



Why do you need to backup data?

Chances are you don't think much about your computer's hard drive, but what would you do without the data it holds? Your or your company's financial records, appointment calendar, customer or client information—all stored as billions of magnetic, microscopic points on metal platters spinning at thousands of revolutions per minute. If anything goes wrong with this finely tuned electromechanical system, all the data can be gone in nanoseconds.

More Data Means More Risk

If you're a power user or if losing your computer or network server for even a few hours would cause problems the backup equation is vital. You need to make reliable backups regularly and you may need an extra hard drive for quick swapping when your primary hard disk drive fails.

There are more backup alternatives than in the past with new hardware and software making automating backups easier than ever. Whether you choose the versatility of recordable optical media (CD-RW), the tried and tested reliability and performance of a SCSI based tape backup system or the latest generation USB hard disk and tape drive options there's an effective backup strategy that will meet your needs without taking up much of your time.

What exactly is a "Backup"?

Backup means different things to different users. In its traditional sense, a "backup" is a copy of everything on your PC's hard drive, including the data, operating system, and applications. When a hard drive fails, it should be able to be replaced, have the files restored, and be up and running again quickly.

A key consideration is *when* the data was last backed up. The more time between the last backup and a drive failure, the more data will be lost. A classic corporate backup procedure uses ten backup tapes; a full backup every Monday, alternating between two master (full) backup tapes. In addition, from Tuesday through Friday an incremental or full backup to protect changes from the day before.

Tape Drives

Sometimes tried-and-true technology remains the best choice. Tape drives win out for both versatility and value. Drives that use the industry-standard Travan tape format dominate the desktop market because they're reliable, familiar, and relatively inexpensive.

Tape backup software lets you restore individual files or groups of files and schedule automated unattended backups although you still have to change tapes manually. Much of this software is a variant of Veritas (formerly Seagate) Backup Exec, which has become a *de facto* standard. In addition to a set of back up tapes having a cleaning tape on hand is also a good idea.

CD-RW (Read Write) Drives

If backing up less than 650MB of data, the capacity of a typical CD-ROM, is all you need then CD-RW drives are an excellent choice. It's possible to *span* larger backups over a number of discs, but swapping out media is time-consuming. The greatest advantage of a CD-RW is that it can be used to both archive data and create custom music CDs.

Blank CDs are inexpensive, widely available, and easy to share with other users. CD-R disks are handy for long-term archival storage as they can be written to only once; CD-RW discs can be written to repeatedly but the write time is considerably longer than writing to CD-R.

Adaptec's Easy CD Creator, which comes bundled with many CD-RW drives provides an Explorer-like interface to generate data disks by dragging and dropping files. If your backup job is a large one you'll be sitting stuck to your computer with a pile of blank CDs, inserting a new one every few minutes. This potential for interminable disk swapping makes CD-RW drives best for data-only backups rather than full-system backups and tips the balance in favour of tape drives for corporate use.

USB Hard Drives and Tape Systems

The latest USB based backup technologies utilize the USB (Universal Serial Bus) connector on current generation computers. This high-speed port enables "Plug & Play" set up and fast data transfer from your computer's hard disk to a USB connected drive or tape. Utilizing the Windows synchronization feature allows copies of complete drives or selected folders to be accomplished easily and reliably.

The Backup Dilemma

Tape drives remain the best and easiest method for performing regular full backups, though CD-RW and USB devices provide viable alternatives for making application data backups.

Whatever backup strategy you choose, its success ultimately depends on your ability and willingness to keep to a schedule, change the media and store the backups in a safe location. The key is to make these steps an everyday routine, like checking your e-mail. In this calamity-prone world, a little bit of thoughtful backup effort can make all the difference. In our experience solutions which cannot be fully automated are not likely to be completed reliably and, Murphy's Laws being alive and well, the time you most need data to be restored is the time when manually relied on backups were not run.

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