

Information Security

ICT Essential Skills

Your data is valuable.. Protect it!



Information Security

What is information security?

- This is a general term which covers all aspects of computer security. It covers protection against viruses and hackers, password and access control policies as well as procedures for the regular backing up of your data (to guard against computer failure)



Advantages of proactive information security

- A proactive information security policy anticipates problems and attempts to guard against future problems, as opposed to discovering a problem and then trying to deal with the problem 'on the fly'.

The Importance of shutting down your computer

- When you are using a Windows based system it is important to remember that just switching off the computer or losing power due to a power cut (power outage) can cause loss of data. To protect against this you should save your work regularly. Many programs have a facility which automatically saves your work; say every 10 minutes (or any time interval which you specify).

Things computers like

- Good ventilation
- Clean environment
- Stable, vibration free surface

Things to avoid

- Dust
- Drinking and eating over the keyboard
- Heat, Cold
- Moisture
- Do not move the system while it is switched on.
- Do not just switch the computer off at the mains. Follow the correct shutdown procedure or data could be lost.
- Do not place objects on top of monitors. This could block the ventilation holes and cause it to overheat.
- Do not place floppy disks near monitors. Monitors produce a strong electromagnetic field, which can damage floppy disks.

User IDs and passwords?

- A User ID is normally used to logon to a computer, or computer network. It uniquely identifies you to the network.
- In addition you use a password which is only known to you. The password guarantees that no one can access the network and impersonate you (in theory).
- Once you have logged on (i.e. connected) to the rest of your computer network, you will have been assigned access rights to the network.



- Your network administrator will have defined these access rights. The idea of access rights is that you only have the ability to connect to, or share, devices which you have authority to use.

Choosing a secure password

- Your password is the only thing which will prevent someone else logging into a computer using your user ID and impersonating you.
- It is important to choose a password which cannot be easily guessed by other people.
- Ideally a password should be at least 8 characters long & contain a mixture of words and numbers.
- It is also recommended that you change your password regularly; some computer systems will require you to change your password periodically.

Why do you need to back up your computer?



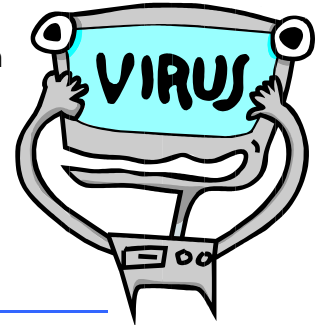
- The most important thing which you store on your computer is information. Often the contents of a hard disk can represent years of work. If the hard disk stops working one day you could lose all those years of work. For this reason it is VITAL that you take regular backups of the information which is stored on the computer. In large organisations this backup procedure is normally performed automatically by your computer support team, where the data is normally held on a centralised, networked computer.

In smaller organisations, it is often up to the individual to organise some sort of data backup. If nothing else is available, copy your files to another disk and make sure that these backup disks are stored away from the computer, ideally off-site. If there is a fire and your office burns down, if your backup disks are stored next to the computer they too will be incinerated.

Computer Viruses

What are computer viruses?

- Viruses are small programs which hide themselves on your disks (both diskettes and your hard disk). Unless you use virus detection software, the first time that you know that you have a virus is when it activates. Different viruses are activated in different ways. For instance, the famous Friday the 13th virus will activate only when it is both a Friday and the 13th of the month.



BEWARE: Viruses can destroy all your data.

How do viruses infect PCs?

- Viruses hide on a disk and when you access the disk (either a diskette, memory pen or another hard disk over a network) the virus program will start and infect your computer.
- The worst thing about a computer virus is that it can spread from one computer to another, either via use of infected disk, or over a computer network.
- The Internet allows you to access files from all over the world and you should never connect to the Internet unless you have a virus-checking program installed on your computer. It is vital to keep your virus monitoring software up to date.
- Many anti-virus programs, such as Norton Anti Virus allow you to update the program so that the program can check for recently discovered viruses.

How to prevent virus damage

- There are a number of third party anti-virus products available. The main thing about your virus checker is that it should be kept up to date. Many companies supply free anti virus software and allow you to receive updates automatically via the Internet.



More Information:

McAfee Anti-virus software <http://www.mcafee.com>

Norton Anti-virus software <http://www.symantec.com/avcenter>

Dr Solomon anti-virus software <http://www.drsolomon.com>

What to do if you discover a virus on your computer

- If you discover a virus on your computer don't panic. If your virus checker alerts you to a virus, then the chances are that it has caught the virus before the virus could infect your computer and cause damage.

Common methods of infection

- The most common method of infection is via emails. Be very cautious about opening unsolicited emails, especially if they contain file attachments. A good anti-virus program should detect most threats from virus-infected emails.
- Any file which you download from the Internet may in theory contain a virus. Be especially careful about downloading



program files (files with a file name extension of .COM or .EXE). Microsoft Word or Excel files can contain macro viruses.

- Do not connect to the Internet unless you have a good anti-virus program installed on your computer.

The limitations of anti virus software

- Anti virus software can only detect viruses (or types of viruses) which the software knows about. As such it is vital that you keep your anti virus software up to date so that it can detect new viruses which are constantly appearing.

What is virus disinfecting?

- Running a virus checker on a machine which contains a virus is known as disinfecting the PC, as the virus program will detect, and then eliminate the virus.

Copyright and the Law

Software Copyright Issues

- Most programs which you purchase are copyrighted and you must not copy them. If you do so you may be breaking the law and if caught, you could find yourself being prosecuted.
- Many people will buy a copy of a game and make a copy for their friends or other family member. This is also normally unlawful. Even lending your program disks or CD-ROM to other people may be breaking the law in most cases.
- There are numerous organisations, such as FAST (the Federation Against Software Theft), which are dedicated to preventing the illegal copying of software.
- ALWAYS first make sure that you have a licence which entitles you to copy the software,



You need to be VERY careful when downloading files from the Internet. Just because a site may say you are free to download materials from the site, does not necessary mean that the owners of the Internet site have the authority to allow you to do this.

- Most text which you will find on the Internet is copyrighted. Never copy text without authority to do so and always quote your sources.
- There are many sites offering free graphics and clipart. Some are genuine and have the authority to offer you a free download of images. Many sites however may not have this authority. Some sites even allow the 'free' download for complete films or music tracks. If you can download a film for free before it is even officially available on video/DVD, it is a pretty good bet that the site is unauthorised.
- Cover yourself. Get written permission to used downloaded materials and 'if in doubt - don't' is the safe rule.
- Because CD-ROM writers have become so widely available, it has become possible to copy entire CD-ROMs which can contain software, games or data. Do not do this. Always be careful of software which you may find advertised at very cheap prices, it may be illegally copied.



**Are you allowed
to copy disks?**



- **Transferring files across a network**
You need to be careful that you do not accidentally make copies of software via your Local Area Network (unless of course you are authorised to make such copies).