

The Impact of Computer Virus Attacks and its Detection and Preventive Mechanism among Personal Computer PC Users

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Abstract: *This document provides abstract overview of the computer virus detection and protection. Computer viruses are most critical area in computer. Most of the computer users in the world are suffering from this threat and it is very difficult to prevent every computer from being compromised by virus. Viruses reproduce themselves and spread through computer to computer and network to network. Most of the engineers develop some antivirus software and some best practices to prevent virus from attacking your computer system and how to block viruses in machine. This research paper describes the prevention of computer viruses, and surveys several related research works in this field. Furthermore, we describe the some significance of applying algorithm in computer virus protection and prevention, and discuss their implication in designing and developing anti-virus technologies and policies. We conclude that, despite its limitations, the some models bring new hope for solving the computer virus problems*

Keywords: virus attacks, virus detection, machine

1. Introduction

This research paper find the factors which leads the virus attacks among personal computer users. Today's society has seen a increase in the use of computers. As a result users of personal computer today need to have a virus protection mechanisms to face the growing computer viruses. Virus attacks on computer are more harmful that shows up and more damage to the computer and It is important to analyze the actions that a virus performs in ones system and also the activities that are possible to occur. This helps in protecting our PC with needful security mechanisms to safeguard the secure information. The purpose of this research paper is to introduce to the reader the threats that the computer viruses can create ,provide guidelines on how individuals can protect themselves against these viruses.

2. Literatures Survey

According to the researchers, an every day computer virus which can destroy a whole computer system within a few seconds. The worst thing that result an inflection is losing data the resides in the computer. A virus is by definition a computer program that spreads and replicates by copying itself .Computer virus attacks have become serious issue and can quickly spread through the Internet and causing even more damages (Joseph Wen 7998). Unlike other threats computer viruses able to infect the program, file and computer very rapidly without direct human intervention. Joseph Wen in 1998 mentioned in his research paper that a computer virus can cause the loss or alteration of programs or data, and can loss their personal data. Joseph Wen 1998 started the vital part of a virus .it is a set of instructions executed spreads itself to other unaffected programs and files. [1] Based on the intention of the virus developer some instructions can do any harmful activities like displaying a test message, erasing files or corrupt stored data, replicating itself or taking up system resources such as disk space,

memory, Central Processing Unit (CPU) time and network connections. (Joseph Wen 1998). In general when we shut down the computer system, most of the viruses are stay active in memory. But when we turn off the computer we just remove the virus from memory, but not permanently remove from the file or disk it has infected. The next time when we turn on the computer system the virus program is activated and starts its vandal activities continuously.

3. Methodologies

Types of viruses and its way of Computer Virus Attacks

3.1 Micro Viruses

Macro Viruses infect the files created using some applications or programs that contain macros such as doc, pps, xls and mdb. They infect the files with macros and also templates and documents that are contained in the file. Macro viruses hide in documents and shared through e-mail and networks.

3.2 Memory Resident Viruses

Memory Resident Viruses usually fix themselves inside the computer memory. They get activated every time the OS runs and end up infecting other opened files. They hide in RAM.

3.3 Overwrite Viruses

Overwrite Viruses delete any information in a file they infect, leaving them partially or completely useless once they are infected. Once this type of viruses entered in the computer, they replace all the file content but the file size doesn't change.

3.4 Direct Action Viruses

Direct Action Viruses mainly replicate or take action once they are executed. When a certain condition is met, the viruses infecting the files in the directory or the folder specified in the AUTOEXEC.BAT. The viruses are generally found in the hard disks root directory and they always keep on changing location

3.5 Directory Virus

Directory Virus also called as cluster virus or file system virus. They infect the computers directory by changing the path of the file location. They are usually located in the disk but affect the entire directory.

3.6 Web Scripting Virus

Some of the web pages include some complex codes in order to create an interactive and interesting content. This kind of a code is often exploited to cause certain undesirable actions. They mostly originate from the infected web pages or browsers.

3.7 Multipartite Virus

Multipartite Virus spread in many different ways. Their actions vary depending on the OS installed and presence of certain files. They hide in the computer's memory but do not infect the hard disk.

4. Analyses and Discussion

4.1 Some of the Warnings of Virus Infected Computer

The followings are the 151 symptoms after virus infected computer such as computer performance slowed down and it takes a time to start the computer, sometimes get restarted frequently on itself, it displays more prompt messages with errors and collapse of operations, sometimes fail the application functionality to meet up to the mark, crushed data that are change in format and it very difficult to reopen, files and documents do not get opened at times with error or unknown file formats, automatically send messages with the virus to our contacts through email, the command CTRL+ALT+DEL no longer works, receives an e-mail message that has a strange attachment, an application program is disabled for no reason and cannot be restarted, the computer may not allow re-installation of the anti-virus, new icons appear on desktop and you cannot replace it or remove it program disappears from the computer without uninstallation, operating system does not start because certain critical system files are corrupted by viruses, receive error messages listing those files, programs that used to run now and stop responding frequently, and a partition completely disappears....etc

4.2 Popular methods of virus detection

One of the most important functions of virus detection which is present in a computer system. Once a virus is detected, the program typically informs the user about the detection of the virus. Since the virus often writes its code

into the program at several different locations the program tries to remove the virus codes and restore the original program. A program uses various methods for detecting viruses. As the characteristics of different viruses are different and detection methods are also different. All types of viruses cannot be detected by any single method. The following is the popular methods used for detecting viruses. Signature scanning Computer viruses copy themselves and infect on each executable file. These types of viruses replicate an identical copy of them-

Selves in byte-by- byte each time they infect a new file. They can be easily detected by searching a specific string of bytes, called virus signature. Simple computer viruses copy itself to each executable file they infect. These types of viruses replicate an identical copy of itself byte-by- byte each time they infect a new file. They can be easily detected by searching a specific string of bytes, called as virus signature and it has been extracted from the body of the virus. A virus signature is a sequence of bytes and it may be found in a virus program code but unlikely to be found anywhere. Extracting a virus signature is a skillful job. We must analyze the virus body carefully in order to extract the virus signature. When a new virus expert has to analyze the infected file fired the pattern or signature of that virus.

4.3 Popular method for virus prevention

Your system by 141checking for viruses each time when computer accesses an executable file. Install a firewall and keep it enable especially when the computer is connected with the internet. Unfortunately, when battling viruses, Worms and hardware firewall may be less effective than a software firewall, as it could possibly ignore embedded worms in outgoing e-mails and check this as regular network traffic.

5. Objectives of the Research

- Identify the reasons which cause virus attacks among the personal computer users.
- Suggest the possible preventive mechanism to safeguard their computer resources from virus attacks

6. Conclusion

There are many methods to treat and prevent the computer virus with anti-virus. you can prevent virus from your desktop only running script on your desktop to block viruses which is come from network, mail and USB. The prevention and the treatment computer virus are a long-term work, it not gets it over and done, should be relentless

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