

# Backing Up Your Data

By Gregory S. Michaels

It's 9:00am and payroll has to be out by noon when you discover your hard drive has failed. Or maybe you emptied that recycle bin a bit prematurely. Hopefully you have a recent backup available. It is estimated that 6% of all PCs will suffer an episode of data loss in any given year. The average cost of each data loss is estimated to be around \$2,500<sup>1</sup>. Whether you are a home user or small business the loss of data can be devastating.

What you need to perform backups:

- A storage device with removable media such as floppy drive, DAT tape drive, CD or DVD writer, or Zip drive. Whatever you choose it should be able to store your daily backed up data on a single disk, CD, DVD, or tape. For a full system backup you will need multiple disks, CDs, DVDs, or tapes.
- You will also need backup scheduling software. There is a backup utility that comes with all Windows operating systems and can be found at Start/Programs/Accessories/System Tools/Backup. Many times backup software is also provided when you buy a storage device such as an external hard drive or DVD burner.

Types of backups:

- Full System – backs up everything regardless of whether or not it was backed up before. Takes the longest to perform but provides quickest restore. Not practical to perform every day.
- Incremental – backs up all files created or modified since the last full backup or incremental backup. Takes the shortest to perform and the longest to restore from.
- Differential - backs up all files created or modified since the last full backup. Time increases each day, shorter to perform and recover from than a full backup overall but longer than an incremental.

What you must back up:

- Any data (documents, images, spreadsheets, accounting data) that is specific to you or your business that cannot be recreated without time and effort on your part.
- Any software you purchased via a download where you do not have original installation disks.

What you do not need to back up:

- The software and OS (operating system) that is installed on your computer that you have the original installation disks for. You can always recover by reinstalling the software.

Backup Strategies:

- Have backup automatically scheduled to run using your backup software.
- Use more than one tape or disk and rotate from day to day, week to week, and month to month. A common secure backup rotation method called the “grandfather method” uses 20 media sets. 4 media sets for each day Mon – Thu rotated every week, 4 media sets for each Fri of the month rotated every month, and 12 media sets for each month rotated every year.
- Periodically make a full system backup, say once a month. Then make incremental or differential backups on a daily basis between full backups.
- Make a copy of all software installation disks and store them in a safe place preferably offsite.
- Have an offsite storage plan for backup media. Use friends, relatives, employees, safety deposit boxes if you have to (100 miles away is recommended). At a minimum use a safe location that can be locked and is fireproof.
- Have documentation in place for performing a restore and perform periodic fire drills to test your restore process and media.
- If you have more than one computer in a networked environment backup data from one computer to the other and vice versa.
- Have more than one backup. Computer to computer and removable media.
- Split your hard drive into 2 drives or purchase a second hard drive. Then segregate your data from your software using the 2 drives. If one drive goes the other may still be accessible. Many viruses attack your C drive boot sector making the C drive unusable. If your data is on the D drive then it is safe.

According to Murphy’s Law: Anything that can go wrong will go wrong. If there is a possibility of several things going wrong, the one that will cause the most damage will be the one to go wrong. Corollary: If there is a worse time for something to go wrong, it will happen then. Don’t let yourself or your business end up paying dearly for problems that can be easily prevented with a good backup system. Have a backup strategy and regularly verify the integrity of your backups.

By Line:

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<sup>1</sup> “The Cost of Lost Data”, by David M. Smith, Ph.D., Assistant Professor of Economics, Pepperdine University, September 1999.