

What is Backup and why is it done?

The word backup refers to making copies of data so that these additional copies may be used to restore the original data in the event of data loss. Basically backups are the last line of defence against data loss, therefore they are the most convenient to use.

Backups are mainly used for two purposes:

1. To restore a computer to an functioning state following a disaster (called disaster recovery)
2. To restore small numbers of files after they have been accidentally deleted or corrupted

NB: Backups are not an archive of data as archives are using the Primary copy of the data and backups are using the secondary copy of the data

Hardware and Software used to Backup Data

There are two types of Backup that can be used: Hardware backups and Software Backups.

Hardware Backups are backups of information that are stored on different types of hardware (Hardware is a general term that refers to the physical artifacts of a technology i.e. items you can actually touch or move from room to room or desk to desk) e.g. When using a computer to backup information the Hardware is the physical items used to store the information i.e. floppy disk, memory stick, CD ROM etc.

Software Backups are backups of information that are stored on different types of software (Software is a is a general term used to describe a collection of computer programs, procedures and documentation that perform some task on a computer system basically it is a set of instructions that tells the computer how to behave i.e. an Antivirus System) e.g. When using a computer to backup information the Software is the computer programs used to store the information i.e. AMANDA system, Bacula System.



File Management

Backing up files

HARDWARE

Floppy Disk:

A floppy disk is a data storage device that is composed of a disk of thin, flexible ("floppy") magnetic storage medium encased in a square or rectangular plastic shell. Floppy disks are used to distribute software, transfer data between computers, and create small backups. They are unpopular today as they have a low data capacity



Magnetic Tape:

Most commonly used for bulk data storage, backup, archiving and interchange. Magnetic tape is a medium for magnetic recording generally consisting of a thin magnetic coating on a long and narrow strip of plastic. Also known as streaming.



Remote backup Service:

Backing up via the internet to a remote location. This can protect against some worst-case scenarios such as fire, flood, earthquake, nuclear strike etc. A drawback is that an internet connection is usually substantially slower than the speed of local data storage devices, therefore causes problems for people with large amounts of data, also has the risk associated with putting control of personal data in the hands of a third party. Online backup systems are typically built around a client software program that runs on a schedule, typically once a day. This program collects, compresses, encrypts, and transfers the data to the remote backup service



Solid State Storage:

Solid-state storage is a non-volatile (this is a general term for all forms of solid state (no moving parts) memory that do not need to have their memory contents periodically refreshed.), removable storage medium that employs integrated circuits (ICs) rather than magnetic or optical media. Examples include flash memory, Universal Serial Bus (USB) devices, Secure digital Cards, Memory Stick, CompactFlash etc. The main advantage of solid-state storage is the fact that it contains no mechanical parts. Everything is done electronically. As a result, data transfer to and from solid-state storage media takes place at a much higher speed than is possible with electromechanical disk drives.



Hard Disk:

In general, hard disks are less portable than floppies, although it is possible to buy removable hard disks (a magnetic disk on which you can store computer data). The term *hard* is used to distinguish it from a soft, or *floppy*, disk. Hard disks hold more data and are faster than floppy disks. A hard disk, for example, can store anywhere from 10 to more than 100 gigabytes, whereas most floppies have a maximum storage capacity of 1.4 megabytes.



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Optical Disk:

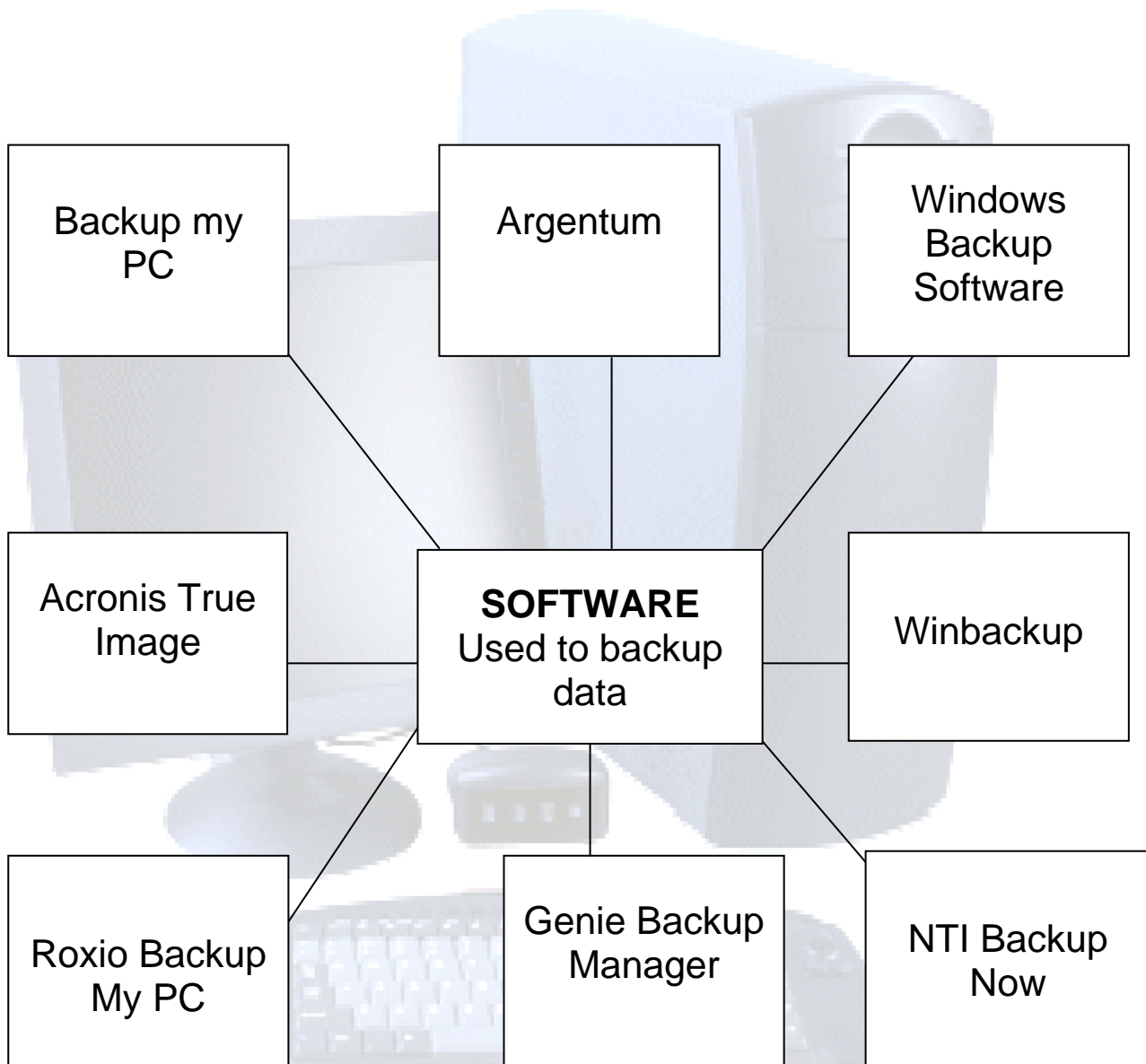
A storage medium from which data is read and to which it is written by lasers. Optical disks can store much more data -- up to 6 gigabytes (6 billion bytes) -- than most portable magnetic media, such as floppies.



Types of optical disks:

- CD-ROM : They come with data already encoded onto them. The data is permanent and can be read any number of times, but CD-ROMs cannot be modified.
- WORM : Stands for *write-once, read-many*. With a WORM disk drive, you can write data onto a WORM disk, but only once. After that, the WORM disk behaves just like a CD-ROM.
- ERASABLE: Optical disks that can be erased and loaded with new data, just like magnetic disks. These are often referred to as *EO* (erasable optical) disks.
- RECORDABLE DVD
- REWRITABLE CDRW or DVD-RAM
- HD-DVDs: These are expensive but hold a lot of data

These three technologies are not compatible with one another; each requires a different type of disk drive and disk.



Recommended website when buying computer backup software is:

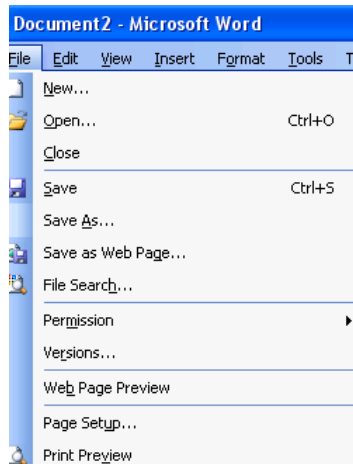
<http://computeractive.co.uk/personal-computer-world/features/2148042/buyers-guide-backup-software>

File Management

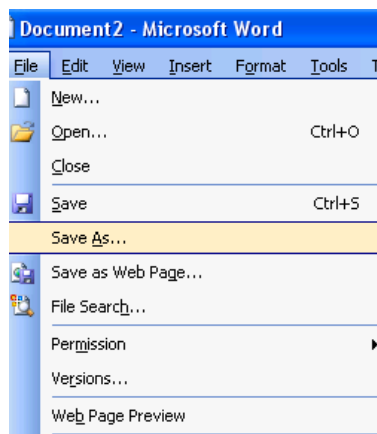
Backing up files


How to do a Backup

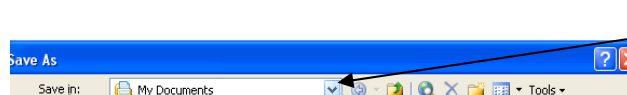
1. Open the saved document that you would like to back-up
2. Choose the file option on the menu bar



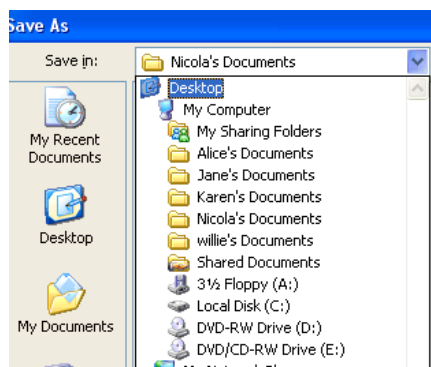
3. Choose the save as option



4. Click on the  arrow in the save in drop down menu (shown below)



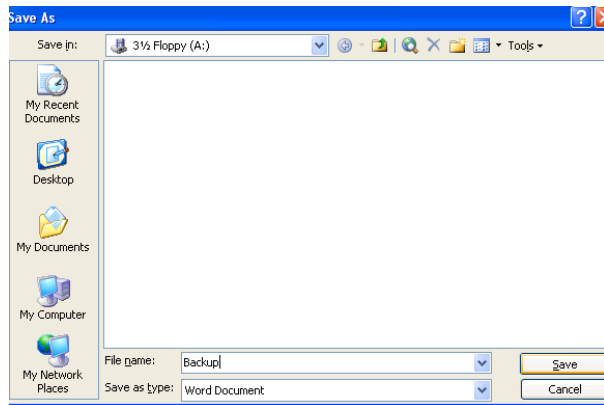
5. Choose the destination of the backup for example floppy disk (A:), optical disk (D:), Local Disk (C:)



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Backing up files

6. Type the name of the backup and click on save



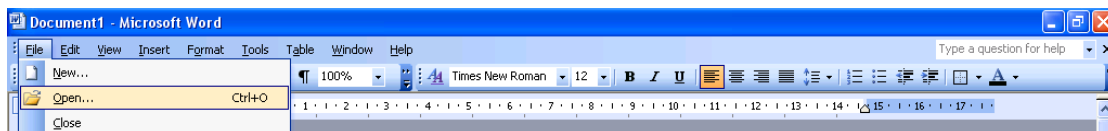
This means that the document will be saved in the original destination and a backup copy is saved in the new backup destination (chosen in step no 5).

NB: You can also copy and paste the document that you wish to back up into the backup destination following the 'How to move/copy a file/folder' handout.

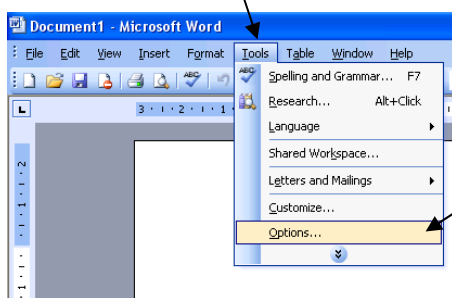
Automatic Back-up

You can also automatically back up your document by completing the following steps

1. Open the document



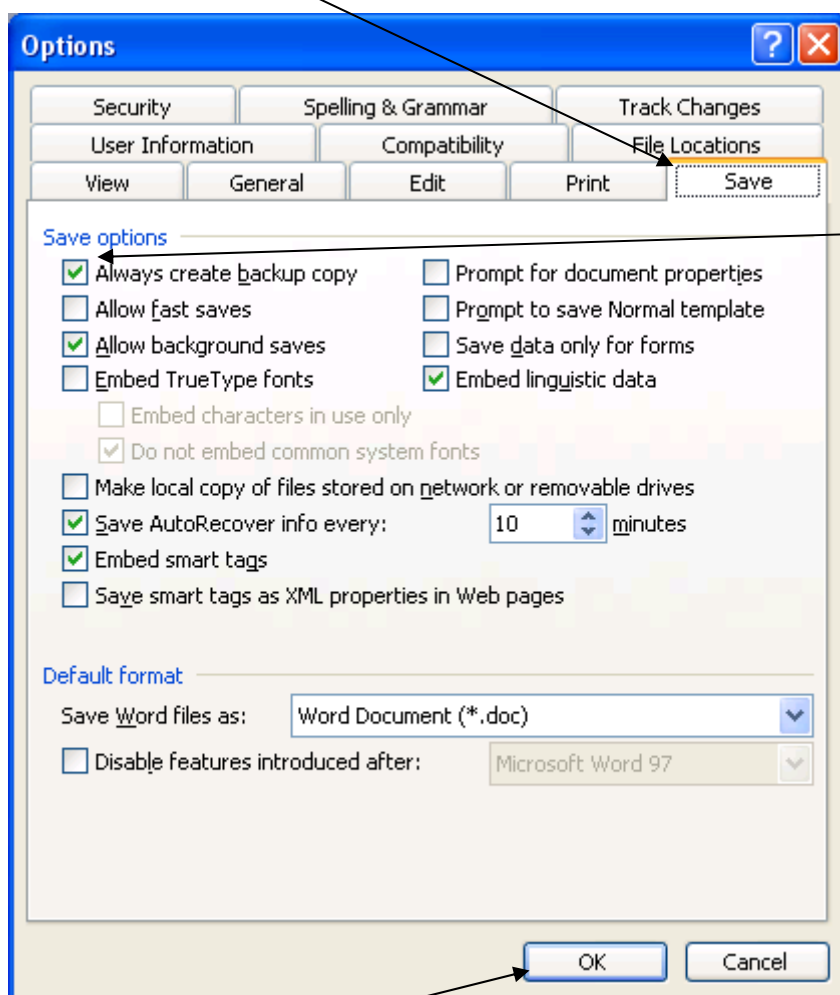
2. Choose the **Tools** icon on the menu bar and then the **Options** icon



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- Click on the **Save** tab and check the **Always create back up copy** box



Then press **OK**

General Information on Backups

The fundamental principle to 'backing up' is **frequent saving**. Do not work on a document for hours before saving it - software, hardware, and mains supplies are not that reliable! Save and name your document at the time of its creation, then click on the Save button every five minutes or so. The exact time between clicks of the Save button depends on how much you like retyping!

When working with data a suggested strategy is to work with three copies*:

- Your working copy which you save frequently.
- A copy on a removable storage device, for example a memory stick. Copy your working copy to this daily or half daily.
- A day old or half-day old copy. If you made a mess with your working copy and its backup, you can return to this one.

*It is very important to remember that one of these 3 copies is to be saved to a removable storage device so it can be taken away with you. Ideally, backups should be stored off-site at a safe location. Therefore if anything happens to the computer or the building/room the computer is in you will still have a copy of your saved file.