

Back up options for your images

1) Backing Up

- a) Why back up your data? Because so much can go wrong.
 - i) For example - physical damage either to your home – fire, flood etc., or to your computer system, either by dropping, liquid accidents or simple fatigue failure
 - ii) Virus, ransomware and malware damage.
- b) Use one of the many backing up applications to keep your system safe. You will need to make your choice of whether to back up your entire system or just your data, so just a few things to consider:
 - i) You can always get another copy of the operating system Windows 10 etc. All your applications are probably available for re-load on-line.
 - ii) But eMails can be a problem particularly if you use a browser independent system, the storage area is often inaccessible and therefore not available for you to copy.
- c) What Back-Up applications are available.
 - i) SyncBack Free
 - ii) EaseUS ToDo Backup Free
 - iii) Cobian
 - iv) Paragon
 - v) FBackup ...the list is long.
- d) How much to back up
 - i) Consider doing a system backup – Just once if you have no system dependant data, or perhaps monthly (you choose) if you do have data that is held in the system.
 - ii) Your data – back up regularly. Very personal choices. I backup onto immediately I load my images to secondary HDD storage, then run my full backup process on the first Sunday in every month.
 - iii) I also have a full data copy on my son's home system which I top up with a portable HDD whenever I visit – usually every month.
 - iv) Whatever you choose to do. Your backup application will require that you have a preferred option for the medium on which you store your data and that again is a very personal choice which will be decided by security, cost, longevity and availability.

2) Home storage options.

a) DVDs

- i) 4.7 GB (single-sided, single-layer – common) Cost 0.20p to 0.25p per disc
- ii) 8.5 GB (single-sided, double-layer)
- iii) 9.4 GB (double-sided, single-layer)
- iv) 17.08 GB (double-sided, double-layer) Cost 0.80p approx per disc
- v) Up to four layers are possible in a standard form DVD

b) Blu Ray Discs

- i) A regular Blu-ray disc can hold 25GB, and these discs are quite sturdy. While they may not be as suitable as hard drives for data which you access frequently, they are ideal for storing the most precious of memories.
 - ii) Blu-ray discs were introduced in order to facilitate the storage and playback of high definition video. Blu-ray discs are read with a blue laser. This is in contrast to CDs and DVDs which are read with a red laser.
 - iii) Since the wavelength of blue light is shorter than that of red light, more data can be packed on to a Blu-ray disc since the blue light can be used to 'resolve' smaller areas of data on the disc.
 - iv) What this means is that the physical areas where data is recorded on the surface of a Blu-ray disc are comparatively smaller than CDs and DVDs. This means that more data can be recorded using the same surface area with a Blu-ray disc than with the other optical disc formats. As a result a standard Blu-ray can store 25 GB.
 - v) There are Blu-ray discs capable of holding up to 100 GB of data, with larger capacity versions planned.
- c) **INCIDENTALLY:** Facebook's data is usually stored on hard drives or flash storage. It isn't cost effective to keep older data on hard drives or flash storage however, so Facebook developed a storage system which makes use of Blu-ray discs.

3) External HDDs

- a) There are two types of hard drive SATA and IDE (serial and parallel respectively). SATA drives at 5Gbs are 5 times faster than IDE drives. So 50 x 20Mb images (total 1 Gb) will take about half a second to download to a SATA drive connected to a USB 3.0 (or Thunderbolt) port as opposed to 25 seconds using an IDE connected to a USB 2.0.
- b) That's a difference that is crucial if you're using the drive as your working drive, but of little consequence if it's being used for backup purposes.

- c) There's not too much difference in price. 1TB external will set you back about £35 to £40 (SATA or IDE) and 2TB about £55, so getting as large a drive as you can afford gives you much better storage space for your money.
- d) A word of warning. HDDs do fail!
- e) I've broken two of them by walking away with my laptop whilst still connected to an HDD. And I've found that they don't like being taken for walks !

4) Network Hard Drives

- a) These are getting increasingly popular as more and more households get a full networking plan. The modern 'smart home'. It's a good way of spending a lot of money if that's what you like to do!
- b) There are wifi only ones made by Verbatim and ones that connect to your broadband so you can only access them when you have connectivity. Western Digital 4Gb version costs £150.

5) Summary for Hard Drives

- a) As mentioned previously, these devices can fail. I personally have 2 x 4Tb units. One resides at my son's home and on a (roughly) monthly basis, I take a small HDD with me with the current month's updates and update the backup.
- b) I have a working version of the latest and previous months on my PC mirrored by the HDD and at the end of the month I have an update session.

6) The Cloud

- a) Issues:
 - i) How much does it cost,
 - ii) how secure is it and
 - iii) how stable is the holder of your data as a company.
- b) The easiest to deal with is how much it costs.
 - i) If you have an Apple iPhone, or computer you get 5Gb free, then in various stages you can buy more on a monthly basis to an advertised limit of 2Tb for £9.99 per month
 - ii) If you have a Google Pixel phone you can store all your phone photos free without any limit. As a Google client not on a Google phone, you get 5GB free on which to store your photos (at full res.) your emails, documents etc. If you want more you can pay £9 per month for 2Tb and there are larger options.
 - iii) Note that if you have a Google account and are prepared to reduce the size of your images to 2048 x 1536 max, they are free for as many as you like.

iv) Some companies, like Dropbox exist only to store data and after the minimal freebie you pay a monthly fee. Examples:

(1) Dropbox Plus £7.99 for 2TB and Dropbox Professional £16.58 for 3TB

(2) IDrive: Personal plans 2TB for \$50 and 5TB for \$100 per annum

(3) pCloud: £5.00 monthly for ½TB and £10.00 for 2TB

(4) MEGA €5 for 200Gb €10 for 1TB, €20 for 4TB, €30 for 8TB

(5) Google £52.12 for 2TB £74.62 for 5TB

(6) Box does an unlimited storage option for £12 per month!

(7) And so it goes on...

c) Now for the How Safe issue.

i) Before entrusting your sensitive data to third party storage facilities, you have to know that your information is going to be stored safely and reliably. And is it? The simple answer is yes. Despite scare tactics devised by hackers to undermine consumer perception of the cloud, cloud storage remains one of the safest ways to store your data today.

ii) To keep data secure, the front line of defence for any cloud system is encryption. Encryption methods utilize complex algorithms to conceal cloud-protected information.

iii) To decipher encrypted files, would-be hackers would need the encryption key. Although encrypted information is not 100% uncrackable, decryption requires a huge amount of computer processing power, forensic software, and a lot of time. Can it be done? Yes, the only way to keep your data safe for certain is to lock it up in a safe beneath the ground.

iv) That being said, your cloud-stored data is generally safer than your locally stored data. Cloud services utilize more complex security methods than the average computer owner could devise, giving your cloud-stored data an added level of protection.

v) Personally, I subscribe to Google Drive for 2TB and all my RAW files are on the cloud. I reckon that I could always re-edit files if I needed to.

vi) Speaking of RAW files. If you don't use RAW files and all your images are jpeg, then you could consider opening a FLICKR.COM account. Storage is limited to 1000 images of any size up to 200Mb for free! I have a Pro Account with Flickr for £40 per year and can store unlimited images. I've got thousands on there 90% of which are not publicly visible. I have scanned all the family's ancient and historic prints and slides and downloaded them to Flickr then given each family member the authority to look at them. It's not in daily use, but I know that many relatives make use of this facility – and my little home is not cluttered with old photos. Yes, I ditched them!!

d) Finally, just a cautionary word.

- i) You may find special offers for using cloud options from companies you have never heard of. They may be good and they may not be. Do make a lot of enquiries first with Photo magazine sites etc. and see what the trade thinks.