Backup

The final step in your digital workflow is backing up your photos. Working out a backup routine is vital to any photographer and something that you must carefully think through to ensure there are no 'weak links' in your chain.

We had in module three explained the importance of buying good incremental backup software, the risks to your data and the main types of storage options available.

What we will do in this section is explain the pros and cons of each of these storage options and then work through a suggested backup routine for you.

Storage Options:

Hard Discs – these now have huge capacity (1TB, 2 TB and 3 TB drives are readily available) and provide cheap reliable storage. Data is written to them very quickly and they are easy to physically store. They really don't have any major cons bar the fact that as they are an electrical device with internal moving parts and as such will eventually fail.

Optical Storage – CD, DVD, BLU-RAY and other Optical Media – Very limited capacity, slow to backup as optical drives can take hours to write data to and can also be prone to errors. Avoid.

Tape Backup – Old, slow and limited in capacity and can also be prone to errors. Avoid.

Online Storage in the Cloud – In principal a great idea as you buy storage space for data 'in the cloud' and a company will guarantee that your data is safe. However, and it's a big however all data that you store in the cloud needs to be uploaded via your internet connection. Now if you just wanted to back up a load of documents and standard office files this is not an issue as a sole trader may only have a few 100 Mb's of information that needs to be stored online. For a photographer with the limited broadband speeds we have today uploading huge amounts of large photo files is probably not going to be practical. For example if you had a 1.5Mb upload broadband connection (bear in mind many internet connections work much slower uploading than downloading) 10Gb of data will take about 14 hours to upload !! You might think that 10Gb of data is a lot of information but bear in mind using RAW and or TIFF file Formats gobbles up data storage. 1000 RAW files from a typical 16/18 megapixel DSLR can take up circa 25GB of data storage and it would not be unusual for a photographer to shoot 1000 photos at a

wedding for example. Backing up 25GB of data then over your 1.5Mb upload broadband connection could take a huge 35 hours !!

In short then the optimum storage medium for photographers currently is the hard disc. While technologies are constantly evolving it is hard to see any other technology replacing the hard disc in the short to medium term future. The most likely one is probably cloud storage which in time will become practical once we start to see affordable very high speed internet connections (100mb + upload).

The Golden Rule:

Data stored on any physical device is at risk. Either the device or storage media can fail or the physical device can itself be damaged lost or stolen. You therefore must have at least two copies of each set of data at each location that data is stored. Now assuming that you have two separate physical locations where you store date (some photographers may use a third…) you will have to have four copies of each set of data to mitigate against data loss.

If using hard discs for your data backup, this means for example having data saved across 4 separate hard discs split over two physical locations. I.E Two hard drives per location.

Why not only use two hard discs, one at each location? Would this not suffice? – NO!

Why? Quite simply imagine a situation where one of your locations is damaged most likely by fire or another major event. This instantly destroys one half of your backup and if you only had one hard disc at each location you are then in a dangerous position where your data is only stored on one single hard disc and what if this failed at this inopportune moment?

A Suggested Backup Routine:

Let's look at a typical professional photographer working on their own. What backup routine would you suggest?

Well the first thing to look at and understand is the difference between 'working' data and 'archive data'.

Working data is the current batch of photos that the photographer is working on. Normally these are edited and stored on a single main personal computer which is often

called the primary workstation. This PC will have either a large single hard- disc for storing photos or a more complex but more resilient RAID disc array which splits the data across multiple hard drives to insure against a single hard disc failing. As the physical capacity of this machine is limited older photos need to be moved off this workstation to archive storage. This then frees up storage capacity for use on other projects. The archive is usually nothing more than multiple hard drives.

Remembering our golden rule you need to have 4 copies of your working data (stored in two separate physical locations, two copies per location) AND 4 copies of your archive data (stored in two separate physical locations, two copies per location).

If you are using a RAID disc array this in essence is two seperate copies at location 1 (your studio perhaps) and you then need to make two incremental backups to two discs stored at your second location (location 2). If you are not using a RAID disc array you need to add a further incremental backup to a second disc at location 1 to keep within the golden rule.

A similar approach works for your archive backup although you are not using an incremental backup approach. You are simply copying a block of data from your working discs to your archive discs and then once you have confirmed the copies are okay by cross checking file counts and data size you can delete this data from your main working disc which in turn will update the incremental backups.

All of the above may appear to be very complicated but always remember the golden rule and you will (barring an extremely unlikely chain of events) never find yourself in a situation where you have data loss.

Backup frequency is important as well and many photographers will back up their primary workstation on a daily basis to ensure that all current work is secure.

Transmission of Digital Images

Once you have created your digital images one of the things you will need to do with them is digitally send the images to another location or client.

There are 4 main ways of sending your digital images:

Physical Transfer on Storage Media: This is where you save your finished digital image onto storage media, typically a USB memory key or hard disc drive and physically send this to your client or recipient. This is suitable where perhaps you have many large digital images which are impractical due to slow internet connections to send via any of the below methods.

Email: Simply attach your digital image to an email. Please note this is really only suitable for small digital images (ideally sub 7-8MB) as many email systems will reject emails with large attachments.

FTP: File Transfer Protocol is a computer protocol which allows via the internet sending of large or multiple files (such as digital images) from one internet connected computer or server to another internet connected computer or server. Very reliable and ideal for large transfers. You need to download an FTP client piece of software to your PC or MAC (the software is available free of charge) and then input an FTP server address and password (this is where you are transferring to) and the software then transfers the files. Note for large files you will need a good quality high speed internet connection with high 'upstream' speeds.

Web Based File Transfer Systems and Services / Cloud Storage: In essence a more user friendly version of FTP where typically you use a third party web based storage service. You upload your digital image to a webserver in the cloud via your web browser and then you can provide access to this cloud storage to your client, either via a secure unique web link or via a password protected login. They then download the digital image. Again you will required a high speed internet connection to ensure timely uploads of large images.