Computer Viruses Are Nothing New

Don't be ashamed. Everybody's had a virus at one time or another. The social diseases of the Internet age, computer viruses vary from the unnoticeable to the utterly horrifying. There are more of them than you think, and they're not going away. According to research firm TruSecure, 28% of corporations had a "virus disaster" resulting in 25 or more infected computers between January and September 2001. "The malicious code problem...continues its seven-plus year trend of worsening every year, " Peter Tippett, chief technology officer of antiviral firm TruSecure, said in the 2001 report.

What Is A Virus?

There are plenty of subtle distinctions in the virus world, but four main kinds of malware, or malicious software, are likely to cause you headaches.

Viruses are parasitic little bits of computer code that attach themselves to existing programs, documents, or system files. When users run infected programs or boot-infected computers, viruses activate and attach themselves to other files they find.

Worms are independent programs that send themselves around the Internet and launch themselves silently on victims' computers, running quietly in the background and wreaking havoc. (You'll often see worms referred to as viruses; most experts consider the word "virus" to include worms, as well.) Both viruses and worms usually carry both code to duplicate themselves and a payload, or the destructive code that makes their presence known. ." A virus .can playa tune, it can display an offensive message, it can delete files, it can wipe your hard drive, it can corrupt information," says Graham Cluley, director of research for antivirus software company Sophos. . .

Trojan horses appear to be a cute screen saver or a neat game, but when run they can destroy flies or open back doors into your machine so evil hackers can attack through the 'Net. Finally, many experts consider virus hoaxes to be "mind viruses." Forwarded endlessly via email, they clog mailboxes, waste productivity, and cause heart- burn. A few hoaxes can even cause damage; one recent trick persuaded users to remove the Sulfnbk.exe file from their computers, a little known and sometimes-useful Windows utility used to restore long filenames that be- come damaged or corrupted.

Many Viruses But Few Epidemics

There are about 60,000 viruses in existence today, according to Steve Trilling, senior director of research for Symantec. (A third of those were created over one weekend in 1999 by a hyperactive automatic virus generator.) Cluley says Sophos sees around 900 to 1,000 new viruses a month. But the vast majority of viruses exist only in antivirus company labs or amongst the shadowy network of computer-virus writers and enthusiasts who call themselves "Vx traders." Owning and writing viruses isn't illegal; it's a hobby, like collecting guns. The problems start when people release viruses into the "wild." The definitive tracker of these occurrences, the WildList (http://www.wildlist.org), shows 612

viruses reported as active somewhere around the world. But most of those viruses are rare, fading, or harmless. Trilling says that at any given time, a handful of bugs cause most of the trouble. "Today, the vast, overwhelming majority of all of our [virus] submissions are of one virus, Klez," he says. Klez is a nasty piece of work that emails victims' personal files across the Web while simultaneously making the messages look like they come from an often-uninfected third party. During the first six months of 2001, according to TruSecure's report, five viruses caused the vast majority of trouble: SirCam, the Love Bug, Home- page, FunLove, and Anna Kournikova. How much damage viruses cause depends on whom you ask. TruSecure, for instance, says virus disasters cost the average company $148,320 in 2001, and in its 2000 report claimed that the Love Bug virus might have cost as much as $10 billion globally. But some experts are skeptical as to how those numbers are calculated. George Smith, editor-at-large of V- myths.com (http://www.vmyths.com), points out that virus damage estimates include the ordinary salaries of tech support staff for the hours they were working on the problem, as well as slippery estimates of lost productivity. "Virus costs can be thought of as part of the overhead that goes to IT staff salaries and wages for fixing up after user error, software crashes, ensuring the network remains stable, " etcetera," he says.

From Harmless Pranks To Vicious Threats

 Viruses weren't always so wide- spread, or so dangerous. The history of viruses stretches back as far as the history of computers. Technology pioneer John von Neumann suggested the idea of self-reproducing computer programs in a 1949 paper, and programmers in the 1960s amused themselves with Core War , a game where they wrote aggressive little programs that I' would try to attack and devour each other. But the first time an average user saw a virus was 21 years ago. In late 1981, a bunch of teenagers at a Pittsburgh high school were shocked when they flipped on their Apple ll computers to see the following on- screen poem:
It will get on all your disks
 It will infiltrate your chips
 Yes it's Cloner!
It will stick to you like glue
 It will modify ram too
 Send in the Cloner!

Office to do their will.) And a lot more people have email. "Gartner [an IT research firm] calls email the killer app of the Internet," says Steve Gottwals, director of product marketing for email security company Sigaba, and hastens to add, " ...not as in bringing death." But email has enabled viruses to spread thousands of times faster than ever before. On March 26, 1999, the Melissa virus emailed itself to everyone in its infected users' Outlook address books, spreading faster than any virus seen before. It wasn't bluntly destructive, but the huge load it imposed on email servers caused corporate networks to buckle under the strain. "Melissa was the big turning point in modern history," Symantec's Trilling says. From 1996 to 2001, the percentage of viruses transferred via email attachments jumped from 9% to 83%, according to TruSecure.

Diskette- based transmission methods plummeted from 74% of all infections in 1996 to 1% in 2001.
Melissa was followed by the Love Bug, Newlove, and Anna Kournikova viruses, all of which spread rapidly thanks to naive computer users opening email attachments.

The Fourth Age

Roger Thompson, technical director of malicious code research for TruSecure, says that we're now in the fourth age of viruses. The first age lasted from 1987 to 1995 and was marked by viruses that infected applications and the boot sectors of floppies and hard drives. The second age, from 1995 to 1999, was the age of macro and script viruses, such as Melissa and the Love Bug, which used simple programming languages designed by Microsoft to help users manipulate Windows and Office. The third age spawned viruses such as SirCam, which work somewhat like script viruses but are written in more difficult programming languages, and are therefore more robust and flexible.

"Now we're seeing viruses with multiple forms of attack that use computer security vulnerabilities to get started," Thompson says. "There's always been the hacker world and the virus writer world, and they've never combined...now they have." Nimda, for instance, takes advantage of a now fixed bug in Internet Explorer to automatically launch itself from an email, even without a user opening an attachment.

And the future?

 Virus fighters see their battle with the virus writer's continuing, with users remaining trapped in the middle. "The sophistication of new viruses is steadily increasing," said Bill Orbis, malicious code expert for the U .S. Department of Energy's Computer Incident Advisory Capability. "It's a battle between the antivirus vendors and the virus creators to see who can get something out there the quickest, and defeat the other guys' system."

BY SASCHA SEGAN