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You Don't Know What You've Got 'Til It's Gone

Joni Mitchell lamented the loss of paradise in her 1970 hit, *Big Yellow Taxi*. The song wasn't about computers, but it reminds me that discovering important files are missing from a computer can ruin the whole day.

Perhaps the model is overplaying the part a bit, but significant data loss is sufficient to cause a business failure.

My older daughter wanted to read some of the files I had posted to a shared Google Drive account, files that described her sudden and unexpected liver failure, a week in a coma, and a liver transplant that occurred nearly three years ago. She couldn't find the files on Google Drive. Neither could I.

The directory had been removed from my primary computer and deletions are mirrored to Google Drive. My local backups also replicate deletions, so I knew the files would no longer be there. CrashPlan from Code 42 keeps old versions of files, so I went back to January 2019 and recovered the 86 files in less than 10 minutes.

It might be tempting to blame the computer, but computers don't magically delete files. Files don't evaporate or fall off disk drives. I had somehow accidentally deleted the directory even though those files are important to the family!

If you think your disk drive will last forever, you're wrong. If you think you won't ever accidentally delete files you want to keep, you're probably wrong. Safe is always better than sorry and that's why backup is so important.

Disk Drives are Fragile

Disk manufacturers have made their products more reliable than they used to be, but any mechanical or electronic device can fail.

Mechanical disk drives contain highly-polished disks spinning at 5400rpm or 7200rpm, but some run at 15,000rpm. The read-write heads fly less than a hair's width above the surface. If the heads touch the disk while it's spinning, disaster ensues. Solid-state disk drives have no moving parts, which makes them more reliable than mechanical drives, but they still can fail.

The failure takes with it the operating system, all installed applications, financial records, photographs, word processor documents, spreadsheets, email files, music, and videos.

It's not uncommon to consider the hardware to be the most valuable part of a computer, but it's not. The valuable part of the computer is the data.

USB drives are inexpensive, easy to use, and fast, but it's important to store them in a remote location.

Hardware can be replaced easily. Data cannot, so backup is essential. Every computer needs at least one backup system, and more are better.

Two primary options exist for backups: USB drives that can be connected to the computer for backup and cloud-based backup systems. It may not be much of a surprise that I use both. And that's not all.

Code 42's CrashPlan backs files up continuously but does not back up the operating system or applications. It's dependent on the speed of the computer's internet connection and that means restoring large amounts of data can be time consuming.

USB drives make backing up and recovering files fast, but the drives should be stored

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at a separate location because a tornado, fire, or other disaster could destroy both the computer and the backups if they're in the same place.

Moderately priced online backup systems such as CrashPlan are not backed up themselves. That may seem like a dangerous shortcoming, but it's not.

The odds are decidedly against both your computer and the cloud-based backup system suffering simultaneous failures. Simply having a cloud-based backup eliminates most of the risk. But not all of the risk.

That's why some people prefer to use more than a single backup system.

A Hybrid System

No one system is perfect. Cloud-based systems separate the computer from its backup by hundreds of miles, but are slower; local backups are faster, but are less secure; the solution: Multiple backups. My system:

- **CrashPlan** ignores the boot drive and backs up about 2.4TB of data from six local hard drives that are attached to the computer.
- **Acronis TrueImage** backs up the boot drive to two separate drives on Sundays and Wednesdays. The drives are stored locally. This is a deficient procedure, but operating systems and applications can be reinstalled with relative ease.
- The data files that are backed up to CrashPlan are also backed up to local USB drives using **GoodSync** once per week. This is a deficient procedure because it's a weekly event and because the drives are stored locally, but CrashPlan backstops the operation. These backups are used only when I need to restore a lot of files that haven't been modified.
- **GoodSync** backs up essential work in process throughout the day to an additional USB drive that's connected to the router as a network-attached storage device. This is the best way to recover a file that's been accidentally overwritten, deleted, or changed recently.

Given my belt, suspenders, and duck-tape system, you may understandably think that

Cloud-based backup systems ensure that no single physical event can destroy both the computer and its backup.

I lose files often and need to recover them. Other than the incident I described, losing files is a rare event.

Even if I hadn't been able to recover the files that I had deleted from Google Drive, I would have needed only to recreate the Google Drive folder and copy the various files from their locations on other hard drives. The shared cloud drive consisted of files copied from other locations on the computer for convenience.

Acronis now offers online backup in addition to its ability to back up the computer's boot drive, so some users may prefer it for both local drive images and cloud-based storage.

GoodSync offers the ability to watch drives and directories for changes to files and to back up changed files immediately. It can also be used to copy files from one computer to another, a feature I use to have my wife's computer send documents, emails, and photos to a special directory on my computer that is then backed up by CrashPlan and to the local backups on USB drives.

Backup is simply an insurance policy against hard drive crashes, errors, forgetfulness, and plain old human stupidity. Disk drives are far more reliable than they used to be, but they still crash. When that happens, having a recovery system in place removes much of the stress. Ω

Want Windows 10 for Free?

Microsoft no longer supports Windows 7 and the offer that gave Windows 7 users a free upgrade to Windows 10 has ended.

Or has it? The free upgrade offer for users of Windows 7 and Windows 8.1 ended in July 2016, but you may still be able to upgrade without cost.

While the upgrade costs $139, the long-expired free upgrade offer may still be available. No guarantees, though.

Start at the *Windows 10 download site* where you'll see a section titled *Create Windows 10 installation media*.

Click the **Download Tool Now** button. Here you have a choice: Select "Upgrade this PC now" if you want to run the process on the computer you're using. If you're downloading the tool for use on another computer, click "Create installation media for another PC."

Make sure you have a full backup just in case things go sideways; then start the installation process and follow the steps shown on screen.

The computer will reboot several times and when the process is complete, you should be able to navigate to Settings > Updates and Security > Activation to view the license code for Windows 10.

Additional points to be aware of:

- This works only for *properly licensed* versions of Windows 7, Windows 8, and Windows 8.1.
- If your current version of Windows 7 is an *Enterprise* version, you cannot upgrade it to Windows 10.
- If the current version of Windows 7 is the *Home* version, you can upgrade only to Windows 10 Home.
- If the current version of Windows 7 is the *Pro* version, you can upgrade only to Windows 10 Pro.

If the upgrade doesn't work and you're concerned about running a computer that no longer receives security updates, you can buy the upgrade for $139, purchase a new computer, or install Linux on the Windows 7 computer for free. Ω