

printout

Keystone MacCentral Macintosh Users Group ❖ www.keystonemac.com

Keystone MacCentral April 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

- Malware for Mac is on the rise. MacKeeper is major culprit.

* Notes, an unappreciated app. With our discussion, we will present the YouTube video *Tips for Seniors*



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

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

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Keystone MacCentral is a not-for-profit group of Macintosh enthusiasts who generally meet the third Tuesday of every month to exchange information, participate in question-and-answer sessions, view product demonstrations, and obtain resource materials that will help them get the most out of their computer systems. Meetings are free and open to the public. **The Keystone MacCentral printout** is the official newsletter of Keystone MacCentral and an independent publication not affiliated or otherwise associated with or sponsored or sanctioned by any for-profit organization, including Apple Inc. Copyright © 2023, Keystone MacCentral, 310 Somerset Drive, Shiresmanstown, PA 17011.

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By Adam Engst

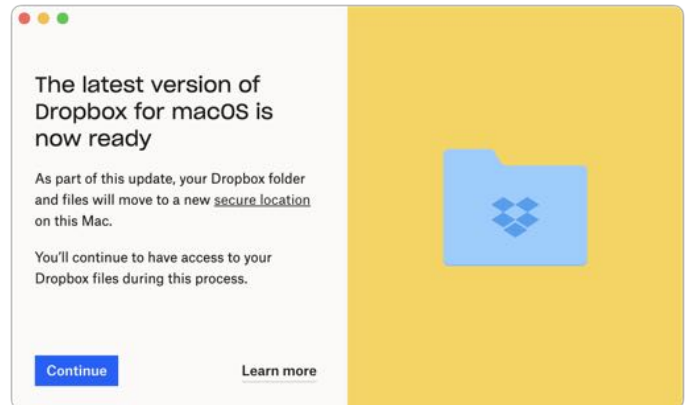
Apple's File Provider Forces Mac Cloud Storage Changes

Over the last year, cloud storage services [Box](#), [Dropbox](#), [Google Drive](#), and [Microsoft OneDrive](#)—and probably others—have migrated from custom kernel extensions to Apple's new-ish File Provider extension. It provides an Apple-approved framework for integrating remote files into macOS and displaying them in the Finder. I touched on this move a year ago in "[Cloud Storage Forecast Unsettled, with Possible Storms](#)" (4 February 2022).

The [File Provider extension](#) first appeared in macOS 12.1 Monterey, though Apple's Developer site suggests that it may have subsequently been made available in macOS 10.15 Catalina. Earlier versions of macOS don't support it, so nothing changes for those running older systems for now. The cloud storage services will likely pull support for older systems at some point, but there's no telling when that will happen. (Everything I say below I've tested in macOS 13.2.1 Ventura—it's possible, even likely, that some details are different in Monterey.)

The cloud storage companies undoubtedly felt they had little choice about adopting the File Provider extension because Apple said it would be deprecating kernel extensions at some point. That hasn't happened yet, but Apple often gives developers several years to get with the program.

My understanding is that Box, Google, and Microsoft have migrated their Mac users to the File Provider approach, whereas Dropbox—probably the most popular among everyday Mac users—has only recently started to encourage those outside its beta program to switch (while others are still being asked to join the beta). It can be hard to tell since cloud storage providers often roll out changes over time or to subsets of customers to test user response, identify concerns, and reduce support loads. Some Dropbox users even report one Mac being upgraded to the new File Provider approach, while others continue to use the kernel extension.



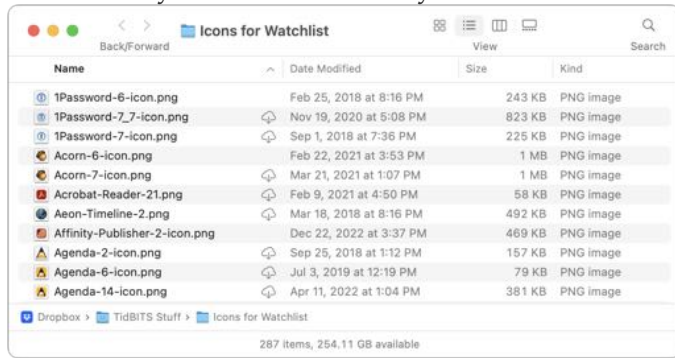
Although it's good to have cloud storage integrated into macOS in a coherent fashion, the switch to Apple's File Provider extension brings with it two key changes that will require adjustments in how you work.

The first change is where local files are stored. All cloud-storage services must now store their files in `~/Library/CloudStorage`. (That's in your home folder's Library folder, which is non-trivial to access for most users since the Library folder is hidden by default.) From a consistency and coherency point of view, the new standard location is a good thing, since users don't have to keep track of where each individual service might have its files. However, just as when Mac OS X introduced the home folder and its now-canonical subfolders (Desktop, Documents, Library, Movies, Music, and so on), the loss of flexibility will create pain points for some users.

The second change revolves around whether the files exist both locally and online ("offline" or "pinned") or just online ("online-only"). Both have advantages and disadvantages:

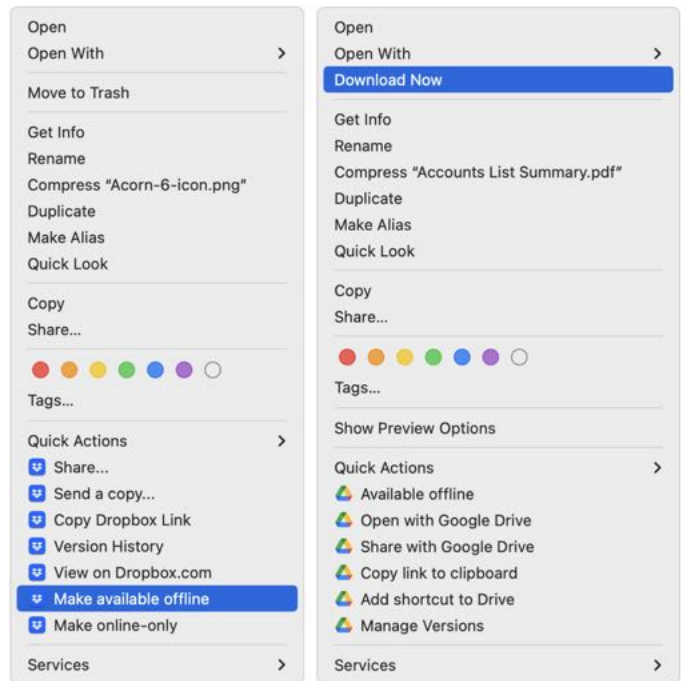
- **Offline files** are stored both in the cloud and on the local drive for quick access. However, they consume local storage space, which may be a problem if you're low on free space. There's no visible indication that a file is offline.

- **Online-only files** exist locally only as icon placeholders until they're opened—they have little cloud icons next to their names in the Finder. This approach saves space, but may suffer from loading delays with large files or slow connections. Of course, online-only files aren't available if you lack connectivity.



After you first migrate a cloud storage service to the File Provider approach, assume that all your files and folders are online-only. That might not be the case—you can tell by looking for the little cloud icons—but such files, as I'll discuss below, can't be viewed using Quick Look, indexed by Spotlight, or backed up by Time Machine and other backup apps.

You can control the state of any file or folder. If you click the cloud icon next to a file or folder name, that initiates a download, turning it from online-only to offline. Control-click an offline file and you'll find commands for downloading files (making them offline) or removing their downloads (making them online-only). Dropbox (below left) relies on Make Available Offline and Make Online-Only commands in the Quick Actions section at the bottom of the pop-up menu. Google Drive (below right) puts Download Now and Remove Download commands at the top of the menu; it has Quick Actions as well.

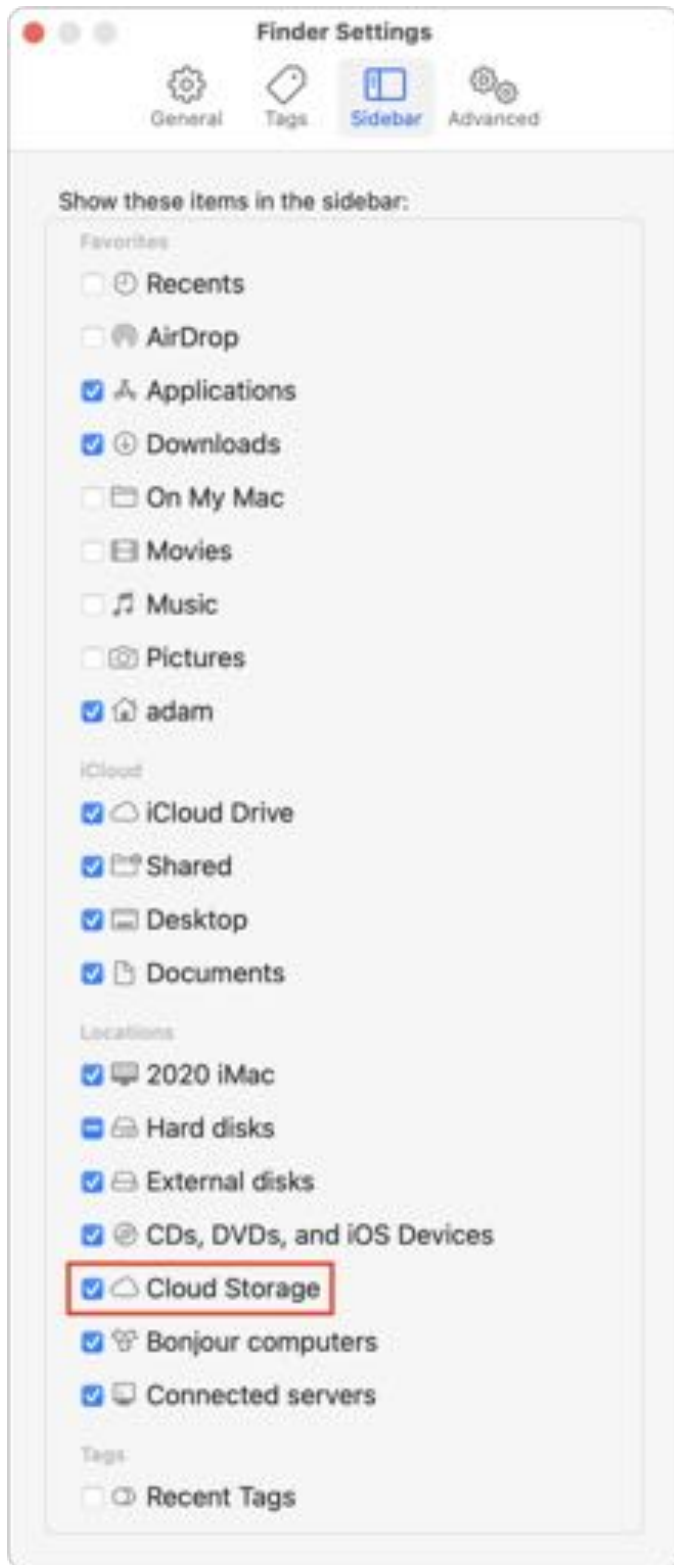


Of course, opening an online-only file in an app also downloads it. It's possible that a third-party app would be unhappy when fed a file that hasn't yet been downloaded; if you get an error, make sure the file is available offline and try again.

To be clear, this distinction between offline and online-only files isn't new or unique to the File Provider extension. All the cloud storage services have provided ways to specify which files or folders were kept locally and which existed only online. The details and implications varied somewhat, but the concept was the same.

Let's look at some of the impacts of these File Provider changes. I focus on Dropbox and Google Drive below because those are the services I use regularly, but Box and OneDrive should be similar in most cases.

Sidebar Locations May Change



The File Provider approach brings cloud storage services into parity with one another and with other forms of storage in macOS. As a result, Apple

has decreed that they appear by default in the Finder window sidebar under Locations. You can even turn them all on and off in Finder > Settings / Preferences > Sidebar.

The new spot may cause some minor confusion, if you previously kept the Locations item closed in the sidebar or regularly accessed Dropbox or Google Drive, for instance, from sidebar items under Favorites. However, you can drag any cloud storage service's sidebar item from Locations to Favorites or even have them in both Locations and Favorites.

This change is minor and easily tweaked however you prefer, but I mention it first because you should click any sidebar items you have and make sure they still work and, more importantly, still work properly.

Look Out for Disconnected Local Folders

Why might a sidebar item not go to the right place? When a cloud storage service switches from its custom kernel extension to the File Provider extension, the location of its local folder moves from wherever you had it to `~/Library/CloudStorage`. Or at least that's the goal.

(As a quick reminder, if you don't see the Library folder in your home folder, hold Option and click the Go menu, which makes Library visible in the menu. Or, with the home folder open, choose View > Show View Options and select Show Library Folder to make it always visible.)

Some users, including us, have experienced situations where the local folder doesn't move but becomes disconnected from the service. Since the cloud storage service will immediately sync to the new location, you can end up with two Dropbox folders, for instance, one at `~/Dropbox` and another at `~/Library/CloudStorage/Dropbox`.

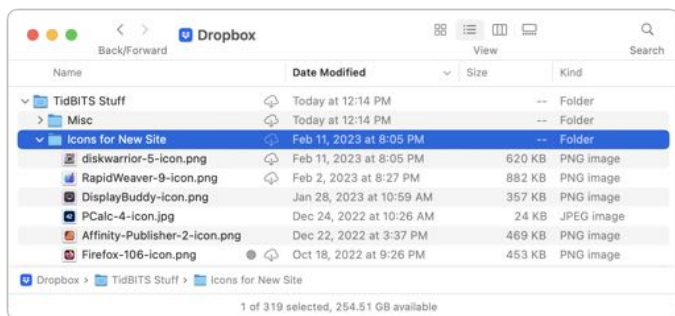
The cloud storage services somewhat muddy the waters by creating what looks like an alias (really a symlink) in their old locations to maintain continuity for users. But is that Dropbox folder in your home folder a symlink or a disconnected local

folder? Check by opening Terminal and typing `ls -l` (if you're not already in your home folder, use the `cd` command first). As you can see below, I now have Dropbox and Google Drive folder symlinks in my home folder. Notice how the symlinks have an `l` in the leftmost column, whereas directories like Downloads and Library start with a `d` and the Dropbox Demo Alias I made for illustration has a `-`.

```
adam@2020-iMac ~ % ls -l
total 8
drwx----- 6 adam staff 192 Nov 27 14:14 Applications
drwxr-xr-x@ 64 adam staff 2048 Apr  8 2022 Books
drwxr-xr-x@ 5 adam staff 160 Oct  2 09:48 Creative Cloud Files
drwxr-xr-x@ 18 adam staff 576 May  2 2022 Cubit
drwx----- 5 adam staff 160 Nov 15 13:26 Databases
drwx----- 98 adam staff 3136 Mar 11 10:29 Desktop
drwx----- 181 adam staff 5792 Mar  8 19:42 Documents
drwx----- 1612 adam staff 51584 Mar 10 18:17 Downloads
drwxr-xr-x  1 adam staff  40 Mar  4 15:07 Dropbox -> /Users/adam/Library/CloudStorage/Dropbox
drwxr-xr-x@ 1 adam staff  19 Feb 28 2016 Dropbox (TidBITS Publishing) -> /Users/adam/Dropbox
-rw-r--r--@ 1 adam staff  852 Mar 11 10:27 Dropbox Demo Alias
lrwx----- 1 adam staff  62 Mar  6 17:14 Google Drive -> /Users/adam/Library/CloudStorage/GoogleDrive-acengst@gmail.com
drwx----- 177 adam staff 5664 Mar 10 17:53 Library
drwx----- 62 adam staff 1984 Sep 10 2021 Movies
drwx----- 65 adam staff 2080 Jun 12 2022 Music
drwx----- 64 adam staff 2048 Jun 23 2022 Pictures
drwxr-xr-x  6 adam staff  192 Apr 15 2014 Public
drwxr-xr-x@ 47 adam staff 1584 Dec 28 2016 Sites
drwxr-xr-x  6 adam staff  192 Jun 13 2022 Virtual Machines.localized
drwxr-xr-x 10 adam staff  320 Jan 30 10:22 Worthless Files
adam@2020-iMac ~ %
```

Verify your findings by copying a new file into the local folder and then checking on the cloud storage service's website to see if it was uploaded.

If you do have a disconnected local folder, you'll have to do some spot checks to make sure everything in it also exists in the online version. I do that by using List View in the Finder, sorting by Date Modified, and then expanding the folders and checking that the most recent files are in both places. When I ran into this with Google Drive, I had only a handful of files that were out of sync, but if you see a lot of differences, consider using synchronization software like [ChronoSync](#) to figure out which files need to be moved.



Be sure to delete the disconnected local folder once you're done to avoid accidentally using it later. If

the service doesn't subsequently create a symlink automatically for you, I recommend making one with these steps:

1. In Terminal, type `cd` and press Return to ensure you're in your home folder.
2. Type `ln -s` (leave a space after the `s`).
3. In the Finder, choose Go > Go to Folder, type `~/Library/CloudStorage`, and press Return to open that folder.



4. Drag the cloud storage service folder—Dropbox or Google Drive, say—from the Finder to the Terminal window to insert its path. This approach is necessary because at least Google Drive actually has a different name than what you see. Press Return to create the symlink.



References to Local Files and Folders May Break

In an ideal world, if the cloud storage service created an alias of its relocated local folder from `~/Library/CloudStorage` to wherever you had it previously, any aliases or other references to files or folders in that folder should continue to work.

However, that's not always the case, especially if you had to clean up a disconnected local folder. If you deleted your disconnected local folder, as I recommend, any aliases that pointed to files or folders in it will break. That's good, since then you know to recreate them.

Similarly, some apps like BBEdit, Keyboard Maestro, and Transmit can optionally store support files in cloud storage as a way of syncing settings and other data between Macs. In the ideal world

described above, everything should keep working, and that was my experience with my most recent Dropbox migration with a few Keyboard Maestro macros that reference Automator workflows and BBEdit text filters that I had stored in Dropbox.

However, there are no guarantees that references to files will all resolve to the new locations, and in the case of apps that use cloud storage for syncing settings, you may not even notice immediately. For hints about which apps might be leveraging cloud storage for syncing, look through your various cloud storage folders, Dropbox in particular.

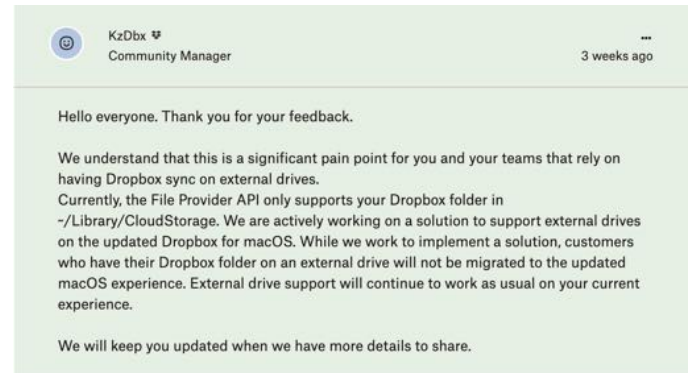
External Drive Support Disappears, Except for OneDrive

The most significant limitation of the new File Provider approach is that `~/Library/CloudStorage` is located on your internal drive. For those with terabytes of files in a cloud storage service, that's a huge problem.

Previously, you could specify where you wanted your cloud storage service's local folder to live, making it easy to locate it on a large external drive. With the File Provider approach, that's no longer possible. Or so [Box](#), [Dropbox](#), and [Google](#) are saying at the moment, although [Microsoft has worked around the limitation](#) with OneDrive by separating the "sync root" (which has to remain in `~/Library/CloudStorage`) from the cache, which can live on an external drive.

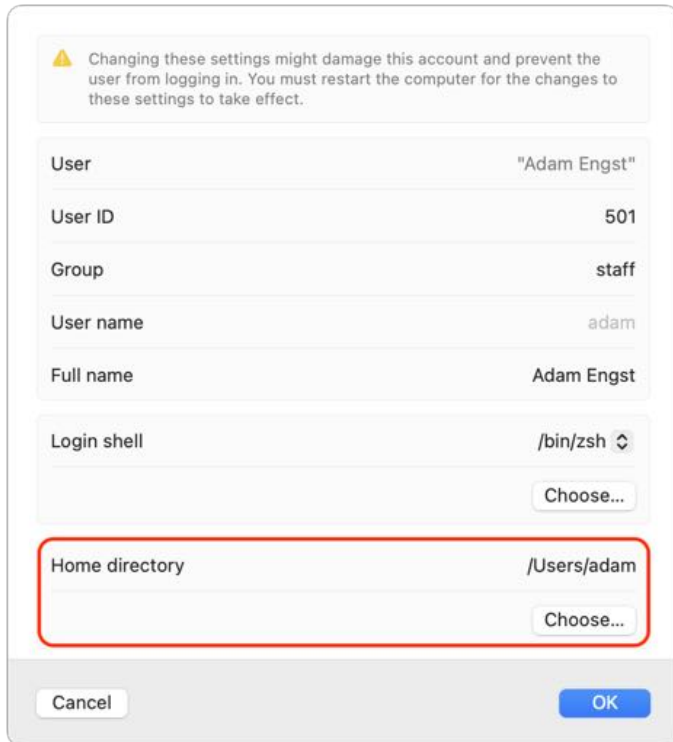
Users are up in arms about this change, particularly those who use Dropbox to keep audio or video processing workstations updated with very large shared files.

The news isn't entirely bad. On 17 February 2023, Dropbox posted a note in a long and vitriolic thread about the loss of external drive support, saying that [the company was working on a solution](#) and users who have their Dropbox folder on an external drive wouldn't be upgraded in the meantime.



If waiting for Dropbox isn't an option, consider the open-source Dropbox client [Maestral](#). It allows you to locate your Dropbox folder anywhere you want, including on an external drive. Maestral relies on the public Dropbox API, which prevents it from transferring only the parts of a file that change from save to save—a binary diff. Instead, Maestral has to transfer entire files, which will be slower and use more bandwidth. Maestral doesn't count toward Dropbox's three-device limit for basic accounts (see "[Dropbox Limits Free Accounts to Three Devices](#)," 14 March 2019).

There might be another workaround, which is to [relocate your entire home folder](#) to an external drive. Control-click a user in System Settings / Preferences > Users & Groups to access the Home Directory field. Don't even think about doing this—even with a test account—unless you're technically adept and have made multiple backups first.



Even assuming that relocating the home folder to an external drive works as desired, there are negatives. It won't work well for laptops, of course, and if you don't wish to shell out for an expensive SSD, you'll suffer from the slower performance of a hard drive. In addition, there's some [online discussion](#) about how installing macOS updates while logged into an account located on an external drive can cause problems; the advice seems to be to [update macOS while using an administrator account on the internal drive](#). If you try this, let us know in the comments how it works.

For thrill-seekers who have the necessary technical chops and excellent backups, there are other options you could try—again, let us know in the comments if either of these works:

- **Dropbox:** If you've already migrated Dropbox to the File Provider approach, a user posted a possible workaround in [another Dropbox Community thread](#). It involves using a symlink to point at the Dropbox folder on an external drive, similar to what Microsoft does with OneDrive. In the recent past, Dropbox hasn't supported symlinks to items on external drives, but perhaps that's changed.

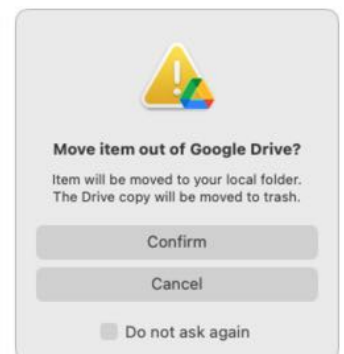
- **Google Drive:** Although Google Drive claims you cannot change its location, [a May 2022 discussion in the Google Drive Help forum](#) recommends using the Unix `touch` command to create a file in a particular location. The suggestion is that doing so causes the Google Drive app to revert to pre-File Provider behavior.

Dragging Files Moves Rather Than Copies

Some of the cloud storage services used their kernel extensions to treat their local folder as a separate volume. The practical upshot was that dragging a file to or from the service's local folder resulted in a *copy* action, leaving the original in place and making a new version in the destination location. Reasonable people can differ about whether this was the right or wrong thing to do, but regardless, it's what users became accustomed to.

With the File Provider approach, all the cloud storage services are essentially folders on the internal drive, not separate volumes, so dragging a file from your Desktop to your Dropbox folder *moves* the file rather than copying it, as does dragging a file from Google Drive to the Desktop.

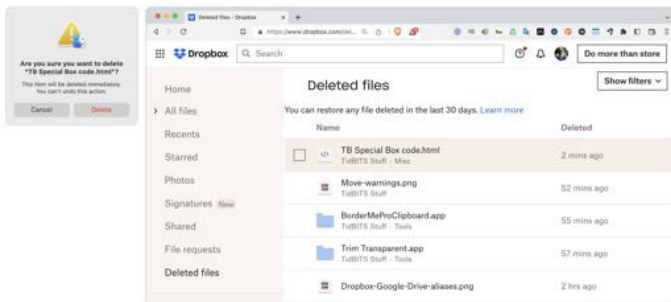
That's an important change because the services also have to maintain an online copy of the file, so at least Dropbox and Google Drive interpret moving a file to another folder in the Finder as a deletion of the online version, putting the moved file in the service's online trash. Both also alert you to what's happening, and you can turn the alerts off.



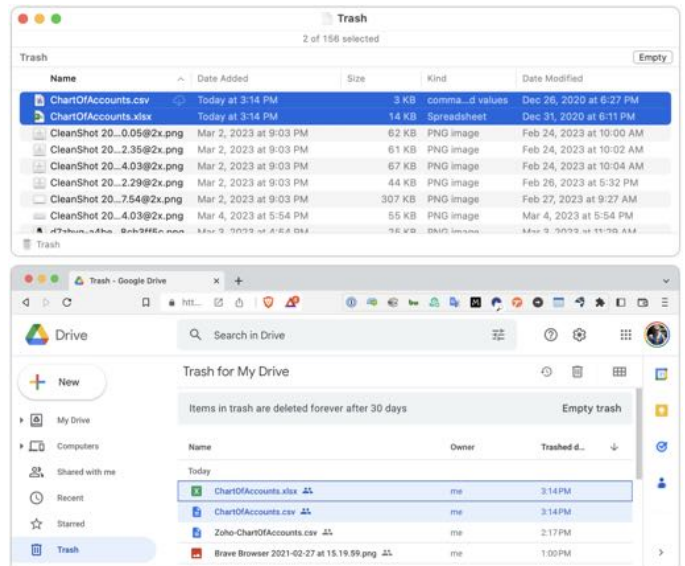
Trashing Retains Online Copies, but Local Behavior May Vary

So what happens when you use the Finder to delete a file from a cloud storage service? It varies, and I can speak only to what happens with Dropbox and Google Drive, but I suspect Box and OneDrive will be similar to one or the other of these approaches. If that's not the case, please contribute additional details in the comments.

With Dropbox, you'll see different behavior based on whether the file is offline or online-only. When you trash an offline file, it simply moves to the Trash like any other file in the Finder. You can put it back, move it to another location, or delete it permanently by emptying the Trash. However, when you delete an online-only file, Dropbox alerts you that the file will be deleted immediately (below left). When Dropbox says that you can't undo the action, it means that it's not putting the file in the Mac's Trash, so Command-Z won't work. However, deleting either type of file moves it to the Deleted Files collection on the Dropbox website, where it stays for 30 days before being deleted permanently (below right).



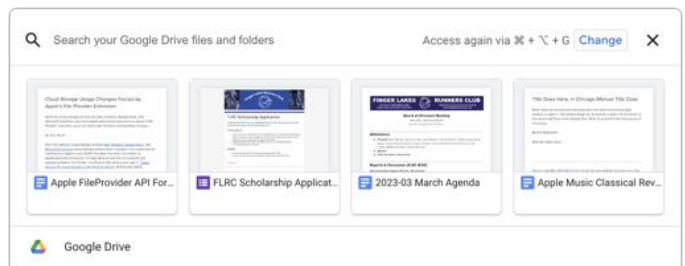
Google Drive has no such distinction. When you delete any file in Google Drive, offline or online-only, it moves into the Mac's Trash like any other file. You can press Command-Z to undo the deletion. Online-only files retain their cloud icons while in the Trash. As with Dropbox, Google Drive also puts deleted files in its online trash, as you can see with the two ChartOfAccounts files I've deleted in the screenshots below. Again, deleted files remain available online for 30 days.



Searches May Work Poorly for Cloud-Based Content

The offline/online-only state of files has implications for searching. Unsurprisingly, if a file is online-only, there's no way Spotlight can index its content. However, filename searches in Finder windows should work, as should searches in third-party utilities like [EasyFind](#) or [Find Any File](#).

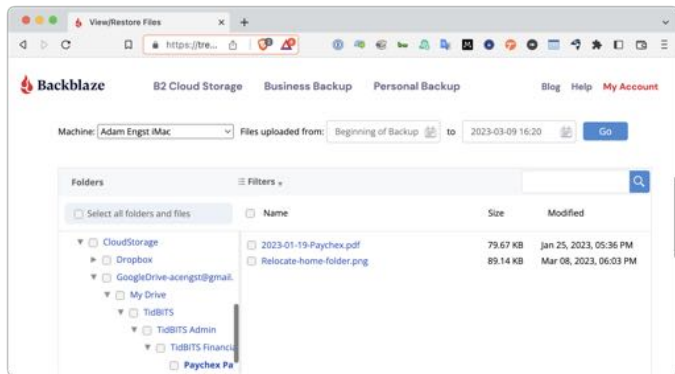
Google Drive offers an easy workaround for content searches. You can bring up a custom Google Drive search dialog in the Finder; the default keyboard shortcut is Command-Option-G. It runs the search on Google Drive on the Web, which can easily search the full content of your files stored in Google Drive. It also finds content in Google Docs and Google Sheets, which wouldn't ever show up in Spotlight, since they exist on local drives only as pointers to the online data.



Backups Work, But...

By now, you can see that online-only files don't really exist on your Mac. That means Time Machine

and other backup solutions cannot back them up. It appears as though all Dropbox *folders* appear in Time Machine, though only *offline files* show up in them. In contrast, Google Drive's folders only appear if they contain offline files. Similarly, Backblaze sees and backs up offline files in `~/Library/CloudStorage`, but it doesn't know about online-only files at all. That's why there are only two files in the folder shown below.



As I noted at the top, you should assume that everything in a cloud storage service is online-only to start and thus isn't being backed up separately. That might not concern you—after all, the data all exists in the cloud. However, if you're sharing folders with other people, it's possible for them to delete files or entire folders accidentally (or maliciously), thus removing them from everyone in the share group. In theory, they should be available

in an online trash or Deleted Files collection, but you may not want to bet on that. A local backup made with Time Machine, Backblaze, Super Duper, or any other app can protect you from such mistakes.

Such things happen—Tonya recently ran into a situation where someone in her workgroup inadvertently deleted an important Box folder containing weeks of work. There might have been other ways of recovering it, but copying from her Time Machine backup was quick and didn't require opening a ticket with IT support.

Therefore, assuming you have sufficient disk space, I recommend downloading your entire cloud storage data store, at least temporarily. Bring everything down and let Time Machine and your other backup systems make a copy. Then, if you want to recover the disk space, reset folders you don't need to online-only. New files you create will be offline because you're working on them, so they'll automatically get into the backups.

Phew! When I started this article, I thought it would be a fairly short explanation of how the Dropbox folder had moved after migrating to the new File Provider extension. Three days of research and testing later, I think I've wrapped my head around all the details. But perhaps not! If you still have questions, ask them in the comments. 🗑️

By Adam Engst

macOS Photo Screen Savers Still Don't Properly Display Rotated or Edited Images

In the days of [After Dark](#), near the start of TidBITS in the early 1990s, screen savers were a big deal—they regularly made news. After Dark was modular, supporting a fertile ecosystem of independent developers alongside licensed options from franchises like Star Trek, Disney, and Marvel Comics. Sadly, After Dark—and its iconic flying toasters—never made the leap to Mac OS 9. Although the package was revived for Mac OS X, it

never regained anything resembling its previous glory (see "[After Dark Returns for Mac OS X](#)," 9 June 2003). If you want to refresh your visual memory of the core After Dark modules, see "[Revisit the Flying Toasters via CSS](#)" (12 June 2015).

By the early 2000s, the world had moved on, which Apple helped by giving Mac OS X its own modular screen saver capabilities, with screen savers that

display either pretty patterns or selections from your photos. Apple's Ken Burns screen saver, which pans and zooms through your photos, has been particularly popular, and the company has added numerous other photo-based screen savers to macOS over the years.

But therein lies the longstanding rub: an unresolved bug that spans many years. The big win of Apple's photo screen savers is that they let you select photos from your Photos library or a folder. According to the author of [ArtSaver](#), an independent macOS screen saver that offers many more options, Apple doesn't allow third-party apps access to your Photos library.

What's the bug? Let's imagine that you're my parents. (They're special, but in this scenario, not unusual.) While digital picture frames are popular and ever larger—you can get affordable ones up to 15 inches—they still don't compare to a 27-inch iMac. And there's the trouble of managing albums and transferring them to a digital frame. Why wouldn't you use your iMac to shuffle through decades of family photos already stored on your computer?

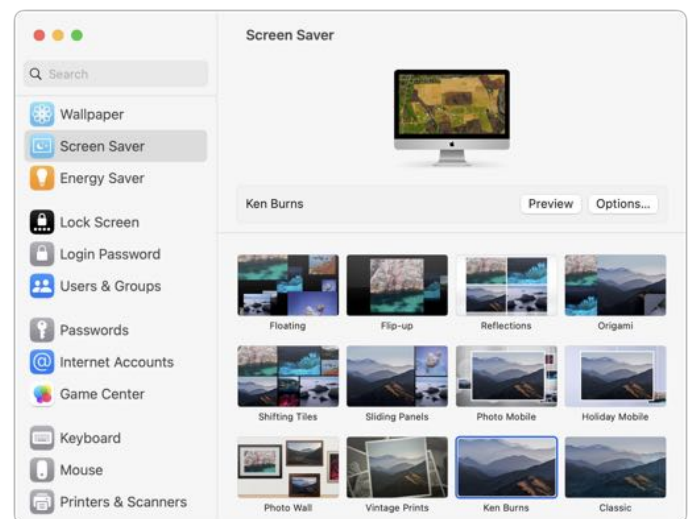
So you pick one of Apple's basic photo screen savers—my parents are not fond of the flippy, zippy ones where photos bounce frenetically—and configure it to display the images from a particular album. That works fine until it hits a photo that was captured in portrait orientation and that you rotated to landscape in Photos. That photo still stubbornly displays in portrait orientation, not landscape, so the subject is on its side.

This is not a subtle bug, though when my parents complained about it, it took me a little while to figure out what was different about the affected images. The problem is simple: Apple's photo screen savers display only original, unedited images in Photos. If you have edited an image, including rotating it, the screen saver ignores your changes, instead using the original image stored separately in Photos.

It's no secret, but Photos stores your original images in a folder (called "originals") within the

Photos Library package. When you edit an image in the app, those changes are applied as a series of transformations rendered on top of the original and shown in preview in thumbnails. However, when the screen saver module references an album image, it doesn't trigger what may be a computationally expensive operation to render the image as you'd see it in Photos. But few other apps should be consuming significant CPU cycles when the screen saver is active.

My parents are a few versions of macOS behind because they're using a 27-inch iMac from 2014, which can't be upgraded to macOS 12 Monterey, much less macOS 13 Ventura. But it took me only a few minutes to confirm that the bug still exists in Ventura. I copied a few photos into a new album, rotated a couple of them and made wildly obvious color edits to several others, and then tested that album in the various photo-based screen savers in System Settings > Screen Saver. Clicking the Preview button showed that it was using the originals and not my rotated or edited versions.



Workarounds

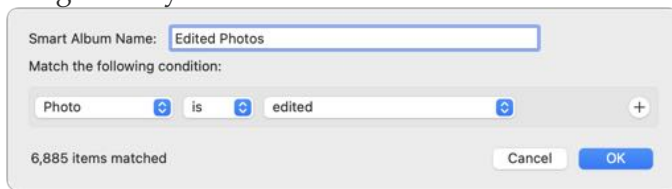
There are workarounds, but you're not going to like them because they waste disk space and require regular maintenance to include new photos.

The first method requires you to export and reimport your edited photos so that the screen saver software sees them as "originals." When you export edited images to the Finder, Photos "burns"

the edits into the files, making them permanent. You can then reimport those images into Photos, either deleting the ones you exported to save space and reduce confusion, or keeping them for future edits, both of which are problematic.

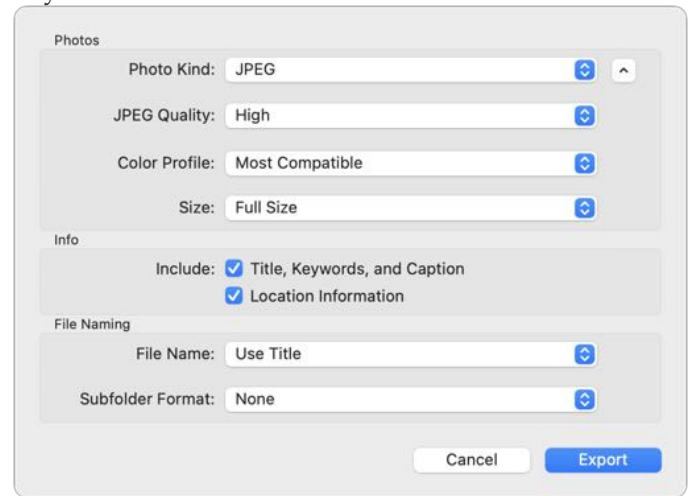
This approach suffers from at least the following problems:

- **It will be clumsy.** Although you can create a smart album that contains only edited photos for export, it will likely still collect oodles of images—nearly 7000 in my Photos library. When you reimport, consider importing into an album and applying a keyword so you can identify these images easily later.

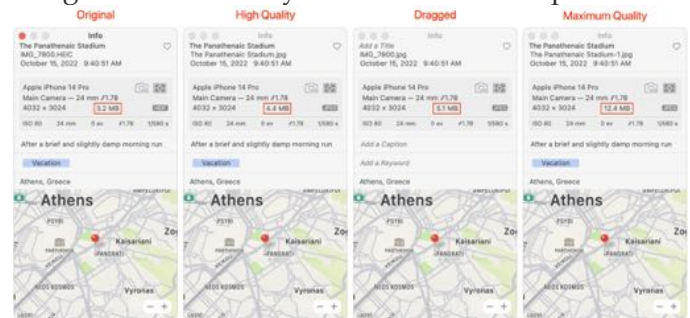


- **You'll need significant disk space temporarily.** Exporting and reimporting all those will take time and consume disk space, and unless you temporarily disable Time Machine and any online backup software like Backblaze, they could cause your backups to balloon in size as well.
- **Some metadata will be lost.** Although you can choose to export photo titles, captions, keywords, and locations, when exporting using File > Export > Export # Photos, you'll lose album and project inclusions. Don't just drag the photos to the Finder, or you'll also lose titles, captions, and

keywords.



- **The imported images may be larger.** If your originals are in HEIF format, replacing them with JPEG versions will likely require more disk space. I started with a 3.2 MB original in HEIF and exported by dragging and by using the High and Maximum settings in the JPEG Quality pop-up menu. The High-quality export grew to 4.4 MB, the dragged image was 5.5 MB, and the Maximum-quality export was a whopping 12.4 MB. If you're instead keeping the versions you exported for later editing, you could export images at the size of your screen to save space.



- **You won't be able to revert anymore.** Of course, if you're replacing your original images with exported and reimported versions, you won't be able to use the Revert to Original command for such photos. That may not be an issue for those that were just rotated, but you might not appreciate losing history on more complex edits.
- **Duplicates could cause confusion.** If you decide to export at a lower resolution to save space and keep the originals when reimporting, you'll end

up with duplicates that may confuse other aspects of your Photos use.

I'm a purist about not throwing away data that could be useful later, so I'm highly uncomfortable with this workaround. The alternative of keeping both the originals and smaller imports makes me even more concerned about wasting space and dealing with duplicates.

Second, you could export only the photos you want your screen saver to display to a folder in the Finder and then point the screen saver at that folder. Even if you export images at just the resolution of your screen and with a tighter JPEG compression level, this workaround consumes a lot of disk space as well and requires even more work

to maintain the folder manually with future exports rather than relying on an easily updated album or automatically updated smart album. It's similarly unsatisfying.

My parents will likely just be annoyed at the incorrectly rotated photos in their screen saver until Apple fixes this bug. But given how many years it has existed, I'm not holding out hope that we'll ever see it fixed. Personally, I'll stick with the [Electric Sheep](#) screen saver I've liked for years, although the rabbit hole that I got sucked down while working on the introductory paragraph reminded me of the [Pure Mac Screen Savers](#), [XScreenSaver](#), and [Screensavers Planet](#) collections of screen savers. There's lots of eye candy out there. 🗑️

By Adam Engst

LastPass Publishes More Details about Its Data Breaches

In 2022, password management service LastPass suffered its latest significant breach, this one resulting in the loss of customer vault data (see "[LastPass Shares Details of Security Breach](#)," 24 December 2022). Months later, the company has finally provided significantly more information about the breach, what data was compromised, and how users should respond. The new information is helpful, but it doesn't make me regret switching to 1Password.

In a [carefully worded blog post](#), LastPass CEO Karim Toubba lays out a more-detailed timeline of two chained incidents, with the [first](#) setting the stage for the [second](#). He then points readers to a pair of security bulletins with recommended actions: one for [LastPass Free, Premium, and Families users](#) and another for [LastPass Business users](#). Finally, he summarizes what actions LastPass has taken to [better secure its systems](#). I

particularly appreciated [the extensive list of all the data types accessed](#), with notes about which fields were encrypted and which were not.

Notably, the company says that it hasn't heard from the attacker nor seen any indication of the data being used.

There has been no contact or demands made, and there has been no detected credible underground activity indicating that the threat actor is actively engaged in marketing or selling any information obtained during either incident.

If you're interested in security stuff, the various posts are worth reading, and LastPass has done a much better job of communicating this time, even if it's overdue. In particular, if you're still using LastPass, I recommend [following the company's advice](#) to:

- Ensure the strength of your master password

- Increase the number of password iterations
- Turn on or reset multifactor authentication
- Review the Security Dashboard
- Turn on dark web monitoring

LastPass hasn't yet made the last two options available to LastPass Free users, but the company says it will enable them shortly. Interestingly, LastPass has dramatically increased the number of password iterations. Some long-time users were still set at what is now an absurdly low 5,000, while newer users had 100,000 iterations. The default is now 600,000—that's a big change.

I wonder what Karim Toubba must be going through. He joined LastPass as CEO in April 2022, and the first breach occurred just months later, in August 2022. The company has likely been in crisis mode ever since, and the extent of the changes (combined with the actual breach, of course!) suggests that its previous security stance was problematic. We hope the adults are now in charge and are taking the right steps to prevent future breaches.

Switching to 1Password from LastPass and Authy

On top of my irritation with LastPass's interface, functionality, and reliability, the breach was the final straw, so I switched to [1Password](#) and [imported my data from LastPass](#). I chose the approach of exporting data from LastPass and importing it into 1Password because 1Password's direct import capability doesn't work if you have multifactor authentication turned on in LastPass. I wasn't comfortable disabling that, even temporarily.

I'm not quite ready to delete all my data from LastPass, but that's on my list once I'm confident that 1Password has all the capabilities I want. I realize that some people haven't been happy with the changes in 1Password 8, but as someone who didn't particularly use previous versions, I haven't been perturbed. While not perfect, 1Password has been significantly more elegant than LastPass,

which never provided anything resembling a native Mac or iOS experience. That was especially true in the last few weeks I used LastPass, when it felt like the company was making rapid changes in an effort to show users that it was doing something.

I particularly like using my Apple Watch to unlock 1Password on my 2020 27-inch iMac and my watch or Touch ID on my M1 MacBook Air. LastPass introduced app-based multifactor authentication a while back, but it never properly accepted input from its watchOS app, forcing me to pull out my iPhone every time to confirm login in its iOS app. I've subsequently reset LastPass's multifactor authentication to use a normal time-based one-time password (TOTP) that I stored in 1Password, which auto-fills it whenever I log in to LastPass on my Mac—a distinct improvement over tapping a button in LastPass's iPhone app.

1Password's support for TOTP has been a big win. I started with authentication apps early, when Google Authenticator was the only game in town. When I learned that its data wouldn't transfer to a new iPhone (it can now if you can scan a QR code on the old device), I switched to the free [Authy](#) ecosystem of apps, which has worked acceptably and syncs across my Macs, iPhone, and iPad. (I tried LastPass Authenticator briefly, but it's available only for the iPhone and iPad, and I hate turning to my iPhone when logging in on the Mac.)

Authy provides the [Authy Desktop](#) app for the Mac, but every time I want to log in to an account requiring two-factor authentication, I have to launch Authy Desktop, search for the website (I have 28 accounts), click a button to copy the code, switch back to my Web browser, and paste the code. I thought about automating the process with Keyboard Maestro, but it would be nothing more than fragile monkey-clicking. The way 1Password auto-fills the TOTP as the next step in the login process has been a huge relief.

(Glenn Fleishman reminds me that you could opt instead to use Apple's multi-platform support for TOTPs, but on the Mac, it works only within Safari. If you use other Mac browsers or apps, you have to bring up Safari > Preferences > Passwords or the

Passwords settings/preference pane, authenticate, search, click, and copy; see his article, "[Add Two-Factor Codes to Password Entries in iOS 15, iPadOS 15, and Safari 15](#)," 7 October 2021. And, of course, then there's the whole iCloud Keychain vulnerability if your iPhone and passcode were stolen; see "[How a Thief with Your iPhone Passcode Can Ruin Your Digital Life](#)," 26 February 2023.)

Moving my two-factor authentication setup from Authy to 1Password has been fussy and time-consuming. Amazon Web Services was the only service that allowed me to register 1Password as an additional authentication device. For all other accounts, I've had to reset two-factor authentication or turn it off and back on. The threat of being completely locked out of an account is scary, so I'm careful to add the new TOTP to both 1Password and Authy (again) before I delete the old account in Authy. While I don't anticipate using Authy after I get everything set up in 1Password, it feels like a useful backup if storing the TOTP in 1Password alongside the account credentials feels problematic. Remember to record one-time or "scratch" codes if a site offers them when enabling two-factor

authentication—they can be a lifeline if you have a TOTP blowout.

Much as with the Wall Street Journal's coverage of iPhone passcode thefts, I've come to see the LastPass breach as an opportunity to rethink my approach to password security. I wasn't entirely happy with LastPass before the breach but couldn't muster the enthusiasm for switching. By cleaning up duplicates and other cruft in 1Password organically, as I need to use the associated sites, I can nibble away at a task that would be too enormous to face all at once—I have over 900 logins. I'll ultimately have a better handle on my passwords than ever before.

But I'll still be happy if passkey support—see <https://tidbits.com/2022/06/27/why-passkeys-will-be-simpler-and-more-secure-than-passwords/> 27 June 2022—becomes widespread quickly such that I don't need all these stinkin' passwords!

To find out more about Passkey, go to

<https://techcrunch.com/2022/09/12/apple-passkey/> 

