How To Recover Your Data

Dennis McMahon will review Do Your Data Recovery Professional.

Do Your Data Recovery for Mac Professional, reliable and safe Mac data recovery software, can help you easily and quickly recover lost files from Mac notebook, desktop, Mac-based hard drive, digital device, removable device due to deleting, formatting, virus attacking, OS crash, improper operation or other unknown reasons.

Deleted File Recovery

Easily and quickly recover deleted files even you have emptied the trash bin.

Lost Volume Recovery

Retrieve lost files from damaged, deleted or lost Mac volumes/partitions.

Mac OS Recovery

Recover lost data after Mac OS upgrade, crash, or reinstallation etc.

Formatted Data Recovery

Completely recover files from formatted, reformatted or erased Mac hard drive or storage device.

Raw Recovery

Raw recovery lets restore lost files from corrupted or inaccessible hard drive/device. ♻

Meet us at

Bethany Village Retirement Center

Education Room
5225 Wilson Lane, Mechanicsburg, PA 17055

Tuesday, March 20th 2018 6:30 p.m.

Attendance is free and open to all interested persons.

Contents

Keystone MacCentral Essentials

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by Adam C. Engst and Josh Centers

Apple Previews iOS 11.3 Changes, Due Later This Year

In an unusual move, Apple has put out a press release that previews the changes in an upcoming dot revision to iOS, iOS 11.3, due out sometime in the northern hemisphere spring. Here's what you can expect:

ARKit 1.5 — ARKit is the framework that developers use to develop augmented reality apps (see "ARKit: Augmented Reality for More Than Gaming," 28 July 2017). In iOS 11.3, Apple says ARKit 1.5 will be able to recognize not just horizontal surfaces like tables and floors, but also vertical surfaces like walls and doors. Imagine playing racquetball in your living room with a virtual ball that doesn't break your windows! The new version of ARKit will be able to map irregular surfaces better, recognize real-world 2D images like signs and posters, and improve its use of the camera, with 50 percent greater resolution and support for auto-focus.

Although AR apps demo well, none has yet been a breakout hit. The improvements in ARKit 1.5 may help produce such a killer app, and it's interesting that Apple chose to lead off its press release with a developer-focused change.

New Animoji — iPhone X users will have four new animoji to choose from: a lion, bear, dragon, and skull. Animoji are technically impressive, relying as they do on the iPhone X facial recognition capabilities, but does anyone over the age of 12 actually use them?

Business Chat — And now for something completely different. iOS 11.3 will introduce a beta of Business Chat, which will let users communicate directly with businesses in Messages. That may sound dreadfully dull, but Apple's example is more interesting. In it, a customer gets a recommendation for a smart lock, which they then buy in the conversation using Apple Pay. Initial partners include Discover, Hilton, Lowe's and Wells Fargo.

The attraction of Business Chat is that you can converse with a support rep, schedule an appointment, and make purchases within the Messages app without sharing your contact information. Plus, you can stop chatting at any time. Apple should eat its own dog food here and put Apple Support on Business Chat.

Batteries and Performance — 2017 ended with a lot of hubbub about a performance-throttling feature that Apple quietly slipped into iOS 10 to prevent unexpected shutdowns on older iPhone models with worn batteries. Apple responded with cheaper battery replacements (see "Apple Apologizes for iPhone Battery Issue, Drops Replacement Prices to $29," 3 January 2018) and promises of better battery management features.

iOS 11.3 seems to be fulfilling that promise. On the iPhone 6 and later, you will be able to view your battery's health in Settings > Battery. Also, you can see if Apple's power management feature is on, and turn it off if so. In truth, turning that feature off is likely a bad idea — if you're seeing significant enough slowdowns to warrant turning it off, you should just get a new battery.

Health Records — The Health app will be able to download health records from select hospitals. See Apple's announcement for a full list.

For many people with ongoing health problems, quick access to health records could literally be a lifesaver. Even for those who are generally healthy, being able to look up exactly when you had some surgery or what drugs gave you bad side effects in the past will be welcome.

The problem, of course, is that hospitals and healthcare systems have to connect their existing patient portals to this system using a standard called FHIR (Fast Healthcare Interoperability Resources). Only 12 institutions are signed up at launch — we hope to see that number increase quickly. If you're an IT executive at a U.S. health system and are interested in learning more, scroll to the bottom of Apple's Healthcare page for an email link. And if you want to see this feature from your healthcare provider, point them at the same page.

Other Changes — There will likely be even more small changes that Apple isn't telling us about now, but here are those that warranted mention:

- Apple Music will soon feature music videos without commercial interruptions. This change seems aimed at enabling Apple Music to compete better with Google's YouTube and VEVO.

- Apple News will have a video section in For You, and it will sport an improved Top Stories section.

- Software authentication will finally be allowed for HomeKit devices, which we mistakenly thought was included with iOS 11.0 (see "A Prairie HomeKit Companion: What's Coming in iOS 11," 7 July 2017). This means that existing home automation devices that do not support HomeKit can be made to do so with a simple firmware update.

- iOS 11.3 will support Advanced Mobile Location to automatically send your location to emergency services when they're called. AML was developed in the UK and is fully deployed there and in Austria, Belgium, Estonia, Finland, Iceland, Ireland, Lithuania, and New Zealand. Other European countries are testing it as well. Watch their video to learn more.

In July 2016, Google announced that nearly all Android devices support AML, so it's good to see Apple catching up. The group behind AML, the European Emergency Number Association, claims that AML is vastly more precise than other emergency systems, sometimes pinpointing a location to within 12 meters. We don't see any indication of AML being discussed for use in the United States, but if it's that much better than existing systems, perhaps Apple and Google can work to lobby U.S. cell carriers to support it.

There are also a couple of changes that beta testers noticed, but that Apple didn't mention. They may or may not appear in the final release:

- The iBooks app has been renamed to just Books, leading to speculation that iBook could be used again for an Apple hardware product. The name change isn't surprising, given Apple's move away from names like iPhoto and iCal to Photos and Calendar. We're curious about what this means for the seemingly abandoned iBooks Author. Reportedly, the iBooks Store will also become the Apple Books Store.

- Messages in the Cloud is back. Apple announced this feature at last year's WWDC, and it was present in some of the early iOS 11 betas before disappearing later in the beta cycle. The idea is that your iMessages will be stored in iCloud and thus sync seamlessly between devices. (Wait, wasn't that one of the benefits of iMessage in the first place?) The problem with Messages in the Cloud is that it took up a not insignificant amount of paid iCloud storage space. If that hasn't changed, Apple would be asking you to pay for functionality that should just work in the first place! No other company charges to store your instant messages.

Apple didn't give a release date for iOS 11.3, saying merely "this spring." Given the company's problems with release quality of late — did you know that Apple has already put out ten updates to iOS 11? — we're happy to wait a bit longer if that means we don't have to download 11.3.1 and 11.3.2 in the weeks following. ⌘

by Adam C. Engst

Bad Apple #1:
iCloud Photo Library Re-uploading

Not long ago, Tonya asked on Facebook what problems people were having with their Macs. She was hoping to gather questions from a cross-section of users to inform a webinar she'll be doing for readers of her "Take Control of Mac Basics" book soon (see "Free Webinar for Readers of "Take Control of Mac Basics"," 5 February 2018). The ensuing conversation spiraled off in numerous directions as various friends and family members griped, kibitzed, and tried to solve each other's problems. It was fascinating because many of these people were long-time Mac users who had been blindsided by an interface change along the way, and who had thus been frustrated by their Macs ever since.

Based on this experience, we're starting a new TidBITS column, called Bad Apple. Read that name however you like — in the context of one bad apple spoiling the whole barrel or like the imperative "Bad dog!" In Bad Apple,

we'll dive into a particular aspect of something specific that Apple got wrong. Please send me your suggestions for future columns — I'm looking for user-interface or user-experience mistakes that can be described and reproduced reliably, not one-off bugs or general complaints about iTunes. As always, our goal is to provide constructive criticism. We're not interested in whining; we'd like to see Apple address these problems.

For our first edition of Bad Apple, I'd like to introduce an "expected behavior" with iCloud Photo Library that Apple should change. Here's the story.

I was seeing some strange problems on my 27-inch iMac running macOS 10.13.3 High Sierra. Messages wasn't getting or sending messages, Wi-Fi calling wasn't working, and after upgrading to 10.13.3, I was unable to enable auto-unlock with my Apple Watch. To solve these problems, I turned iCloud off and back on. Despite the iCloud preference pane throwing an ominous error, the problems did indeed disappear.
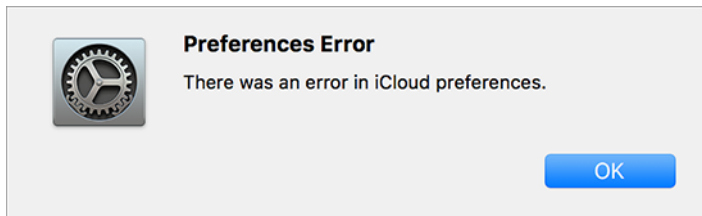
However, there's a nasty side effect of turning iCloud off and back on: iCloud Photo Library needs to re-upload all your photos. It does this in order to compare the library's contents to the synchronization "truth" at iCloud. Fair enough, except that this process can take days, depending on the size of your Photos library and the speed of your Internet connection. Bad Apple! We don't see that sort of poor performance with Dropbox or Google Drive, and this behavior is both unnecessary and driving people away from iCloud Photo Library.

It turns out that there are quite a few actions that can cause your entire Photos library to be re-uploaded to iCloud, one of which I knew already (see "More Problems with iCloud Photo Library Uploads," 19 June 2015):

- Repairing the Photos library to fix missing or incorrect thumbnails

- Switching the System Photo Library to another library and back

- Enabling My Photo Stream for a different library and then pointing it back

- Turning iCloud Photo Library off and back on

- Moving the Photos library to another drive

- Restoring the Photos library from a backup

I'm not convinced that these actions actually re-upload everything, since it goes faster than my initial iCloud

Photo Library upload. It's nearly impossible to test such a hypothesis, and even Apple uses the term "re-upload." However, it's also not impacting my Mac or Internet performance as badly it did back in 2015 when I did my first upload (see "How to Throttle iCloud Photo Library Uploads," 20 May 2015). In the end, it took less (possibly much less, since it finished while I was sleeping) than 18 hours to "re-upload" 113 GB over a 6 Mbps upstream link. That amount of raw data should have taken nearly 45 hours to upload at full throttle.

It's bad enough that Photos wants to upload every photo to iCloud Photo Library again, but here's the scenario that triggered this article. When I tried to turn iCloud Photo Library on again, I was told that I didn't have enough space: my 200 GB iCloud storage plan had only 56 GB free, but my Photos library contained 113 GB of photos. All that was true, except for the fact that the reason my iCloud account was so full was because it already held every one of those photos! Every time I clicked Continue to acknowledge that I realized this fact, Photos turned iCloud Photo Library off again.
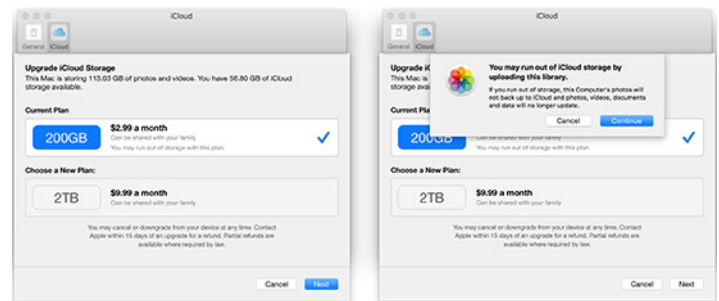
Two workarounds immediately presented themselves:

- Upgrade to the 2 TB storage plan and downgrade later. I didn't want to do this because I didn't want to pay for storage I didn't need, just on principle.

- Create a new Photos library, set it to be the System Photo Library, and let Photos download everything from iCloud Photo Library again. Unfortunately, this approach destroys all projects (cards, calendars, and books). I've had to do this already once due to corruption in my Photos library, so I didn't have anything to lose, and I was almost certain it would work, but it isn't an ideal solution.

I decided to be pig-headed about this problem — there was no reason I could see why iCloud Photo Library didn't understand that it already held all my photos — so I contacted Apple. That experience warrants another article, but to make a long story short, after troubleshooting with Steve, a Photos support expert, for 90 minutes, he finally went off to check with even higher-level support. After a few minutes, he came back, incredulous, and told me that what I was seeing was "expected behavior" and that I should upgrade to a 2 TB plan temporarily. If I downgraded within 2 weeks, he said, I wouldn't be charged.

We'd had some time to chat while I did things like boot into Safe Mode, and I had asked Steve how long he had

been supporting Photos. "Seven years," he said. So to sum up, a wide variety of common actions can create a situation where the recommended solution is to sign up for an unnecessary storage plan and then cancel it later? The interface gives no hint that this is necessary, and a Photos support expert who had been working in that group for years was equally as shocked as I was? Bad Apple!

One final thought about this workaround, for photography buffs who have massive Photos libraries. What if your library is larger than 1 TB? There is no iCloud storage level beyond 2 TB, so you'd be forced to work around the problem by creating a new Photos library and setting that to be your System Photo Library.

Later, Steve sent me a link to a couple of pages that explained the situation. Oddly, these weren't official Apple support pages but were instead user tips in the Apple Support Communities by a user named Léonie. They were good explanations, but I'll award another "Bad Apple!" for Apple pawning the task of describing "expected behavior" off on a user tip, rather than providing official documentation.

After I walked through the steps to upgrade my iCloud storage account to 2 TB, I was presented with an interesting dialog I hadn't seen before. It summarized my iCloud storage situation and seemingly let me delete data from iCloud. That was extremely scary, so I just clicked Done and moved on.


Photos immediately started re-uploading my photos and videos, and I'll ignore the fact that none of the numbers that Photos reports in various places seem to agree with one another. Wait, no, I won't. Bad Apple! Why should Photos say at one point that my library is 113.03 GB, and then 94.6 GB at another? And do I have 30,875 photos, 30,879 photos, or some larger number that caused the iCloud progress count at the bottom of the Photos screen to report that it had 33,726 items to go, even though adding the number of photos and videos together never results in a number higher than 31,471. Come on, Apple, this is basic math, and discrepancies like this reduce user confidence. Be consistent!
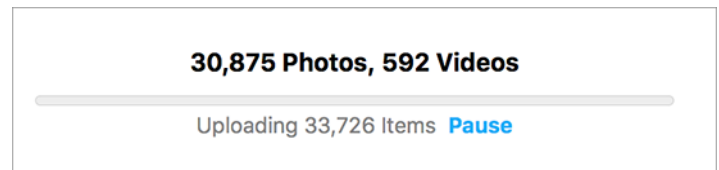
When Photos finished re-uploading, I immediately downgraded my iCloud storage plan back to 200 GB. To do that, I opened System Preferences > iCloud, clicked the Manage button, clicked Change Storage Plan, clicked Downgrade Options, selected the 200 GB plan, and clicked Done. I hoped there wouldn't be an additional charge for the 24 hours I was on the 2 TB plan, but I didn't think I'd know that for a month.
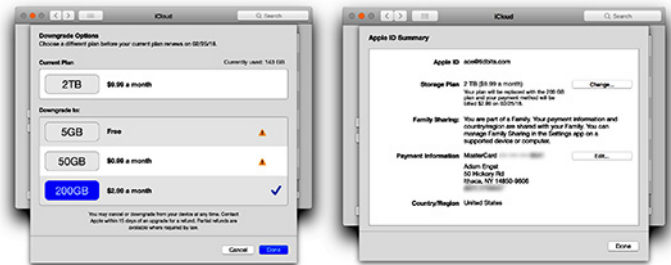
In fact, a couple of days later, I got an invoice from Apple for the 2 TB storage plan for $7.87. Not a lot of money, certainly, but it is simply wrong for Apple to charge a customer to resolve a problem caused by bad design and "expected behavior."
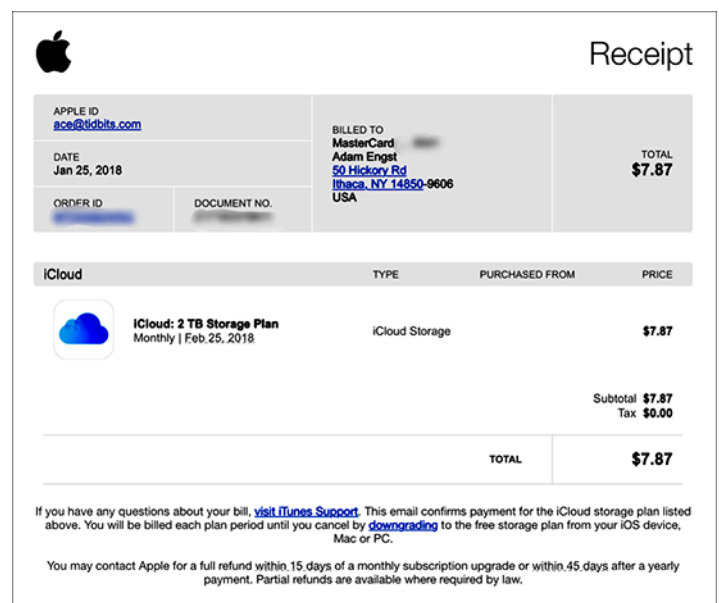
So I hunted down the email I'd received from Apple with my case number, clicked it to reopen the case, and decided to try the chat since I didn't want to have a long conversation. The woman on the chat was nice, but she had to escalate the problem to iCloud support via the phone since she couldn't reverse charges. After waiting on hold for a while, I had to explain the situation to another woman and wait on hold again before finally being escalated again to a senior advisor, Shea Marie. Who knew this would be so hard?

There I told my story one more time, explained that the charges for the 2 TB account needed to be reversed, and clarified for Shea Marie that it really was $7.87 and not $6.99 plus tax. To reverse the charges, she had to cancel my iCloud storage entirely, causing me to receive an alarming email and notification from iCloud that my free 5 GB of storage was full. Then I had to "upgrade" again to the 200 GB plan I had started with.

The only problem was that I had previously had about 56 GB free, but after all this, I had 85 GB free, which seemed wrong. Shea Marie thought the problem was the family sharing storage that Tonya and Tristan use, and that it would catch up shortly. It didn't right away, but after the call, when I went into System Preferences > iCloud > Manage Family > My Apps & Services > iCloud Storage, it was clear that I needed to click Start Sharing again to get the storage to share properly.

After another hour of support, I was back to where I was before I turned iCloud off and back on. That was necessary, but I had no idea it would involve 2.5 hours of work with Apple and 18 hours of re-uploading — at least I don't have a data cap or per-byte charges, as do some TidBITS readers! ⊙

by Thomas R. Bank, II
Keystone MacCentral Webmaster

The Results of a Hackintosh or FrankenMac

Last month our Hackintosh or FrankenMac build was powered up for the first time after getting all the components together. The Mac booted up, powering two Dell UltraSharp 27" 2560 x 1440 resolution monitors and a third Dell UltraSharp 24" 1920 x 1200 resolution monitor. Everything worked as planned!

So let's start with a breakdown on components that were used in the system:

2010 Mac Pro	$1900
512Gb SSD	$230
(3) 4Tb Hard Drives	$315
64Gb RAM	$320
Sonnet Tango 3.0	$80
(2) GeForce GTX 680 GPUs	$1240
(2) Intel Xeon X5690	$500
Thermaltake V1 Chassis	$30
EVGA 750W PSU	$113
PSU Daisy Chain Adapter	$21
GPU Power Leads	$104
Total	$4853

For comparison, a 2013 Mac Pro (6,1) with 12-core 2.7Ghz processor, 64Gb RAM, 512Gb SSD, and AMD FirePro D500 GPUs lists for $6400 – despite being unchanged in over four years. From there, I would still have had to add the additional hard drives ($315), Nvidia GPUs ($1240), and cases for both the drives ($430 - 4-bay RAID) and GPUs ($450 - 2-slot PCIe Expansion Chassis) for a grand total of $8835 – nearly twice the price of my system build.

As noted previously, since starting this series Apple has released the iMac Pro (12/17). Although it offers options of 8 to 18 cores and up to 128Gb of RAM, it still only offers two (proprietary) AMD graphics options and only 1, 2, and 4Tb SSD options for storage with a price of $5000 to nearly $13,500 fully optioned. To price a somewhat comparable system, I chose the 3.0Ghz 10-core processor, 64Gb RAM, 1Tb SSD, and Radeon Pro Vega 56 graphics for a price of $6600. However, similar to the 2013 Mac Pro, I would still be faced with costs for additional drives, GPUs, and enclosures for a grand total of $9035. It would have gained me some speed, double the space on my boot SSD, and saved me the $290.00 cost of one 27" monitor, though (bringing the price down to $8745 and beating the Mac Pro).

In the iMac Pro press release, Apple also mentioned the coming Mac Pro: "*In addition to the new iMac Pro, Apple is working on a completely redesigned, next-generation Mac Pro architected for pro customers who need the highest performance, high-throughput system in a modular, upgradeable design, as well as a new high-end pro display.*" However, as of this writing, there still is no additional information on these Mac Pros nor when we might even be seeing them.

This lack of a roadmap severely hampers business planning for offices that operate on Macs. Should an office wait indefinitely until a Mac that could meet their needs is released? Should an office buy a current Mac that somewhat meets their needs – and risk having something more aligned with their needs be released in a few months – or even weeks? Or is it time for them to consider switching to Windows or Unix?

In my case, for the time being, a Hackintosh or FrankenMac is still the only option for a system to meet my needs. Further, it saved a considerable amount of money over adding to a current Mac Pro or iMac Pro system.

I must state that there are some potential drawbacks to my course of action that you should consider before embarking on your own project. To start, the processors are the older 32-nm "Westmere" Xeon chips as opposed to the 22-nm "Ivy Bridge" Xeon chips of the current Mac Pro or the 14-nm "W Family" or "Skylake" Xeon chips of

the iMac Pro. Memory bandwidth is also increased in the current Mac Pro and iMac Pro. Further, the older Mac only has four PCIe 2.0 expansion slots where the current Mac Pro offers six comparable Thunderbolt 2.0 ports and the iMac Pro moves up to Thunderbolt 3.0 ports, but only has four of them. These ports further raise the throughput and accommodate PCIe 3.0 standards. As mentioned, chassis or enclosures are typically required to make use of these Thunderbolt ports, which does add to the end cost. But, in short, the older components are constrained in their throughput, which will ultimately affect speed and output. This must be considered in relation to cost and other capabilities when considering whether to build a Hackintosh or FrankenMac compared to buying a "stock" Mac.

Another issue would be if a new macOS operating system would not support the older system architecture. For now, the 2010/12 Mac Pros still support macOS up to High Sierra, but that could change with each new operating system that Apple releases.

For now, the gains in throughput are negligible compared to the benefits of cost and overall footprint for us. As new technology continues to advance, this will put "stock" systems further ahead in the equation, but will also likely lower the costs for older systems. Depending on your processing needs, this will factor into your decision. Hopefully, the "modular Mac Pro" will come to fruition and allow users to "tune" their system purchases to their varied needs better than the current options.

Although I have been looking at options to further upgrade the graphics cards, the current premiums caused by the bitcoin situation has that on hold until prices potentially stabilize. I will also likely paint the accessory power chassis to match the Mac Pro tower.

I'll end our series with some more photos of the finished product. I've been quite happy with how things have turned out and look forward to the service it will provide.
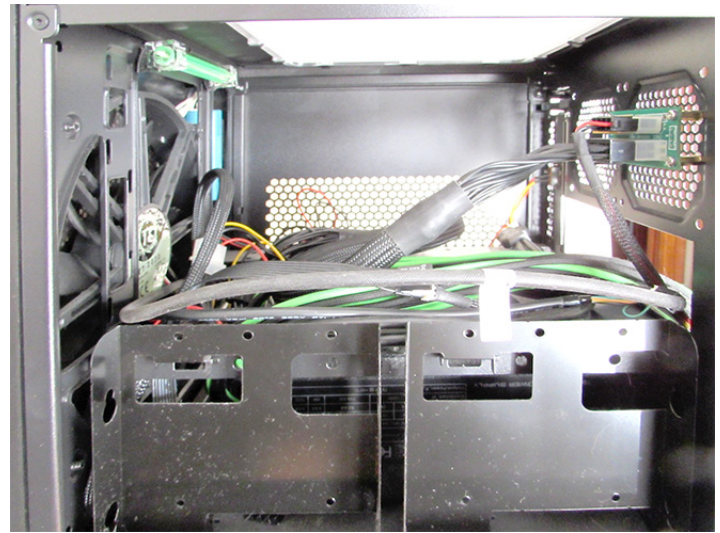
Software Review

Apple Updates

**macOS High Sierra 10.13.3 Supplemental Update
Feb 19, 2018 – 591.9 MB**

System Requirements
  – macOS 10.13.3

The macOS High Sierra 10.13.3 Supplemental Update fixes an issue where using certain character sequences could cause apps to crash. This update is recommended for all users. 🖐

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