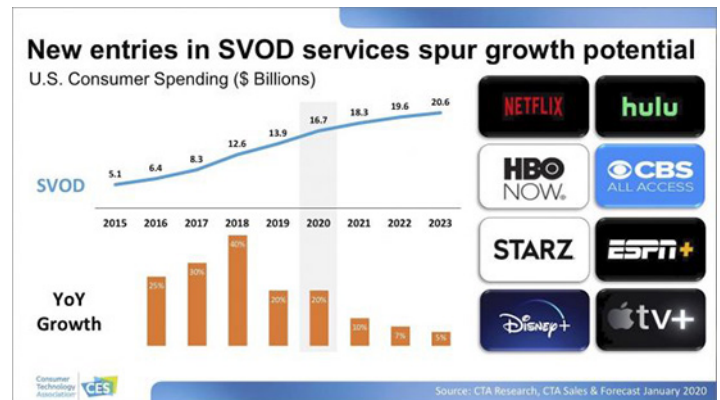
(It should be noted that technology is, overall, usually a net positive for employment. Compare the tiring work

of 19th-century accountants, whose work was difficult drudgery, to the large number of people working with spreadsheets today with more interesting work and higher salaries. New technology kills old bad jobs and generates new good ones; the problem being that it's not the same people moving from the one job to the other. Unskilled workers are hit particularly hard.)

AI was another area where the presenters leapfrogged over real-world experience, saying that the last ten years were about connectivity, but the next ten would center on AI. I thought that perhaps connectivity should get some more attention, and made a note to do a speed test on my Internet connection in the room. But I couldn't do it, because in a multibillion-dollar hotel hosting one of the world's top tech conferences, neither the open Wi-Fi nor my hotspot could get any bandwidth — I was offline.

Streaming Video for Your Every Waking Minute

Streaming video services were the next focus, telling us what we already know: there are a lot of them, and more are coming. Did you know NBC's streaming service will be called Peacock? (With Disney owning ABC and CBS All Access seemingly planning on being a [24/7 Star Trek feed](#), I look forward to the announcement of PBS Sesame Stream to round out the networks of my childhood.) But clearly, the market is not close to being saturated, as the market is not only growing, but the rate of growth increased through 2018 and is still at a healthy 20%. After all, why settle for one streaming service with more video than you can watch in a lifetime when you can subscribe to five?



And why settle for sitcoms that can last 21 whole minutes when you can have much faster jolts of thrilling content? [Meg Whitman](#) and [Jeffrey Katzenberg](#) announced a new company and streaming service, Quibi, that will produce shows for the YouTube generation that can be watched on a phone while standing in line. I note that YouTube already exists and can be watched in line for free. But as I'm not a member of the generation that considers watching YouTube to be the equivalent of watching Netflix, I'm not the right person to judge whether Quibi is doomed or brilliant.

Which device you're going to watch all this on is also up in the air. The official "Next Big Thing" is 8K television, but that's big in terms of size, not in terms of whether anyone will buy one. If you want to tell the difference between 4K and 8K, you'll need a screen with at least 65 inches, and



that's more than can fit in most living rooms (see "[CES's 2019 Tech Trends: Big Data, 5G, AI, AR/VR, Autonomous Vehicles — and Bigger TVs](#)," 8 January 2019). Koenig even made an awful dad joke about how his wife wouldn't let him bring one home, then said that 8K would still be huge because of applications like billboards and corporate displays. When was the last time you were interested in billboard technology? I have no doubt that someday we'll have homes with entire walls in 16K or 32K, showing vistas indistinguishable from a view out the window — but that is likely to bring with it a change in architecture before the tech will fit.

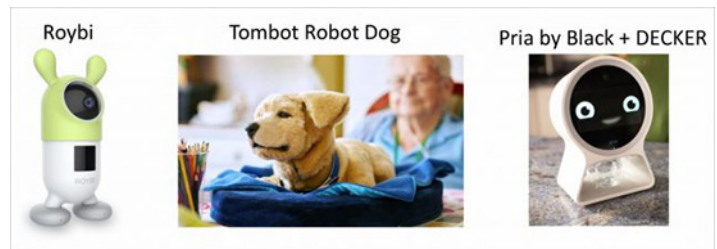
Reality, Augmented or Virtual, and the Rest of the Trends

That imaginary vista, of course, is an example of virtual reality, or VR, which has now been lumped in with augmented reality (AR) to create a new buzzword: XR. (I'm not sure what the X stands for, and I'm pretty sure I don't want to know.) The next slide shows why I think AR is a much bigger deal than VR: you will be able to use AR without using gear that would cause a scuba diver to say, "too bulky." Google has impressed me twice with their AR advances, the first being a Maps overlay that puts [giant arrows onto your route](#) (and which has mostly worked for me, but with some howling errors), the other being that Google Translate appears [fast and accurate enough](#) that I'm not worried, prior to a trip in three days, that I only got to lesson three of my Italian audio course. A phone is a poor way of using the technology, but Translate and [Lens](#) are essentially closed captions for the real world.

The rest of the talk covered other sectors of less general interest but included a grab bag of either exciting or preposterous news. Esports, which is what we now call watching other people play video games, somehow surpassed \$1 billion in revenue last year. Self-driving vehicles are already expected as near-future fleet vehicles for companies like Uber and Lyft. But we're also supposed to see an explosion of "multimodal" transportation, such as electric scooters that take us the last distance that Uber can't go. (This was followed, apparently without recognition of irony, by a discussion of digital health and gadgets that ensure we do enough walking every day.) And yes, that includes the flying car, which (regulations permitting) you could be able to call like an Uber by the mid-2020s — should you be one of the people who thinks that idea is attractive rather than terrifying.

The talk wrapped with a discussion of robots — always, it's the industrial applications that are important but the adorable ones that are on display — and the growing field of "resilient technology," which are systems that degrade gracefully and with fewer outages in crises. Clearly, terrorism was on everyone's mind when this was brought up, but by the way Rohrbaugh said it was for "disaster recovery or... things like disasters," this is not something that's openly talked about by the CTA. Which is ironic, because it could be the biggest way innovative technology changes your life, even if that just means having [steady electricity in California](#). 🗑️

VR Hardware 3.0	AR Advances
	
<ul style="list-style-type: none"> • Six Degrees of Freedom (6DoF) now the norm • Untethered models 	<ul style="list-style-type: none"> • AR glasses get realistic • Smartwatch features and more • More AR apps



By Josh Centers

Squash Is a Fun Way to Compress Images

We're fans of MacPaw's Setapp, which offers access to over 170 apps for \$9.99 per month. When a specific need comes up, it's nice to be able to click the Setapp icon in your menu bar, search for what you need to do, and get access to the right tool in minutes.

As the author of several Take Control titles, I'm in a constant battle to keep PNG images small without sacrificing clarity.

My first line of attack employs the Mac's built-in Preview app, which lets me reduce the image's size and resolution in Tools > Adjust Size, and crop out unnecessary bits by selecting the portion of the image I want to keep and pressing Command-K (for more details, see [Take Control of Preview](#)). But those techniques take me only so far before image quality suffers.

There are lots of free options for shrinking PNG images without a noticeable loss in image quality. You can find Web sites like [TinyPNG](#) (which also offers a Photoshop plug-in), command-line tools like [OptiPNG](#), and native Mac apps like the free and open-source [ImageOptim](#) (which also provides a command-line interface and a Web service).

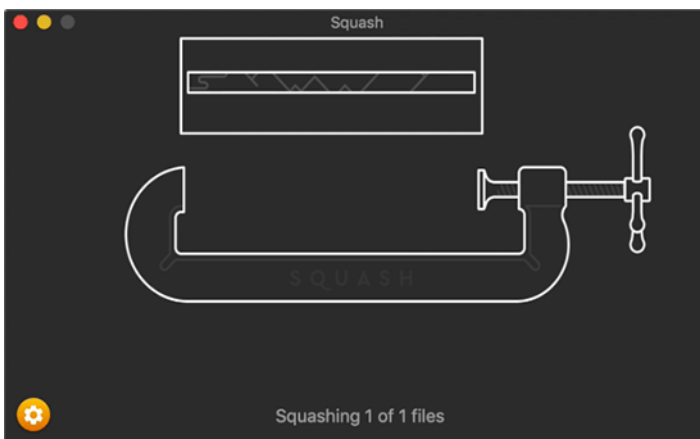
I've always leaned toward OptiPNG for this task, but the last time I needed to compress some images, I was working on a new iMac that I had set up from scratch. I was in a hurry to get my tasks done and didn't feel like diving into setting up [Homebrew](#) and the myriad command-line tools I enjoy, since that's a long and winding rabbit hole.

So I decided to check Setapp, where I found a fun little utility called [Squash](#) from [Realmac Software](#). On its own, it costs \$14.99 from Realmac or the [Mac App Store](#). I doubt I'd pay that much given that there are so many good free utilities in this space. My choice to give it a try highlights the genius of Setapp: developers get to monetize otherwise overlooked apps, and users get quick access to a set of curated utilities.

How Squash Works

Squash is a simple app. Invoke it by dropping an image or set of images on its Dock icon or into the Squash window. Then it works its image-compression magic, tells you how much it compressed the image(s) by, and prompts you to save. Squash does not overwrite the original image but instead saves it as a new file with "-squashed" appended to the original file name. You can change the suffix in Squash > Preferences.

What distinguishes Squash from its competition is that Realmac has managed to make an image compression app fun. While your image is compressing, an animation plays of a clamp squishing a picture frame. Squash also plays a funny noise by default, but if that annoys you, you can turn it off.



A silly animation while compressing images might be a trivial reason to like a utility, but what's wrong with adding a little whimsy to such a dull, repetitive chore? For many of us, isn't that why we started using the Mac in the first place, because it was fun? Form should always follow function, but this world is in desperate need of joy as well.

So let's talk about function. I mentioned a lot of apps that compress PNGs. How does Squash stack up in terms of space saved? I took three PNG screenshots: 91 KB MB, 5.7 MB, and 19.5 MB in size. I compressed them with ImageOptim, OptiPNG, and Squash. I compressed each image with Squash twice, once with the default setting, and again with the More Compressed option enabled.

In terms of real-world file sizes, the apps were fairly similar (what's a few bytes these days?), but the relative percentage differences were greater than I had expected. When using its default settings, Squash was consistently in last place in terms of compression, but when I enabled its More Compressed setting, it consistently achieved or tied for first place.

Image 1 (91 KB)

Squash (More Compressed): 48 KB (47.3% smaller)
ImageOptim: 48 KB (47.3% smaller)
OptiPNG: 54 KB (40.7% smaller)
Squash (default): 54 KB (40.7% smaller)

Image 2 (5.7 MB)

Squash (More Compressed): 2.9 MB (49.1% smaller)
ImageOptim: 3.2 MB (43.9% smaller)
OptiPNG: 3.3 MB (42.1% smaller)
Squash (default): 3.6 MB (36.8% smaller)

Image 3 (19.5 MB)

Squash (More Compressed): 14.8 MB (31.8% smaller)
ImageOptim: 14.8 MB (31.8% smaller)
OptiPNG: 15.5 MB (20.5% smaller)
Squash (default): 17.4 MB (10.8% smaller)

I won't pretend that this test was comprehensive. I could have spent hours trying different settings in ImageOptim, different images, and various other utilities. There are two takeaways from this data:

There is a difference in image compression apps and methods.

You should turn on the More Compressed feature in Squash. The extra wait is worth it.

Squash offers other features too, including conversion of PNG to JPEG, JPEG compression, and quick conversion of PSD to JPEG. The last feature is especially interesting if you find yourself converting Photoshop documents to JPEGs often since it saves you the time and trouble of opening Photoshop or a similar image editor.

If you subscribe to Setapp, I recommend giving Squash a try. Outside of Setapp, ImageOptim is a quality free app that does a fine job, even if it's not as fun. 🗑️

Software Review

Apple Updates

macOS Catalina 10.15.3 Update

Jan 28, 2020 – 2.99 GB

System Requirements

- macOS Catalina 10.15.2

The macOS Catalina 10.15.3 update improves the stability, reliability, and security of your Mac, and is recommended for all users.

This update:

- Optimizes gamma handling of low gray levels on Pro Display XDR for SDR workflows when using macOS
- Improves multi-stream video editing performance for HEVC and H.264 encoded 4K video on the 16-inch MacBook Pro (2019)

macOS Catalina 10.15.3 Combo Update

Jan 28, 2020 – 4.59 GB

System Requirements

- macOS Catalina 10.15

The macOS Catalina 10.15.3 update improves the stability, reliability, and security of your Mac, and is recommended for all users.

This update:

- Optimizes gamma handling of low gray levels on Pro Display XDR for SDR workflows when using macOS
- Improves multi-stream video editing performance for HEVC and H.264 encoded 4K video on the 16-inch MacBook Pro (2019)

Security Update 2020-001 (Mojave)

Jan 28, 2020 – 1.62 GB

System Requirements

- macOS 10.14

Security Update 2020-001 is recommended for all users and improves the security of macOS.

Security Update 2020-001 (High Sierra)

Jan 28, 2020 – 1.92 GB

System Requirements

- macOS 10.13

Security Update 2020-001 is recommended for all users and improves the security of macOS. 🗑️



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