

BACKING UP YOUR DATA

The loss of Babel and the recovery of its data via an automated backup system is a reminder that all of us need to establish a backup routine for the data on our computers. Because they can be stolen and are more likely to be dropped or otherwise damaged, laptops are particularly vulnerable, but hard drives fail on desktop computers and servers at unpredictable moments.

Organize Your Data for Backup

The first thing you need to do is organize your data so that it's easy to locate for backup. On a Windows machine, each user has a personal profile in a folder in C:\Documents and Settings. The best way to organize your data is to make sure it is in this folder; always saving to folders within "My Documents" is a good way to do this. On a Mac, each user has a Home directory; make sure everything you need to back up is stored within this directory, i.e., all your personal data should appear when you click on the House icon. **Caution: every time you install a program, make sure you know where it is saving its data. If you cannot force it to save to "My Documents" or your Home directory, make a note of the data's location so you can back it up.**

What should you back up? **Anything that cannot be easily replaced should be backed up:** e-mail that is not stored on a server, digital photographs, address books and contact lists, calendars, bookmarks and favorites, documents, finished video projects, etc. Software, music, videos, etc. that you have purchased and downloaded can generally be replaced, but you may have to pay for them again. You should certainly store software license numbers and receipts in multiple locations away from your computer in case the software must be replaced; archiving the installer on a CD is a good idea. Burning music and videos to CD/DVD is also good practice. And remember to store your usernames and passwords in several secure locations!

Decide How to Back Up

You can back up your files to media (CDs, DVDs, external drives) you control or to networked drives maintained by others. **Since all media fail, you should consider backing up important data both locally and on a networked drive.**

Local

The easiest way to back up data is to copy files to CDs, data DVDs, or external drives. For critical or irreplaceable files, copy the files to two different locations. Do this kind of copying any time you make an important change to the file. A CD

holds 650 – 700MB of data; a single-layer DVD, 4.7GB. On the University's IBMs, the easiest way to burn data CDs/DVDs is to use the program **RecordNow Data** in the **Multimedia Center for Think Offerings** menu under Start > All Programs. Mac users insert a blank CD/DVD, drag data to its icon, and click Burn.

The easiest way to create a backup routine is to use a software program that does backups on a set schedule. Windows XP includes the **Windows Backup** utility. (In Windows XP Professional, it is ready to use; in XP Home, you may need to install it. Consult the Windows Help screens for instructions.) This program is located in Start > All Programs > Accessories > System Tools > Backup. This program allows you to choose which folders/data to back up and where to store them. Unfortunately, the "where" options are limited; **the Backup utility cannot back up to a CD-RW/DVD-RW drive.** Your best options are a networked drive or an external hard drive. The **Advanced** options of the Backup utility make it easy to schedule regular backups.

The Mac OS does not yet include a backup utility. LaCie's SilverKeeper and EMC's Retrospect Express are often bundled with external drives; SilverKeeper is also available for download from <http://www.pure-mac.com/backup.html>, a site that lists a number of backup utilities for the Mac.

If these free/bundled options do not suit your needs, explore commercial back-up products. Norton has several for Windows, including Save&Restore and Ghost. EMC Retrospect is known for its backup products and services; consumer versions exist for both Windows and Mac.

Networked

The easiest and safest way to maintain critical files is to copy them to your NetFiles "private" directory. The University backs up this data for you and, of course, it is accessible from any networked computer on the Richmond network. **You have 2 GB of space in NetFiles; this is not enough to do systematic backups of your computer. It will also fill up very quickly if you use it to store images, audio, and video.**

Some Internet Service Providers offer networked storage, as do Web Hosting/Domain Hosting providers. Yahoo! users can use the Briefcase feature to store files; just remember to keep your accounts active. Digital photos can be backed up to services like Flickr, particularly if you buy a low-cost Premium account.

Finally, if you can back up from campus or have broadband at home, there are online backup services. Mac users may want to explore the possibilities of a .Mac account (~\$100/year). .Mac furnishes both a backup utility and a space to back up important data. Although the .Mac back-up space is limited, the utility can be used to back up to CDs/DVDs and external drives. Xdrive (<http://www.xdrive.com>) and backup.com (<http://www.backup.com>) are two

online services for Windows; BlackJack (<http://www.blackjack.com>) and Mac Backups (<http://www.macbackups.com>) are for Macs. iBackup (<http://www3.ibackup.com>) is multiplatform.

Multiple Backups

A good backup routine includes the use of multiple backups for data absolutely critical to your work or files, e.g., digital photographs, that can't be replaced. These backups should be stored in multiple locations separate from your computer. If, for example, you have taken pictures and downloaded them to your computer, you might want to upload them to a networked drive and burn them to CD. Remember, too, that iPods can be used as portable hard drives, although they are not the most cost-effective nor the safest alternative for backups.

Internal and External Hard Drives

It is, of course, possible to install a second hard drive in most desktop computers and use that for backups. However, if something catastrophic happens to your computer—fire, flood, lightning—your backup will probably be gone as well. So an internal hard drive should not be your primary backup device.

External hard drives are inexpensive and portable. If you are planning to use backup software, you need not buy a drive significantly larger than the maximum size of the data you will back up. **You do need to consider how you will connect the hard drive to your computer. Both USB and Firewire/IEEE1394 are options. Mac users generally can use either, but Firewire works better than USB on older Macs. There is no significant difference between Firewire and the USB2.0 of new computers. Few PCs have Firewire/IEEE1394, so check your computer before you invest in a Firewire hard drive if you are backing up a PC.** Sample prices for external drives on Sunday, December 3, 2006:

- | | |
|------------------------------------|------------------------------|
| • Maxtor 300GB USB2.0 and Firewire | \$129 after rebate (CompUSA) |
| • LaCie 250GB USB2.0 | \$99.99 (CompUSA) |
| • Seagate 250GB USB2.0 | \$99.99 (Circuit City) |
| • Seagate 160GB USB2.0 | \$89.99 (BestBuy) |

Acomdata is another reputable brand. The Apple Education Store (<http://store.apple.com> > Education) sells LaCie hard drives already formatted for Macs, and the package includes all the cables and backup utilities. These drives can be reformatted for PCs, but the software is Mac only.

Remember that external hard drives can fail, too; it may be prudent to have two.