

Malware

Malware stands for “Malicious software” and is any type of software which acts in a way which is damaging (malicious) or intrusive to a computer. The types of malware are given below.

WARNING: This sheet discusses ways in which computers and networks are misused. It is illegal to use these techniques yourself.

Viruses

Viruses are a type of malware where malicious code is in an **executable program**. Viruses have the ability to **replicate** on other devices or computers in the same way that viruses in people replicate. The files attach to computer programs or files. Viruses may hide in the **boot sector** of a hard disk drive so that they run when the computer is started. They can also be stored on **removable media** so that they run when inserted to a computer. Viruses are started by a human doing something such as opening an executable file in an email or inserting removable media to a computer. Viruses may contain a program that listens to each key pressed on the keyboard and sends them to a remote computer. This is called a **keylogger** and is used to discover passwords as they are being typed into the computer. Other viruses may send out **spam** email or cause a **denial of service attack (DoS)**. It is common for viruses to corrupt files or programs stored on any secondary storage.

Spyware / Adware

Spyware is used to find personal information about users. It may send this information to another computer or person without the user agreeing. Spyware can be sent in a Trojan Horse or adware. A web browser stores **cookies** when you visit websites. This is to remember users when they visit the same website again and can be helpful as it saves you logging in. However, if cookies are used to track users without permission then this can also be seen as spyware.

Adware is another type of Trojan Horse which contains code that will cause many **advertisements** to appear on the computer in order for the creator to make money.

Trojan Horses

The **Trojan Horse** was a wooden horse used to take over the city of Troy. It was sent as a gift, but contained people who attacked the city from inside. In computers, a Trojan Horse contains useful software which the user wants and runs. However, it also contains malicious code which may damage files, annoy the user or create a **backdoor**. Trojan Horses do not replicate like viruses.

Anti-virus software

Anti-virus software is used to **detect** viruses and prevent them being executed or replicated. The software contains a **real-time scanner** which checks every file before it is installed, opened or executed. Each virus has a unique pattern of bits called a **signature** which can be detected, a little like a fingerprint on a human. Anti-virus software contains a **database** of signatures which needs to be constantly **updated** with the signatures of new viruses. If a virus is found then it will be prevented from being executed and the files will be **quarantined** so that they cannot be run again.

Anti-malware software

Anti-malware software is used in the protection and removal of malware such as worms, Trojan Horses, spyware and adware. A lot of anti-virus software now performs anti-malware functions too.