

# **Spyware: Vendors and Practices**

Benjamin Edelman  
[www.benedelman.org](http://www.benedelman.org)

# Agenda

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- The spyware problem
- General practices
- Types of practices
  - Spyware/adware vendors
  - Rogue anti-spyware vendors
  - Advertisers
  - Ad networks

# “Spyware”

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VONAGE  
THE BROADBAND PHONE COMPANY™

A Typical Infected PC

To Place an Order Call  
1.800.986.4VON

Web Offer

New Smileys For Summer - 8,000 and growing!

WOO

Web Offer

gifts.com

The easy way to find great gifts

Find great gifts based on personality or interests!

**Gifts for her:**

• PRETTY & PAMPERED

• CREATIVE & ARTISTIC

• FASHIONABLE

• MUSIC LOVER

• GOURMET

• SEE ALL GIFTS FOR HER



**Gifts for him:**

GRILLMASTER •

WELL-GROOMED GUY •

GADGET GURU •

SPORTS FAN •

GOLFER •

SEE ALL GIFTS FOR HIM •



Cours

enroll

This is a Web Offer commercial offer and is not sponsored or displayed by the websites that you are visiting.

October 2005

# Why Not “Adware”?

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- Nonconsensual installations
  - Exploits
  - Huge bundles
- Poor disclosures
- One-sided “bargain”

# Spyware business models

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- Ads
  - Pop-ups and pop-unders
  - Toolbars, sliders, sidebars, desktop icons
- Tracking
- Spam, DDoS, zombies, botnets

# Recurring Practices

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- Exploit-based installations
  - nonconsensual installations
- Poorly-disclosed bundle
  - Scroll box disclosure
  - Euphemisms in product description
    - unfair/deceptive installations

# Example nonconsensual installations

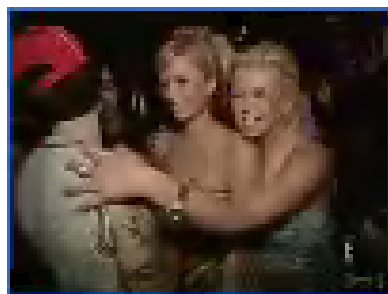
---

→ [www.benedelman.org](http://www.benedelman.org)  
(videos, narratives)



# Example unfair/deceptive installations

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## Paris Hilton And Tara Reid Gone Wild

seekmo

This content is FREE thanks to Seekmo.  
Why? Because it's paid for by advertising.

The following is included in the Seekmo installation:

Seekmo Search Assistant (Seekmo SA) provides free access to Paris Hilton And Tara Reid Gone Wild and all Seekmo-supported content across the Internet and, in exchange, may display to you several ads per day based upon keywords from your Internet browsing. [Learn more about Seekmo.](#)

Seekmo Toolbar lets you search the Internet from any webpage. [See the Seekmo Toolbar.](#)

### End User License Agreement ("EULA")

(Last Revised July 6, 2006)

NOTICE TO USER: THIS END USER LICENSE AGREEMENT ("AGREEMENT") APPLIES WITH RESPECT TO SOFTWARE APPLICATIONS PROVIDED BY ZANGO, INC. AND ITS AFFILIATES.

☒ By clicking "Play Now" I represent that I (1) am at least 18, (2) agree to the terms of the EULA above and (3) consent to play Paris Hilton And Tara Reid Gone Wild.

▶ Play Now

Play

Cancel

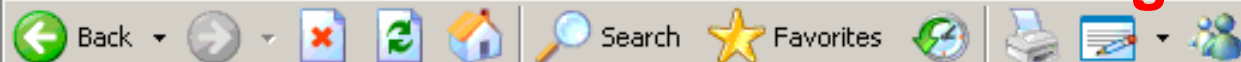
January 2007

# Zango's Settlement Obligations


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“Express consent” shall mean that, prior to downloading or installing any software program or application to consumers' computers: (a) Respondents clearly and prominently disclose the material terms of such software program or application prior to the display of, and separate from, any final End User License Agreement; and (b) consumers indicate assent to download or install such software program or application by clicking on a button that is labeled to convey that it will activate the download or installation, or by taking a substantially similar action.

File Edit View Favorites Tools Help



Address http://www.radiostorm.com/

 **RUN FOR OUR SONS**

Register for a Disney marathon. **SIGN UP NOW** 

[RunForOurSons.org](#)

- About us
- Contact Us
- Privacy
- MySpace



HOME PLAYLIST

POP TOP 40

ALTERNATIVE

 **Do you want to block Junk Emails?**

 **ADD TO** 

**Download Our Toolbar**

**RADIOSTORM CHAT**  
07/10/07 07:42 PM  
**Gaara(The Guardian):**

**POP TOP 40**  
- Jon McLaughlin - Beautiful Disaster

**Alternative**



Start



Radiostorm.com - Micros...

http://media.fastcl...

Internet

July 2007

9:43 PM



HOME

PLAY

Download Our Toolbar

RADIOSTORM CHAT

07/10/07 07:42 PM

Gaara(The Guardian):

Pop Top 40

- Jon McLaughlin - Beautiful Disaster


Alternative

## Spam Blocker Utility - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Print Mail


Address <http://spamblockerutility.com/installation/Browsing/install.aspx?DefaultSkin=&AdditionalXips=> Go



### Setting up Spam Blocker for Outlook...

Outlook® is a registered trademark of Microsoft Corp.

- ☒ Protects your Inbox from annoying Junk mail
- ☒ Guards you from fraudulent Emails and Scams
- ☒ Compatible with Outlook ® and Outlook Express ®



[Free Download](#)

Done Internet



Start



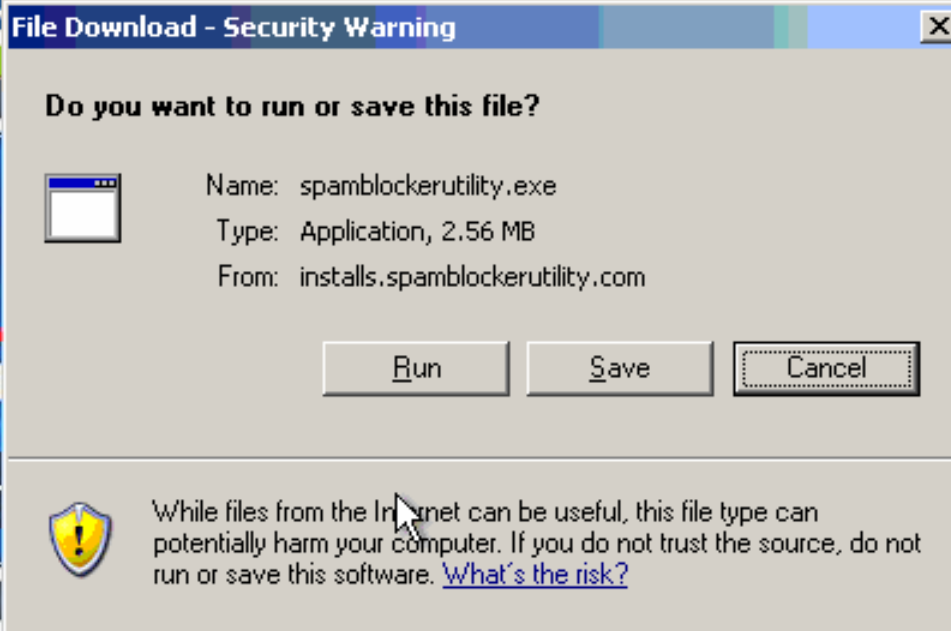
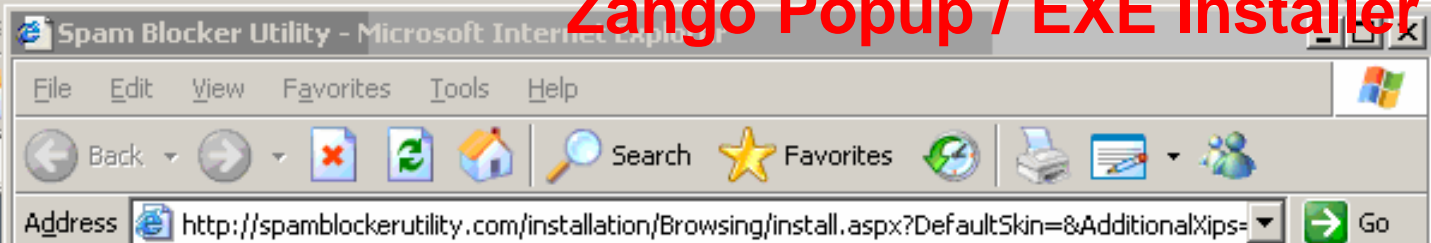
Radiostorm.com - Micros...

Spam Blocker Utility - ...

Internet

July 2007

9:43 PM





## Internet Explorer - Security Warning

Do you want to run this software?

Name: [SpamBlockerUtility](#)Publisher: [Spam Blocker Utility, Inc.](#)

More options

Run

Don't Run



While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. [What's the risk?](#)



# SPAM BLOCKER UTILITY

Welcome to Spam Blocker Utility Installation

Please review our Terms of Use and End User License Agreement.  
Use the scroll bar to review the entire document

## TERMS OF USE AND END USER LICENSE AGREEMENT FOR SPAM BLOCKER UTILITY SOFTWARE AND WEB SITE

Spam Blocker Utility is a division of Hotbar.com, Inc. ("Spam Blocker Utility")

We believe users should to be able to choose to receive free software, tools and content in exchange for limited, reasonable advertising, which they can easily control and disable if they wish.

We want to explain how our software collects information. It is our commitment that:

I Decline

I Accept





# SPAM BLOCKER UTILITY

Welcome to Spam Blocker Utility Installation

You will soon be able to enjoy:

- Colorful Emails- add cute emoticons and other goodies to your emails.
- Enhanced Browser- fast search tool and related links.
- Weather Tool- stay updated with your local weather.
- WOWpapers- decorate your desktop with thousands of wallpapers.
- EasyScreenSavers- free screen savers to download.

Please be assured that this software is not a spyware application, and is 100% committed to your privacy. Each of these features may be uninstalled separately at any time. These free services are ad-supported unless you choose our paid version.

- ☒ Enable SpamBlockerUtility keyword search in Internet Explorer address bar and change my search assistant in Internet Explorer to ResultsMaster.

Please choose from the following:

- ☒ Free ad-supported version  
☐ Paid version

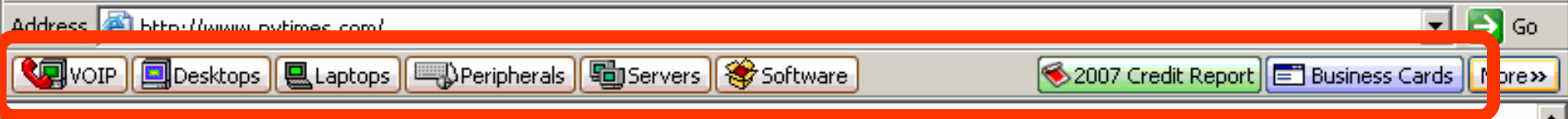
Next >>

# Zango's Obligation to Label Ads

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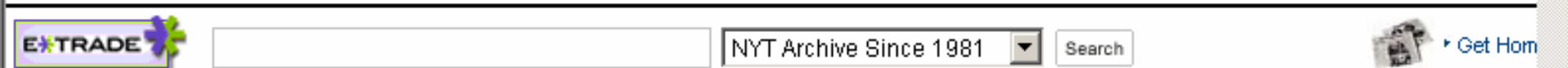
Respondents ... shall in each ... advertisement clearly and prominently: (1) identify the program causing the display of such advertisement, together with language specifying that the advertisement is served by such program; (2) provide a hyperlink or other similar technology directly linking to a webpage that provides clear and prominent instructions for (a) uninstalling Respondents' software or other application through which consumers received such advertisement; and (b) accessing Respondents' complaint mechanism. ... [S]uch hyperlink shall be clearly named to indicate these functions.

# Unlabeled Zango Toolbars



## The New York Times

Tuesday, August 7, 2007 Last Update: 12:12 AM ET



- JOBS NEW**
- REAL ESTATE
- AUTOS
- ALL CLASSIFIEDS
- WORLD
- U.S.
- Politics
- Washington
- Education
- N.Y./REGION
- BUSINESS
- TECHNOLOGY
- SPORTS

### Government Set for a Crackdown on Illegal Hiring

By JULIA PRESTON

Federal authorities are expected to announce rules that would require employers to fire workers who use false Social Security numbers.



### ARTS »

#### Notorious Absentee Shows Up, Grandly

Lauryn Hill's rhymes are often about her confidence and what she expects from the world.



#### Before the Big Night: Beethoven, Sweat, Tears

Michael



August 2007 12:15 AM

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

http://www.nytimes.com/2007/08/25/world/middleeast/25detain.html?\_r=1&hp&oref=slogin

Search post Down Estate Find Movie

Customer Support  
Invite a friend  
Games  
Watch Videos

S PAPER VIDEO MOST POPULAR TIMES TOPICS

**Middle East**

World All NYT

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION ARTS STYLE TRAVEL

AFRICA AMERICAS ASIA PACIFIC EUROPE **MIDDLE EAST**

**NEW NETFLIX**

**Rent Movies From N**

\* Only \$4<sup>99</sup> a month  
\* No late fees  
\* NEW! - Instant Viewing Online

**With Troop Rise, Iraqi Detainees Soar in Number**

By THOM  
Published August 25, 2007

WASHINGTON, Aug. 24 — The number of detainees held by the American-led military forces in [Iraq](#) has swelled by 50 percent under the troop increase ordered by President Bush, with the inmate

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August 24, 2007

Start With Troop Rise, Iraqi... http://www.nytimes.com... 9:30 PM

# Unlabeled Zango Desktop Icons



My Documents



Repair Your  
Registry



My Computer



My Network  
Places



Recycle Bin



Internet  
Explorer



Free PC  
Wallpapers



Find And Fix  
Errors

August 24, 2007



9:28 PM



## Zango Decoys Soliciting Installation

[Home](#)[Play](#)[Publish](#)[Upload](#)[Advertise](#)

### Unlimited Play - Play Now!



<http://live.pirillo.com> My Dad and I discuss the first computers we had in our home, and various Accounting software programs.

Thanks to Zango, premium content on this and other websites is free, paid for by advertising. When installed,

Zango software presents ads (based on keywords from your Internet browsing) in the Zango Toolbar and in a separate browser window that pops up on your screen. If included in this download, the Zango Outlook/Outlook Express Toolbar gives you access to free emoticons and other fun content from within Outlook or Outlook Express when you are online. Zango is always running and will upgrade automatically. You can uninstall Zango via Add/Remove Programs, but then won't have access to most Zango content.

For more information: [Best Practices](#), [Privacy Policy](#), [FAQ](#)

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(Last Revised April 2, 2007)

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[View EULA](#) | [Print EULA](#)

☒ By clicking "Continue" I represent that I (1) am at least 18, (2) agree to the EULA terms and (3) consent to install Zango and play Accounting Software.

[GO BACK](#)

Click "Continue" to install Zango and access this content for free.

[CONTINUE](#)

August 26, 2007

# Typical spyware vendor fact pattern

---

- US vendor with identifiable location & assets
- Installations with unfair/deceptive disclosures
- Installations through third-party partners
  - Poor oversight of partners
  - Some installations are nonconsensual, deceptive, and/or unfair
- Harm
  - Privacy, reliability, productivity, performance



# Specific US companies

---

- Clickspring (Massachusetts)
- Command (New York)
- Look2me (Minnesota)
- Seedcorn (California)
- SurfSideKick (California)
- Targetsaver (California)
- Vendare Media → New.net (California)
- ComScore → RelevantKnowledge (Virginia)
- Zango (Washington)



# Spyware vendor litigation - facts

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Need --

- Proof of nonconsensual installations
- Proof of unfair/deceptive installations

Typically proven via --

- Screenshots
- Videos
- Narratives

# Agenda

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- The spyware problem
- General practices
- Types of practices
  - Spyware/adware vendors
  - Rogue anti-spyware vendors
  - Advertisers
  - Ad networks

# Rogue anti-spyware fact pattern

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Rogue anti-spyware --

- Tells users they're infected
- Charges money for disinfection

Rogue anti-spyware reaches users via --


- Fake user interface ads
- Exploit-based install of scanner

Warning - Spyware Notice



If your computer has been running slower than usual, it may be infected with Adware or Spyware. To scan your computer, click yes below.

YesNo



RegisterHelp

System Information

Scan Now

Update Signatures









Advanced

Proactive Protection

Tell a Friend

Infections Detected: 121

To remove selected infections, click the "Remove Infections" button

Infection	Severity	Type	Loc
<input checked="" type="checkbox"/> NETObserve	%ProgramsDir%\...		
<input checked="" type="checkbox"/> NETObserve	%ProgramsDir%\...		
<input checked="" type="checkbox"/> Surfairy	Extreme Risk	Spyware	
<input checked="" type="checkbox"/> Surfairy	Extreme Risk	Spyware	
<input checked="" type="checkbox"/> Surfairy	Extreme Risk	Spyware	
<input checked="" type="checkbox"/> Surfairy	Extreme Risk	Spyware	
<input checked="" type="checkbox"/> Surfairy	Extreme Risk	Spyware	
<input checked="" type="checkbox"/> Xtractor Plus	Extreme Risk	Adware	

Description :

Please register

Warning

The current copy of Spyware Stormer you have installed on your computer is not registered. In order to remove detected spyware, you must register your copy of Spyware Stormer.

To activate your copy of Spyware Stormer, please enter your order number and activation key in the fields below:

Order Number :

Activation Key :  -  -  -

Activate

If you do not have an order number or activation key, please click "Register" below and obtain one now!

»Register

Spyware Stormer  
Casale Media (Ontario, New York, California)

# Other Rogue Anti-Spyware Litigation

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## FTC

- Spykiller
- MaxTheater

## Washington State Attorney General

- Secure Computer
- Software Online
- High Falls Media, ROC Telecommunications
- James Lane / Quickshield
- Securelink Networks, NJC Softwares, FixWinReg

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File Edit View Favorites Tools Help



Address http://www.google.com/

Go Links &gt;&gt;

NO ANNUAL  
CONTRACTS.  
NO SURPRISE  
BILLS.



**GoPhone**  
only from Cingular

GOPHONE SERVICE REQUIRED. CERTAIN RESTRICTIONS APPLY.

**NOKIA 6030 (REFURB)  
FOR ONLY \$29.99**

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The new at&t

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[Preferences](#)  
[Language Tools](#)

Free email with 2.8GB storage and less spam. Try [Gmail](#) today.

[Advertising Programs](#) - [Business Solutions](#) - [About Google](#)[Make Google Your Homepage](#)

http://ad.motiveinteractive.com/click,jwIAAC54AgD5QwMATvQBAAIAZAAAAAP8AAAAHEQAABgTudAIAmUcCAPqaA,



Internet

[Start](#)[C:\Documents and Settin...](#)[Cannot find server - ...](#)

4:32 PM

File Edit View Favorites Tools Help



Address http://www.google.com/



Links &gt;&gt;



Direct from HP to your home or home office.

[Personalized Home](#) | [Sign in](#)

# Google™

[Web](#) [Images](#) [Video](#) <sup>New!</sup> [News](#) [Maps](#) [more »](#)

Google Search

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Done

Start



Untitled - Windows Medi...

C:\Documents and Settin...

Google - Microsoft Int...

Internet

11:56 AM



File Edit View Favorites Tools Help



Address http://www.google.com/

Go Links &gt;&gt;

**Verizon FiOS**  
Fiber optic high-speed Internet  
Get blazing speeds – Downloads up to 15 Mbps  
Uploads up to 2 Mbps

As low as  
**\$44.95/mo.**

**verizon**

[Check availability »](#)

[Personalized Home](#) | [Sign in](#)

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[Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

Google Search

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Internet

Start



Cannot find server - ...

Untitled - Windows Medi...

C:\Documents and Settin...

1:57 AM

# Advertisers – policy objectives

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- Discourage funding of spyware vendors
- Protect legitimate web sites & restore competitive incentives

# Advertisers – precedent

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- New York v. Cingular
- New York v. Priceline.com
- New York v. Travelocity

# Advertisers – typical facts

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- Used spyware installed without consent, or unfairly/deceptively, to cover competitors' web sites with pop-up ads.
- Advertiser knew of the spyware vendor's practices, or reasonably should have known.
- Substantial expenditures over an extended period.

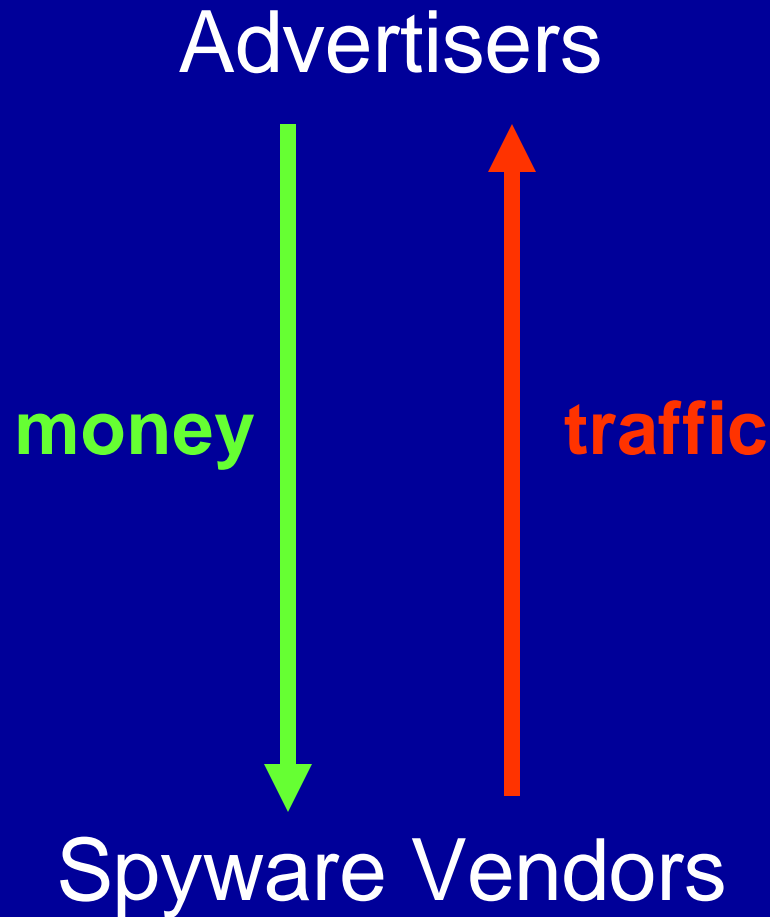
# Agenda

---

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  - Advertisers
  - Ad networks

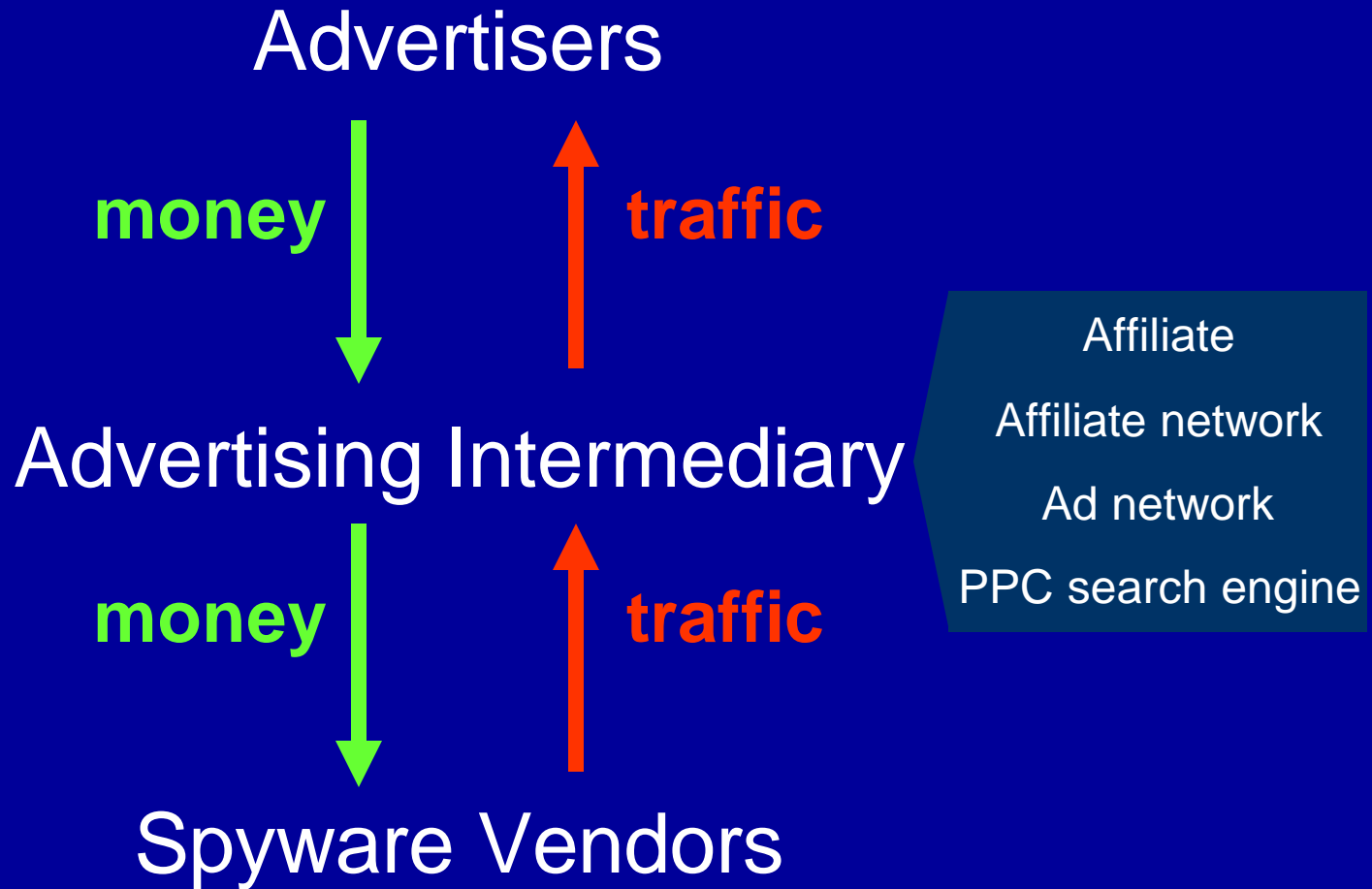
# Spyware Revenue Sources

---



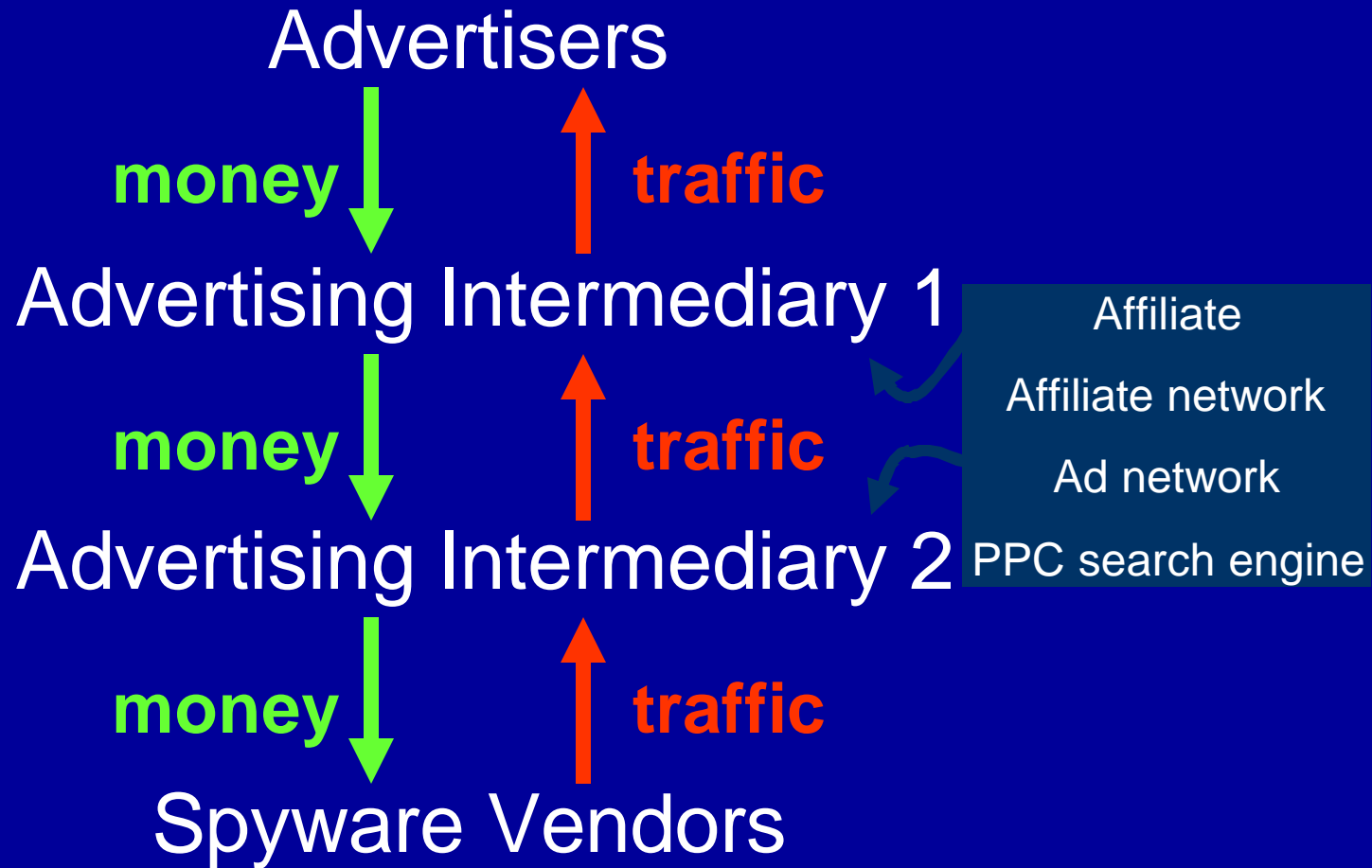
# Revenue Sources

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# Revenue Sources

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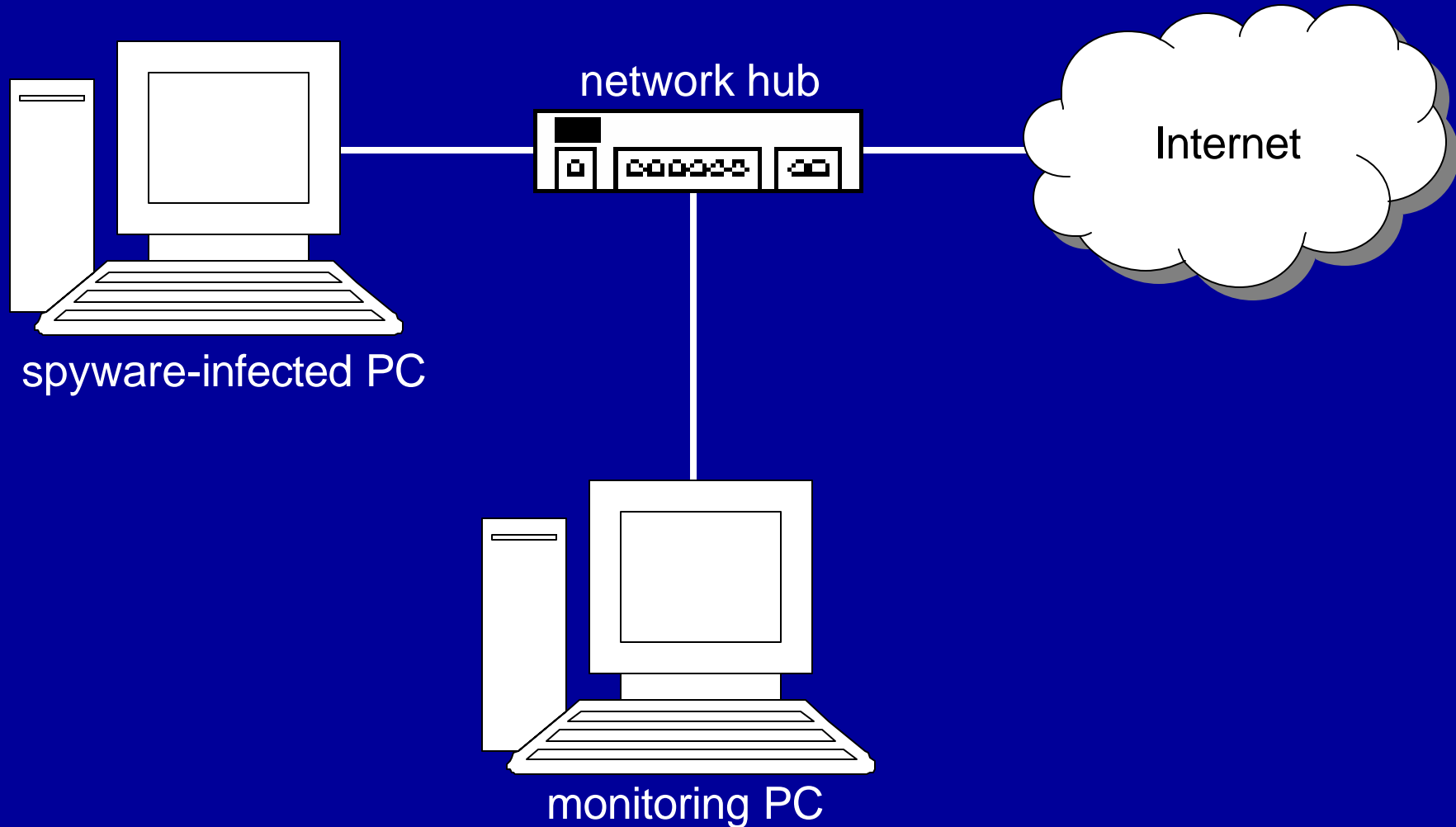


# Investigation Methods

---

# Investigator's Tools: Packet Sniffer

---



# Spyware Ads Placed through Networks

---

File Edit View Favorites Tools Help



Address http://www.google.com/

Go Links &gt;&gt;

NO ANNUAL  
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http://ad.motiveinteractive.com/click,jwIAAC54AgD5QwMATvQBAAIAZAAAAAP8AAAAHEQAABgTudAIAMUcCAPqaA,



Internet

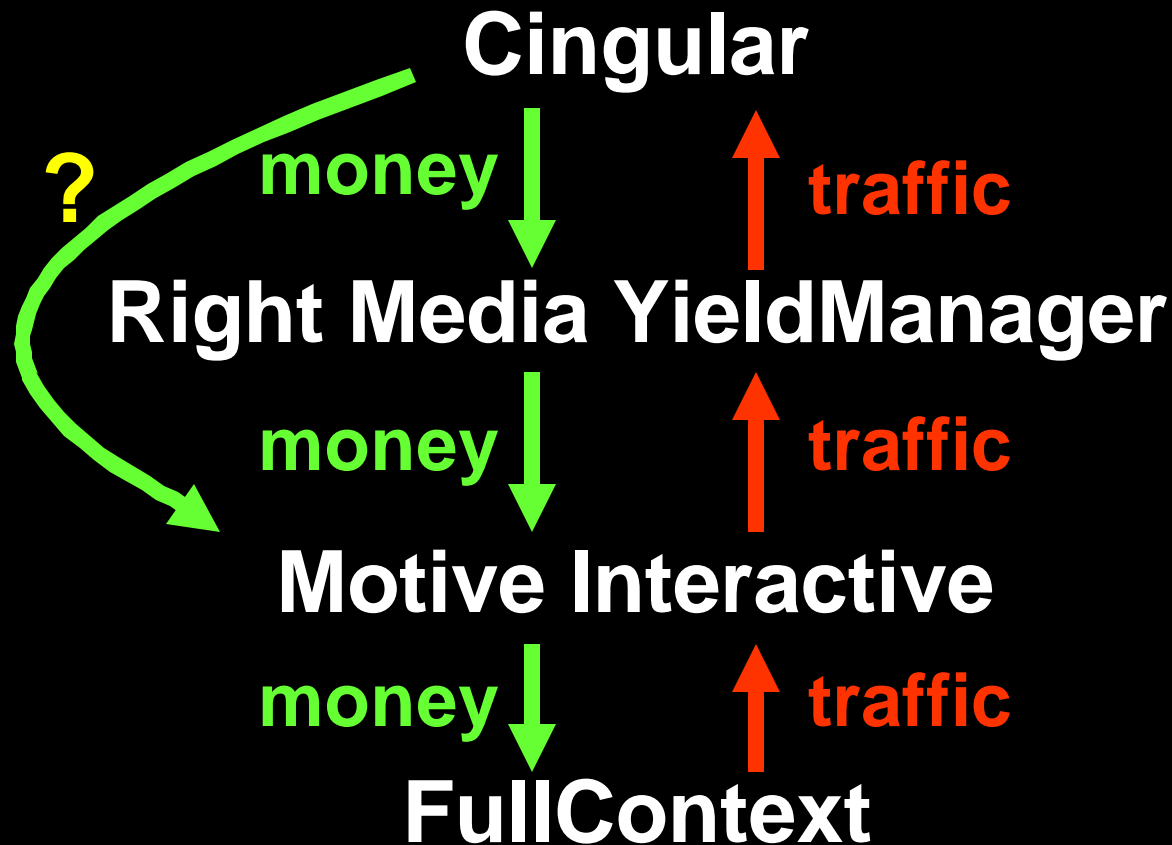
[Start](#)[C:\Documents and Settin...](#)[Cannot find server - ...](#)

4:32 PM

# The Chain of Relationships

```
→ GET /adrotate.php HTTP/1.1 ...  
Referer: http://www.google.com/  
...  
Host: 64.40.99.166  
← HTTP/1.1 200 OK  
Date: Sat, 17 Feb 2007 22:13:31 GMT  
...  
<html><head></head><body ...>  
<!-- BEGIN STANDARD TAG - 728 x 90 - adsingular.com:  
AdSingular - DO NOT MODIFY -->  
<SCRIPT ... SRC="http://content.motiveinteractive.com/rmtag3.js">...  
<SCRIPT language="JavaScript">var rm_host =  
"http://ad.motiveinteractive.com"; var rm_section_id = 161838;  
rmShowAd("728x90");</SCRIPT>  
<!-- END TAG --></body></html>
```

# Fullcontext Promoting Cingular



**verizon**wireless  
We never stop working for you.®

PERSONAL

BUSINESS

MY ACCOUNT

PRODUCTS | PLANS | GET IT NOW®

| SUPPORT

## Enter your location

Please enter the **location for the area where you plan to use your phone the most** so we can give you accurate information about wireless pricing, coverage, customer service, and offers near you. Click submit to continue.

### Choose location by zip code

Enter Zip Code

### Or, choose location by city/state

Select a state

Search for cities

May 2006

# Understanding the Chain of Redirects - Verizon

→ GET /imp/servlet/ImpServe?urlContext=http://www.tipany.com...  
&transponderID={8D0526ED-F7CB-4005-9191-6C9A9D0F557B}  
Host: xadsj.offeroptimizer.com

1

← HTTP/1.1 200 OK ...  
url="http://gdlckjoe.com/click.aspx?l=3984&c=2319&s=WirelessFM";  
width=800;  
height=600; ...

→ GET /clk.aspx?l=3984&c=2319&s=WirelessFM HTTP/1.1 ...  
Host: gdlckjoe.com  
← HTTP/1.1 301 Moved Permanently  
Location: http://clickserve.cc-dt.com/link/click?lid=  
41000000009135925

2

→ GET /link/click?lid=41000000009135925&mid=MOCAR HTTP/1.1 ...  
Host: clickserve.cc-dt.com ...  
← HTTP/1.1 302 Found ...  
Location: http://www.verizonwireless.com/b2c/affiliate?...

3



# Direct Revenue Promoting Verizon



File Edit View Favorites Tools Help

Address [http://&ico=0&ics=20&ref=+500501.500682&search\\_constraint=0&search\\_query=rollbacks&sourceid=19081171230847785823](http://&ico=0&ics=20&ref=+500501.500682&search_constraint=0&search_query=rollbacks&sourceid=19081171230847785823) Go Links >>
[Home](#) | [Your Account](#) | [Cart](#) | [Track Order](#) | [Help](#)
[Registry](#) | [Wish List](#) | [Gift Cards](#)
[Click here](#) to sign in or create new account

[Electronics](#) [Movies](#) [Music](#) [Books](#) [Toys](#) [Baby](#) [Jewelry](#) [Sports & Fitness](#) [★ See All](#)  
[For the Home](#) [Garden & Patio](#) [Photo Center](#) [Video Games](#) [Apparel](#) [Gifts & Flowers](#) [Pharmacy](#) [In Stores Now](#)

 Search  for:  **Find!**

## 803 items found for "rollbacks"

### Narrow Your Results

#### Departments

##### For the Home

- [Air Conditioners & Filtration](#)
- [Appliances & Housewares](#)
- [Bed & Bath](#)
- [City Living Collection](#)
- [Decor](#)
- [Furniture](#)
- [Luggage](#)
- [Massage Spa &](#)

### TOP SELLERS

These top sellers were found in your search results.



**Keys**  
**Ovation**  
**Serenade 7-**  
**Person Hot**  
**Tub Spa**  
**Package**  
**With Stereo**  
**ROLLBACK**

**\$2,998.00**



**Polaroid 7"**  
**Dual-Screen**  
**Car DVD**  
**Player w/**  
**Game**  
**Controller &**  
**Built-in**  
**Games**  
**ROLLBACK**

**~~\$400.00~~**



**Bounce**  
**'Round 5-in-**  
**1 Ultimate**  
**Sports**  
**Arena**  
**ROLLBACK**

**\$174.88**

**Was:**  
**\$296.62**

Done

Internet

April 2006

Start



C:\Documents and Set...

Buy.com - Flash Cards...

Search results for r...

Untitled - Windows Me...

5:25 PM

# Understanding the Chain of Redirects - Walmart

→ GET http://a.targetsaver.com/adshow ...  
http://www.buy.com/retail/specialty\_store\_1.asp?loc=14575... 1

← HTTP/1.1 200 OK  
http://www.targetsaver.com/redirect.php?clientID=113.167 ↓

→ GET /redirect.php?clientID=113.16777729.1804289383&finalURL=...  
← HTTP/1.1 302 Found  
Location: http://targetsaver.com/redirect1.php?clientID=113... 2

← http://www.easilyfound.com/a/2.php?cid=1029 ↓ 3

→ GET /a/2.php?cid=1029 ↓ 4

← <script><!-- function clicktoit() {  
document.forms[0].submit();} --></script> ...  
<body onload="Javascript:clicktoit()">  
<form action="/a/3.php" method="get"> ...

→ GET /a/3.php?cid=1029 ↓ 5

← Location: http://click.linksynergy.com/fs-bin/click?id=MCVDO... ↓

← http://click.linksynergy.com/fs-bin/swat?lsnsig=I020ToJJ8rI&... 6

← http://www.walmart.com/reflect.gsp?sourceid=2301369222076574... 7

# Targetsaver Promoting Walmart



# Netflix Promoted by Zango via Roundads – Lead-Stealing

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://www.netflix.com>

Address [lix.com/Register?mqso=6018701&js\\_sourceid=AnCa4QMGRF4...1o5z26NZJ58n8MBLvzm1Q](http://lix.com/Register?mqso=6018701&js_sourceid=AnCa4QMGRF4...1o5z26NZJ58n8MBLvzm1Q) Go

**NETFLIX**

Welcome How It Works

- Over 75,000 Titles
- Fast, Free Delivery
- More Family Friendly Features
- [Give Netflix as a Gift. Buy a Gift Subscription.](#)

We value your privacy. Netflix will not give your address to third parties.

**5 movies**

**2 DVDs by mail**

Choose from over 75,000 titles

**3 movies online**

Choose from over 1,500 titles

Watch Now Watch Now Watch Now

Want to learn more?

[FREE Trial offer details](#)

[Browse our selection of movies](#)

[Learn more about the Netflix service](#)

**Questions?**

Call 1-800-715-2135

24 hours a day

This ad served by Zango software downloaded through Zango.com. Click here to learn more.

Done Internet

Re-type Password

4-10 characters (case sensitive)

Enter Zip Code

Secure Server

May 2007

Start Netflix Online Movie Ren... Netflix Onli...

3:05 AM

# Understanding the Chain of Redirects - Netflix

→ POST /showme.aspx?...&keyword=netflix.com/re+.netflix.com+...  
Host: tvf.zango.com

1

← ...  
ad\_url: ... http://ads.roundads.com/ads/dvd.aspx?keyword=  
.netflix.com/Register ...

→ GET /ads/dvd.aspx?keyword=.netflix.com/Register  
← Host: ads.roundads.com

2

HTTP 301 Moved Permanently ...  
Location: http://click.linksynergy.com/fs-bin/click?id=AnCa4...

→ GET /fs-bin/click?id=AnCa4QMGFR4&offerid=78684.10000177...

← HTTP/1.1 302 Found  
Location: http://www.netflix.com/Signup?mqso=60187019  
&ls\_sourceid=AnCa4QMGFR4-L1oSz26NZJS8n8MBLvzm1Q ...

3

# Zango Promoting Netflix












# Zango Showing Google AdSense Ads

File Edit View Favorites Tools Help

 Back    Search  Favorites  Media   Address  [https://www22.verizon.com/ForHomeDSL/channels/orderdsl/olo\\_futurenotification.asp?NextPageName=FN](https://www22.verizon.com/ForHomeDSL/channels/orderdsl/olo_futurenotification.asp?NextPageName=FN) Go Brought to you by Seekmo Search Assistant - Microsoft Internet Explorer [More about Seekmo](#)

File Edit View Favorites Tools Help

 Back    Search  Favorites  Media  Address  [http://www.hotscoop.org/cat\\_web\\_services/verizon\\_dsl.html](http://www.hotscoop.org/cat_web_services/verizon_dsl.html) Go**HotScoop.org**  
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Yahoo or MSN@ Content Service included. Check availability now.

Ads by Goooooogle

Opening page [https://www22.verizon.com/ForHomeDSL/channels/orderdsl/olo\\_futurenotification.asp?NextPageName=FN](https://www22.verizon.com/ForHomeDSL/channels/orderdsl/olo_futurenotification.asp?NextPageName=FN)



# Zango Serving Google AdSense Ads

PPC Advertisers



Google



4,600+ URLs *(as of June 2005)*



Zango

# Ad networks – typical facts

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- Allowed spyware vendors to sell inventory through the ad network, or otherwise to get paid via the ad network.
- Passed advertisers' funds on to spyware vendors, keeping a portion for themselves (overhead, profit).
- Reasonable diligence could have uncovered the spyware vendor's practices. Sometimes, actual knowledge.

# Anti-spyware legislation

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# **Spyware: Vendors and Practices**

Benjamin Edelman  
[www.benedelman.org](http://www.benedelman.org)