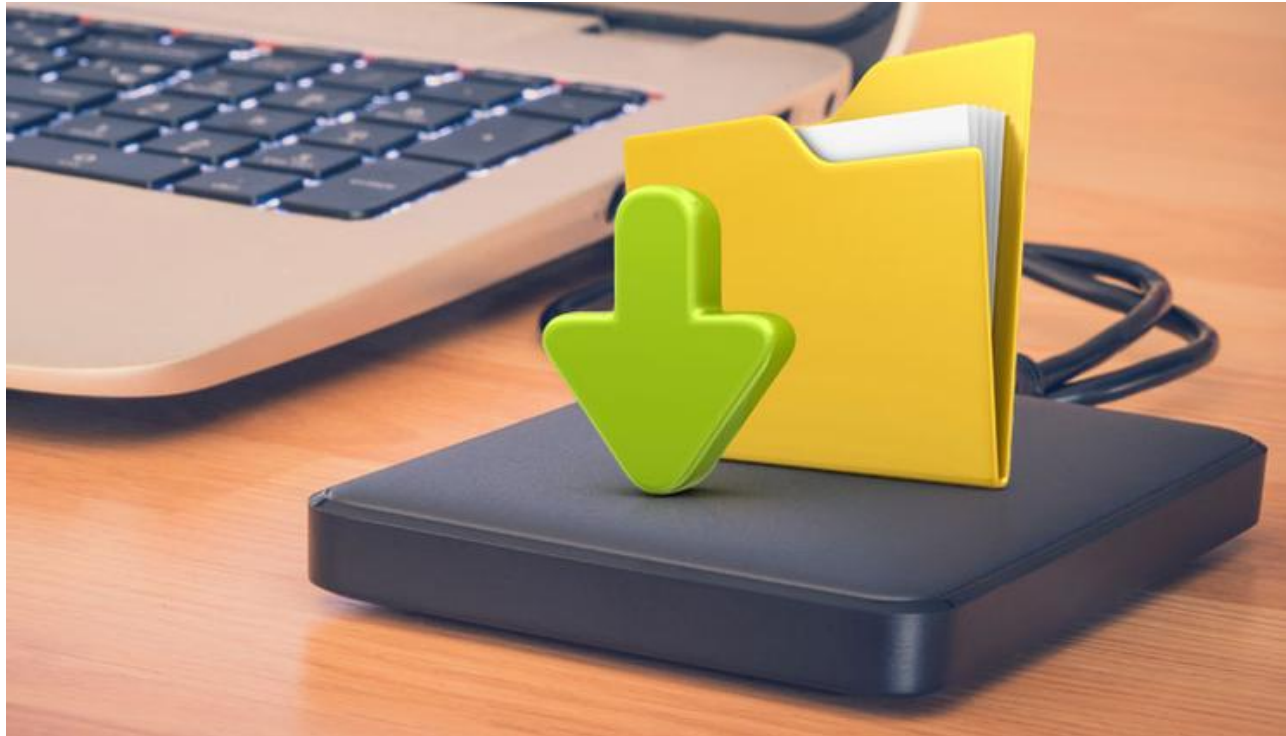


# The Beginner's Guide to PC Backup

- By [Eric Griffith](#)
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You know you're supposed to back up your data, but if you're not sure how to get started, this guide will help.



We all know we're supposed to back up our data. We could go so far as to say that a backup of digital data is essential to a person's well-being and peace of mind. (One copy of a file on your computer does not a backup make. Redundancy, people, redundancy.)

Why, then, do so many people still not bother to back up? Even after losing an important document, irreplaceable photo, or entire sets of financial records, some still don't take the time. Perhaps it's because backing up takes some effort. In the past, it's been complicated. Now, thanks to new software, hardware, and services, it's easier than ever. Here's a quick look at the types of backup available, as well as the tools you'll need to pull it off, with as little work as possible.

## What to Back Up (In Addition to The Obvious)

It might seem like enough to point your backup software to your documents, pictures, videos, and music folders and let it do its thing. Maybe it is, if you're diligent about putting your data in the right place on your drives. Even so, there are other types of data you should think about backing up.

## Email

It's unlikely that your [email client software](#)—if you're still using that instead of a

Web-based system like [Gmail](#) or [Outlook.com](#)—places your email data files in a convenient place for backup. So it's up to you to seek them out and back them up.

Users of Outlook (the software that comes with Microsoft Office) have to keep track of a file called the PST (Personal Storage Table), which could be in a couple of different places, depending on which version of Outlook and Windows you are running. To find it, open Outlook, go to the File tab, select Account Settings on the right, then click it. Go to the Data Files tab, click any entry, and Open Folder Location. You also need to make sure that you can See Hidden Items—in [Windows 10](#) File Explorer, go to the View menu and there's a checkbox to make sure.

You can back up the PST manually, of course, but since it can get big, that's not always easy. Outlook has an Import and Export option that helps. There's also an Outlook 2007/2003/2002 add-in from Microsoft called [Personal Folders Backup](#) that does just what it says. Follow these [instructions from Microsoft](#) to use it in Outlook 2010. Or, for simplicity's sake, go with a third-party backup tool like [Safe PST Backup](#).

If you're using a different desktop email like Thunderbird, your email isn't in one single file; it's spread across many .EML files in mailbox folders. Luckily, Thunderbird [supports plug-ins](#) that can be used to help.

If you do use a Web-based email, you could also use desktop software like [eM Client](#) to get access to them, all while in discrete desktop software, which lets you actually back up the messages on those services. It supports Gmail, Google Apps, iCloud, Outlook.com, and others. The software has its own backup settings under Tools > Settings > Backup, to create a folder for you regular backup software to check regularly.

## Browsers

Why back up your window to the Web? You've carefully cultivated bookmarks or favorites: that's reason enough. But let's not forget all those passwords and delicious cookies that make access to sites easier. You don't want to lose them in a crash.

Mozilla has backup and sync with encryption built into the [Firefox](#) browser. Access it from the hamburger menu (the three stacked lines in the upper right), set up an account, and then set it up on all your Firefox-enabled computers and also Firefox for [Android](#) or [iOS](#).

[Google Chrome](#) has a similar sync feature, which saves browser settings (bookmarks, extensions, themes, even apps) to your Google account if you desire; changes are synced whenever you use that account with Chrome on other computers.

But who only uses one browser? [Xmarks](#) is a popular way to sync browser data across multiple browsers, including Firefox, Chrome, Internet Explorer, and Safari. It can ensure the same (or at least similar) browsing experience no matter what browser you're using. Make a

single change and it's backed up to the Xmarks servers then added to your other browsers when opened.

## Drivers

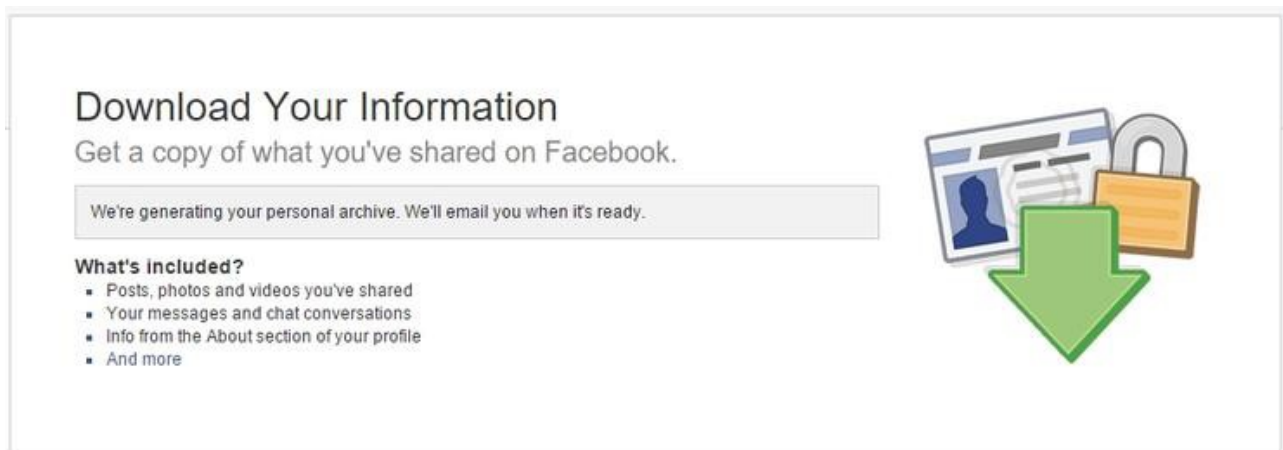
If you've got peripherals, you've got drivers—the software that makes your computer talk to video cards, printers, scanners, and the like. Simple Windows software apps like [DriverMax](#) (which installs extra toolbars, so watch it during install) or [SlimDrivers](#) will back up your current drivers and also search out current versions of drivers that are out of date. If you neglect backing up these handy files, you might have to rummage through [every manufacturers' website](#) to get them when you're performing a restore—but to be honest, that might be the better way to go, so you have the most up-to-date drivers all digitally signed. It will take more time, but might benefit you in the long run.

## Social Networks

It may seem weird to back up info that you don't keep on your hard drive, but do you seriously trust Twitter and Facebook to never, ever suffer a catastrophic data loss? Be prepared. It's not like you'd use these backups to restore them to online use in most cases, but better to have a redundant copy for your records than risk losing it all.

For **Twitter**, you don't need a third-party tool anymore. Sign in via the desktop browser and go direct to [your account settings](#). Scroll down and click "Request your archive." You'll be emailed a link with the full file of all your tweets and pics you've uploaded in a short time.

On **Facebook**, go into [General Account Settings](#) when logged in on the desktop, and you'll see a link at the bottom: "Download a copy of your Facebook data." It's the same deal: Facebook starts creating an archive then emails you a link for downloading it when ready. You'll get all you've ever posted, plus some of your friends' names and emails (if they share them). You do not get friends' status updates and photos, even if you're tagged in them, nor your pithy comments made on other people's posts.



On **LinkedIn**, go to [Privacy and Settings](#)—you'll have to confirm your login. Click the Account tab at the bottom, then click the link for "Request an archive of your data >>". Again: you'll get a link in email. They say it could take up to 24 hours. However, I got one in less than five

minutes—but only for an archive of messages, connections, and imported contacts. I had to wait a while for a second link to download an archive of activity and account history.

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## Types of Backup

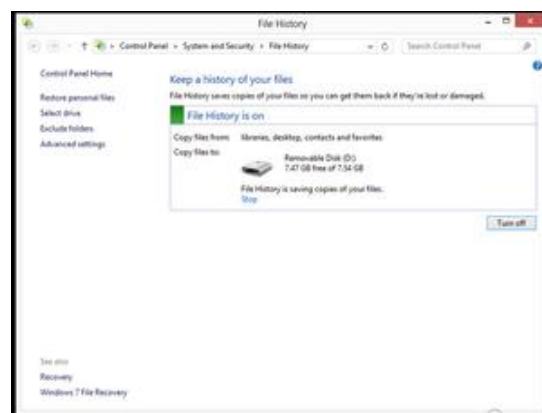
Backing up can be as simple as copying a file from one spot to another, say from your hard drive to a removable USB flash drive. But the arsenal of tools at your disposal is capable of doing so much more. What you need for redundancy, security, and access, however, decides what kind of backup you should use.

### Select Files and Folders

If you only need to back up specific data, use software that will let you pick and choose what files you want to save. (Remember, simply moving a file isn't backing up. You need at least two copies. Redundancy, folks, redundancy.) Just to be safe, back up entire folders on a recurring basis to ensure that newly created or updated files get backed up at a later date.

There's plenty of free software to take care of this for you, including Windows 7's own integrated [Backup and Restore](#) feature, still available in Windows 8 and 10—you can find it in the Control Panel. There's also [File History](#), a newer backup option that came along first in Windows 8. It's available from the Control Panel AND the Settings app in Windows 10 (just type "settings" into your Cortana search bar then click Update & Security). Each pretty much offers recurring copying of files you use to a secondary drive as backup. File History is a lot easier to set up, but it's also more limited. Then again, File History will also let you create a full system image backup—that's a full copy of your entire Windows PC system drive as it exists—so if you ever have to restore it, it'll be exactly as it was on the day of the backup.

Other software you could consider for straight up drive-to-drive backups in Windows 10: [Bvckup2](#), [SyncBackSE](#) or [SyncBackPro](#), and [AOMEI Backupper Standard](#).



## Cloud Storage and File-Synchronization Services

A must for anyone with more than one computer in use, synchronization software makes sure you have the same files on all your PCs. They always include a backup of files online, which

you can access anywhere, even via smartphone. It's the ultimate in redundancy. Big names in this area include [Dropbox](#), [Microsoft OneDrive](#), and [Google Drive](#) (which earned a full five stars in our review, as it goes well beyond just file-sync and storage).

With any of these, make a change to a file and it's automatically sent to all the other PCs using the account, even on other operating systems. All of them provide a few gigabytes of online storage for free, typically 2GB, but you can get a lot more by paying a yearly fee. For a comprehensive look at the best available, read [The Best Cloud Storage and File-Syncing Services for 2016](#).

### **Online Backup Services**

We're in the era of the cloud, so online backup, once a bit specialized, is and should be the norm for backing up important files. Unlike the above services that also include a file-sync option, these products tend to lean toward direct backup to online storage, with easy restoration options. You install software on the PC, tell it what files/folders to keep backed up, and it does the rest in the background. And because the storage is online, you can typically read files via the browser, or restore the files to other systems, as needed. Big names you've heard of in this are: [iDrive](#), [Carbonite](#), [EMC MozyHome](#), and [CrashPlan](#). For more, read [The Best Online Backup Services for 2016](#).

### **Full Disk Image**

There are several ways to back up a full hard drive. The first, copy all the files from the drive to another (larger) drive. This means you get everything, even if you don't need it, but it is easy to keep up-to-date and restore select files from it as needed.

Arguably the better way is to make an image of the drive. An image is a replica of all of your data—every file and folder, even the programs and system files—taken like a snapshot in time of the drive at a given moment. When used for restoration, it overwrites what exists after that point in time; the hard drive would revert to the state it was in at the time of backup.

Imaging is an especially perfect way to back up a brand new computer. Then, in a couple of years when it starts acting wonky (don't kid yourself, it happens to all computers) you can revert the drive back to its original settings. Keep in mind, however, that this is like going back to the factory settings—albeit your own—which means the restoration will not include data accumulated after the original imaging. Data should be backed up separately. (Yes, you should have two sets of backups running. Have I mentioned redundancy yet?)

Your best option is to do a full disk-image backup on a regular basis, with data included, using software that can read images and selectively pull files for restoration when necessary. You will need a very big backup destination drive to pull it off, typically an external hard drive (see below for recommendations).

Software options for imaging a drive include the free [DriveImage XML](#) or [Clonezilla](#), or high-end solutions like [Paragon Hard Disk Manager](#) (our Editors' Choice), or [Acronis True Image](#)



[2016](#), or the unique [Acronis True Image Cloud](#), which lets you save an entire disk image online.

## **Backup Destinations**

How you back up data may depend on the type of media you use as the destination site. Here are some options:

### **External Hard Drives**

It doesn't get much easier than this: Plug a big ol' external storage drive into your PC via USB and get started. Of course, drives come in all shapes, sizes, and configurations. A standard drive won't cost much, but it won't do anything but sit there and let you do all the work (not that there's anything wrong with that). Almost all drives today use connectors like USB 3.0 or Thunderbolt to get incredibly high speeds.

Perhaps your biggest decision will be whether to go with faster but more expensive solid-state drives (SSD). Unlike hard disk drives, SSDs have no moving parts and that means fantastic performance—which is always a plus when you've got a lot of data to copy. For more, check out [SSD vs. HDD: What's the Difference?](#)

Among what we consider [The 10 Best External Hard Drives of 2016](#) you'll find the [LaCie Little Big Disk Thunderbolt 2](#) (1TB) pictured below, [Apricorn Aegis Padlock DT FIPS](#) (4TB), and the [Seagate Backup Plus Desktop Drive](#) (5TB).



### **CDs/DVDs/Blu-ray Discs**

The old stand-by for backup is to copy your files to a shiny disc. The downsides remain capacity and speed. CD-Recordables (CD-Rs) can only hold so much data (around 700MB,

maximum)—that's so small it's going to feel like using a floppy disk. A DVD-R is much better at 4.7GB, but even 8.5GB dual-layer DVD-R discs won't hold your entire music and photo collection. Dual-layer Blu-ray discs (BD-Rs) store up to 50GB and the prices have dropped—a box of 50 goes for less than \$25 these days. However, even at that capacity, backing up to discs will feel interminably slow compared with fast hard drives and flash drives. Who wants to take discs in and out all the time?

The upsides: All disk-based media is cheap. Discs are also super portable. It's a good idea to keep a backup of your data off-site, if possible. If a disaster takes out your computers and storage, it's likely that your backups are gone as well, but it won't get what's not there. And a CD is about as easy as it gets to take with you. Well, next to...

### **USB Flash Drives**

Small USB drives are almost as inexpensive as discs, even as their capacity increases. They also have the advantage of being uber-portable. Maybe too portable, since they're easy to lose (and steal). But locking one multi-GB flash drive in a safe deposit box is easier than storing discs or hard drives. Some USB drives are even designed for protection from the elements, making them all a safer destination for your data. Of course, you need to get the largest capacity drive you can get—generally 64GB—to back up everything, especially if you'll be imaging your drive. That can get expensive, but might be worth it for the convenience. Our Editors' Choice flash drives with 64GB or higher capacity include the [Lexar JumpDrive M10 Secure](#), [Kingston DataTraveler microDuo 3.0](#) (right), and [SanDisk Extreme 3.0](#). You can read more at [The Best USB Flash Drives](#).

### **Network Attached Storage (NAS)**

A NAS box is a hard drive (or drives) that sits on your network, so all the users on the network can access it. Sometimes, a NAS is called a home server. They're not always cheap, and some don't even include built-in storage, so you'd have to buy hard drives separately. The really cheap ones aren't even going to let you change the storage options. That said, NAS boxes are getting easier to work with every day.

NAS can do a lot more than back up a few files. Many can back up multiple computers in a home or office. Streaming media from a NAS to a device like a game console or smartphone is common place; sharing files across the network and out to the Internet, making it a Web server, is also the norm. Most NAS boxes feature FTP, online remote access, security controls, and different RAID configurations to determine how drives store your data (redundantly or spread across drives). Some even have multiple Ethernet, Wi-Fi, and USB ports. Some capture input from networked digital video cameras. The options seem almost endless, which makes it worth shopping around to get the right one for your home or office.

Naturally, we've got picks for [The 10 Best Network-Attached Storage \(NAS\) Devices of 2016](#). You can't go wrong with the price or abilities of our top-rated NAS, the [Netgear ReadyNAS 202](#) (below), which sells for the incredibly low price of \$189.99 (though you have to provide all the drives—it can take up to 12TB). An inexpensive but top rated NAS by PCMag analysts remains the [Asustor AS-202TE](#), a \$293 device with record-breaking speeds—perfect for your multi-PC home backups. If you're going truly high-end, like for an office, consider just about

any NAS from [Synology](#)—the company is consistently the winner of our [Readers' Choice Awards for NAS manufacturers](#).

## The Cloud

We kind of covered this above, but it bears repeating, as the cloud seems to be the future of backup. The cloud refers to online storage. Sometimes it's used by a service, like Google Drive, to store your data. It can also be straightforward storage space provided by big companies like [Amazon Cloud Drive](#) (5GB free) or small companies like our current Editors' Choice favorite, [iDrive](#), which lets you back up multiple devices to 5GB of cloud storage for \$59.50 a year. It's typically up to you to handle uploading and downloading with minimal special tools to help you outside of the service's limited Web interface, though services like iDrive (pictured below) are changing that.

Cloud-based direct PC backup is not new. [Mozy](#) and [Carbonite](#) have been around for years providing direct backup of files on your computer to the Internet, usually in the background and in a completely unobtrusive way. There is typically a free tier of service for these kinds of services and a subscription fee to back up more (the amount depends on the service).

If you have only a few small files to store, we recommend using [Google Docs](#). You can upload any kind of file you want to the service, as long as the file is less than 250MB in size. You get 15GB of free space; the next tier is 100GB for \$1.99/month. Adding files or entire folders is as easy as dragging them to your documents list if you use the Chrome browser. Google Docs will convert the file to Docs format for online editing if you desire; then the file won't count against your storage.