

# Backing Up Your Mac

If you don't have a backup system for your Mac now, or have one but don't understand it nor keeps it up-to-date, this article is for you.

If you just don't care if you lose everything on your Mac at some point, it's just not at all important to you in any way, then you can stop reading now.

If you do care about not losing data from your Mac, stay with me and I'll walk you through some simple steps to get your Mac backed up and you can stop worrying about losing data, as in applications, photos, music, video, email, and everything.

There are lots of ways to make back ups. I will give you a very good one first. It is all you really have to do. There is more you can do and I'll mention them later but first do this:

1. Go acquire a 1TB external hard drive. You probably don't need a 1TB drive, but that is what is readily available most anywhere. Sam's Club, Best Buy, Amazon. They currently cost around \$75 to \$120. Some are bundled with a flash drive, which you may want but don't need, for this process. You might even find some 2TB drives for the same price.
2. Purchase a copy of Carbon Copy Cloner <[https:// sites.fastspring.com/bombich/product/ccc](https://sites.fastspring.com/bombich/product/ccc)> \$39.99. This may be the best \$40 you ever spend! Install Carbon Copy Cloner on your Mac.
3. Run Disk Utility, it is on your Mac already. It is part of the Mac OS so everyone has it. Select First Aid on the tab in Disk Utility and let it run. When it finishes and reports that your hard drive is OK, continue to the next step. If your hard drive has issues see below Your Drive Has Issues.
4. Connect the 1TB external hard drive to your Mac. See that it shows in on your Mac's desktop\*.
5. Launch Carbon Copy Cloner. Click in the box that says Source. Then select your Mac's internal hard drive. Usually called Mac HD unless you changed the name.
6. Click the box that says Destination. Then select your 1TB external hard drive. In the center of the screen select Safety Net off.
7. Now double check steps five and 6. Then click Clone in the bottom right hand corner of Carbon Copy Cloner.
8. The cloning (back up) process will start. Carbon Copy Cloner (CCC) will tell you what it will do. Again check that the source and destination are correct, then click OK.
9. Copying begins and you will see a progress bar at the top of the CCC screen. This first backup will take a good while. Depending on how much data you have on your Mac's disk, it could take hours. You may still use your computer for other things if you want.
10. When the process completes you will have an exact copy of EVERYTHING that is on your Mac's internal hard drive. You can even boot (start up) your Mac from this copy! A good thing!

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11. When the copy is finished, eject the external hard drive. You can set CCC to automatically eject the external hard drive when it finishes making the clone.
12. Don't keep the clone attached to your Mac between back ups. Since you will have two identical hard drives, if they are both attached you or your Mac could save files and data to the wrong drive. You only want to save new and changed files to your internal hard drive as you have been doing all along. You are done!
13. Now you have a backup! Whew! Now, you can stop worrying about losing all your stuff! Well, wait. Is the backup any good? How do you know there is really any data on the 1TB hard drive? This is how. Attach the 1TB hard drive to your Mac and wait until it shows up on your desktop. If it does, that's a real good start.
14. Now Shut down your Mac.
15. Now start up your Mac and as soon as you hear the chime PRESS and HOLD the OPTION key. You will get a blue or gray screen, depending on the Mac OS you are using, and then you will see a row of icons in the center of the screen. Release the OPTION key. Click on the 1TB external drive clone and press Return.
16. Your Mac will try to boot from the 1TB clone external drive. This may take a while longer than your normal start up (especially if your internal hard drive is a Solid State Drive (SSD)).
17. When you get your desktop, check that your stuff is there. Don't use Mail or save or delete files. You are just checking that your data have been backed up. You don't need to check everything. The fact that you got this far is a real good indicator that you have a good clone back up. If you have some super important files, you may want to check that they are on this clone.
18. When satisfied that your clone is good, Shut Down the Mac again.
19. Unplug the external 1TB hard drive from your Mac. Then do a normal start up. Now, you are back in business and you may continue working on your Mac, changing, saving, downloading new stuff and so on.
20. After some time of using your Mac you will want/need to up date your backup clone.
21. Attach your 1TB external hard drive to your Mac and then launch Carbon Copy Cloner (CCC).
22. Now CCC will do what is called an incremental backup. This means, it will only copy new and changed files to the destination disk. It will also, THIS IS IMPORTANT, delete any files and data you have deleted from your internal hard drive from the destination hard drive. This will keep both disks in sync, which are identical and the destination disk will not grow in size, meaning you will never run out of back up space! The incremental backup takes a lot less time to complete as you might guess. If not much has changed between back ups then it is very fast. If a lot has changed between back ups, then it will take longer, but never as long as the first backup. Some of the time for back ups is for CCC to read the disk to see what has changed. It does this before it does any copying of data. Click the Clone button.

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23. At some point, determined by you, you will want to update your backup again. Repeat steps 21 and 22. You do not need to test your clone after every update. You may if you like. You should test your backup clone from time to time to be sure it works. It is very rare that it wouldn't work, but everything can fail. If your backup isn't any good, then you don't really have a backup.

Wow. I said this would be easy, well it is. It looks like a lot, but it is really easy. After you do it a time or two, it will seem like no big deal. All you are doing is copying all your data to another drive. You use Carbon Copy Cloner because some files on your Mac cannot be copied by the Finder. They are special and hidden files. Apple does this you don't accidentally mess things up by doing things to these files. Carbon Copy Cloner can see and copy the files and make the clone drive bootable.

## Your Drive Has Issues.

If your internal drive doesn't pass step 3, you will want to fix it before making a backup; otherwise, you are just copying problems that may bite you later.

If Disk Utility's First Aid doesn't fix or resolve the issues you will likely need to use another more powerful disk utility program to fix the problems. I recommend Disk Warrior by AlSoft. <<http://alsoft.com/Buy/index.html>> Currently it is \$120.00. You aren't likely to find it cheaper unless it is an older version. You want to make sure the version of Disk Warrior is compatible with the version of Mac OS you are using. This is VERY IMPORTANT!

Disk Warrior is very easy to use, and it fixes the likely issues your disk may have. It is also good to run Disk Warrior even when you don't think you have disk issues. It will keep your disk healthy data wise. It cannot fix physical mechanical problems; no software can. It is time to replace the drive if there are physical problems.

## All Safe Now?

OK, so you have a backup clone drive and you tested it and know it is good. All done?

Well, yes and no. What if your backup is lost, stolen, or damaged? Then, you don't have a backup right? If you keep your backup near your computer and there is a theft, fire, flood etc you will likely lose your Mac and your backup and all your data. Oh, shoot!

If one clone is good, two or more is better, and one should be kept off site. Like maybe your work office (outside your home) or a friend or relative's home. Maybe a safe deposit box would be a good idea especially if you already have one. You will need easy access to this off site drive because you will need to update it frequently; otherwise, it won't really be a complete backup.

## What Else to Do?

The above, I feel, is the best way to back up everything. There are other backups you can do to fill in some gaps. Time Machine which is part of the Mac OS is really good to use especially with a desktop Mac. Plug in an external hard drive and launch Time Machine. In Time Machine select the external drive and Time Machine will back up your data. You can select things you don't want Time Machine to back up if you like. The backup that Time Machine makes will NOT be bootable and will not be incre-

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mental. Time Machine makes what is called an archival back up. That is, it keeps everything and copies new and changed files. This happens in the background at one hour intervals. You can change the time and force a backup any time. Time Machine allows you to go back to a file you might have altered or deleted and retrieve that older version. This can be a life saver if you tend to delete files or otherwise, mess them up in some way. Because Time Machine keeps everything, the hard drive that you are using for Time Machine will eventually become full. Then, you will need to add another drive, get a larger drive, or allow older files to be deleted as needed by Time Machine.

Using Time Machine with a laptop is a little trickier, but can be done. Time Machine works best if it is always connected to your Mac and a laptop is most likely to be moved around a lot. You can just re-connect when you bring your laptop back to your Time Machine disk, and it will continue from where the last backup was. However, the files between connections won't be protected. You could have created one or more files, then made changes and then more changes. Those previous versions won't be saved and therefore cannot be retrieved.

One solution for laptops is to purchase a Time Capsule from Apple. Time Capsule is a hard drive with an AirPort base station (WiFi router) built in. So you can connect Time Machine via WiFi and be connected as you move around your home or office. You can back up more than one Mac at a time this way too. It doesn't help if you leave and go on the road.

Carbon Copy Cloner has features and settings to help you automate your backups and even send you email when your backup is completed. Documentation for all this is in Carbon Copy Cloner's Help tap.

There are online back up services that are good too.

## **The advantages are:**

No software purchase is needed.

No additional hard drives are needed.

Won't run out of space.

It's off site; way off site so a regional disaster won't get your data.

It all pretty automatic.

## **The disadvantages are:**

Requires internet connection.

Monthly or yearly fees.

Uploads take a long, long time. Most ISPs give you slower upload speeds than download speeds.

Ongoing costs.

Restoring more than a few files means you need to request the service to copy files to a flash drive or a hard drive and ship them to you, for an additional fee.

Doesn't back up everything on your hard drive. Good and bad.

Can't get back and running right away as you can with a clone.

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A service I have looked at and think is good is Back Blaze <<https://www.backblaze.com/cloud-backup-ad.html?gclid=CKeS8vXEg9ECFYg7gQod4LwMeg#1056>>. You get unlimited backup for \$5.00 per month. I feel this also works best with desktops Macs that are most always on. It does work with laptops as you can start and stop anytime. The updates happen in the background. This can and does slow your internet connections for other things and could cause issues with streaming audio and video, as in movies etc. Your first back can and likely will take days or weeks. It will also back up attached hard drives at no additional costs. This is great for that photo, music, or movie library. But remember it is S-L-O-W, unless you have a high speed uplink.

I should mention that you could use Super Duper \$27.95 instead of Carbon Copy Cloner. It works much the same way and I used it many years ago, but I prefer CCC, and it's what I use.

There are other software and services out there too. Anything that works are fine as long as you actually make back ups and then keep them updated. The above it what I do and it has saved me from losing data and having to rebuild my disk.

## An Example

Recently, while doing a Mac OS update, I had a glitch and my MacBook Pro disk, or at least the System tracks got hosed. That is screwed up, wrecked, unusable. Panic, no. Unhappy, yes.

I booted from the CCC clone drive, copied off a few new files from my internal disks that were not on the backup clone and did a complete restore. That is I copied from the clone to my internal hard drive. Since most of the files were still on my internal hard drive and they were OK the restore didn't take very long. I booted my MacBook Pro and was back up and running almost as if nothing had happened. Without the clone, I'd have lost all my data and all the software settings over years of use. I probably never would have gotten things back the way they were.

***Back ups are important. Do it now, or be sorry later.***



\* If hard drives and CD/DVDs don't show on your Mac's desktop you can turn that feature on. In the Finder (click on your Mac's desktop) click the Finder Menu and select Preferences. Then click General and then click to put a checkmark in the boxes next to the items you want to show on your Mac's desktop. These will stay until you uncheck them. I prefer to see all the storage devices connected to my Mac. Displaying these items is the way all Macs worked until OS X. Then there was the option to hide them and then hidden became the default. Why? I guess to give a cleaner look to the desktop and that Apple wanted the base level of your hard drive to be the desktop. In fact when OS X first came out there was no DeskTop. The screaming began by previous Mac users and the DeskTop was soon restored, sorta. The current DeskTop is really a special folder that acts like a desktop. You don't

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have to be concerned about it except to not have a lot of stuff on this desktop, is slows your Mac down when you do.