

## **Chapter 13**

### **Virus and Antivirus**

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#### **13.1 VIRUS**

A Computer Virus or Virus is a piece of code which is capable of copying itself and typically has a detrimental (i.e. harmful) effect, such as corrupting the system or destroying data. A kind of malicious software program or "malware" that, when executes, replicates itself by reproducing (copying its own source code) or influences other computer programs by modifying them or deleting them. Virus insert malicious code into existing documents, programs or OS, and then spreads itself by various means. Over 90% of viruses spread through various attachments on emails or any external attachment such as USB, cable etc. The term computer virus was first described by Fred Cohen in 1985. Viruses generally perform some type of harmful activity on host computers (also known as infected host computer). Some common destructive activities are acquisition of hard disk space or central processing unit (CPU) time, accessing private information (e.g. credit card numbers, PIN), corrupting data, displaying biased or humorous messages on the user's screen, spamming e-mail contacts, logging their keystrokes, or even sometimes rendering the entire computer system useless.

#### **13.2 ANTI-VIRUS**

Antivirus or anti-virus software (often abbreviated as AVS), also known as anti-malware software, is a computer software used to prevent, detect and remove malicious software issues and viruses (distributed via e-mails, USB or Flash drive) for implementing security.

Unlike virus, an antivirus software is a program (just like any other program in computer) that is used to detect and prevent from harmful loading of web pages from the internet and also detect an unauthorized transmission between USB or flash drive and a computer.

### **13.3 VIRUS PROTECTION SOFTWARE**

There are many virus protection software's available in the market today and working successfully. Mostly software's are made and available for Windows operating system and also for others like Android and so on but Linux does not need any anti-virus software program. Because the security for Linux is very strong. But most of the virus attacks are done from Linux based system. Some of the most commonly used Anti-Virus software programs are as follows:

- ☐ Quick Heal Antivirus
- ☐ Norton Antivirus
- ☐ AVG Internet Security
- ☐ Avast Antivirus
- ☐ K7 Total Security
- ☐ Kaspersky Antivirus
- ☐ Bit-defender and Macafee etc.

These Antivirus software programs are available in both free and paid versions in terms of their features. In free version of a program less features are available while in the paid version full support and premium features are available.

### **13.4 PROTECTION OF THE COMPUTER FROM VIRUS**

There are numerous ways to protect and remove malware or virus from our computers. No one method is enough to ensure your computer is secure. The more layers of defense, the harder for hackers to use your computer. These are some of the critical steps to protect your computer:

- ☐ Install Firewall
- ☐ Install Antivirus Software
- ☐ Install Anti-Spyware Software
- ☐ Use Complex and Secure Passwords
- ☐ Check on the Security Settings of the Browser

#### **Install Firewall**

A firewall acts as a security guard. Generally firewalls are of two types: Software Firewall and Hardware Firewall. Each serves similar purpose but different in a different way. A firewall is the primary step to provide security to the computer. It

builds a barrier between the computer and any unauthorized program trying to approach the system through the Internet. For systems at home, the firewall must be turned on permanently. It alerts you in case of any unauthorized efforts to access your system.



### **Install Antivirus Software**

Antivirus is also one of the means to protect the computer. It is software that facilitates to guard the computer system from any unauthorized access or software that may harm the system. The unauthorized software may be viruses, key loggers, Trojans etc. They might harm the system in any ways like slowing down the processing speed of computer system, deleting important files and accessing personal information (Account details, Pin etc). To ensure proper safety of the system, antivirus software must be installed and updated periodically to prevent the system from further attack of newly created viruses. Certain antivirus software like Antivirus for Windows 8 software includes advanced features such as email protection, identity theft and blocking of pop-ups.

### **Install Anti-Spyware Software**

Spyware is a kind of software program that gathers someone's personal information or information related to an organization without their consent with an intent to redirected the information to a third party for malicious activities. Spyware are difficult to be removed due to their specialized designing. Anti-Spyware software is specially designed to combat the harms of spyware. It offers real time protection. It scans all the information entering the system and helps in blocking the threat once detected. Eg. Comodo Free Antivirus comes with spyware protection built in.



### **Use Complex and Secure Passwords**

The foremost task in maintaining system security is to have strong and complex passwords. Complex passwords pose difficulties for the hackers to hit the correct

password. An ideal password must have at least 8 characters in length and include a combination of numbers, letters that are both upper and lower case and includes a special character. Hackers employ certain tools to break easy passwords in few minutes.



### **Check on the Security Settings of the Browser**

Some newer versions of browsers provide built in security and privacy settings that you should review and set to the level according to your desired level of security. Recent browsers give you features like not to track your movements, increasing your privacy and security.

## **13.5 UPDATING THE SOFTWARE**

Generally most of the new antivirus programs (programs or computers purchased after the year 2000) provide the facility for users to update their antivirus program through the software. In order to update the antivirus program, Open it and look for "Update", "Check for updates", "Live Update", or something similar.

### **IMPORTANT POINTS**

- ☐ A Computer Virus or Virus is a piece of code which is capable of copying itself and typically has a detrimental (i.e. harmful) effect, such as corrupting the system or destroying data.
- ☐ Antivirus or anti-virus software (often abbreviated as AVS), also known as anti-malware software.
- ☐ A firewall acts as a security guard.
- ☐ Spyware is a kind of software program that gathers someone's personal information or information related to an organization without their consent with an intent to redirected the information to a third party for malicious activities.
- ☐ The foremost task in maintaining system security is to have strong and complex passwords.

## Practice Questions

### Objective type questions:

**Q.1** Which one of the following is an antivirus software?

- A. Virus protector
- B. Quick Heal
- C. VMware
- D. HCL

**Q.2** By whom the term virus is described?

- A. Fred Cohen
- B. Jonty Rhodes
- C. Jon Nuemann
- D. Fred Stark

**Q.3** In which year the term virus is described?

- A. 1982
- B. 1992
- C. 1985
- D. 1986

### Very short answer type questions:

- Q1. Give the definition of computer virus?
- Q2. What are the various mediums for spreading computer viruses?
- Q3. What is an Anti-virus software program?
- Q4. Write down the names for 5 most commonly used AVS programs?
- Q5. Give the names of basic steps for protecting computer from viruses?
- Q6. What are different types of firewall? Write down short definitions for each?

### Short answer type questions:

- Q.1 How to update software? Explain in brief?
- Q.2 Explain about virus protection software with example?
- Q.3 Give various difference between virus and antivirus?
- Q.4 How could a computer antivirus provides protection? Explain any two methods in brief?

### Essay type questions:

- Q.1 Explain methods of protection from virus in detail?
- Q.2 Explain virus and antivirus in detail?

### Answer key for objective type questions:

- 1. B
- 2. A
- 3. C