

Digital Photo Archiving: Keeping Your Images Safe

by Photographer Raymond Klass

For all the convenience and capability the digital revolution has brought to photography, it has not made securely archiving images any simpler than it was before. With slide or negative film, things were relatively straightforward – store your chromes or negatives in archival plastic sleeves, out of direct sunlight, in a dry, cool location, and you were pretty well set. Now with digital, we all of a sudden have RAW files, small JPEGs, large TIFFs, multiple copies, different versions, and a myriad of cables, hard-drives, CDs, DVDs, and does anyone still have a drive that fits those ZIP or JAZZ disks?

Digital technology has certainly given us as photographers the ability to work our images in new and exciting ways, but it has also made the process of making sure we have a copy of our most-important, most-valuable, creative works more difficult. Unlike the simple storage of film, there is no one-process, no one-solution that will fit every need. Rather, there are some basic guidelines that help us to insure that our images will be safe and secure for years to come.

The first step to making sure your photographs are well backed-up, is to have a simple and transparent filing scheme. The more complicated the program or the organization structure, the more difficult it will be to know where all your images are located, and whether they've been adequately protected. It sounds like a simple step, but if you have files spread in hundreds of folder, across dozens of drives, CDs, DVDs, and perhaps even across both your laptop and desktop computer, it can be a monumental task to simply determine where all of your images are, much less if they've been backed-up to another drive.



There are several programs that can help you manage your files in a simple way. Most notably Adobe Lightroom and Apple Aperture are popular choices for organizing one's photo database. In addition, many find that loading their images into a logical folder structure and using a file browser like Adobe Bridge is the right solution for them. Regardless of what software you choose, a key piece in this puzzle is having adequate disk space to store your files without having to maintain an undue multitude of external hard drives.

Part of the solution to adequate disk space is ruthlessly editing your images, and eliminating files that are duplicates or are technically or aesthetically inadequate. By not keeping every shot you've ever taken, you will decrease the storage space you need tremendously. It will also make it easier to return to your best photographs, when you don't have to scroll through all of your rejects.

Once you've organized your files into logical folders and eliminated the clutter, it is time to think about

keeping those good shots safe. There are a lot of different options for saving your data, but only a couple that you should be interested in. Your photos should be stored on a different drive than the one you use for loading programs and running the operating system of your computer. For laptop users, this is typically an external drive. For desktop users, this might be an external drive, but it also could be an internal drive installed in your computer's extra drive bay. The key concept here is that using alternative drives for your image storage enables you to expand your storage capability as you need more space. It also separates the drive that holds your images, and the drive that runs your programs, creating a faster overall system.

There are 3 basic technologies that separate external drives, USB, Firewire, and eSATA. eSATA is by far the fastest, followed by Firewire 800, then Firewire 400, and lastly USB. For our purposes, USB and Firewire 400 are both quite slow for handling the large files created by today's digital cameras. eSATA is a great option if your computer has the capability to use this relatively new technology, otherwise Firewire 800 is a good choice.

To illustrate the differences between these technologies, I used one of my external hard drives that offers all four connections, and clocked the transfer speed using a special program. I don't have an eSATA connection, so for this comparison I just want to note that typical eSATA rates hover



around 110 MB per second. USB was the slowest at 30 MB per second, Firewire 400 was close at 34 MB per second. Firewire 800 was by far the fastest of the three I tested at 75 MB per second – more than double USB or Firewire 400.

I know it might sound like your old USB or Firewire 400 drives are plenty fast enough, but I know from experience a little speed makes a big difference. I recently transferred about 70,000 images from a large server using Firewire 400 technology, the 1.6 TB transfer took a mere 12 hours to complete – with Firewire 800 I would have been done 6 hours earlier!

When purchasing drives, look for those that offer the newer eSATA connection in addition to the fastest option that your computer currently uses. That way if you upgrade your computer, the drive will also be capable of operating through this newer interface.

In terms of storage space, I'm a firm believer that you can never have enough. With 6 TB (4,000 GB), I'm already starting to run out of space. If you're planning to start taking videos, realize that video clips greatly multiply the amount of free space that you will need. Depending on the size of the video being captured, and the compression used, video files can exceed 1 GB per minute.

With external drives, it is easy to upgrade your storage space in logical increments, though I wouldn't recommend buying a drive smaller than 1 TB for your long-term archiving. Remember that too many drives can make it difficult to keep track of your files.

The basic concept behind keeping your backups safe, is always having at least 2 copies, and preferably 3. Recent developments in consumer hard drives have made this much easier and more cost-effective. Several companies have come out with drives that automatically copy your data onto 2 drives, creating mirrors of each other. The advantage here is that if one of the drives fails for whatever reason, your data is still safely stored on the second drive. This technology is called RAID 1, and has been used for many years in large institutions and places like hospitals, where losing their data to a drive failure would be unacceptable. Until recently, this technology was very expensive.

RAID 1, also sometimes called "mirroring" should not be confused with RAID 0, often referred to as "striping". There is a fundamental difference between these two designations – just remember that RAID 1 provides the security photographers need for their images.

There are several companies that offer affordable and reliable RAID 1 solutions. 2 companies stand out at this point for both quality and price. G-Technology offers a device called the G-SAFE drive, and Newer Technology offers a RAID drive called the Guardian Maximus. Both offer RAID 1 protection, cooling fans to promote the life of the hard drives, and automatic rebuild, should one of the disks fail.

A RAID is great to have attached to your computer, but for total security, we must take into account the possibility of fire or flood, both of which could easily compromise both drives at once. I also use a second external drive, which is stored off-site, and updated

regularly (monthly). This drive acts as a last resort in case of natural disaster or robbery.

With drives in two locations housing your most precious files, you should be safe and secure in knowing that your images will be accessible for years to come. Today's newest technology makes backing up your images a simple and automated process. By starting off on the right foot, securing your photographs can be a nature part of your workflow.

