Data backup: Don’t wait for the next crash

Choose a file duplication method that meets your needs.

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We know backing up data is important yet few of us do it consistently, either because we don’t think of it or cannot spare the time. Also, because today’s computers are less expensive and more reliable than before, many doctors think a system crash “can’t happen to me.”

Don’t wait for a power surge or hard drive failure to obliterate your crucial files or documents. This article describes numerous ways to back up and store data, each with different features. Your needs will determine which method is best for you.

HARD DRIVE FAILURE

Hard drives, which store information on platters via electrical charges, are vulnerable. They are rated with a mean time between failure (MTBF),1 which indicates how long on average a hard drive will work before it fails. Although the average MTBF is 50 years, electrical discharges such as power surges or lightning storms can force failure much sooner.

Viruses—if programmed to do so—can also corrupt hard drives. Most viruses propagate to another computer, using your computer as a host.

Companies such as Dataleach can recover information from your hard drive, but recovery may take days.

BASIC BACKUP TOOLS

CD-ROM-burning programs such as Nero Burning ROM are one way to back up data. Most computers purchased within the last 2 years have a built-in CD-ROM burner—a device that reads and creates CD-ROMs—along with CD-burning software.

Keep in mind the size of the disk you are using. CD-ROMs have a maximum capacity of 700 megabytes, but file location information consumes about 10 megabytes. A DVD-ROM can hold 4.7 gigabytes, almost 7 times the capacity of a CD-ROM.

Also consider expense. Recordable CDs on average cost 25 cents per disk. Recordable DVDs are more expensive (between 50 cents and $1 per disk depending on quantity purchased) but could save you money if you’re storing several gigabytes of data. The average cost per 100 megabytes of backup is 3.6 cents with CDs and 1.5 cents with DVDs.

Avoid rewriteable CD and DVDs—disks that can be erased and used again. Although such a disk may minimize backup costs, another computer may be unable to read it.

Alternate storage devices offer varying speeds and capacities. For example, a portable USB flash drive may be useful for storing less than 2 gigabytes. If you need more capacity, external USB hard drives can store up to 80 gigabytes. You can download or store a file within seconds with either device if it has a USB 2.0 transfer speed rating.

Zip drives, which can hold 750 megabytes, were once popular but have become less useful because they lack speed. Tape backup systems are extremely fast and can hold 130 gigabytes, but these devices are expensive and used more for large-scale business server backup.

‘WHICH FILES SHOULD I BACK UP?’

Obviously, you should back up electronic medical and billing records as well as documents created in your Microsoft Office suite.

Don’t ignore other critical information sources, such as Web browser bookmarks and e-mails, but remember that your mail, address book, and account information may be stored in different places depending on your e-mail program.

If you use a recordable CD or DVD, you must determine one by one which directories and files to archive. Nero has an easy-to-use “wizard” that guides you through this process. Nero also lets you automate backup: You would no loner have to remember to do it. Backing up e-mail and browser-bookmarked sites will be difficult, however, unless you know where they are kept.

Products such as Genie Backup Home Manager and NovaBACKUP have built-in search/inventory capability and back up to CDs or DVDs. Also, once the first backup is created, these programs can determine if the files have changed. Thus, subsequent backups will duplicate only files or modifications created since the previous backup. Specialized back-up programs also encrypt information and compress data to conserve space.

SCHEDULING DATA BACKUP

If you don’t create a schedule for backup, chances are it will never get done.

Ideally, you should back up data daily at a set time, such as at noon or closing.

Many psychiatrists, however, probably need a longer interval depending on how long backup takes (anywhere from 5 to 20 minutes depending on volume of data) and whether the information is critical. Also, a file cannot be duplicated while in use, as two computer programs cannot share a file in order to protect the data.

STORING BACKUP

After creating your backup:

- keep the backup and the software used to create it at another location in case of fire or theft
- test with your staff the process of restoring the information to the original hard drive, so that you will learn how to do it and how long it takes to get your computers running.

ALTERNATIVE BACKUP METHODS

If you have broadband Internet access via DSL or cable modem, consider using online backup services offered by Connected or Xdrive. Your data will be safe once you’ve downloaded and installed their software, designated files, and determined backup frequency. These online services also store the data at a remote site in case of fire or theft. Some physicians, however, may feel uncomfortable keeping data on another server for security reasons.

The Mirra Personal Server, an alternative to off-site backup, can be connected to one computer or a network and can back up one or all computers. This server can also synchronize files between computers and allow access to them over the Internet.

For real-time backup, a RAID array2 (redundant array of inexpensive drives) is your only choice. With RAID level 1, two hard drives record simultaneously. When one drive fails, another continues to work and has the information. A RAID array requires a specialized drive controller card, which costs around $150, or specialized software.3 Controller cards are widely available on the Internet (use search terms “Mac Raid controller” or “PC raid controller”), and raid arrays are available for any platform.

THE FUTURE

As multimedia become integrated into medical records and software programs create more information, physicians will need more storage space. New storage technologies such as the HD-DVD and Blu-Ray4 offer up to 25 to 30 gigabytes per disc. Similar to the VHS-Betamax wars of the 1980s, manufacturers are vying to make these high-density storage devices the future storage standard. Also, perpendicular recording technology is increasing hard drive storage capacity.5

Disclosure

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