INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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   INTRODUCTION

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   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

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   HYPOTHESES

   RESEARCH METHODOLOGY

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   RECOMMENDATIONS/SUGGESTIONS

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   ACKNOWLEDGMENTS

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   APPENDIX/ANNEXURE

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- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, KurukshetraUniversity, Kurukshetra.

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- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

COMPUTER WORLD: WITHOUT VIRUS

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ABSTRACT

Over a decade of work on the computer virus problem has resulted in a number of useful scientific and technological achievements. The study of biological epidemiology has been extended to help us understand when and why computer viruses spread. Techniques have been developed to help us estimate the safety and effectiveness of anti-virus technology before it is deployed. Technology for dealing with known viruses has been very successful, and is being extended to deal with previously unknown viruses automatically. Yet there are still important research problems, the solution to any of which significantly improves our ability to deal with the virus problems of the near future. The goal of this paper is to encourage clever people to work on these problems. Institutions so as to come to a point of setting protocols thus the varying goals and objectives converge to a focal point of matching final output. Aim of this work is to propose a system that is self sufficient and has each and everything a person may think of and nothing new need be installed on the home system so that a virus attack may never take place.

KEYWORDS

Trojans, Virus,, Virus Free World, Worms.

INTRODUCTION

Can we expect a virus free world? This question raises so many ideas and one of them is as under:
How a virus does enter our system? One of the answers may be that when we download an application that was not installed earlier or if we are looking for an update from a non reliable source we expect thousands of viruses or worms to chip in.
Some times it is inadvertently done and at others we are bound to take care of an urgent project and there is no time left for proper scanning and we are bound to take the calculated risk. Again, we may falter in the calculations and we lose the cause.
Taking care of such a situation, if at all, everything required by any person is available on a reliable resource then possibly; we may never face a challenge of a virus attacking our disk.
The proposed solution hereunder is as follows:

1. Remove any sort of hard disk at the user's premise.
2. Therefore no and nothing need be installed in the system.
3. Each and everything will be available online.
4. Just as we work on Google, we need only one such system that will allow us to access anything and everything.
5. Every thing will be available virus free and nothing new need be installed.

REVIEW OF LITERATURE

In 1983, Fred Cohen coined the term "computer virus", postulating a virus was "a program that can 'infect' other programs by modifying them to include a possibly evolved copy of it." Mr. Cohen expanded his definition a year later in his 1984 paper, "A Computer Virus", noting that "a virus can spread throughout a computer system or network using the authorizations of every user using it to infect their programs. Every program that gets infected may also act as a virus and thus the infection grows."
In 1988 the Internet was shut down by the "Morris Worm," a self-replicating program coded by Robert Tappan Morris of the Chaos Computer Club. It used send-mail and finger exploits to break into and propagate from one UNIX computer to another. By the time it had infected some 10% of the computers on the Internet, it was clogging essential Internet communications lines as the worm shipped around ever more copies of it. Yet many computer scientists say we shouldn't call the Morris Worm a computer virus.
Before the first computer virus was ever coded, in 1984, Dr. Fred Cohen wrote his doctoral thesis on the topic (published in his book "Computer Viruses," ASP Press, 1986). As a result, Cohen is credited by many with being the first to conceive of their existence. It is important to remember -- Cohen is AGAINST computer viruses. He didn't invent them, but was the first to prove they could be created, and to foresee the damage they could cause. Purists hold by the definition of virus that appeared in Cohen's doctoral thesis: a computer virus is code that, when active, attaches itself to other programs.
However, long before Dr. Cohen detailed the characteristics of viruses, mathematician John von Neumann proved that a Turing machine (a mathematical construct representing a single-processor computer) is capable of containing a "universal constructor" which, if provided with a program containing its own description, is able to reproduce itself. Von Neumann's "universal constructor" proof covers not only Cohen's definition of a computer virus, but also self-replicating programs such as the Morris Worm.
Using that explanation, we can see that viruses infect program files. However, viruses can also infect certain types of data files, specifically those types of data files that support executable content, for example, files created in Microsoft Office programs that rely on macros.
Compounding the definition difficulty, viruses also exist that demonstrate a similar ability to infect data files that don't typically support executable content - for example, Adobe PDF files, widely used for document sharing, and .JPG image files. However, in both cases, the respective virus has a dependency on an outside executable and thus neither virus can be considered more than a simple 'proof of concept'.
In other cases, the data files themselves may not be infect-able, but can allow for the introduction of viral code. Specifically, vulnerabilities in certain products can allow data files to be manipulated in such a way that it will cause the host program to become unstable, after which malicious code can be introduced to the system. These examples are given simply to note that viruses no longer relegate themselves to simply infecting program files, as was the case when Mr. Cohen first defined the term. Thus, to simplify and modernize, it can be safely stated that a virus infects other files, whether program or data.
In contrast to viruses, computer worms are malicious programs that copy themselves from system to system, rather than infiltrating legitimate files. For example, a mass-mailing email worm is a worm that sends copies of itself via email. A network worm makes copies of itself throughout a network; an Internet worm sends copies of itself via vulnerable computers on the Internet, and so on.
Trojans, another form of malware, are generally agreed upon as doing something other than the user expected, with that "something" defined as malicious. Most often, Trojans are associated with remote access programs that perform illicit operations such as password-stealing or which allow compromised machines to be used for targeted denial of service attacks. One of the more basic forms of a denial of service (DoS) attack involves flooding a target system with so much

data, traffic, or commands that it can no longer perform its core functions. When multiple machines are gathered together to launch such an attack, it is known as a distributed denial of service attack, or DDoS.

While purists draw a firm distinction between viruses, worms, and Trojans, others argue that it is merely a matter of semantics and give the virus moniker to all viruses, worms, and Trojans. To satisfy both parties, the term malware, a.k.a. malicious software, was coined to collectively describe viruses, worms, Trojans and all other forms of malicious code.

Malware can be defined as any program, file, or code that performs malicious actions on the target system without the user's express consent. This is in contrast to Sneakyware, which can best be described as any program, file, or code that the user agrees to run or install without realizing the full implications of that choice. One of the best examples of Sneakyware was Friendly Greetings, a greeting-card trick that exploited users' willingness to say yes without reading the licensing agreement. By doing so, they were blindly agreeing to allow the same email to be sent to all contacts listed in their address book.

IMPORTANCE OF THE STUDY

Over a decade of work on the computer virus problem has resulted in a number of useful scientific and technological achievements. The study of biological epidemiology has been extended to help us understand when and why computer viruses spread. Techniques have been developed to help us estimate the safety and effectiveness of anti-virus technology before it is deployed. Technology for dealing with known viruses has been very successful, and is being extended to deal with previously unknown viruses automatically. Yet there are still important research problems, the solution to any of which significantly improves our ability to deal with the virus problems of the near future. The goal of this paper is to encourage clever people to work on these problems. To this end, we examine several open research problems in the area of protection from computer viruses. For each problem, we review the work that has been done to date, and suggest possible approaches. There is clearly enough work, even in the near term, to keep researchers busy for quite a while. There is every reason to believe that, as software technology evolves over the next century or so, there will plenty of important and interesting new problems that must be solved in this field.

As more viruses are written for new platforms, new heuristic detection techniques must be developed and deployed. But we often have no way of knowing, in advance, the extent to which these techniques will have problems with false positives and false negatives. That is, we don't know how well they will work or how many problems they will cause. We show that analytic techniques can be developed which estimate these characteristics and suggest how these might be developed for several classes of heuristics.

STATEMENT OF THE PROBLEM

We have a reasonable, qualitative understanding of the epidemiology of computer viruses, characterizing their spread in terms of birth rate, death rate, and the patterns of program transfer between computers. But a mystery remains. Evidence suggests that viruses are still relatively uncommon - that their prevalence has always been very low. But, according to our current theories, this can only happen if the birth rate of viruses is ever so slightly higher than their death rate, a coincidence too remarkable to believe. We discuss effects that might be responsible for this puzzling observation.

We are in the process of deploying digital immune system technology that finds new viruses, transmits them to an analysis center, analyzes them, and distributes cures worldwide, automatically, and very quickly. The current architecture for this system uses a centralized analysis center for a variety of good reasons. But a more distributed approach, perhaps even a massively distributed approach, has advantages as well. We outline the system issues that must be considered, and what simulation results would be useful, in understanding the tradeoffs.

There have been thankfully few instances of worms - freestanding virus-like programs that spread themselves and may never be present in the computers file system at all. Yet virtually all of our anti-virus technology relies on detecting and removing viruses from a file system. We discuss the new problems that worms engender, and suggest some of the new technology that may be needed to deal with them.

Current anti-virus technology is largely reactive, relying on finding a particular virus before being able to deal with it well. Modern programming environments can give rise to viruses that spread increasingly rapidly, and for which a reactive approach becomes ever more difficult. We review the history of pro-active approaches, showing why traditional access controls are basically useless here, and describe newer approaches that show promise.

OBJECTIVES

Over the past ten years, a single method of detecting computer viruses has nearly eclipsed all others: scanning for known viruses. Originally, a string of bytes was selected from some known virus, and the virus scanner looked for that string in files as a way of determining if that file was infected with that virus. Later, more complex techniques were developed which involved looking for various substrings in various parts of the file. But all of these techniques have one thing in common: they look for static characteristics of viruses that are already known. Main objective of this paper is to develop a virus free world using a technology which may be feasible to work with.

HYPOTHESES

Development of a new system containing each and everything that a user may wish to have without having any hard disk at the user’s end so that nothing can be installed on user’s system and everything he requires would be provided on the network in a virus free manner.

RESEARCH METHODOLOGY

The research methodology in this area would be EXPLORATORY. Exploratory research is a type of research conducted for a problem that has not been clearly defined. Exploratory research helps determine the best research design, data collection method and selection of subjects. It should draw definitive conclusions only with extreme caution. Given its fundamental nature, exploratory research often concludes that a perceived problem does not actually exist. Exploratory research often relies on secondary research such as reviewing available literature and/or data, or qualitative approaches such as informal discussions with consumers, employees, management or competitors, and more formal approaches through in-depth interviews, focus groups, projective methods, case studies or pilot studies. The Internet allows for research methods that are more interactive in nature. For example, RSS feeds efficiently supply researchers with up-to-date information; major search engine search results may be sent by email to researchers by services such as Google Alerts; comprehensive search results are tracked over lengthy periods of time by services such as Google Trends; and websites may be created to attract worldwide feedback on any subject.

CONCLUSION

With the help of modern connectivity systems already prevailing in the market and the technological knowledge available we may precede a step further and enhance the security against the viruses and worms. Though, the current paper talks about finding newer ways. It talks about removing the threat of viruses completely. It throws the light on the possible solution of eradicating any sort of hard disk at users’ premises thus scoring a great chance of not letting any virus enter the system and sustain there. It talks about putting everything online where every aspect gets properly scanned and the threats get minimized.

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