Inside the Malware Industry

Agenda

- Do the presentation

Who Am I

- Integrated Solutions Lead for Matrikon Toronto/Chicago
  - Custom software for Power Plants
  - NERC CIP for the past year or so
- Previously developed Pharmacy systems, online casinos, dating websites
  - And malware

Why Am I Here?

- Never seen anyone talk about the subject from the inside
- Thought it was interesting
- So that you don’t do what I did

Who Was I?

- It was 2004 and I was just a programmer with no security/malware background whatsoever
- Was broke
- Found the job on Craigslist
- Hired as Lead Developer for a malware company
- 5 other programmers

History

- He was being paid by someone else to run this business
- Had tried previously with a group of outsourced developers from India
- Said the time difference was too much and they had some kind of falling out
  - The falling out turned out to be that he didn't pay them, so he didn't get the source code
- Hence, us

Features

- Client Application
  - Run any application we wanted
  - Add links, icons, shortcuts
  - Change homepage, search provider
  - Keyword search popups and hyperlinking
  - Check for updates daily
- Server
  - Track installs and updates
  - Manage Multiple Campaigns
  - Upload new versions

Polymorphic Installs

- Random filenames and locations
- Random file contents to get by hash checks
- While I worked there, no malware protection software was able to remove it
- Had started looking into hiding the files in Alternate Data Streams

Affiliate Hijacking

- Abusing affiliate site referrals
- If you went to a site in our list, you got redirected through our affiliate link
- We would get commission off anything purchased
- Hundreds of affiliates

Kernel Module

- Hide all the files from the user
- If they were deleted, they would be immediately replaced and randomized once more
- Probably called a root kit now

Technology Used

- Client Side
  - Internet Explorer Plugin (Browser Helper Object hooks)
  - Visual C++ 6
- Server Side
  - PHP Interface
  - MySQL
- Hosted on Russian servers guaranteed to never take down content

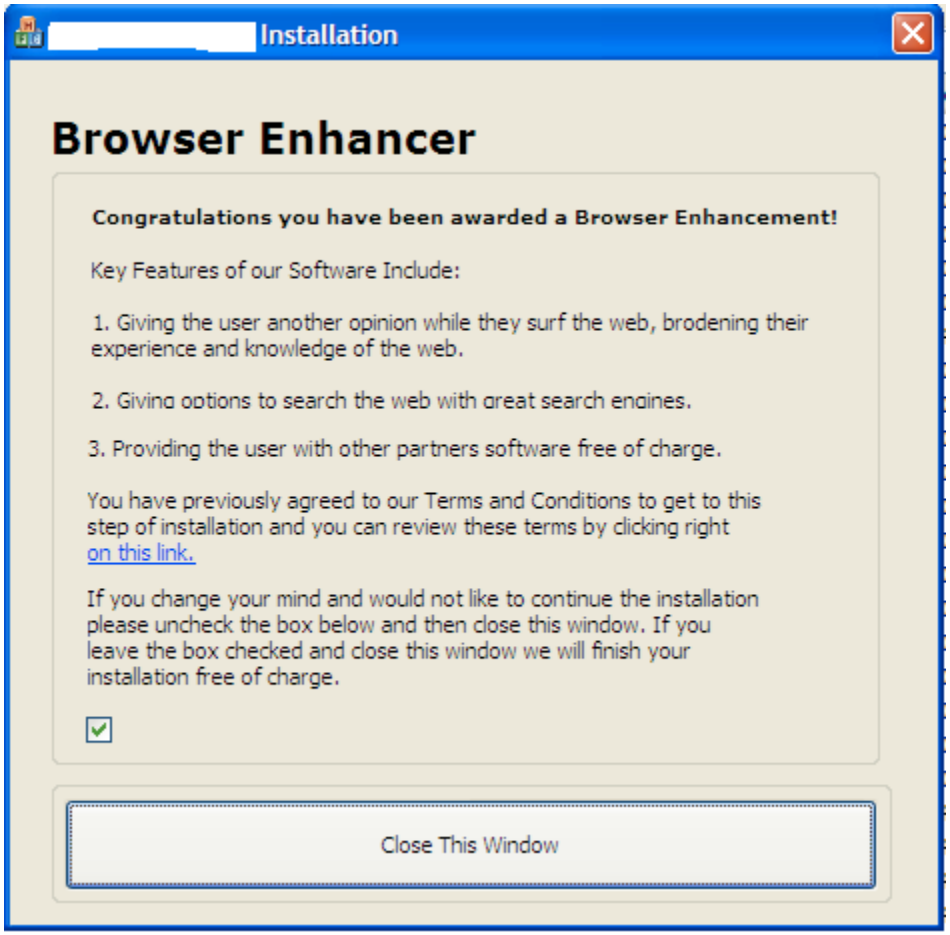
How Does This Get Installed?

- My boss said he would pay $10k to whoever found a way to remotely install our software
- Exploits IE Flaw
- Our exploit required two things
  - Get the file on the computer and out of protected IE zones
  - Run the file
- I found one that was able to do this using a custom .chm file and exploit in Windows Media Player
  - Was unpatched until XP SP2
- Not Illegal
  - However, we covered our backs with a custom installation dialog
- My boss never paid the $10k

Installation

- Standard IE 6 Installer

Installation



- Custom installer
- Bypasses standard install method
- Legal disclaimer not needed, but just in case
- Tricky to not install

How Did We Deploy The Installer

- Put the exploit in banner ads
- Websites don’t know what ads they run
- And we didn’t know which sites we ran on
- Run the ‘campaign’ for a while and then open the IFrame with the exploit
- Only display to a configurable fraction of viewers
- Don’t try on incompatible browsers
- Keep track of IP addresses and don’t show the IFrame twice to the same person

How Malware Makes Money

- We had over 12 million installs, guess how much money our malware made?
  - Not a dime
    - Affiliate programs know what to watch out for
      - But also don't do much about it
- My boss made a lot of money
- How?
  - Installing other peoples malware
- You can make ~10 cents an install
- My boss would package as much malware as he could get paid for (around 20 different packages)
  - Companies apparently only paid for ~60% of installs

What Happens When You Install 20 Pieces of Malware at Once

- Some will install the .NET framework
- Your computer will never be slower
- They try to uninstall each other
  - Including installing AV

Want To Be A Millionaire?

- You can!
- The technical part is easy. All the work is making sure the other malware companies pay you
- My boss was convinced no laws were broken
- All you need is no conscience!
- And people you can trust

How Did It All End?

- Much like all the other internet companies I've worked for, they stopped paying me
- Found out the company was founded at an AA meeting
- Went on to work for the person who was paying my boss
- Quit after working 80 hours a week for a few months
- Likes to be able to sleep at night
- This period on my resume is listed as contract work

Other Scams

- Trying to throw search engine results
- Had their own search engines with paid top results
- News video popups

What can be done about malware

- As long as there is money to be made, someone will try
  - Or even if they just think they can
  - Or even if they think they can make money off people who think they can
- Blacklisting is a fools errand
  - Whitelisting is the future (or should be)
    - Guess you can't make money if you can't sell virus signature updates

What Did I Learn

- Creating malware is not hard
- You can easily make a lot of money on the internet
- AV/Malware protection seems almost useless
- This kind of software is not going away
- It’s not worth compromising your ethics for money

Questions

- Any?

Contact

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