Sync with iCloud Photos

While Photos works fine as a standalone image library, it's built to connect with Apple's online service, iCloud. With iCloud Photos, all your devices can view items stored in a single online library—and add new items to it—giving you access to every item in your media collection from any device (**Figure 33**).

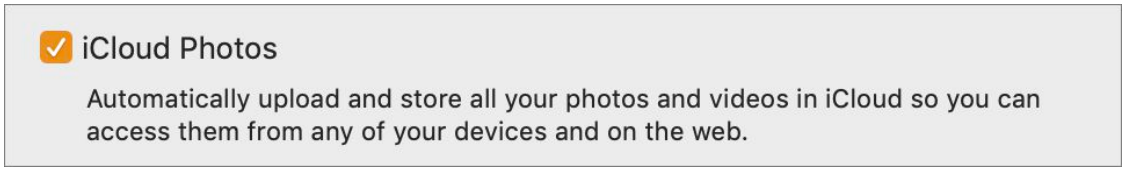

Figure 33: Check the iCloud Photos box in Photos > Preferences > iCloud to sync with iCloud.

Uploading your Photos Library to iCloud adds convenience and a measure of safety to your photo collection, but there are numerous complications to this process, too.

The Cost of Cloud Storage

As of this writing, every Apple ID comes with 5 GB of free iCloud storage. 50 GB of iCloud space (including not just your photos but your iPhone and iPad backups as well as iCloud Drive files) costs $0.99 per month, 200 GB costs $2.99 per month, and 2 TB costs $9.99 per month (To check the latest pricing and rates for different countries, see Apple's iCloud storage plans and pricing page.)

That's essentially the same price as Google and Dropbox, but with better integration and syncing on Apple devices. However, if you're an Amazon Prime member, you should know that Amazon Photos offers unlimited photo storage free for Prime members. It's worth looking into, even if only as a second cloud backup for your images.

Set the System Photo Library on a Mac

iCloud syncing works only with a single library on your Mac, which Apple refers to as the System Photo Library. It's generally the first

library that you opened when you started Photos. You can have as many libraries as you like (see Manage Multiple Libraries on a Mac), but only one can sync to iCloud.

To change the System Photo Library:

1. Hold down the Option key and launch Photos.
2. Select the library that you want to sync via iCloud, and click Choose Library.
3. Choose Photos > Preferences > General.
4. Click the Use as System Photo Library button (**Figure 34**).

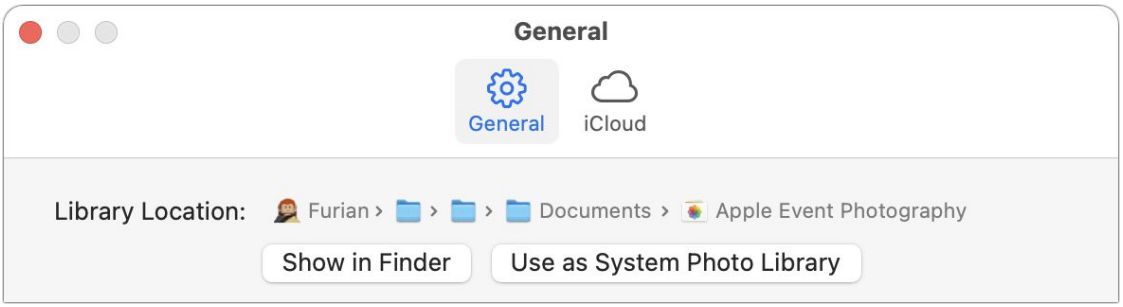

Figure 34: Click Use as System Photo Library to make your currently open library iCloud eligible.

Start Syncing With iCloud Photos

When you sync with iCloud Photos, you also have to choose which items are retained on your device's local storage. Here are the details.

Turn On iCloud Photos

To turn on iCloud Photos on a Mac, choose Photos > Preferences > iCloud and select the checkbox next to iCloud Photos. Photos immediately begins uploading the entire contents of your library to iCloud. On an iPhone or iPad, toggle this setting on in the Photos section of the Settings app.

Choose to Keep Local Copies

I have 20 years of digital-camera files in my photo collection, so many that I use an external drive to store them. (The drives inside most of my devices just aren't big enough!)

What that means, though, is that I can't browse my entire photo collection or add photos to it without attaching that drive. With iCloud syncing, though, you can use Photos to browse your entire collection *without it consuming all your disk space*. It's a setting you can choose in the iCloud tab of the Preferences pane on a Mac, and in the Photos section of the Settings app on an iPhone or iPad.

If your iCloud Photos Library is smaller than the free space on your device of choice, you can use the Download Originals to This Mac option (it's called Download and Keep Originals on an iPhone or iPad, and is off by default), which means the full-resolution version of every photo in iCloud Photos downloads to your device if it's not already there.

But if you change that setting to Optimize Mac/iPhone/iPad Storage (**Figure 35**), Photos no longer feels the need to store all your files locally. If you try to edit (or view at a large size) any image that isn't on your Mac, Photos downloads the image from iCloud and then presents it to you.

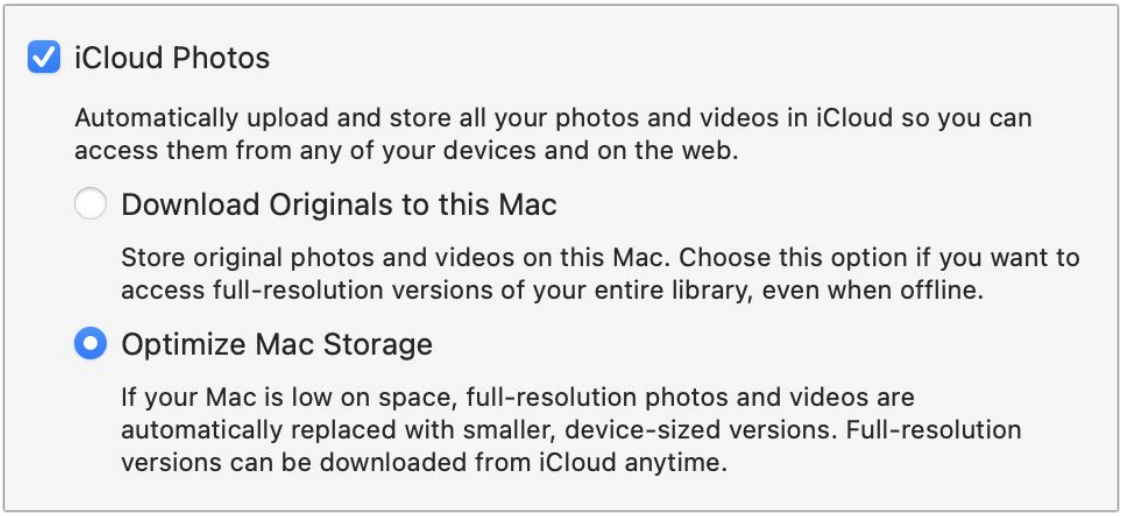

Figure 35: These two choices in Photos' iCloud preference pane determine if your entire iCloud Photos Library is stored on your Mac.

When your drive begins to run out of space, your Mac can delete images from your library to save space, confident that the master files are in the cloud. Generally, items won't get deleted from your library until your device is low on space—the figure I've heard through the grapevine is when it's between 90 and 95% full—and then the system begins searching for purgeable items to be removed, including photos. (See Restrict the Growth of Mac Libraries, later in this chapter, to learn about a clever way to more actively restrict the total size of your library on a Mac.)

(Yes, it *would* be nice if you could tap a button and force Photos to purge everything that's been synced to iCloud off your device. But Apple thinks that's too fiddly of an option, so you can't. Alas.)

Warning! If all your Macs are set to Optimize Mac Storage, you're relying on Apple to keep your photos safe from harm. You shouldn't consider iCloud Photos a backup! Set at least one Mac to download everything—and then back up that Mac with Time Machine or some other local backup, an online backup service, or both. See Back Up Your Photos for more.

Understand Sync Relationships

Using iCloud Photos to manage photos requires a mental shift. You're no longer using individual devices, but a single shared library. This has major ramifications. If you edit an image on one device, those edits propagate (rapidly) to all the other devices. If you delete an image in one place, it's deleted *everywhere*. Don't delete an image on your iPhone assuming it will remain on your Mac, because it won't.

Fortunately, Apple has built in a safety zone. Deleted files spend about a month (the time can vary between 28 and 40 days) in a holding bin before being permanently deleted. To display this bin, select the Recently Deleted album in the sidebar.

iCloud Photos also makes sure that all of your devices have access to the albums you've created, including auto-organized albums such as Favorites, Panoramas, Slo-mo, and the rest. If you organize using

folders, you'll find those structures intact, too. Smart albums, however, appear only on a Mac.

Deal with Missing Data

When you're using iCloud Photos on more than one device, photos, folders, albums, and keywords sync. However, Categories don't sync, nor do projects or keyword shortcuts.

Every device attached to your iCloud account scans photos for People and Categories separately, but when you manually mark a face in a photo as belonging to a specific person, that data is synced, so your People database on other devices should be similar… if not actually the same.

Restrict the Growth of Mac Libraries

If your System Photo Library is set to Optimize Mac Storage, you may find that it keeps growing over time as it downloads more photo data and full-resolution versions of photos you've viewed or edited. After a while, even a library with Optimize Mac Storage turned on can end up being very large.

Apple has a behind-the-scenes way of dealing with this issue: when your disk's free space falls below about 10%, Photos begins purging files from your library that it knows it can re-download later from iCloud Photos. This can happen in other circumstances where your Mac is feeling disk-space pressure. (This will never, ever happen if your Mac is set to Download Originals to this Mac.)

Unfortunately, many people feel that this hands-off approach means that their Photos libraries balloon to outrageous sizes, edging out more important data. Fortunately, with the advent of Apple's new APFS filesystem, there's a solution. (Thanks to Dave Nanian, developer of the SuperDuper! backup utility, for the suggestion.)

If you're like me, what I'm about to suggest will sound outrageously dangerous, because in HFS+, Apple's old filesystem, it was. But if your

Mac's internal drive is formatted with AFPS—as pretty much every modern Mac is—it's not dangerous at all.

APFS lets you create additional volumes, or partitions, on an APFS disk at will. Each partition appears as its own volume, but they're actually all sharing one drive and all the free space on it. This feature is important because we can constrain the size of a Photos Library with Optimize Mac Storage enabled by placing it on a partition that has a limited size (**Figure 36**).

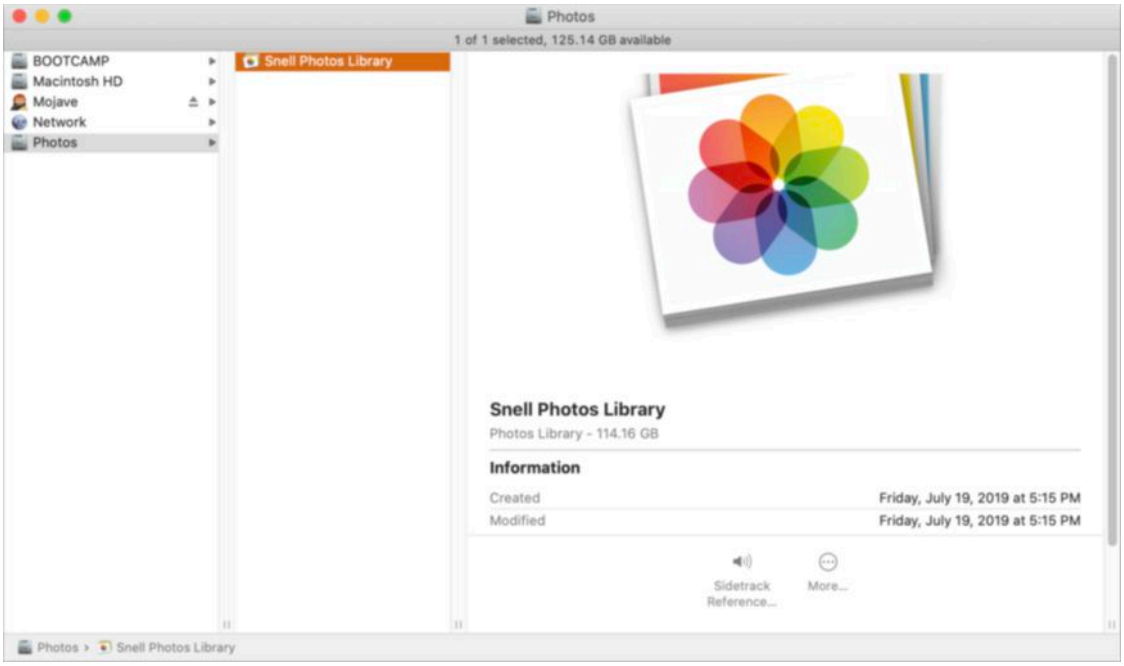

Figure 36: I've created a Photos partition on my iMac, in which my Photos Library resides.

Create a New Partition for Photos

Let's say we have a Mac with a 1 TB internal SSD, running macOS Catalina. That disk has two partitions on it, one for user data and a read-only one for precious system data. To this, we're going to add a new partition called Photos, and limit it to 75 GB of data. Here's how:

1. Open the Disk Utility app, found in the Utilities folder within the Applications folder on the root of your Mac's hard drive. Under the Internal heading in the sidebar you see all your drive's current partitions.

2. Click your startup disk and then click the plus + icon above Volume on the toolbar. This adds a new APFS volume to the container, which we'll name Photos (**Figure 37**).

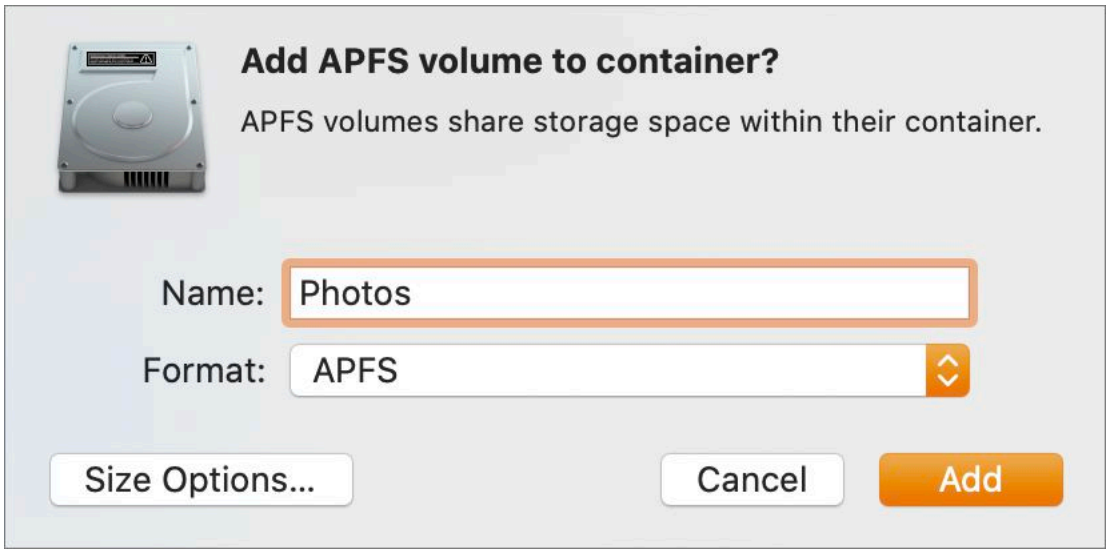

Figure 37: In Disk Utility, add a new Photos partition.

3. Click the Size Options button and set the Quota Size to 75 GB. Click OK. (Don't make the Quota Size too small, however—Photos still needs room to download thumbnails and metadata, and I've received reports that it does not work properly on small volumes.)

4. Click Add, and that's it! You now have a new partition that's perfect for a Photos Library with Optimize Mac Storage turned on.

Start Fresh on the New Volume

You can copy your old Photos Library there, but I recommend making a brand-new empty library on that volume instead. To do this:

1. Launch Photos with the Option key held down.

2. Click the Create New button, navigate to your new Photos volume, and click OK.

3. Go to Photos > Preferences > General and click the Use as System Photo Library button.