# EOU Information Technology Guideline
# Backing Up Your Hard Drive
# March 22, 2007

### Introduction

Imagine you come into your office to complete that special project you have been working on for a week. When you turn on your computer you are greeted with a black screen with a flashing cursor or maybe a frozen screen. You call IT and they come and report that your hard drive is dead. You had a backup of your files, right?

### Recommendations

#1 At the very minimum, you should make a copy of your documents once a month.
#2 The next best alternative copy your documents once a week
#3 An approach that may require technical support is to purchase some type of backup medium (as described below) and setup a backup utility to automate the backup process for you.

### What to Back Up

Forgo a grandiose backup routine in favor of a plan that you know you will perform regularly. You will get by just fine with backing up only your data files and folders. Other items you might back up:

- My Documents (Word, Excel, PowerPoint, photos, videos, etc.)
- Web browser book favorites or bookmarks
- Non-Groupware email address books and mailboxes

### Find the Right Medium

The essential elements of backing up are multiple copies and multiple sites--the first because any media can go bad and the second because you don't want to lose your backup along with your PC. Let the size of the job determine which media you choose.

| Backup Needs | Connectivity | Technology | Price |
|---|---|---|---|
| 512 MB to 2 GB | USB port | Thumb Drive (Gizmo) | Medium |
| 700 MB | CD drive with burner | CD-R | Lowest |
| 4GB | DVD drive with burner | DVD+R | Low |
| 80 to 500GB | USB port | External Hard Drive | High |

Note that the thumb drive fits in your pocket and can safeguard small amounts of vital data on the road. Just be sure to encrypt that data to keep it from prying eyes in case you lose the unit. Use CD-R and DVD+R write-once media (they're more reliable than RW). An external hard drive has a large capacity but is far too fragile and unreliable for you to count on it as your sole backup medium.

### Backup Utilities

The first backup you make is the most important because it serves as the baseline for all subsequent backups. Once you start making backups, you'll want to continue with the same technique, so choosing that technique is important.

#### *Straight copy*

The simplest way to make a backup is to copy the files directly from their source location to the backup media, just be sure that your email application and web browser are closed when you copy the related files.

For the most part a straight backup is manual. You can use either the drag and drop method, or CD and DVD burning software allow you to save files and to verify that original files were faithfully copied.

With a straight copy there is no way to compress the files to reduce the amount of disk space they take up. The files must be compressed to a zip file, but that adds step before the zipped file is copied to the select medium.

### *Backup Utilities*

Backup utilities are designed to do several things: allow you to backup files from multiple locations at the same time; compress all files into a single, large file; verify the files backed up; and automate processes. There are numerous manufacturers of these utilities, some are free, some come with a price, and all do basically the same things with different levels of ease and style.

- Cobian – freeware that can schedule compressed, verified backups to a thumb drive, internal or external hard drive, or shared network drive
- Microsoft backup – a backup utility included with most versions of Windows that allows compression, verification and scheduling
- External hard drives use their own proprietary utilities

Give each backup a descriptive name, such as 'Backup of Documents – March 2, 2007'. Use the backup utility's comments feature to list the date and time of the backup and anything else that will help you discern its contents in the future. If the backup application allows compression, use it to save space. Be careful with compress because the resulting file format may only be accessible by the backup utility.

Use the utility's verifying function to confirm that it copied all the data correctly. Consider making two copies with the first backup to a hard drive and then a thumb drive or burning copies to a DVD or a couple of CDs, which may be faster than running the backup twice.

Once you've made your full baseline backup, you can drastically reduce your time and space requirements by continuing with:

- Differential backups, which include all data that has changed since the baseline backup
- Incremental backups, which include only data that has changed since the last backup. Incremental backups are quick and require relatively little storage space, but re-creating files from such backups involves restoring each of these backups in order.
- Other schemes
- Finally, you should never overwrite your original baseline. You should overwrite differential and incremental backups after making new full backups that contain the same data.

### Security Issues

Different kinds of data require different levels of security and hence different backup considerations. For most user data **not** containing vital information, such as names, addresses, phone numbers, or social security numbers, the backup guidelines provided here will suffice. If you deal regularly with sensitive information, please consult with your IT tech for more suggestions on backing up and securing such data.