

Backup, archiving and recovery

Vital aspect of having a computer

How often do you backup your data?

Every time that you change something

Different types of backup

Full **system** (Image) backup

This stores everything that is on the selected disc in a compressed format

Operating System, data, settings, Programs, The Lot!

You can't read the files directly, you have to restore the whole system

Benefit: You can restore the whole machine back to a point in time when the image was written.

Downsides: You can't just restore one file.

It takes quite a long time to create the image and to restore the image.

Full **data** backup

This stores all the data that you have selected on your computer, normally in a compressed format, although you can just store a **copy** uncompressed.

Documents, spreadsheets, email, settings, but NOT the Operating System

Benefit: You can recover just one file if you need to.

Downside: It takes quite a long time to backup the data each time you create a backup.

Incremental backup

This stores all the things that have changed since your last full Data backup or last incremental data backup

Benefit: It stores just the changed files, nothing else, hence faster

Downside: If you have a crash then you have to rebuild the system and restore ALL the incremental backups back to the time of the last full data backup.

File History

This is a different form of backup

This allows you to store copies of your files on a regular basis. The default is every hour.

You can change the schedule to whatever you want.

Benefit: If you delete a file accidentally, then you can recover most or all of your work

Downsides: You are creating and storing multiple copies of the same file. After a while you will run out of storage space unless you delete some of the copies.

File history does not create a full system image.

Backup Strategy

Full System image plus full data backup, then Incremental backups.

Timing probably **Full system** every 3 Months, **Full Data** every month, **incremental** on every change

Recovery drive

Manufacturers sometimes include a recovery drive on your machine. It looks like an extra disc. Sometimes it is hidden.

The recovery drive is similar to the Windows system Repair disc and contains tools to rebuild your system

Where do you store your backups?

Considerations

Security – Are you sure that you can get to your backup when you need it?

Cloud supplier owns access to YOUR data!

Speed of recovery – Are you dependent on broadband speed, or just the speed of your Machine

Tools

Built in free tools or dedicated software

Free tools are often clunky or restrictive

Dedicated tools are more flexible, but cost money

Recovery after a problem

It depends what happened:

It worked fine until new software was installed

Solution: Restore to previous version. This depends on manually turning on System Restore to create system Restore Points

I accidentally deleted a file or folder

Solution: Restore from data backup

The system runs slow after a long time of use

Solution: Restore a clean operating system

I had a hardware failure and I now have new parts

Solution: Full rebuild of the computer and restore your data.

Practical demonstration of Full System Backup using **Windows** tools

Go to **Settings**

Update and Security

Backup

Go to Backup and Restore (Windows 7)

Create a System Image

Create a System Repair Disc

Recreate the system

Can **only** restore to the **same hardware** as was backed up. The Disc has to be at least the same size and type.

Process

Start the PC/Laptop

Enter the BIOS

Change the Boot settings such that the DVD drive is the Boot drive

Save the BIOS settings

Restart the computer with the System Repair Disc in the DVD drive

Wait for the DVD to load the software (It takes ages, so don't panic)

Connect the media containing the System Image to be restored

From the Menu, select restore from System Image.

Accept and start the restore (This will take ages)

Watch the progress bar until it says Restore complete.

Remove the System Repair Disc from the DVD drive.

Restart the computer and go into the BIOS settings

Change the Boot sequence back so that the hard disc boots first

Save the BIOS settings

Restart the computer and hopefully Windows should load successfully

Archiving

The process for removing old stuff off your computer and storing it somewhere safe.

You can use an external hard drive, or store in the Cloud.

Two ways to do it

- 1) Copy files from your computer to an external storage device, then delete the files on the computer

Benefit: You can easily read the archived files just by attaching the external storage device.

Downside: You have stored the files in an uncompressed state, hence using more storage

- 2) Set up a Data Backup the create a backup of just the files that you want to archive, then delete the files on the computer.

Benefit: All the archived files will be stored in a compressed format, hence most efficient used of storage

Downside: You will have use the Restore software to be able to recover the file(s).