

Backing up your digital image collection provides it with essential protection.

In this chapter, you'll learn more about your options for creating a reliable backup of your entire digital image library. Topics include

- Backing up images to an external hard drive connected to your computer
- Using an online photo sharing service to back up your images
- Using other backup options

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Backing Up and Archiving Your Digital Photo Library

Digital photography is all about capturing memories, telling stories through visuals, and being able to share moments of your life with other people. Thus far, you have learned how to take photos, edit and enhance your favorite images, organize your entire digital image library, and share images or entire albums with others.

One more important aspect of digital photography should not be forgotten, and that is establishing and maintaining a reliable backup of your entire digital image library.

When it comes to using computers and devices, things go wrong. It's a fact. And no matter how skilled you are using technology, some things can't be prevented. Computers, smartphones, and tablets can crash and lose data. They can also get lost, stolen, or damaged.

It's not a matter of "what if" something goes wrong. It's a matter of being prepared for when something goes wrong and taking steps, in advance, so that you do not lose any important information—in this case, your digital photo collection.

This chapter discusses several options for backing up your images. However, each option has drawbacks. At least for your most important images, seriously consider adopting two separate backup strategies—one that involves storing backup copies of your images on an external hard drive that connects to your computer, and one that's online-based that enables you to store your images in the cloud.

Stick with It!

Once you choose and set up one or two backup options to protect your digital image collection, make sure you stick with it. Many backup options can be set up to work automatically. It's your responsibility, however, to initially set them up and then check periodically to ensure they're functioning properly.

Backing Up Images Using an External Hard Drive

One of the easiest options for creating a backup of your entire digital image collection, as well as everything else stored on your computer, is to connect a large-capacity external hard drive to the computer and activate auto-backup software, so that as you create and modify your data, documents, files, and photos, a backup is automatically created and stored on that external hard drive.

Both the Windows (PC) and OS X (Mac) operating systems have tools built in that are designed to create and maintain a backup of your computer's data. However, it's your job to activate this feature and then make sure it continues to function properly.

The most popular option is to purchase an external hard drive that has a capacity larger than the capacity of your computer's internal hard drive and that connects to your computer via a USB cable.

The price of external hard drives has dropped considerably in recent years, and one can be purchased from any computer or mass-market consumer electronics store, or from an online merchant, for between \$50 and \$300, depending on its design and capacity.

Size Matters

When choosing the capacity for your external hard drive, think in terms of your future needs. How large do you anticipate your digital photo library becoming in the months and years ahead? Take that estimate and triple it. Plus, how much storage space do you need to maintain a complete backup of your computer? Consider investing in a 1TB, 2TB, or 4TB external hard drive, which should be more than adequate for your needs.

Once you have connected an external hard drive to your computer, you can either manually back up your entire Pictures folder (Library) or use automatic backup software to do this on your behalf, either in real time as additions or changes are made or at least once per day when your computer is turned on but not otherwise in use.

Although you can opt to maintain a backup of just your digital images, you're better off maintaining a backup of your entire computer, which includes your digital photo collection. You can then create a supplementary backup of just your digital images elsewhere (online, for example).

There are several benefits to creating and maintaining a backup of your computer and digital image collection on an external hard drive connected to your computer:

- The backup files are kept local and easily accessible.
- No Internet access is required to create or maintain a backup or retrieve data from that backup.
- You can set it up so the backup files are created automatically.
- It's quick (compared to online backups) both to back up and restore.
- Backing up files (your digital images) to an external hard drive is also much faster than uploading the files to an online service. This is particularly relevant if you have hundreds or thousands of high-resolution digital images to back up.

It's Not All Good

External Hard Drives Have Their Drawbacks

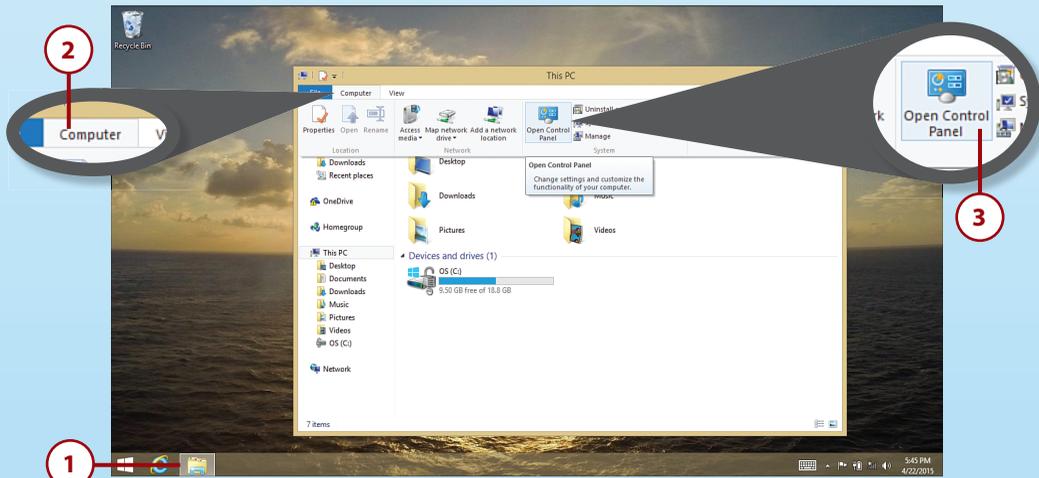
There are a few potential pitfalls in using an external hard drive to back up your computer and your digital image library. First, just like the hard drive built in to your computer, an external hard drive can crash. This can result in data corruption or data loss.

Second, if the external hard drive is kept connected to your computer, anything bad that happens to your computer can also happen to that hard drive. For example, if the computer is stolen, chances are the thief will also steal the hard drive connected to the computer. If the computer is kept at home and is subjected to a flood, fire, power surge, or other disaster, the external hard drive will experience the same fate.

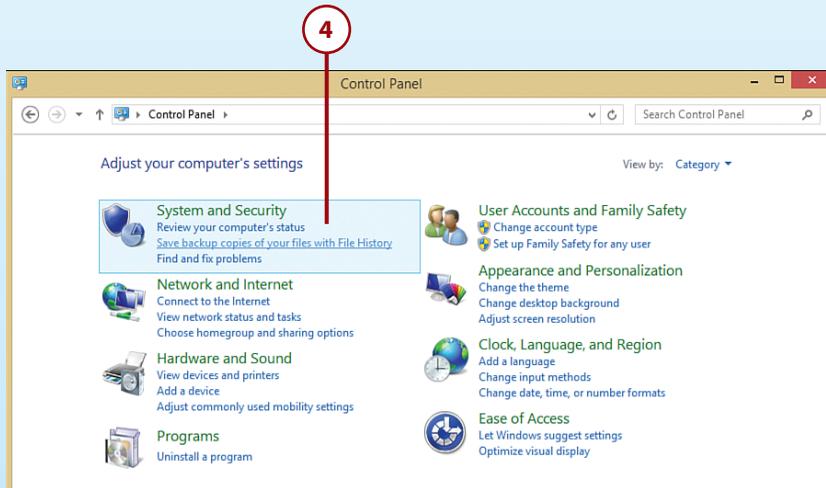
If you're using your computer or mobile device away from home and don't have the external hard drive that contains your backup files with you, if the need arises, you won't be able to access those files until you return home. However, if your backup files are stored online, they can be accessed from anywhere in the world as long as an Internet connection is available.

Set Up Your PC to Back Up Automatically

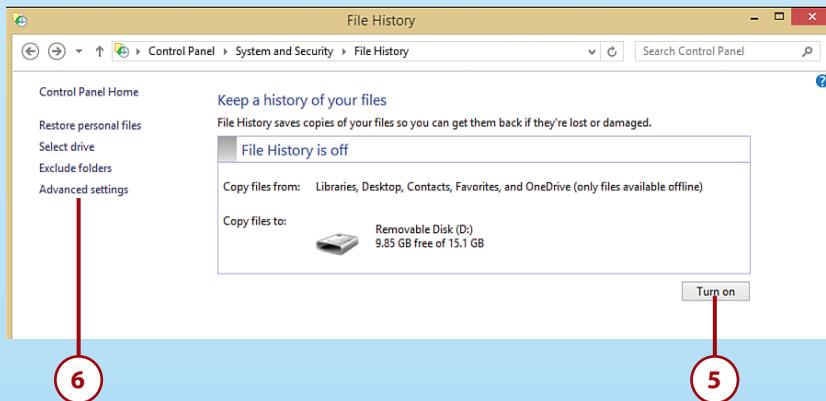
Windows has a backup feature called File History that can be set up to automatically back up your entire computer or specific libraries and folders stored on your computer's hard drive. To set up this feature, connect an external hard drive to your computer and then follow these steps:



- 1 From Desktop, open File Explorer from the Taskbar.
- 2 Click on the Computer tab.
- 3 Click on the Open Control Panel icon.

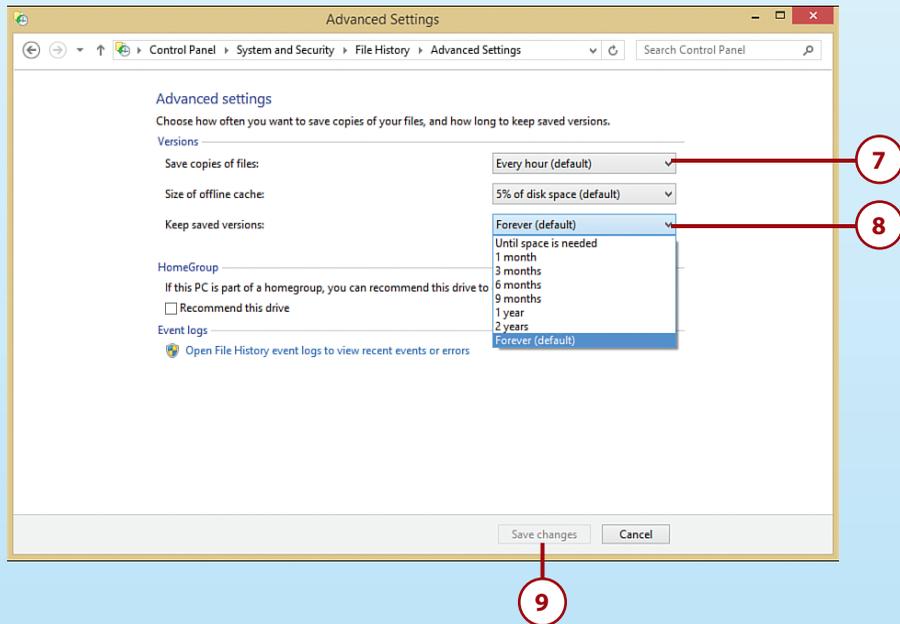


4 Click on the Save Backup Copies of Your Files with Files History option.



5 Click on the Turn On button.

6 Click on the Advanced Settings option.



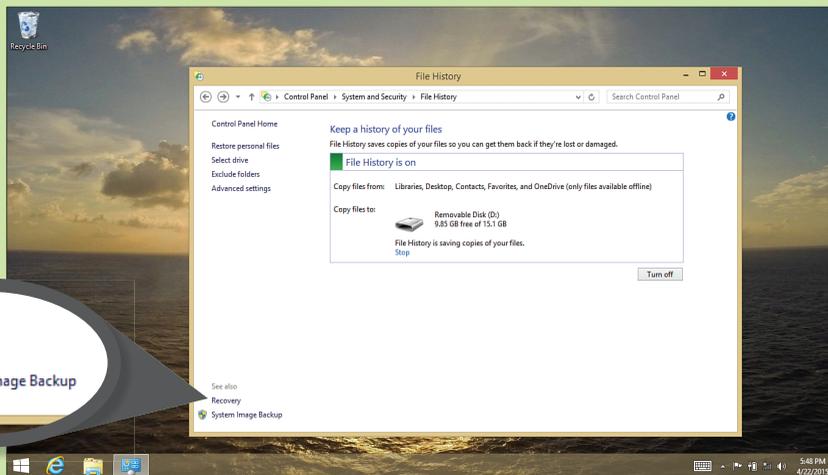
- 7** Select how often you want a backup for your files to be made. Choices range from every 10 minutes to once daily.
- 8** Click on the Keep Saved Versions option to determine how long you want files kept. Ideally, choose the Forever (default) option. This requires more storage space on your external hard drive but ensures that all files (including photos you may delete in the future, as well as current ones) remain accessible as part of your backup.
- 9** Click Save Changes and close the Control Panel window. The File History feature is now turned on and active and functions in the background, as long as the external hard drive is connected to your computer. (Not shown.)

>>>Go Further

CREATE A SYSTEM IMAGE BACKUP AND RECOVERY

To create a complete backup of your entire PC, from the File History window, click on the System Image Backup option displayed in the lower-left corner of the window.

Next, choose the storage location for your backup (which is your external hard drive) and then follow the onscreen prompts. Instead of choosing an external hard drive, you can also opt to store your data on DVDs (if your computer is equipped with a writable DVD drive) or on a network location of your choosing. Based on how much data needs to be saved, the backup process could take up to several hours.

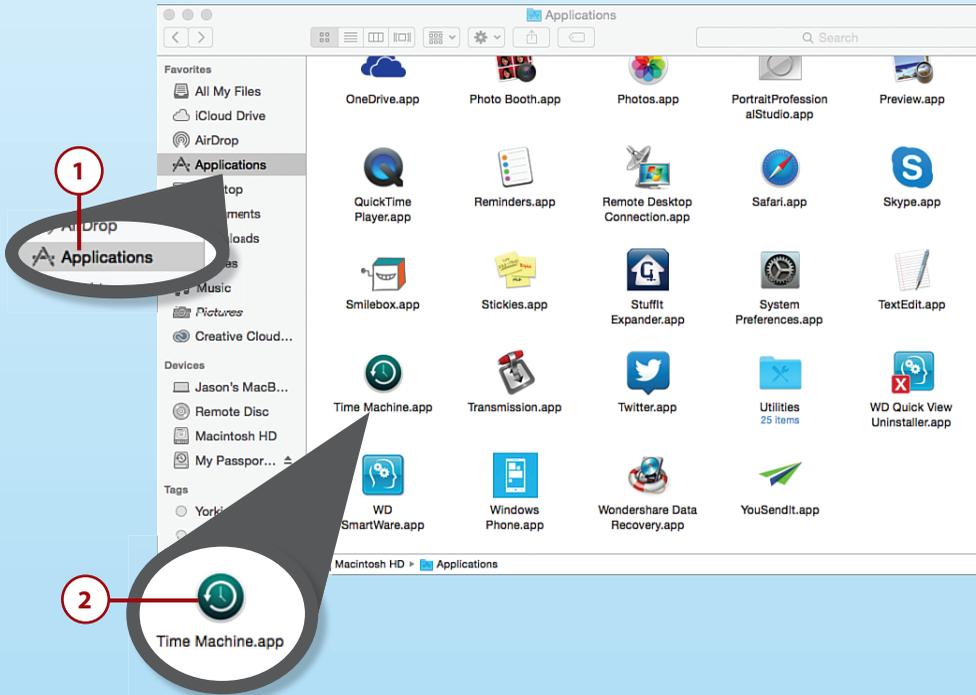


If and when you ever need to recover data stored as a backup file using File History, click on the Recovery option displayed in the lower-left corner of the File History window. It's also possible to access the external hard drive, open the File History folder, and then access the specific backup files (photos) you want or need.

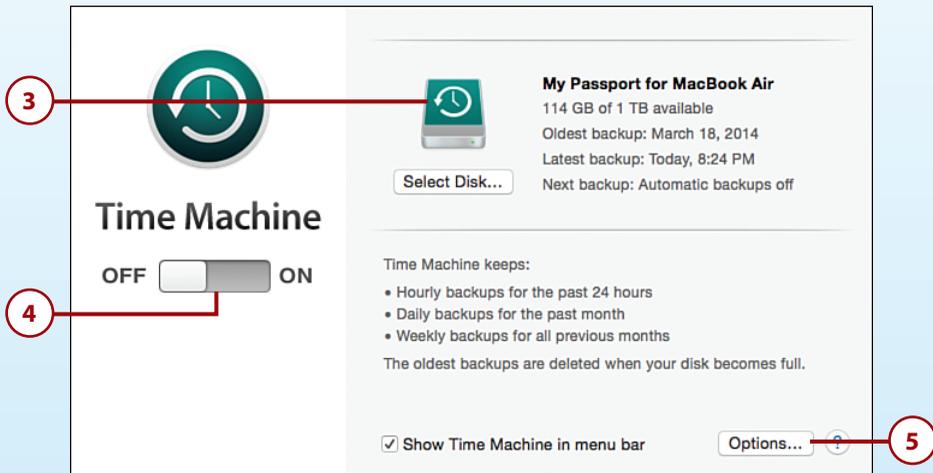
Many third-party software companies make easy-to-use, comprehensive, and customizable computer and data backup solutions for Windows PCs that work flawlessly with an external hard drive. You can find these by visiting the Windows Store and in the Search field entering the phrase "Data Backup Software" or "Photo Backup Software."

Set Up Your Mac to Back Up Automatically

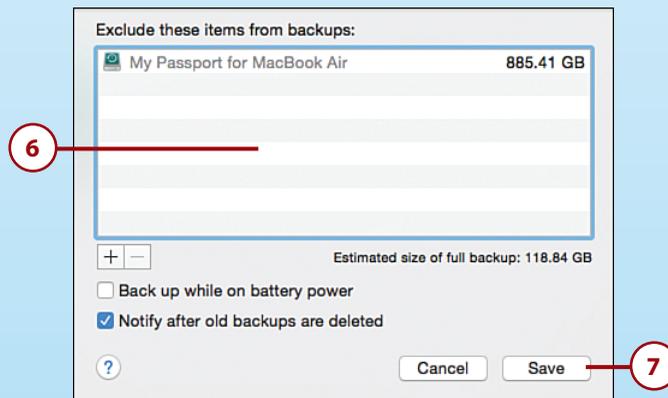
Your Mac has a feature called Time Machine that enables you to automatically create and maintain a backup of your entire computer (or specific folders you select) using an external hard drive. To activate and use Time Machine, connect an external hard drive to your Mac and follow these steps:



- 1 From the Finder, access the Applications folder.
- 2 Scroll down to the Time Machine icon and click on it to launch the app.



- 3 Click on the Select Disk button to choose your external hard drive.
- 4 Click on the Time Machine virtual switch to turn on and activate the auto backup feature.
- 5 Click on the Options button.



- 6 Choose to exclude specific folders, drives, and other content from the auto backup process. (You can later remove options from this list, after adding them.) Click on the "+" icon found in the lower-left corner of the window to add specific folders or drives that should not be backed up using Time Machine. Choose the specific folders or drives, and then click on the Exclude button.
- 7 Click Save and close the Time Machine window.

More on Time Machine

Once you set up Time Machine and activate it, this feature works in the background to maintain your backup files (an icon appears along the top of the screen), as long as the external hard drive remains connected to your computer. If you're using a notebook computer, you can connect an external hard drive at your convenience and then manually initiate the backup process, if necessary.

Time Machine can also now be set up to automatically update the backup files with new or changed content anytime the external hard drive is connected to a computer.

To manage your Time Machine backup, or retrieve your backed-up files later, click its icon. In the window that appears, to initiate a manual backup, click on the Back Up Now option. To access previously backed-up files, click on the Enter Time Machine option.

For more information about how to restore or retrieve backup content stored using Time Machine, visit <https://support.apple.com/en-us/HT201250>.

Backing Up Your Smartphone or Tablet

When it comes to backing up your smartphone or tablet, you have two primary options. First, you can connect your mobile device to your computer using the supplied USB cable, and then use the provided software to create and maintain a backup of your mobile device's contents on your computer (within its hard drive or on a hard drive connected to your computer).

iTunes Sync Is Used to Back Up Your iPhone or iPad

Apple's iTunes Sync feature, which is built in to your mobile device, as well as the iTunes software for the Mac or PC, are used to create and maintain a backup of your mobile device by connecting it to your computer using the supplied USB cable. This can also be done wirelessly if the mobile device and Mac or Windows PC are connected to the same home wireless (Wi-Fi) network.

To discover how to use iTunes Sync to back up your mobile device to your computer, visit <https://support.apple.com/en-us/HT201253>.

The second backup option is to use your mobile device's Internet capabilities and have it maintain a backup of your entire device or your important files (including your photos) using an online service.

iOS mobile devices (the iPhone and iPad) can create and maintain an online backup using the Apple iCloud Backup feature. The iCloud Photo Library feature can be used to back up your entire digital photo collection. (See Chapter 10, "Sharing Photos Online," for more information about iCloud Photo Library.)

Set Up iCloud on Your iPhone or iPad

To set up iCloud functionality on your iPhone or iPad, launch Settings, tap on the iCloud option, sign in to your iCloud account, and then turn on the iCloud Drive, iCloud Photo Library, and iCloud Backup features.

Android-based mobile devices can be set up to automatically use Google Drive to create and maintain an online backup. To set up this feature, launch Google Drive from your Android-based smartphone or tablet's Apps screen.

Both iOS and Android-based smartphones can also use other third-party cloud-based services, including Dropbox, Flickr, or Microsoft OneDrive for image backup purposes. To do this, the proprietary app for that service must be loaded onto your mobile device, and you need to set up an account with the service you select.

Finding Online Backup Solutions for PC or Mac

When it comes to creating a backup of your photos online, you have many choices, including those mentioned in Chapter 10. For example, Apple iCloud, Dropbox, Google Drive, and Microsoft OneDrive, all make backing up and syncing images between computers and compatible mobile devices a straightforward process.

With so many different cloud-based image backup options available, it's best if you choose one that meets your needs and then stick to using just that service, by creating a single account linked to all your computers and mobile devices.

That way, when your photos are backed up on that service, you can access them from any of your Internet-enabled computers or mobile devices.

After you decide which cloud-based photo backup service to use, follow these steps:

- 1 Download the appropriate software or mobile app for that service on each of your computers and mobile devices (if the required software or mobile app isn't already preinstalled).
- 2 Set up a free account with the service of your choice. Your free account includes a predetermined amount of online storage space. If you need additional online storage, a monthly fee applies.
- 3 Using the software or mobile app for the online service you select, use your account username and password to sign in to that service on each of your computers and mobile devices separately.

You Need Only One Account

You need only one account for a service, but you must sign in to the service separately, using the same username and password, from each computer or mobile device you are using it with.

- 4 When applicable, set up the online service to back up and sync all your digital images, or images stored within specific folders/albums that you preselect.
- 5 If you want to share images from specific albums or folders with other people, you can do this using the service's sharing feature. Keep in mind that when you choose to share specific images or albums/folders, all your other content stored on that service remains private.

The following list includes information about four cloud-based services that you can use to create and maintain an online backup of your entire digital image library (or the albums you deem as most important):

- **Apple iCloud Photo Library**—If you're a Mac, iPhone, or iPad user and you turn on the iCloud Photo Library feature on each of your computers and mobile devices using a single iCloud account, one complete image library, with all your images (in the albums to which they're assigned), automatically

is backed up and synced online and accessible from all your computers and mobile devices. The required software is built in to the operating system for the Mac and iOS mobile devices. To use iCloud with a PC, first download the free iCloud for Windows software from Apple's website (www.apple.com/icloud/setup/pc.html).

Take Advantage of iCloud Drive

If you want to create a manual online backup of image files, the iCloud Drive feature can also be used. When turned on, iCloud Drive is displayed in Finder as a storage option. Simply drag and drop selected images or album folders to iCloud Drive. Internet connectivity is required.

- **Dropbox**—Regardless of what type of computer or mobile device you're using, free Dropbox software can be downloaded and installed on your PC, Mac, iPhone, iPad, or Android-based mobile device, and it can then be used to back up and sync your digital image library so it's accessible from all your computers and mobile devices. To set up a free Dropbox account and download the required software, visit www.dropbox.com.
- **Google Drive**—If you're an Android mobile device user, your smartphone or tablet comes with the Google Drive app preinstalled. All you need to do is set up a free account (or use your established account) to have this app automatically back up and sync your photo library. Google Drive software is available for PCs and Macs, while an optional Google Drive app is also available for the iPhone and iPad. Visit www.google.com/drive to download the required software or mobile app.
- **Microsoft OneDrive**—If you're a Windows PC user and you activate Microsoft OneDrive, anytime you add photos to the Pictures Library on your PC, they sync with your online-based Pictures Library automatically. Microsoft OneDrive software can also be installed on a Mac or iOS mobile device, so the service can be used with non-Windows-based equipment as well for backing up and syncing images between all your computers and mobile devices. The OneDrive software comes preinstalled with Windows but can be downloaded and installed onto Macs as well by visiting <https://onedrive.live.com>. (OneDrive apps are also available for iOS and Android mobile devices.)

It's Not All Good

Internet Access Is Always Required

The biggest drawback to using a cloud-based service to back up your digital image library is that to create and then maintain the backup, your computers and/or mobile devices require Internet access. If no Internet access is available, you won't be able to access your images until the computer or mobile device you're using reestablishes its online connection.

Also, a slow internet connection will make backing up a large number of high-resolution digital image files a potentially time-consuming process.

Another potential drawback is that as your digital image library grows (because you've taken more and more photos), your online storage space needs increase. Ultimately, regardless of which service you choose, chances are you need to pay a monthly or annual fee for additional online storage space.

On the plus side, as long as the computer or mobile device you're using has Internet access, you can access your digital image library from almost anywhere in the world, whenever you want. Plus, if the computer or mobile device you're using isn't your own, and is not linked to your online account, you can still visit the website for that service, log in using your username and password, and gain access to your image files.

One benefit to using a cloud-based service to back up and sync your images is that unless you instruct the service otherwise, all your image files are stored online at their original resolution.

Many photo sharing services, as well as social media services, automatically reduce the resolution and file size of your digital images to conserve online storage space. Anytime you're using an online service for online backup and/or archival purposes, you definitely want all your digital image files to be retained at their original resolution and file size.

Set It Up, But Don't Forget It

Typically, once you set up a backup option for your digital images just once on each of your computers and mobile devices, it continues to work automatically and behind the scenes until you manually make changes or turn off the backup option.

Don't take this for granted, however. Get into the habit of periodically checking your backup files, particularly for your most important photos, and make sure the files are intact and up to date. This way, if something does go wrong with your computer or mobile device, you know your photos are safe and can be restored as needed in the future.

Knowing that a reliable backup of your photos exists, on an external hard drive and/or online (or using another storage medium), this should give you the confidence to experiment more using your camera, as well as with whatever photo editing and enhancement software or mobile app you select.

Feel free to experiment with various features and functions as you're working with your images, tap your creativity, and strive to build upon your digital photography skills. If all else fails, you can always refer to your backup files and retrieve the original version of your images.

Now that you've read this book, with just a bit of practice, your photos will begin looking more professional as you take them, and you'll be able to do so much more with the digital images after they've been shot when it comes to viewing, editing, enhancing, printing, and sharing them.