

Image File Backup And Storage Roundup

Portable Drives And Online Backup Keep Data Safe & Accessible

The digital image age has raised many questions and concerns about the safety and protection of precious image files. How do you back up memory cards on the fly? What if you need to access images not on your portable computer when traveling? Are there safe and reliable options other than hardware to back up all those digital images? And if we switch operating systems, is there a good way to transfer files between incompatible operating/file systems (namely, Mac to Windows NTFS or Windows to Mac OS Extended/Journaled)? We did a survey of a large number of devices that can help you handle your image files.

Portable Hard Drives/Card Readers (And Sometimes Viewers, Too)

One popular option for those who don't

want to lug their computer in the field, or on the road for that matter, are portable drives that feature slots that accommodate various memory cards for backups to a built-in hard drive, with most serving as card reader/writers. CompactFlash (CF) and Secure Digital (SD) support is most popular, followed by Memory Stick (MS), with xD-Picture Card trailing. Adapters may be needed to use cards that are not directly supported. Select devices let you swap out the drive, should the need arise.

A portable device of this kind proved to be a lifesaver on a trip to the Caribbean. At the time, I was only working with 2GB CF cards and before long I'd filled up the five cards I was carrying. So I transferred the files from each card to my portable drive and was able to start fresh. Of course, not everyone trusts their valuable images



A Few Caveats

Every portable drive should be treated like any external desktop drive. Be sure to eject the device following standard procedures recommended for your operating system to prevent corrupting data or crashing the drive. Whereas battery-driven devices will automatically shut down after a prescribed period, some USB/FireWire non-battery-reliant drives may remain fully operational when connected to a host computer even when the host computer is in Sleep/Standby mode. Others spin down and park the heads or mimic the host and truly go to sleep.

Increasingly, we're finding USB-powered drives come with a Y-cable. Normally, we only need to connect the mini-plug to the device and the standard USB plug into the USB port on the computer. But if that in itself does not deliver enough power, the Y-cable's secondary plug (with shorter cable and often identified with a tag) comes into play, being connected to a free USB port on the computer to provide the necessary power to run the drive. The downside to that, obviously, is that you're devoting two of the computer's USB ports to one device. Select devices may not operate via a USB hub. *In short, be aware of the specs before you buy.*

Online Storage

The old saying, "don't put all your eggs in one basket" goes for data backup as well. Despite our best efforts with desktop RAID drives and portable storage devices, an efficient and fairly economical route to take for insurance is an online "vault" (with complete data security). The following is a list of sites that I've found that may serve your purposes. I've only listed services from companies I've worked with in the past, although I haven't tested these online services personally. Some may provide limited free storage (say, 2GB) or a free trial period. But extensive storage (within limits) over time usually comes at some cost, varying with volume of data and features. To make this option cost-effective, you might want to store only JPEGs, not raw or TIFF files. Other websites may also provide the opportunity to market/license your photographs. **Note:** This should not be used as your only means of backing up data, as one never knows when a service will be discontinued, as we've seen all too often these days. Those I have listed are distinct from specific photo-sharing sites.

- Iomega iStorage (www.iomega.com)
- Mozy (www.mozy.com)
- Swiss Picture Bank (www.swisspicturebank.com)
- Fabrik Ultimate Backup (<http://backup.fabrik.com>)
- Memeo iDisk (www.memeo.com)

Key Features: Memory Card Back-Up Drives & Multimedia Viewers

Notes: (1) These devices are preformatted as MS-DOS (FAT32), making them cross-compatible with Apple Macintosh and Windows computers out of the box. To be recognized as an external drive, the device may need to be switched on first and some devices require a USB setting. (2) CF = CompactFlash, MS = Memory Stick, SD = Secure Digital, MMC = MultiMediaCard, xD = xD-Picture Card, USB-OTG = USB On-The-Go (an extended USB protocol requiring a special, often optional cable to connect to digital cameras and other devices). (3) Given that most are roughly the same size, it's safe to assume that these devices employ a 2.5" drive, unless otherwise specified. A 1.8" drive is generally more rugged and doesn't need added shock protection. (4) Evaluations based on sample products. Not all products were available for testing. (5) Sample memory card used in testing was a 50x Kingston Elite Pro CF card that contained 1.62GB of image data. Back-up times will vary based on card used and volume of data.

Device (Website)	Connectivity	Memory Card Slots	Display	Type & Features	Card Backups (Back-up Time)	Size & Weight	MSRP/Drive Size	Comments/Evaluation
Digital Foci Photo Safe II (www.digitalfoci.com)	USB 2.0	Three slots for CF, MS/Duo/Pro, SD/SDHC/MMC, xD	2" monochrome backlit LCD	Memory card backup: instantly recognized as external drive; card reader/writer recognized on PC but not Mac; user-replaceable Li-Ion battery; auto shut-off	One-touch card backup; assigns unique folder names; (back-up time: 5 minutes)	4.6x3x0.8" 9.6 oz	\$119/80GB \$149/160GB \$199/250GB	A simple and compact back-up solution: turn it on, pop in a card, and execute. Deduct points for a lack of on-board file management. Mac users deduct points for missing card read/write functionality. (Digital Foci also has multimedia devices with full-color displays.)
Epson P-7000/6000 (www.epson.com)	USB 2.0; A/V output; headphone jack	Two slots for CF, SD/SDHC/MMC, MS, xD	LED-backlit 4" TFT LCD (16 million colors)	Multimedia viewer/memory card backup: histogram; EXIF data; recognized as external drive w/USB setting; serves as card reader/writer; built-in speaker; P-7000 supplied with Travel Pack accessory kit	One-touch card backup; audible completion signal; verify option (doubles back-up time); assigns unique folder names; detects and rejects duplicate folders; (back-up time: almost 5 1/2 minutes w/o verify)	5.9x1.3x3.5" 16 oz	P-7000: \$799/160GB P-6000: \$599/80GB	The best display in this category with amazing color, clarity, and brilliance. Bells and whistles (such as retouch function) are nice but not essential in this type of device. Deduct points for bulkiness, high price, and slow backups.
JOBO GIGA Vu SONIC (www.jobo.com)	USB 2.0; USB-OTG	Two slots for CF, SD/SDHC/MMC, MS/Pro/MagicGate/Select	3.2" QVGA color	Memory card backup: raw file support; histogram; Li-Ion battery	Manufacturer's specification: 1GB in 30 seconds	5.2x3x1" 10 oz	\$320/80GB \$350/120GB \$380/160GB \$430/250GB	Sample not available at press time. Judging from a sample previewed at photokina, it appears to have much in common with the Sanho UDMA (below).
MemoryKick MediaCenter (www.argraph.com)	USB 2.0; A/V output; headphone jack	Two slots for CF, SD/SDHC/MMC, MS/Pro/Duo, xD	2.2" TFT LCD, 262K colors	Multimedia viewer/memory card backup: 1.8" drive; instantly recognized as external drive; auto shut-off; raw file support; MP3 and video player; serves as card reader/writer; non-replaceable drive/battery; built-in speaker	One-touch card backup; (back-up time: almost 6 minutes)	2.6x4.3x0.7" 5.6 oz	\$299/30GB \$349/60GB \$459/120GB	The smallest and newest device in this group, the MediaCenter uses an innovative touch-sensitive interface. Deduct points for atypical histogram and EXIF data displays; awkward menu navigation; slow backups; and erratic video playback. The rugged 1.8" drive and roughly cell phone size are definite assets.
Nexto-eXtreme ND2700 (www.nextodi.com)	USB 2.0; USB-OTG; eSATA	Two slots for CF, SD/SDHC/MMC/MMC Plus, MS/MagicGate/Pro, xD	Monochrome backlit LCD	Memory card backup: user-replaceable drive; instantly recognized as external drive; Li-Ion battery; self-diagnostics; auto shut-off	One-touch card backup w/high-speed verify function; auto-detects duplicate folders (back-up time: under 4 minutes)	5x3x0.9" 8.1 oz	\$429/160GB \$489/250GB \$534/320GB \$719/500GB	I really appreciate the fast file transfers and especially the super-fast verification and being able to replace the hard drive with one up to 2TB capacity. Deduct points for the hard-to-read screen display.
Sanho HyperDrive ColorSpace UDMA (www.bkaphoto.com)	USB 2.0; USB-OTG	Two slots for CF, SD/SDHC/MMC, MS/Pro/MagicGate/Select, xD	3.2" QVGA color	Memory card backup: user-replaceable drive; built-in Li-Ion battery; auto shut-off; raw file support; histogram; EXIF data; recognized as external drive with USB setting; serves as card reader/writer	Assigns unique file names to downloaded folders; visual confirmation; audible completion signal when files transferred; file manager option to rename folder/file; (back-up time: under 4 minutes)	5.2x3x1" 10.5 oz	\$349/120GB \$369/160GB \$399/250GB \$429/320GB \$549/500GB	The UDMA is a vast improvement over the HyperDrive Space, with sleeker operation and a nice-size color screen. Deduct points for poor navigation and failure to instantly recognize card insertion.



to a pocket-size drive. So if you wish, use the device purely for what it was intended for—as a back-up storage medium. Then safely store the full cards in a card wallet (with the back of the card facing you to indicate the card is full and thereby avoid using them accidentally).

Increasingly these devices sport a color screen and also serve as a viewer, but those devices that are strictly relegated to backup employ monochrome displays. If you feel more comfortable previewing images before deleting them from the card, then the color display is a must. Otherwise, go with the less expensive monochrome screen. A few devices also verify card uploads, if you don't mind the additional time required by this process, but time spent in verification seems well spent.

While the primary function is back-up storage, a few of these devices also serve as multimedia players, supporting not only slide shows on their increasingly large and highly viewable color screens, but also movies. And as a bonus, they may throw in music (largely MP3) playback. Given that video is growing in popularity among D-SLRs, as well as point-and-shoots, make sure your camera's video format is supported. As for still images, the majority support raw file playback, as well as JPEG, and will display EXIF header data.

These devices largely connect to your computer via USB 2.0. A rarity is FireWire or ultrahigh-speed eSATA connectivity. Unlike typical mobile hard drives, each of these devices is battery-driven. USB and FireWire connection to a host computer serves to charge the device's batteries (not applicable to eSATA or necessarily to all USB devices in this group)—and this usually applies only when the device is powered down. If you're transferring large volumes of data from device to computer or using it as an external drive, you should connect the device to an electrical outlet via the supplied charger/adaptor for uninterrupted power flow. Otherwise, you'll drain the

FAT32 Speaks Volumes

Like many USB flash drives, card-reading drives come preformatted with a FAT32 file system under MS-DOS, so they can talk freely with any computer they're hooked up to. That means they're compatible with Windows and Mac operating systems right out of the box, so you can easily share (read/write) data across platforms.

In contrast, the more typical portable hard drives (sans card reader) come preformatted out of the box for Windows or Mac, with a few notable exceptions that are cross-platform FAT32 ready. Whereas Mac computers come with a disk utility that lets you reformat the drive as MS-DOS (FAT32), that may not be true of Windows PCs. Iomega has a ready solution in the form of a FAT32 Formatter that is available as a download (click on the Support link at www.iomega.com—technically for Iomega products, but should work with any drive).

A word of caution: *Do not format* a card-reading drive from your computer as you may delete vital software components. Use the device's on-board format utility.

battery, disrupt the transfer, and possibly crash the drive and corrupt data in the process. **Important:** *Charge device fully before first use. For the initial charge, I recommend using the supplied charger, not the computer.*

Mobile Data Storage: Pocket Hard Drives

The vast majority of pocket hard drives don't read memory cards via a slot. Nor can they be conveniently connected directly to a camera for instant downloads. So why use them? They exist as an expedient means of backing up data from your hard drive or to serve as an external drive for a laptop. But their utility extends beyond that.

Because of their small size, you can carry these portable drives in a camera bag without even noting their presence. These drives provide insurance against damage to or theft of your primary computer—the one you left at home or the laptop you left in the hotel room. If you carry a laptop and download pictures to this computer after a day's shooting, connect the portable device to the notebook and copy the files there as well. Even if you don't delete the files from the memory cards, you'll have redundant backup—and that's a very wise move for valuable pictures you've spent countless moments and dollars to capture.

These drives are powered directly by the computer once you hook them up. The vast majority are USB 2.0 compliant (look for SuperSpeed USB 3.0 products in 2010, according to www.usb.org). FireWire and eSATA connectivity is available on select devices. At least one portable drive comes with its own FireWire docking station for speedier connection/removal.

You may be looking at a decision here: between a standard pocket-size drive and a card-reading drive. Since the card drives can also be used as a conventional external drive, it would seem to represent one-stop shopping at its most convenient. However, the majority of these drives tend to be bulkier than a standard drive of comparable capacity, and likely cost more. At the very least, whether it reads cards or not, a portable drive is a must-have traveling companion. Wherever you have access to a computer with a compatible port (and USB is the safest bet, since it's universal), you'll have access to your data. 🌀

Late-Breaking News

The Solid State Drive (SSD) is the latest drive technology to come down the pike. It has every advantage of a flash drive, namely lower power requirements, plus it offers faster read/write times compared with typical portable drives, with no moving parts to fail over time or heat buildup to damage the drive. The real downside is higher cost gigabyte for gigabyte and more limited capacity, compared with conventional mobile hard drives (even of the 1.8" variety)—although increasing popularity will drive prices down and capacities up. Anyway, one hard drive manufacturer is expected to announce an SSD storage device by the time you read this. But even more astounding perhaps, one card drive manufacturer revealed, also confidentially (hence the lack of names), the pending introduction of an SSD card drive. No further details were available at press time.

Key Features: Portable Drives

Notes: (1) Drives can be reformatted for your preferred operating system. But first, copy resident back-up software/other files to a safe place. (2) Given that most are roughly the same size, it's safe to assume that these devices employ a 2.5" drive, unless otherwise specified. A 1.8" drive is generally more rugged and doesn't need added shock protection. (3) For our purposes, we'll consider a drive as entering Sleep/Standby mode even when it spins down and the heads park. True sleep/standby is evidenced by extinguishing LEDs. (4) Evaluations based on sample products. Not all products were available for testing.

Device (Website)	Platform/Connectivity (Out Of The Box)	Features	Size & Weight	MSRP/Drive Size	Comments/Evaluation
Buffalo Technology MiniStation Cobalt (www.buffalotech.com)	Mac/Windows; USB 2.0	Shock-resistant design; TurboUSB data transfer rates—up to 20 percent faster; Memeo AutoSync software included (Mac/Windows); SecureLockMobile encryption software for Windows PC; choice of colors	NA	\$109/250GB \$129/320GB \$189/500GB	Sample not available at press time.
Clickfree Portable Backup Drive (www.goclickfree.com)	Windows; USB 2.0	Comes with back-up software for one-touch operation or user-defined backups	4.5x2.9x0.7"	\$89/120GB \$109/160GB \$129/250GB \$179/320GB \$219/500GB	This quiet, cool drive makes it so easy and effortless to back up your computer's hard drive. But I'm disappointed that the promised cross-platform version/firmware upgrade has not materialized. Deduct points for staying awake while host computer sleeps.
Iomega eGo BlackBelt (www.iomega.com)	Mac/Windows; USB 2.0	Drop Guard Xtreme protects against drops up to 7 ft; local (software via download) and online backup included; Power Grip band (other eGo portables available in different colors/configurations)	5.3x3.5x0.8" 7.7 oz	\$99/250GB (capacity ranges with model)	Slightly bulkier than some of the other drives we looked at, but it runs quiet and cool. Effectively enters standby (spins down) along with host computer. I would especially feel comfortable carrying this around on a vigorous journey because of its shock protection.
LaCie Rugged Hard Disk (www.lacie.com)	Mac/Windows; USB 2.0 (also available with FireWire 400/800 for Mac)	Dual shock protection (max drop height: 35"); scratch-resistant aluminum shell; back-up software included	5.7x3.5x1" 8.8 oz	\$109/250GB \$119/320GB \$159/500GB (FireWire version prices vary from above)	Sample not available at press time.
Other World Computing Mercury On-The-Go Pro (www.macsales.com)	Mac; USB 2.0; FireWire 400/800	Fast 7200 RPM drive; shock isolation system; back-up and utility software included	5.5x3.5x1" under 11 oz	\$139/200GB \$149/250GB \$167/320GB (other models available for Windows)	With its cool see-through design, this quiet drive can practically double as a desktop drive w/o the power requirements. Effectively goes into Sleep mode (spins down) along with host computer. While the drive itself may be protected against shock, the plastic casing appears more fragile, so I'd hesitate to subject the drive to rough handling.
Seagate FreeAgent Go for Mac (www.seagate.com)	Mac; USB 2.0 and FireWire 400/800 (docking station requires FireWire 800 port)	Apple Time Machine ready; docking station included (Windows version available in different colors and includes back-up software)	5.4x3.2x0.7" 7.8 oz (w/o docking station)	\$149/250GB \$169/320GB \$189/500GB	Sleek and stylish, but the docking station really makes it for me, adding convenience. It runs quiet but slightly warm, and goes to sleep along with host computer.
SimpleTech Signature Mini (www.simpletech.com)	Windows; USB 2.0	Rubberized exterior; available in different flavors (literally—Espresso, Bubblegum, etc.); local and online backup included	4.9x3.1x0.8"	Espresso: \$79/120GB \$159/500GB (capacity varies with "flavor")	Easy-grip rubberized exterior affords some protection against shock; runs cool and quiet; fashionably slim and lightweight. Deduct points for staying awake while host computer sleeps.
Transcend StoreJet 25 Mobile (www.transcendusa.com)	Mac/Windows (FAT32 file system); USB 2.0	Dual-stage anti-shock design (meets US military standards); back-up and security software included	5.3x3.2x0.7" 7.3 oz	\$78/160GB \$92/250GB \$108/320GB \$186/500GB	Ultra-quiet with barely any noticeable vibration, you won't know it's running till you see the read/write LED flicker, but it does appear to go to sleep along with the host computer. Cross-platform compatibility is a plus. And ruggedized design should come in handy over challenging treks.
Verbatim Portable Hard Drive (www.verbatim.com)	Mac; USB 2.0 and FireWire 400	Compatible with Apple Time Machine (USB-only models available with back-up software for Windows)	5.4x3.4x0.6" 5.8 oz	\$80/160GB (USB-only models as high as 500GB)	With its sleek design, this drive not only runs cool but effectively goes to sleep (spins down) when the computer enters Sleep mode. I wish it came in a larger capacity with FireWire support.
Western Digital My Passport Studio (www.wdc.com)	Mac; USB 2.0 and FireWire 400/800	Illuminated capacity gauge; includes high-speed turbo driver for maximum performance; compatible with Apple Time Machine (USB-only models formatted for Windows)	5x3.2x0.7" 6.4 oz	\$199/320GB \$229/400GB \$249/500GB	The slim Passport-series drives look like tiny books. I tested the Mac drive with FireWire connection. It runs quiet but does get warm to the touch. However, it goes into standby when computer is put to sleep.
Wolverine Data Ultra-Portable USB Drive (www.wolverinedata.com)	Mac/Windows (FAT32 file system); USB 2.0	1.8" drive; roughly cell phone size	4.3x2.6x0.6"	\$79/20GB \$99/40GB \$129/60GB	The rugged 1.8" drive and tiny size are decided assets. This is a more economical and efficient means of storage than several stacked USB drives that would amount to the same size. And cross-platform compatibility is a big plus. Wolverine also has multimedia viewers with memory card support and color displays.