

Computer Security

What do you think of when you see or
hear the terms:

Computer Security

Why is Security an Issue?

Security threats can come from many sources, ranging from individuals through to organized crime to “legitimate” businesses.

Some of the motivations are:

financial gain

vandalism

curiosity

proving superiority

revenge

Viruses

This is the term most commonly used in reports of security threats.

Many security threats are not actually viruses.

The media and general public do not understand enough to know the difference.

Viruses

A virus is a piece of code that attaches itself to a file. The file is now said to be infected.

In addition to the ability to attach to a file, the virus generally carries a payload, which is a small program that execute when the infected file is accessed.

Viruses

The payload of the virus can range from almost harmless (e.g., a humorous message) to very malicious (e.g., erasing the entire hard drive).

Like a biological virus, the computer virus is also designed to spread. When the infected file is accessed on a new system, additional files will be infected.

A virus spreads through “physical” contact, such as an infected CD, USB, or by downloading an infected file.

Worms

A worm is similar to a virus, but it is more aggressive about spreading.

Worms use the fact that most computers are interconnected (e.g., networks, internet). They search for connections between computers and try to put copies of themselves on vulnerable systems.

Trojan Horses

A Trojan horse is a program that looks like something you want (e.g., some free anti-virus programs). The goal is to trick you into downloading and running the program.

As soon as the program executes, the payload is delivered. This will quite often be a virus or worm, and you just willingly installed.

This is the most common way to breach security, particularly with unknowing users.

Spyware

Spyware often falls into the “gray” area of security threats, since there is a range of behaviour for this type of software.

At best, spyware will track your browsing habits and send targeted advertisements when you go to certain web sites.

Most web browsing involves this to some extent in the form of cookies, which are legitimate files stored while browsing.

Spyware

At the other end of the scale, some types of spyware will gather far more information and relay that back to the owner/creator.

In addition to browsing, they might include the software on your computer, personal information, and possibly private and financial information.

Spyware

As the spyware becomes less legitimate, it will often behave more and more like a virus.

The worst spyware will copy itself to multiple locations in your computer. Cleaning or removing one instance will only cause another to become active.

In addition, the worst spyware will take control of your computer and/or internet browser, sending pop-ups and advertisements.

Exercises

Research methods (3-5) that can be used to prevent or correct some or all of these security issues.

For each method you discover, write a very brief (3-5 points or sentences) summary.

Submit your summary as an OpenOffice document to the exercises folder under your name.