

## **File Versus Image Backups**

There are several categories of backup software, but most products for individual users fall into one of two categories: file-based backup and image-based backup

### **Image-Based Backup**

A disk image backup is basically a backup of your whole hard drive. The basic idea is for backup software to use low-level disk I/O to just copy all the bits on your hard disk to another disk, without any particular regard for concepts like files. When you have a backup image, there's no question of accidentally forgetting to backup a particular file -- if it was on the hard disk, then it got backed up!

The real payoff for making a backup image is when catastrophe strikes. If your main hard drive dies and you have a backup image on another hard drive, then you could be up and running again in a matter of minutes, which is all it might take to remove the defective hard drive and insert the backup drive in its place. Since the image backup has a copy of everything, you don't have to do any reinstalling of applications.

There are also some potential drawbacks to a backup image. An image backup may take a lot of time (e.g., hours for a large disk), so you may backup less frequently, meaning you could lose more work if your main disk dies.

Image backup software typically requires you to reboot to perform the backup, so the backup software can be sure of not interfering with running software. On the other hand, you can buy image backup software that can run in the background while you're using Windows -- but then there's always a small but finite chance that the backed up image will have one or more partially updated files in it.

### **File-Based Backup**

File-based backup is the more "normal" kind of backup software you will see. File-based backup just means somebody has to tell the software which data files have to be backed up. At the extremely simple end of the spectrum, data file backup can be as simple as just manually copying some files to a recordable CD and putting it on your shelf. Some file backup software will help you do the file selection, by backing up the most typical kinds of user files or locations, or by offering to automatically detect which files have changed since the last backup.

Backing up selected files instead of an entire disk means the resulting backup can be much smaller. That makes file backups more appropriate when backing up across a network. Online backup services invariably use file backup rather than image backup, both to reduce their storage costs and to reduce the length of time required to transmit the backup data across the wire.

File backup software can often produce much faster and smaller backups than image backup software, but it has its drawbacks as well. With a file backup, there's always the chance that you failed to tell the software to backup an important file.

If your main hard drive crashes, you may need quite a bit of time to get up and running on a new hard drive, even if you have a very good file backup. The problem is, if you're starting with a blank hard drive (unlike an image backup), then you have a lot of reinstalling to look forward to. First, you have to install Windows, then you have to (re)install any applications that you had installed on the original drive (your backup software application, if nothing else!). After all that, then you can run your reinstalled backup software and tell it to start restoring backed up files from your backup CD/DVD (or wherever you stored them).

### **Which is Best: File Backups or Image Backups?**

This is a trick question: it's better to use both file and image backups rather than just one or the other. However, for most individuals, I recommend starting with file-based backups. I'll explain why.

File-based backup software tends to be less expensive than image backup software. File-based backup is more likely to let you perform frequent and incremental backups in the background, making for a narrower window of vulnerability than a nightly image backup can offer. Many image backup software packages make it hard to do a partial restore; if you have to restore an entire hard disk just to recover a single file that you just accidentally deleted, you'll be wishing you had used a file backup utility.

Of course, these are general recommendations, based on general needs and the general characteristics of these two types of backup. Your individual needs could dictate a different choice, and the remainder of this guide should help you find the best software for your own situation.