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Storage Solutions for the Professional Photographer

Today's professional photographer has a myriad of digital tools at their disposal to create content more easily and with better results than ever before. Gone are the days of the required lightroom, chemicals and expensive, specially treated paper photographers used to produce photos – the digital revolution changed all that. Now, results are instant - thanks to digital cameras and onboard digital storage - and photographers do not have to develop photos in order to view them.

So, if you're an experienced professional or recently new to photography, this article will talk about the tools you need to make your job easier and achieve the best results – quickly and efficiently. We will assume that you have already chosen the best digital camera(s) for your needs and will instead focus on digital storage; how to manage your library of work, edit and optimize images, and how to archive and share it with others. In this article we will explore:

- How much storage does a professional photographer require?
- How to backup and store your work
- On-board flash storage, post-production storage, and portable storage designed especially for a photographer's workflows
- HDDs vs. SSDs – which are best for what tasks?
- Considering ruggedized equipment for outdoor or on-location shoots

Understanding Photo Storage

- **How much storage does a professional photographer need?**

If you ask most photographers, they will say you can never have enough storage. That's because photographers want to keep most of their work, and not throw it away. HDDs (traditional hard drives) are the most cost-effective way to store lots of files, since they come in massive capacities (up to 14TB in a single drive). And there's also SSDs (solid state drives) that transfer and access data faster than HDDs but cost more per TB than HDDs.

As you fill up drives with your work, they become archives in themselves and you can organize and store them as you see fit. When you need more storage, simply buy more or erase existing storage so that you can fit newer work or keep your drives full as a physical backup of your work.

- **SD and microSD Cards**

Old-fashioned film-equipped cameras have become outdated and have given way to digital cameras that can store hundreds or even thousands of high-quality photos using an on-board flash memory card that is removable. These **SD and microSD cards** come in a variety of speeds and capacities – make sure to choose one that is compatible with your device. [See our article on SD and microSD cards here.](#)

- **Offloading and Backing Up Your Work**

The removable flash storage in your camera starts to fill up as you take photos, and the amount of photos you can take depends on the photo resolution you set - 4K (or Ultra High-Definition) photos will fill up a card faster than SD (Standard Definition) photos, because their file size is much higher. At some point your flash card will fill up and require offloading or erasure to make room for more photos.

Most professional photographers will want to review their work on a laptop, tablet, or smartphone and decide to keep good photos and delete bad ones. Once you have all the photos you want to keep, you need to store them on digital media that will preserve them reliably, while enabling you to edit and share them with colleagues. There are several ways to do this:

- **You can keep the photos you want on the SD card**, creating an archive (kind of like keeping the 'negatives'), and then insert a new, or blank SD card into your camera to start shooting again.
- **Choose a USB portable drive** that will give you the flexibility to transport your work between devices - like from a laptop to your studio or home workstation
- **Use a USB thumb drive** – that works like a portable drive, but with limited capacity
- **Multiple-drive RAID devices** that are portable and fast when you're dealing with massive amounts of data, like 4K photos or thousands of photos
- **Cloud storage** lets you upload to a remote server, and allows you to access your files from wherever internet is available
- **Use a Wi-Fi enabled drive** that will offload photos from your Wi-Fi equipped camera directly to the drive as you shoot

A Variety of Storage Options

Today's professional photographers can choose from a variety of storage form factors, capacities and speeds. Let's take a look at some of the most popular:

- **Portable Hard Drives for Photographers** are a popular choice because they are versatile and are available in a variety of capacities. Most are HDD-based and equipped with a USB interface - make sure to check which USB version is right for your computer.
 - The most common is USB 2.0 (older) and USB 3.0.
 - Newer computers have USB-C or Thunderbolt connections which deliver speeds much faster than USB 2.0 and 3.0
- **Solid State Portable Drives** deliver faster speeds than HDDs, but presently in lower capacities and share the same types of USB interface as HDD portable drives
 - These drives are great for editing on the SSD itself, because of their fast response times
 - Solid state drives can be more resilient in the field because they have no moving parts and can withstand the occasional jostle or short drop.
- **Portable RAID devices** group two or more HDDs or SSDs to work together in a specially-designed enclosure to deliver massive capacities and speed.
 - Usually equipped with specially-tuned HDDs designed to work in an always-on RAID environment. Unlike standard desktop drives, these are resistant to heat and vibration.

The Professional Photographer's Storage Workflow

1. Setting up the Camera and Capturing Images

The professional photographer's workflow process begins with a quality digital camera. You have your choice between formats:

- Most pro photographers prefer to shoot in the **RAW format**. RAW images are uncompressed and use all of the data captured by the camera's sensor – so images are at maximum resolution and have a much higher file size than jpeg photos. RAW images must be edited and processed before they are ready for export – giving the photographer full control over exposure, color balance, resolution and more.
- The **JPEG format** is a compressed format that does not require any post-production work and is more common among casual photographers. Depending on your camera, you can determine in advance what color profile, compression, image resolution and white balance settings to use for the optimal results without post-production editing.

2. Transfer Images to Your Smart Device or Laptop

There are several ways to transfer images to your smartphone, laptop or tablet:

- Connect the SD/microSD/CompactFlash card to your computer, via a built-in card reader or by using a USB-enabled card reader connected to an available USB port
- Wi-Fi enabled cameras can offload photos directly to a cloud server or Wi-Fi enabled storage device and can bypass an internal SD card entirely.
- Use your computer's interface to drag wanted files on to a connected storage device and copy or move them to the device, while deleting unwanted photos and freeing-up space on the card to accommodate new photos.
- There are programs like Apple Photos, Adobe Lightroom, and Adobe Bridge (among others) that can help automate the process and help keep your files organized and tagged properly.
- Use an external portable drive or NAS array to backup and archive the photos you want to keep, making a backup of your work is the best way to prevent loss or accidental deletion.

3. Edit and Process Images

Once you have offloaded your images on to your device, it's time for a quality review. Go through each photo and edit as necessary – making color corrections, retouching, exposure fixes, and more in your favorite photo-editing tool like Adobe Photoshop or Lightroom.

Photo editing can be a time-consuming process depending on what you want to correct in any given image. This step is crucial for separating good images from ones that you want to discard, or if you don't want to throw any images away, you can offload 'duds' onto a portable drive for consideration later on.

4. Organize, Backup and Archive

Once you have reviewed and edited your photos, you will want to sort through them, arranging them in folders, giving them thoughtful filenames, and using software like Adobe Bridge to tag and easily index photos into logical collections.

Of course, you do not want hundreds of photos taking up space on your computer and possibly slowing it down in the process, so creating an organized backup of your work is key to easily finding what you need later on. Consider using several devices to hold different collections for easy access:

- Thumb or Flash drives for limited amounts of data
- USB portable HDD or SSD drives for higher capacities
- Cloud or NAS storage devices for massive amounts of storage

5. Exporting Images

Whether you're preparing images for the web or print, you will need a way to export them. There are several ways to do this:

- For print purposes, you can copy your final images to a thumb drive or an SD card for easy delivery to a print studio. You can also burn them to a DVD or CD; however, this method takes more time to accomplish.
- Share your images on a personal cloud server and invite others to share, or if you have a lot of images, you can copy them to a portable drive for easy transport to a remote location
- Web images are usually lighter in size and can be emailed or uploaded electronically to a remote server – whichever way you choose, make sure to make a backup of your work in case something goes wrong with the transfer, or the file is accidentally lost or erased.

Photographer's Q&A

Q: What is the safest way to save photos?

A: The best way to save photos is on flash media or a solid state drive, simply because there are no moving parts in these devices to wear down over time or accidentally break. Traditional hard drives are reliable and perfectly fine for data storage (especially in large amounts), but SSDs and flash-based memory are the best storage devices for photos and have the advantage with faster access times and thousands of potential rewrites to the flash cells. Don't forget to always backup your work to a separate drive – it's the best way to safely preserve your precious photos.

Q: What kinds of storage would I need on a remote photo shoot?

A: When you're in the field, you want to be prepared to get your best shots quickly, and make sure they're safe until you can review and edit them. Storage should be ruggedized, weather resistant, portable, compact and bus-powered (draws power from the USB connection, and does not have to be plugged-in).

- SSD fits the bill here - with up to 2TB currently available in a portable, stand-alone device that is bus-powered, an SSD can go anywhere with solid state reliability. Choose a solid state drive that rates fast, has the capacity you need and is small enough to fit in your gear.

- Flash Memory – SD and microSD cards for your camera – you'll thank yourself for having extras on hand. As you shoot photos, these cards can fill up fast, so it's good to have a few spares so that you can keep shooting uninterrupted.
- Popular too, are multi-drive RAID arrays that are portable and can accommodate massive amounts of raw data quickly utilizing Thunderbolt technology, and also act as a server for multiple users back in the studio.

Q: Is it better to store photos on a CD or a flash drive?

A: Between the two, a CD has more potential for damage than a flash drive. Sure, both can be crushed or melted, but a CD is more fragile overall (remember the last time a music CD skipped on you, or a DVD wouldn't play?), and a scratch or accidental crack can render a CD useless.

USB flash drives and memory cards are generally more durable than CD or DVD media in the long run; the hard plastic or metal shell the media is encased in would have to be breached in order to get to the flash memory inside. While flash drives are limited in capacity, they are generally cheap; so, collecting many as 'mini archives' filled with your work can be a viable archival system.

Q: What kind of drive should I use to back up my photos?

A: Large amounts of photos, or photos that have large file sizes can eat up space on a hard drive quickly. SSDs are fast for file transfers but are limited in capacity and somewhat expensive per GB. Conversely, HDDs are lower in cost and reach higher capacities that SSDs currently do, so you can store more backup files while saving costs.

A portable drive is a good choice since it can be connected from one device to another to make sharing and syncing easy. Or, consider a central server like a NAS or personal cloud that you can fill with your work and access your files from anywhere in the world that has internet – these devices can act as a backup device and an active file server at the same time.

Q: Can I use an SSD to edit photos?

A: Yes...in fact any kind of drive can be used to edit photos (you actually use a computer or tablet app to edit the photos on the drive itself), but SSDs are a better choice because of their fast response times – especially when dealing with huge files like 4K or 8K photos. There's no need to compromise the drive space on your computer when you can edit directly from a connected drive – just make sure you choose a drive with plenty of capacity to accommodate your files with extra room for editing.

Q: What features should I look for when choosing a drive?

A: Most photographers want a fast drive that will store their files reliably while keeping them accessible for quick transfers. Look for a drive that:

- Has fast transfer rates – drives can range from transfer rates of Up to 480 Mbits/sec with USB 2.0; all the way up to 30 Gbits/sec with Thunderbolt 3 – choose a drive that has an interface compatible with your laptop or tablet
- Is portable and does not rely on a separate A/C connection for power
- Has enough capacity to do the job – data can fill up a drive quickly – make sure you don't find yourself throwing out files you want to keep because you don't have enough storage.
- A durable form factor that can withstand bumps and jostles in the field.