



Geeks Bearing Gifts: Unwrapping New Technologies

(Part 1)

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Course Materials

- **Geeks Bearing Gifts:**

Unwrapping New Technology Trends

- <http://nnlm.gov/train/geekgifts/>

- **Course Materials**

- http://nnlm.gov/train/geekgifts/geeks_A.doc

- http://nnlm.gov/train/geekgifts/geeks_B.doc

- http://nnlm.gov/train/geekgifts/geeks_C.doc

- **PPT Presentation and handouts**

- <http://nnlm.gov/psr/training/>



Class Overview

10am – 11am

- Spyware and Malware

11am – 12pm

- Instant Messaging, Chat and SMS
- Open Source Movement
- Radio Frequency Identifiers (RFID)

12pm – 1pm

- Lunchtime!



Class Overview

1pm – 2pm

- RSS, Blogs, Wikis and Social Networking Software

2pm – 3pm

- Podcasting , Vodcasting and Voice over IP (VoIP)
- Internet 2
- Geek Gadgets Galore: Tablet PC's, Blackberrys, Treos, VoIP accessories



Class Objectives

- Increase awareness of new technologies
- Give you the ability to explore and use new technologies
- Identify library applications and integrate in own work environment
- Become aware of resources that will help you stay informed



**I Always Feel Like
Somebody's Watching Me:**

**Spyware and other
Malware**



Spyware

- A broad category of malicious software intended to intercept or take partial control of a computer's operation without the user's informed consent
- Spyware subverts a computer's operation for the benefit of a third party - usually for commercial gain (\$\$\$)
- Differs from viruses and worms in that it does not self-replicate



Common Spyware Tactics

- Delivery of unsolicited pop-up advertisements
- Theft of personal information (credit card numbers!)
- Monitoring of Web-browsing activity for marketing purposes
- Routing of HTTP requests to advertising sites (penny-per-click Web sites)



Spyware Statistics

Dec 2005 - AOL/NCSA Online Safety Study

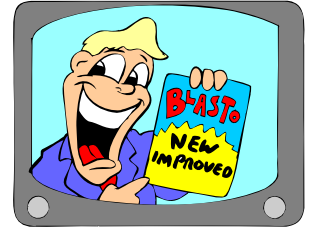
56% - had no anti-virus protection or had not updated it within the last week

44% - did not have a properly-configured firewall

38% - lacked spyware protection

83% - believed that they were safe from online threats!!!

Adware



- Some programs display advertising as an alternative to shareware registration fees (i.e. Eudora)
- Classified as "**adware**" in the sense of advertising-supported software, not as spyware
- Usually do not operate secretly or mislead the user



Routes of Infection

1) User installs through deception

- Piggybacks on so called legit software
- Tricks user into doing something that installs the software without them realizing it

2) Bundled with shareware or other apps

- in some cases spyware authors have paid shareware authors to bundle spyware with their software (*i.e. Gator*)



Routes of Infection – cont'd

3) Exploitation of software vulnerability

- Attacks known security vulnerabilities in a Web browser or other software (i.e. IE, MS Java runtime)
- “Drive-by Downloads” - usually a link takes a person to a webpage with some scripting code (i.e. php) that installs software as a Browser Helper Object

Spyware Piggybacking!



Spyware Deception examples



Bonzi Buddy!



Bonzi Buddy is generally targeted at children and claims:

“He's your interactive friend and traveling companion! He'll talk, laugh, sing, do tricks, and browse and search the Internet with you...”



Symptoms of a Spyware infected machine

- Computer slows to a crawl
- Pop-ups galore (advertising & porn)
- Major stability issues (crashes and hangs)
- Difficulty connecting to the Internet
- After entering search into your search bar, a new and unfamiliar site starts handling searches
- Unfamiliar sites added to your bookmarks



Spyware and Cookies

What are Cookies?

- Variables set by Web sites (including advertisers) which can be used to track Web-browsing activity
- Can be legitimate: used with shopping cart or to maintain consistent user settings on a search engine or web service (i.e. PubMed)

Are cookies spyware? **No**



Troubleshooting

Spyware infection occasions more visits to the PC repair center than any other problem

- If at work ask others if they are experiencing problems – it could just be an Internet issue
- If using Windows - Launch Task manager (ctrl+alt+del, Task manager button)
- View Processes – if you notice unusually high CPU performance, most likely there is a problem!



Software Solutions

- **CounterSpy** - Sunbelt Software
<http://www.sunbelt-software.com/CounterSpy.cfm>
- **Spy Sweeper** - Webroot Software
<http://www.webroot.com>
- **Ad-Aware SE Personal** – Lavasoft
<http://www.lavasoftusa.com/software/adaware/>
- **Spybot Search & Destroy** – Safer Networking
<http://www.safer-networking.org>



More Software Solutions

- **Windows Defender** (currently in beta)

<http://www.microsoft.com/athome/security/spyware/software/default.msp>

- **CWShredder**

<http://www.trendmicro.com/cwshredder/>

- **Merijn.org's HijackThis**

<http://www.spywareinfo.com/~merijn/downloads.html>

- **BHODemon (v. 2.0.0.23)**

<http://www.definitivesolutions.com/bhodemon.htm>



2 Modes of Operation

- **Real-time protection** - prevents spyware from being installed – scans incoming network data and disk files at download time
- **Manual scanning and removal** - inspects contents of Windows registry, operating system files, and installed programs



Ad-Aware[®] se

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Status

Scan now

Ad-Watch

Add-ons

Help

Scanning Results



Scan Summary

Critical Objects

Negligible Objects

Scan Log

Target families detected on this system

- MRU List (16 Objects Total)
- VX2 (42 Objects Total)
 - ▶ VX2 has a TAC rating of 10
 -
- 180Solutions (13 Objects Total)
- SideFind (41 Objects Total)
- istbar (16 Objects Total)
 - ▶ istbar has a TAC rating of 7
 -
- TopMoxie (19 Objects Total)
- DyFuCA (84 Objects Total)
- Hijacker.TopConverting (1 Objects Total)
- Zango (13 Objects Total)
 - ▶ Zango has a TAC rating of 6
 -
- vWindows (1 Objects Total)

Summary Of This Scan

Total scanning time: 00:04:45
 Objects scanned: 77399
 Objects identified: 242
 Objects ignored: 0
New critical objects: 242
Average TAC: 5.214
 Negligible objects: 16
 Negligible references: 42

Right-click an item for more options.

15 Families

Quarantine

Show Logfile

Next



Spyware Removal Tips

If all else fails and you still have a spyware infection:

- Boot Windows into **Safe Mode** – hold/tap F8 key when booting computer
- Run **Spyware** scan manually
- Run **Antivirus** scan manually

- Go make a sandwich or watch a movie 😊



Windows Safe Mode

```
Windows Advanced Options Menu  
Please select an option:
```

```
Safe Mode
```

```
Safe Mode with Networking
```

```
Safe Mode with Command Prompt
```

```
Enable Boot Logging
```

```
Enable VGA Mode
```

```
Last Known Good Configuration (your most recent settings that worked)
```

```
Directory Services Restore Mode (Windows domain controllers only)
```

```
Debugging Mode
```

```
Start Windows Normally
```

```
Reboot
```

```
Return to OS Choices Menu
```

```
Use the up and down arrow keys to move the highlight to your choice.
```




Security practices

- Install a web browser other than Internet Explorer
 - Try Firefox or Opera
- If you must use IE – keep up-to-date on security fixes and patches!
- If you don't have a firewall – get one!
 - Some Linksys routers have firewall software built-in
 - Latest Windows updates include firewall
 - ZoneAlarm “FREE” is popular
- Practice Safe Surfing!



Other Malware

- Most common are **Viruses & Worms**
- Difference?
 - Virus - depends on hosts to spread itself
 - Worm – a worm operates more or less independently of other files
- Both are able to self-replicate



Virus

- self-executing, self-replicating program

Symptoms:

- damage files
- cause erratic system behavior
- display annoying messages



Worm

- a self-replicating virus that does not alter files but resides in active memory and duplicates itself
- use parts of an operating system that are automatic (services) and usually invisible to the user

Symptoms:

- Take up system resources, slowing or halting other tasks

Other Malware

- Wabbits
- Trojans
- Backdoors
- Spyware
- Exploits
- Rootkits (Sony CD's!)
- Key loggers (Dangerous!)
- Dialers





Questions?



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● ● ● | **Instant Messaging, Chat
and SMS**





Instant Messaging (IM)

- The act of instantly communicating between two or more people over a network such as the Internet
- Requires use of a client program or Web-based client
- Differs from e-mail in that conversations are able to happen in real time



IM Features

- **“Presence Awareness”** feature – indicates whether people on one's list of contacts are currently online and available to chat (i.e. 'Buddy List')
- **“Status Message”** – ability to set a status message (i.e. away, do not disturb)



Popular IM Clients & Services

- AOL Instant Messenger, MSN Messenger, Yahoo! Messenger
- Google Talk
- ICQ
- Jabber

Multi-Protocol

- Trillian, GAIM, Meebo (Web-based)



IM History

- **Early 1970s** - early form of instant messaging was implemented on the PLATO system
- **1980's and 1990's** - UNIX/LINUX "talk" instant messaging system widely used by engineers and academics
- **November 1996** - ICQ was the first general instant messenger introduced for non-UNIX/LINUX computers



Too Many Protocols!


- After ICQ was introduced numerous variations appear – many of which use different protocols, so...

How do you manage all these protocols?

- Use a client that supports multiple protocols:
 - Trillian, Jabber, GAIM or Meebo (Web based)

Trillian Basic 3

Trillian View >>

 **mmiller**
Partially C...

My Mail Account...
mmiller@library.ucla.e...
liquifuzz@aol.com

My Contacts
Buddies (2/4)
ChrisShaff
MBoerSEA
Offline Contacts
BadSinus
defcon1 2u
depressedSatan
dukevista
liquifox
veronicaarroyo

Buddies



ChrisShaff : AIM - ...

File Edit View Actions Help

Video Audio Send File Invite Info History

From liquifuzz to ChrisShaff

[10:41] ChrisShaff: hi
[10:41] Liquifuzz: how r u?
[10:41] Liquifuzz: heh nice icon lol
[10:41] ChrisShaff: heh
[10:42] ChrisShaff: which one do you see?
[10:42] Liquifuzz: i'm preparing to teach the geeks bearing gifts class
[10:42] Liquifuzz: so i'm firing up trillian to take a screenshot 😊
[10:42] Liquifuzz: it's the cat with the helmet on - looks like alime rind
[10:42] Liquifuzz: or tennis ball
[10:43] ChrisShaff: ah, yeah
[10:43] ChrisShaff: that's a fun one
[10:43] Liquifuzz: hmmm
[10:43] ChrisShaff: my icon varies depending on which computer I used recently
[10:43] ChrisShaff: it's a lime
[10:43] Liquifuzz: lol!
[10:43] Liquifuzz: did u make that?
[10:43] ChrisShaff: geeks bearing gifts?
[10:43] ChrisShaff: no
[10:43] ChrisShaff: <http://images.google.com/images?q=cat%20helmet&ie=utf-8&oe=utf-8&client=firefox-a&rls=org.mozilla:en-US%20official&sa=N&tab=wi>
[10:43] Liquifuzz: <http://nmlm.govtrain/geekgifts/>
[10:44] ChrisShaff: fun
[10:44] Liquifuzz: y
[10:44] Liquifuzz: ok here goes i'm gonna screenshot us
[10:44] Liquifuzz: you'll be famous!
[10:45] ChrisShaff: heh

A A A A B I U  

Send

Last message received on 3/7/2006 at 10:45 AM.

You are logged in as:



AOL System Msg

[10:40] AOL System Msg: Your other AIM sessions have been signed-off. You are now signed-on from 1 location(s).

[10:48] liquifuzz: cool

[10:48] AOL System Msg: AOL System Msg menu: To manage your Instant Messaging sessions, choose an option below by responding with the option's number (1 or 2). 1. Sign off my AIM sessions connected from other locations (this will not disconnect my AOL sessions) 2. Tell me how many times I'm currently signed on.

B I U A Arial 10

chrisshaff

[10:48] liquifuzz: there one more time using meebo

[10:49] liquifuzz: test 123 😊

[10:49] liquifuzz: this is cool - an online version

[10:49] liquifuzz: anyhow - i can never remmber all my poasswords!

[10:49] liquifuzz: ok done with testing cya chris!

B I U A Arial 10

chrisshaff is online

Buddy List

I'm available ▼

- ▼ **Buddies (2)**
 - chrisshaff
 - MBoerSEA
- ▼ **Offline (5)**
 - defcon1 2u
 - depressedSatan
 - dukevista
 - liquifoxX
 - veronicaarroyo



Uses for IM Services

- Interoffice Communication
 - NN/LM staff, esp. Technology Coordinators use IRC heavily
- Virtual Reference

Library Success Wiki: Virtual Reference and IM

http://www.libsuccess.org/index.php?title=Online_Reference



Questions?



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Thumb Culture: SMS





Short Messaging Service (SMS)

- A service available on most mobile phones that permits the sending of short messages between mobile phones, other handheld devices and even landline telephones
- SMS is also referred to as **Text messaging** or **txting**)



Other messaging implementations

- Not all Text messaging systems use SMS
- Some alternate implementations from Japan are:
 - J-Phone's *SkyMail*
 - NTT Docomo's *Short Mail*



SMS Popularity

- Popular with younger generation
- Very popular in Asia, due to low charges per text message
- Not as popular in US due to unlimited "mobile-to-mobile" minutes, high monthly minute allotments, and unlimited service – but it **is** starting to become popular



Txt speak

Joe: Hi

Michael: can I help u?

Joe: y, what time u close?

Michael: 6pm

Joe: gr8, thx!

Michael: np - cya

- **Netlingo's - List of Acronyms & Text Messaging Shorthand**

<http://www.netlingo.com/emailsh.cfm>



Social Impacts of SMS

- **Academic:** Cheating in school
- **Criminal:** Osama joke & Clash lyrics
- **Political:** Joseph Estrada forced to resign as president of the Philippines through use of SMS chain letters
- **Social:** During Hurricane Katrina – with phones down, many used SMS on mobile phones to communicate



Uses for SMS

- Virtual Reference – really! 😊

“TXTing Librarians @ Curtin”

Curtin University Library in Australia

[http://conferences.alia.org.au/online2005/
papers/a12.pdf](http://conferences.alia.org.au/online2005/papers/a12.pdf)



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Let my Software Go:



The open source Movement



Open Source

- refers to a program in which the source code is available to the general public for use and/or modification from its original design free of charge, i.e., open



Open Source Software

Differs from commercial software in that the **source code** is freely available for anyone to:

- examine, evaluate, and adapt/modify for their own needs
- port to new operating systems and processor architectures
- distribute modified versions
- even market it!



Not the same as “Freeware”

- is “*free of charge*”
- is generally proprietary - users do not have the freedom to use, copy, study, modify or redistribute
- Source code for freeware may or may not be published
- permission to distribute modified versions may or may not be granted



History

- **Jan 1998** - "open source" label comes out of strategy session in reaction to Netscape's announcement of source code release for Navigator (known as Mozilla)
- **Feb 1998 - Open Source Initiative (OSI)** formed by Eric S. Raymond and Bruce Perens



Open Source Initiative (OSI)

“The **basic idea behind open source** is very simple: When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing.”



Advantages to using Open Source

- low cost and high value
- quality and reliability
- security
- increased freedom and flexibility (both hardware and software)
- adherence to open standards



Disadvantages to using Open Source

- Liability for intellectual property infringement
- No guarantee of quality or fitness
- Projects can easily be abandoned or updates and fixes become less frequent



The Cathedral and the Bazaar

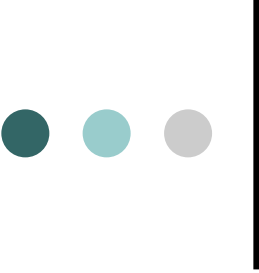
- 1997 Essay by Eric Raymond

<http://www.catb.org/~esr/writings/cathedral-bazaar/>



Licensing

- Open Source Software licenses grant rights to users which would otherwise be prohibited by copyright including rights on:
 - Usage
 - Modification
 - Redistribution
- GNU General Public License (GPL) - most prominent example of licensing



Where can I find Open source Software?

- **SourceForge.net**
 - world's largest Open Source software development web site
 - hosts more than 100,000 projects
- **Freshmeat.org** (*Linux slanted*)
 - another popular large index of Unix and cross-platform open source software



Most Active Projects - Last Week

(Updated Daily)

[\[View Other Top Categories\]](#)

Rank	Project Name	Percentile
1	Azureus - BitTorrent Client   	100.000
2	phpMyAdmin  	99.999
3	Gaim  	99.999
4	7-Zip  	99.998
5	gulivern	99.997
6	WebCalendar  	99.997
7	Asterisk@Home  	99.996
8	PDFCreator  	99.995
9	FCKeditor	99.995
10	FileZilla  	99.994
11	Compiere ERP + CRM Business Solution  	99.994
12	FreeNAS  	99.993
13	ZK - Ajax but no JavaScript	99.992
14	JasperReports	99.992
15	WinMerge  	99.991
16	KeePass Password Safe  	99.990
17	Open Computers and Softwares Inventory	99.990
18	GanttProject	99.989
19	OpenWFE  	99.988
20	Ares Galaxy	99.988
21	MiKTeX  	99.987
22	synergy  	99.986
23	MinGW - Minimalist GNU for Windows	99.986
24	PhpGedView  	99.985
25	Owl Intranet Knowledgebase  	99.984
26	eMule	99.984
27	PHP For Applications - PHP Framework  	99.983
28	Gallery  	99.982



NN/LM Open source usage

- Firefox browser
- MediaWiki (Wiki-based intranet)
- WordPress (Blog)
- Linux, Apache, MySQL, PHP (LAMP)

Other Popular applications:

- Plone CMS, phpBB, openoffice, Zope, Ubuntu Linux (live CD)



Questions?

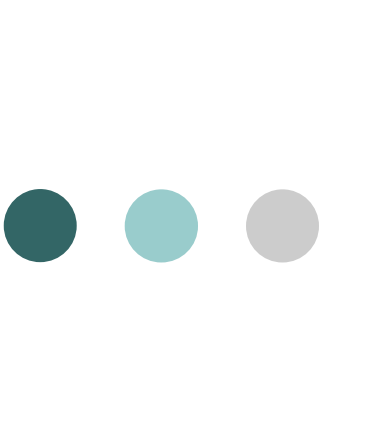


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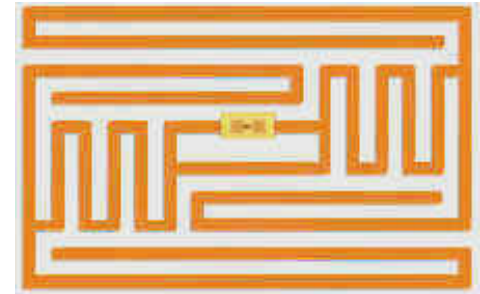


**I know what you took last
night:**

**Radio Frequency Identifiers
(RFID)**

Radio Frequency IDentification (RFID)

- is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders
- RFID tags are small objects, containing antennas that enable them to receive and respond to radio-frequency queries from an RFID transceiver





2 Types of RFID tags: Passive and Active

Passive:

- require no internal power source
- Smallest = 0.15 mm × 0.15 mm
- Distance: Passive tags have practical read distances from about 10 millimeters up to around 20 feet



2 Types of RFID tags: Passive and Active

Active:

- Include an internal power source which enables them to have longer range; larger memory; and ability to store additional information sent by the transceiver
- smallest active tags = size of a coin
- Distance: range of up to 100 feet or more, and battery life of up to 10 years



RFID Use in Libraries

- Security gates detect whether a book has been properly checked out
- When users return items the item record in the Integrated Library System (ILS) is automatically updated
- Return receipts can be generated
- Future use – replace barcode technology



Potential and Actual Medical Uses

- Talking Prescriptions
- Hospitals may use RFID systems to identify patients and/or permit hospital staff to access medical records
- Tracking medical equipment in real-time can reduce costs and improve care

Other Uses for RFID

- Animal identification
- Airline baggage tracking, passports
- Electronic payment (debit cards)
- EZpass toll collection, driver's licenses
- Tracking prisoners
- Pallet tracking
- Building access control





The RFID System

- An RFID system consists of:
 - Tags
 - Tag Readers
 - Edge Servers
 - Middleware
 - Application Software



Cost

- Due to low cost the majority of RFID tags in existence are passive
- \$ 7.5 cents for quantities of 1 million and \$ 7.2 cents for orders exceeding 10 million
- Current demand for RFID integrated circuit chips is not close to supporting that price



RFID Controversies

- Privacy and security issues are numerous:
 - Illicit tracking of tags
 - Duplication or cloning of tags
 - Shortage of computation resources for standard cryptographic techniques within the tags
 - Tags can be read at a distance without knowledge of the individual
 - Customer identification data tracked without permission



Human Implants

- **Amal Graafstra**, a Washington Business Owner has two RFID implants, one in each hand
- Amal's **RFID implants page**
<http://www.amal.net/rfid.html>
- **RFID Toys** - book
<http://tinyurl.com/s5h3j>

For the RFID Paranoid: The RFID-Zapper

- A group of German privacy hackers have come up with a portable device that can wipe a passive RFID-Tag permanently, called the RFID-Zapper



[http://events.ccc.de/congress/2005/wiki/RFID-Zapper\(EN\)](http://events.ccc.de/congress/2005/wiki/RFID-Zapper(EN))



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