

Pulp Google Hacking

The Next Generation Search Engine Hacking Arsenal

15 February 2012 – ISSA Los Angeles – Los Angeles, CA



Presented by:
Francis Brown
Stach & Liu, LLC
www.stachliu.com



Agenda

OVERVIEW

- Introduction/Background
- Advanced Attacks
 - Google/Bing Hacking Core Tools
 - NEW Diggity Attack Tools
- Advanced Defenses
 - Google/Bing Hacking Alert RSS Feeds
 - NEW Diggity Alert Feeds and Updates
 - NEVV Diggity Alert RSS Feed Client Tools
- Future Directions



Introduction/ Background

GETTING UP TO SPEED





Open Source Intelligence

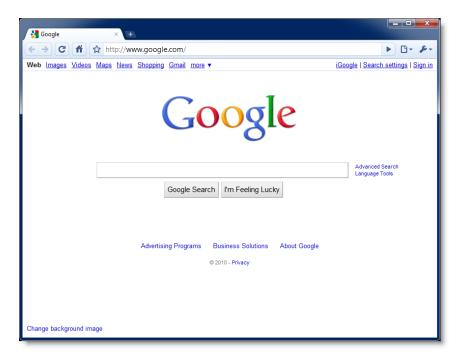
SEARCHING PUBLIC SOURCES

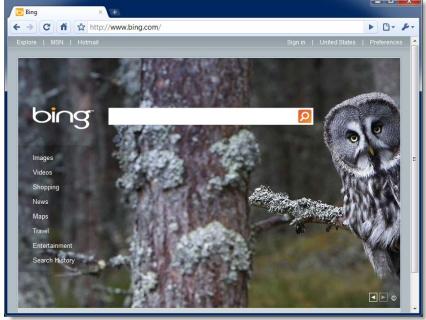
OSINT – is a form of intelligence collection management that involves finding, selecting, and acquiring information from *publicly available* sources and analyzing it to *produce actionable intelligence*.



Google/Bing Hacking

SEARCH ENGINE ATTACKS









Google/Bing Hacking

SEARCH ENGINE ATTACKS

Bing's source leaked!

```
class Bing {
   public static string Search(string query)
   {
     return Google.Search(query);
   }
}
```





Attack Targets

GOOGLE HACKING DATABASE

- Advisories and Vulnerabilities (215)
- Error Messages (58)
- Files containing juicy info (230)
- Files containing passwords (135)
- Files containing usernames (15)
- Footholds (21)
- Pages containing login portals (232)

- Pages containing network or vulnerability data (59)
- Sensitive Directories (61)
- Sensitive Online Shopping Info (9)
- Various Online Devices (201)
- Vulnerable Files (57)
- Vulnerable Servers (48)
- Web Server Detection (72)





Google Hacking = Lulz

REAL WORLD THREAT

LulzSec and Anonymous believed to use Google Hacking as a primary means of identifying vulnerable targets.

Their releases have nothing to do with their goals or their lulz. It's purely based on whatever they find with their "google hacking" queries and then release it.

- A-Team, 28 June 2011





Google Hacking = Lulz

REAL WORLD THREAT

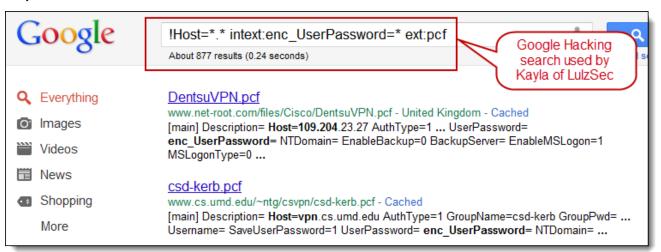
22:14 <@kayla> Sooooo...using the link above and the google hack string. !Host= *. * intext:enc_UserPassword= * ext:pcf Take your pick of VPNs you want access too. Ugghh.. Aaron Barr CEO HBGary Federal Inc.

22:15 <@kayla> download the pcf file

22:16 <@kayla> then use http://www.unix-ag.uni-

kl.de/~massar/bin/cisco-decode?enc= to clear text it

22:16 < @kayla > = free VPN







Quick History

GOOGLE HACKING RECAP

Dates	Event	
2004	Google Hacking Database (GHDB) begins	
May 2004	Foundstone SiteDigger v1 released	
Jan 2005	Foundstone SiteDigger v2 released	
Feb 13, 2005	Google Hack Honeypot first release	
Feb 20, 2005	Google Hacking v1 released by Johnny Long	
Jan 10, 2006	MSNPawn v1.0 released by NetSquare	
Dec 5, 2006	Google stops issuing Google SOAP API keys	
Mar 29, 2007	Bing disables inurl: link: and linkdomain:	
Nov 2, 2007	Google Hacking v2 released	





Quick History...cont.

GOOGLE HACKING RECAP

Dates	Event	
Mar 2008	cDc Goolag - gui tool released	
Sept 7, 2009	Google shuts down SOAP Search API	
Nov 2009	Binging tool released by Blueinfy	
Dec 1, 2009	FoundStone SiteDigger v 3.0 released	
2010	Googlag.org disappears	
April 21, 2010	Google Hacking Diggity Project initial releases	
Nov 1, 2010	Google AJAX API slated for retirement	
Nov 9, 2010	GHDB Reborn Announced – Exploit-db.com	
Jan 15, 2012	Google Code Search shuts down	





Advanced Attacks

WHAT YOU SHOULD KNOW





Diggity Core Tools

STACH & LIU TOOLS

Google Diggity

- Uses Google JSON/ATOM API
 - Not blocked by Google bot detection
 - Does not violate Terms of Service
- Required to use Google custom search

Bing Diggity

- Uses Bing 2.0 SOAP API
- Company/Webapp Profiling
 - Enumerate: URLs, IP-to-virtual hosts, etc.
- Bing Hacking Database (BHDB)
 - Vulnerability search queries in Bing format





DIGGITY CORE TOOLS

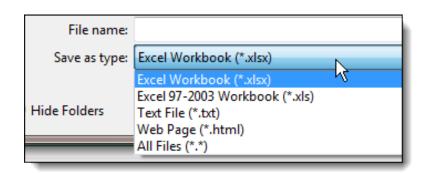
Google Diggity - New API

- Updated to use Google JSON/ATOM API
- Due to deprecated Google AJAX API



Misc. Feature Uprades

- Auto-update for dictionaries
- Output export formats
 - Now also XLS and HTML
- Help File chm file added







DOWNIOAD BUTTON

Download Buttons for Google/Bing Diggity

- Download actual files from Google/Bing search results
 - Downloads to default: C:\DiggityDownloads\



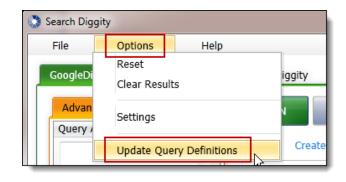
- Used by other tools for file download/analysis:
 - FlashDiggity, DLP Diggity, MalwareDiggity,...







AUTO-UPDATES



SLDB Updates in Progress

- Example: SharePoint Google Dictionary
 - http://www.stachliu.com/resources/tools/sharepoint-hacking-diggity-project/#SharePoint GoogleDiggity Dictionary File

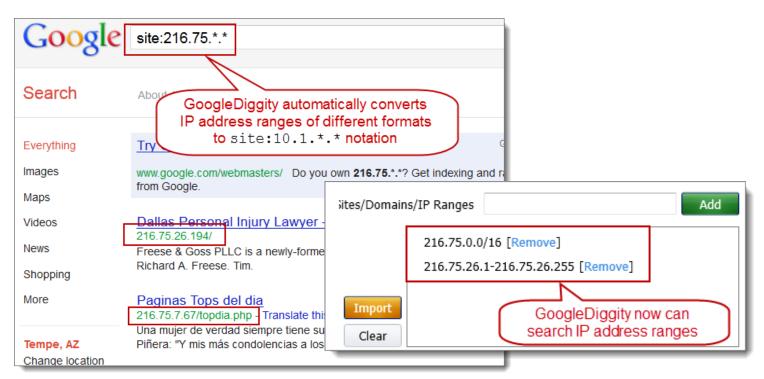






IP ADDRESS RANGES

GoogleDiggity can now search for IP Address Ranges







Dictionary Updates

THIRD-PARTY INTEGRATION

New maintainers of the GHDB - 09 Nov 2010

• http://www.exploit-db.com/google-hacking-database-reborn/

Google Hacking Database Reborn

9th November 2010 - by admin

The incredible amount of information continuously leaked onto the Internet, and therefore accessible by Google, is of great use to penetration testers around the world. Johnny Long of Hackers for Charity started the Google Hacking Database (GHDB) to serve as a repository for search terms, called Google-Dorks, that expose sensitive information, vulnerabilities, passwords, and much more.



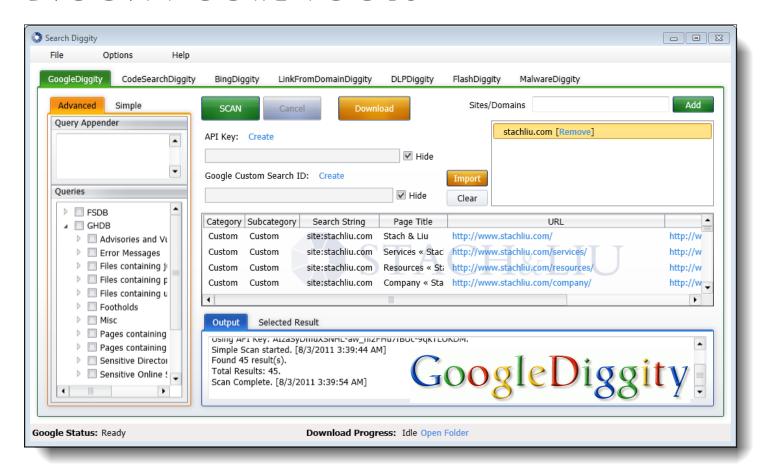
As Johnny is now pursing his mission in Uganda, he has graciously allowed us at The Exploit Database to pick up where the GHDB left off and resurrect it. It is with great excitement that we announce that the GHDB is now being hosted by us and actively maintained again. This will allow us to tie the GHDB directly into our database of exploits providing the most current information possible.





Google Diggity

DIGGITY CORE TOOLS

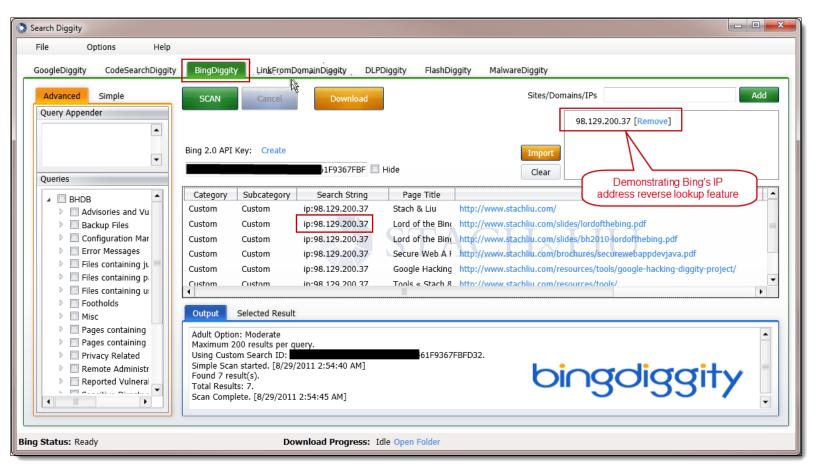






Bing Diggity

DIGGITY CORE TOOLS







Bing Hacking Database

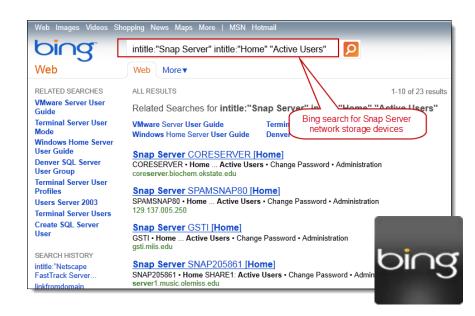
STACH & LIU TOOLS

BHDB – Bing Hacking Data Base

- First ever Bing hacking database
- Bing hacking limitations
 - Disabled inurl:, link: and linkdomain: directives in March 2007
 - No support for ext:, allintitle:, allinurl:
 - Limited filetype: functionality
 - Only 12 extensions supported

Example - Bing vulnerability search:

- GHDB query
 - "allintitle:Netscape FastTrack Server Home Page"
- BHDB version
 - intitle:"Netscape FastTrack Server Home Page"







Hacking CSE's

ALL TOPLEVEL DOMAINS

Google custom search Google D	iggity
All Top Level Domains	
Google™ Custom Search Search	
Search engine details	
All top level domains: http://data.iana.org/TLD/tlds-alpha-by-domain.txt	
searches sites including: *.ZW/*, *.ZM/*, *.ZA/*, *.YT/*, *.YE/*	l
Last updated: July 21, 2011	
Add this search engine to your Google homepage: Google Add this search engine to your blog or webpage »	
Create your own Custom Search Engine »	







NEW GOOGLE HACKING TOOLS

Code Search Diggity







Google Code Search

VULNS IN OPEN SOURCE CODE

 Regex search for vulnerabilities in indexed public code, including popular open source code repositories:









- Example: SQL Injection in ASP querystring
 - select. *from. *request\.QUERYSTRING

```
| Select.*from.*request\QUERYSTF | Search | Advanced Code Search | Search |
```

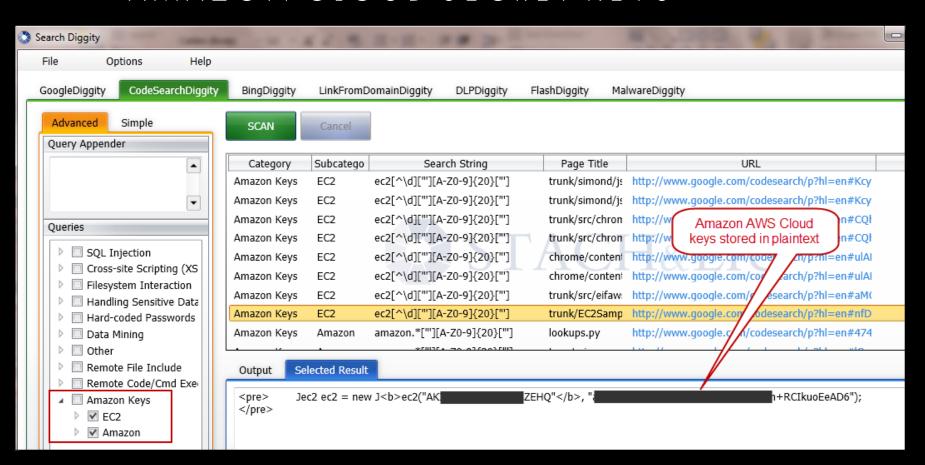






CodeSearch Diggity

AMAZON CLOUD SECRET KEYS









Cloud Security

NO PROMISES...NONE

Amazon AWS Customer Agreement

http://aws.amazon.com/agreement/#10

10. Disclaimers.

No guarantee of confidentiality, integrity, or availability (the CIA security triad) of your data in any way

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linkfromdomaindiggity

NEW GOOGLE HACKING TOOLS

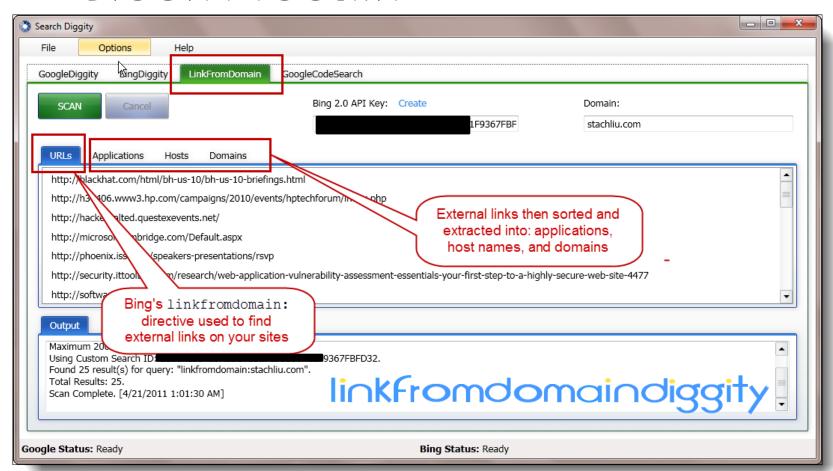
Bing LinkFromDomainDiggity





Bing LinkFromDomain

DIGGITY TOOLKIT

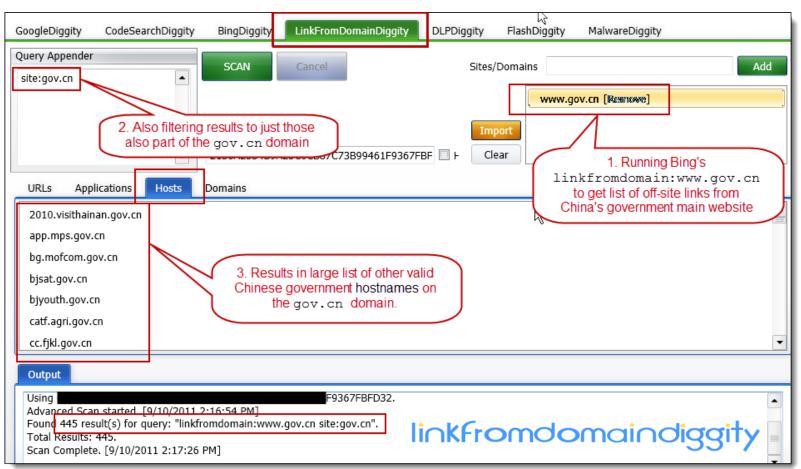






Bing LinkFromDomain

FOOTPRINTING LARGE ORGANIZATIONS







NEW GOOGLE HACKING TOOLS

Malware Diggity





MalwareDiggity

DIGGITY TOOLKIT

1. Leverages Bing's linkfromdomain: search directive to find off-site links of target applications/domains



2. Runs off-site links against Google's Safe Browsing API to determine if any are malware distribution sites





3. Return results that identify malware sites that your web applications are directly linking to





MALWARE GONE WILD

Malware Distribution Woes – WSJ.com – June 2010

• Popular websites victimized, become malware distribution sites to their own customers

Massive Malware Hits Media Web Sites

Security researchers estimate that roughly 7,000 Web pages were compromised in a SQL injection attack this week, including *The Wall Street Journal* and *Jerusalem Post*.

By Mathew J. Schwartz, InformationWeek June 10, 2010

URL: http://www.informationweek.com/storp//chow/article_ibtml/2orticleID=225800247

"Every time I load Jpost site, I get nas on Tuesday, referring to the Jerusaler

Sure enough, the Web sites of the *Jer* and the Association of Christian Schosites serving malware to viewers.

From: www.itworld.com

Mass Web attack hits Wall Street Journal, Jerusalem Post

by Robert McMillan

June 9, 2010 —Internet users have been hit by a widespread Web attack that has compromised thousands of Web sites, including Web pages belonging to the Wall Street Journal and the Jerusalem Post.

Estimates of the total number of compromised Web sites vary between 7,000 and 114,000, according to security experts. Other compromised sites include servicewomen.org and intijops.org.





MALWARE GONE WILD

Malware Distribution Woes – LizaMoon – April2011

• Popular websites victimized, become malware distribution sites to their own customers







MALWARE GONE WILD

Malware Distribution Woes – willysy.com - August2011

• Popular websites victimized, become malware distribution sites to their own customers

Malware attack spreads to 5 million pages (and counting)

Unpatched sites turn on visitors

By Dan Goodin in San Francisco • Get more from this author

Posted in Malware, 2nd August 2011 18:07 GMT

An attack that targets a popular online commerce application has infected almost 5 million webpages with scripts that attempt to install malware on their visitors' computers.

The mass attack, which osCommerce store-mar When researchers from search results suggested search results showed to

Armorize Malware Blog



willysy.com Mass Injection ongoing, over 8 million infected pages, targets osCommerce sites

POSTED BY: CHRIS ON 7.25.2011 / CATEGORIES: DRIVE-BY DOWNLOAD, HACKALERT, MASS INJECTION, OSCOMMERCE, WEB MALWARE

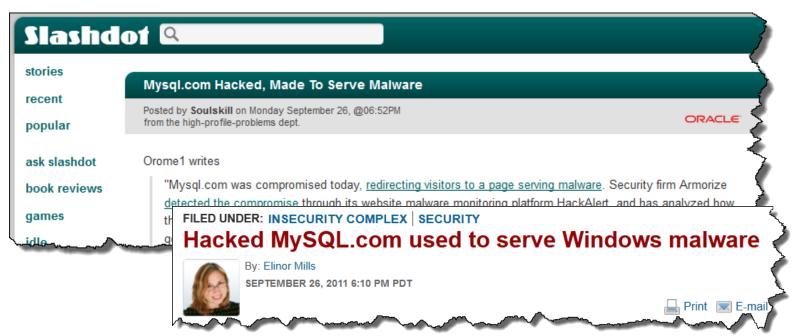




MALWARE GONE WILD

Malware Distribution Woes – mysql.com - Sept2011

• Popular websites victimized, become malware distribution sites to their own customers

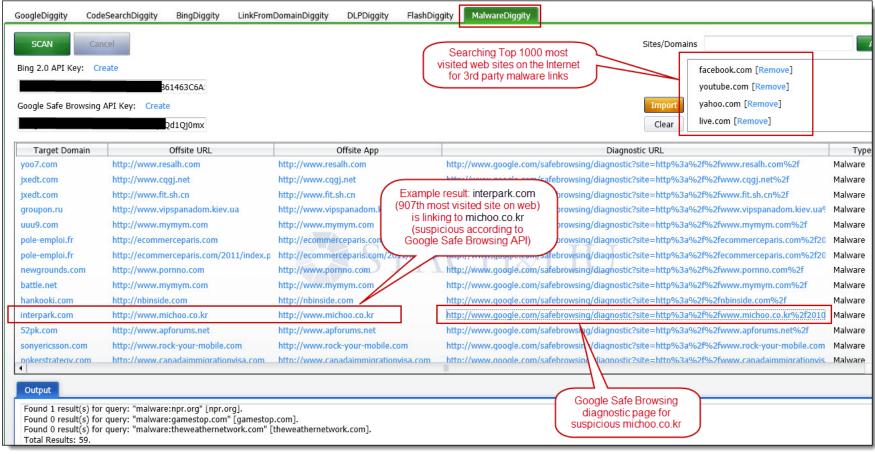






Malware Diggity

DIGGITY TOOLKIT







Malware Diggity

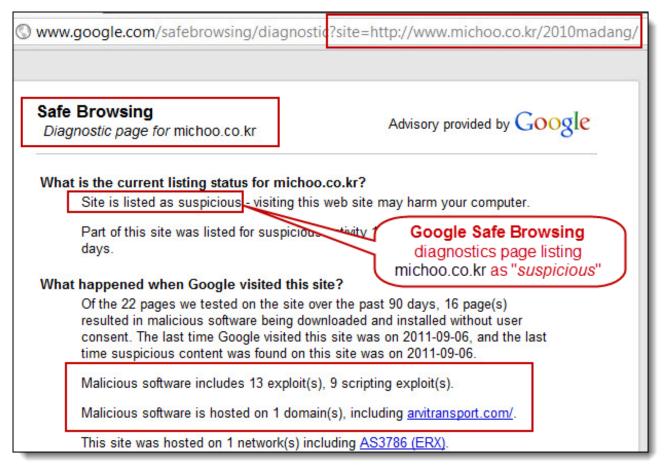
DIGGITY TOOLKIT





Malware Diggity

DIAGNOSTICS IN RESULTS







NEW GOOGLE HACKING TOOLS

DLP Diggity



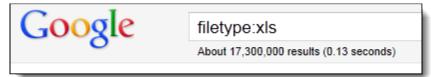


DLP Diggity

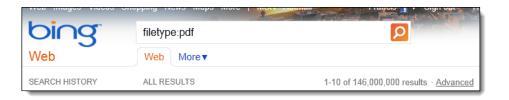
LOTS OF FILES TO DATA MINE







bing	filetype:doc	D
Web	Web More▼	
SEARCH HISTORY	ALL RESULTS	1-10 of 26,900,000 results · <u>Advanced</u>



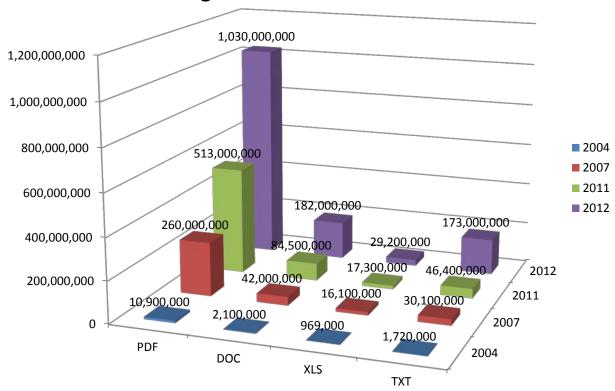




DLP Diggity

MORE DATA SEARCHABLE EVERY YEAR

Google Results for Common Docs

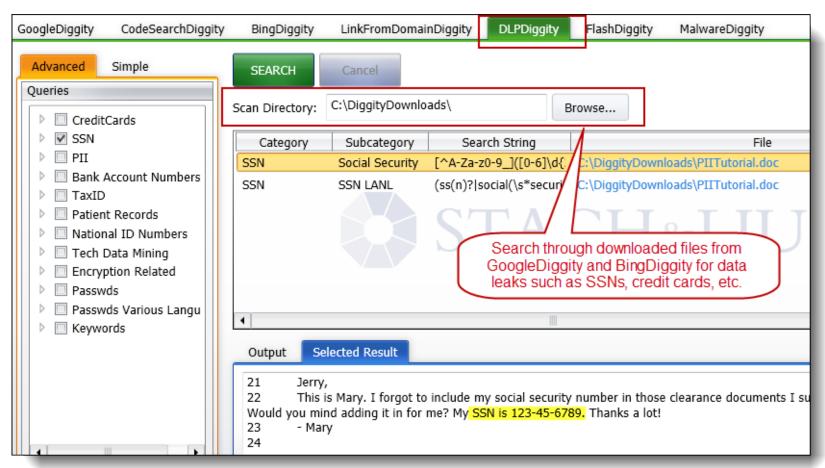






DLP Diggity

DIGGITY TOOLKIT









NEW GOOGLE HACKING TOOLS

FlashDiggity

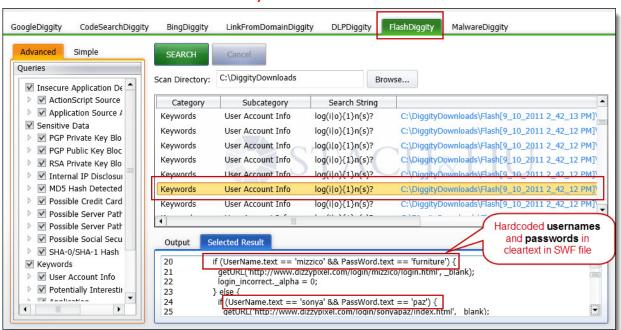




Flash Diggity

DIGGITY TOOLKIT

- Google for SWF files on target domains
 - Example search: filetype:swf site:example.com
- Download SWF files to C:\DiggityDownloads\
- Disassemble SWF files and analyze for Flash vulnerabilities





NEW GOOGLE HACKING TOOLS

DEMO





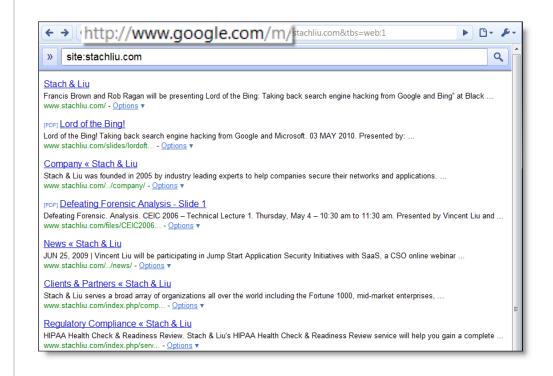
GoogleScrape Diggity

DIGGITY TOOLKIT

GoogleScrape Diggity

- Uses Google mobile interface
 - Light-weight, no advertisements
 - Violates Terms of Service
- Bot detection avoidance
 - Distributed via proxies
 - Spoofs User-agent and Referer headers
 - Random &userip= value
 - Across Google servers











NEW GOOGLE HACKING TOOLS

Baidu Diggity





BaiduDiggity

CHINA SEARCH ENGINE

Fighting back





NON-DIGGITY ATTACK TOOLS

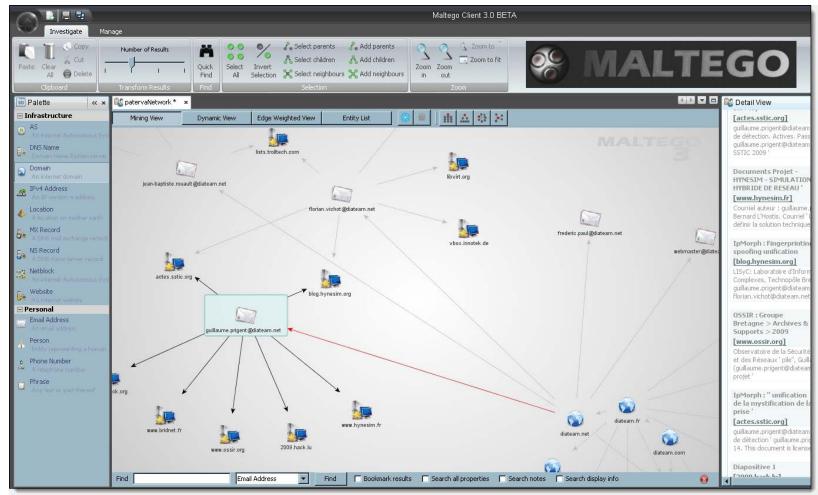
Other Search Hacking Tools





Maltego

INFORMATION GATHER TOOL







theHarvester

FOOTPRINTING TOOL

• Gathers e-mail accounts, user names and hostnames, and subdomains

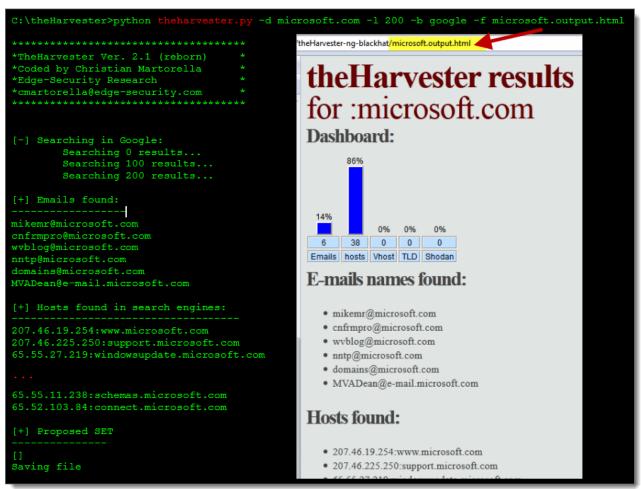
```
C:\theHarvester-ng-blackhat>python theHarvester
                                                   theHarvester
*TheHarvester Ver. 2.1 (reborn)
*Coded by Christian Martorella
*Edge-Security Research
                                       theHarvester gathers: emails,
*cmartorella@edge-security.com
                                       subdomains, hosts, employee
                                      names, open ports and banners.
Usage: theharvester options
       -d: Domain to search or company name
       -s: Start in result number X (default 0)
       -v: Verify host ame via dns resolution and search for virtual ho
      -f: Save the result into an HTML and XML file
                               se query on all ranges discovered
       -n: Perform a DNS re
       -c: Perform a DNS brut
                                  rce for the domain name
       -t: Perform a DNS TI
                             Searches different public sources,
       -e: Use this DNS se
                              such as: Google, Bing, LinkedIn,
       -1: Limit the numbe
                                                            oes from 50 to
                              PGP key servers and SHODAN
       -h: use SHODAN data
            google 100 to 1
                                                           ption)
Examples:./theharvester.py -d microsoft.com -1 500 -b google
         ./theharvester.py -d microsoft.com -b pgp
         ./theharvester.py -d microsoft -1 200 -b linkedin
```





theHarvester

FOOTPRINTING EXAMPLE





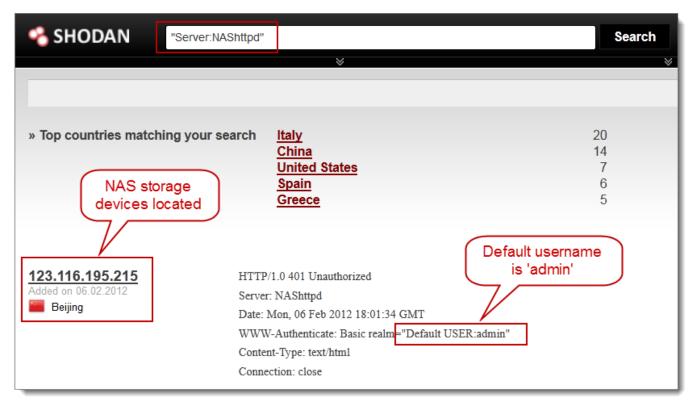


SHODAN



HACKER SEARCH ENGINE

 Indexed service banners for whole Internet for HTTP (Port 80), as well as some FTP (23), SSH (22) and Telnet (21) services



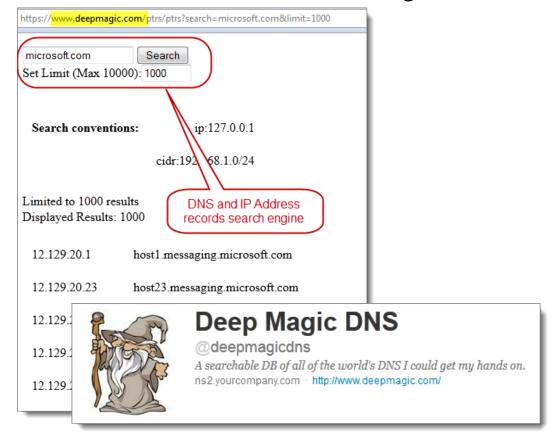




DeepMagic DNS

FOOTPRINTING DNS SEARCH ENGINE

DNS/IP Addr records hacker search engine



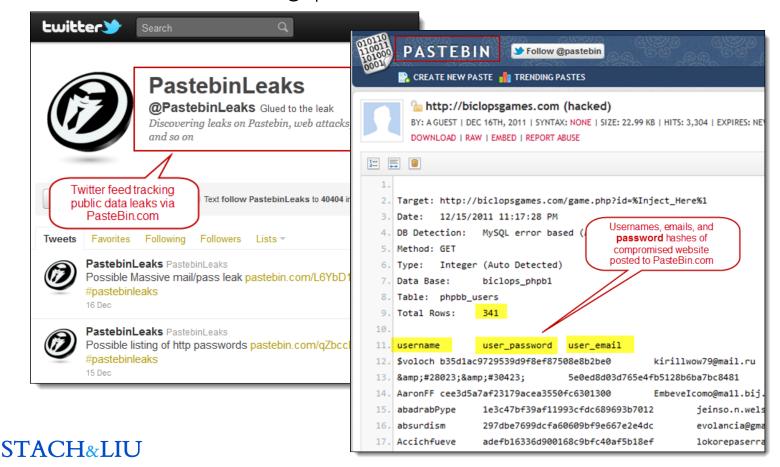




PasteBin Leaks

PASSWORDS IN PASTEBIN. COM POSTS

• Twitter feed tracking passwords leaked via PasteBin



Advanced Defenses

PROTECT YO NECK





Traditional Defenses

GOOGLE HACKING DEFENSES

- "Google Hack yourself" organization
 - Employ tools and techniques used by hackers
 - Remove info leaks from Google cache
 - Using Google Webmaster Tools
- Regularly update your robots.txt
 - Or robots meta tags for individual page exclusion
- Data Loss Prevention/Extrusion Prevention Systems
 - Free Tools: OpenDLP, Senf
- Policy and Legal Restrictions





Existing Defenses

"HACKYOURSELF"

- ✓ Tools exist
- Convenient
- Real-time updates
- Multi-engine results
- * Historical archived data
- Multi-domain searching





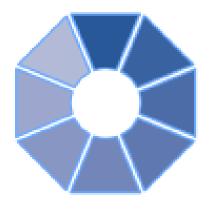


Advanced Defenses

NEW HOT SIZZLE

Stach & Liu now proudly presents:

- Google and Bing Hacking Alerts
 - SharePoint Hacking Alerts 118 dorks
 - SHODAN Hacking Alerts 26 dorks
- Diggity Alerts FUNdle Bundles
 - Consolidated alerts into 1 RSS feed
- Alert Client Tools
 - Alert Diggity Windows systray notifications
 - iDiggity Alerts iPhone notification app





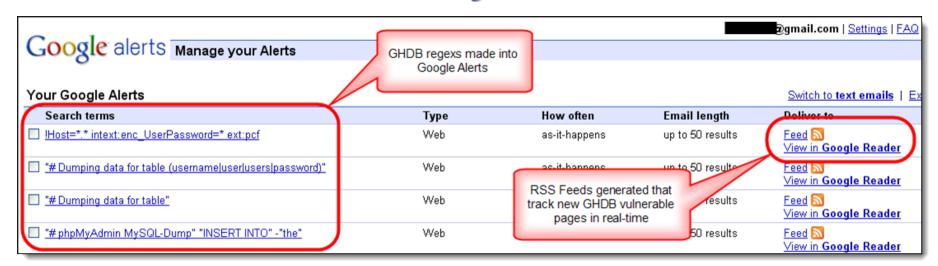


Google Hacking Alerts

ADVANCED DEFENSES

Google Hacking Alerts

- All hacking database queries using Google alerts
- Real-time vuln updates to >2400 hack queries via RSS
- Organized and available via Google reader importable file







Google Hacking Alerts

ADVANCED DEFENSES





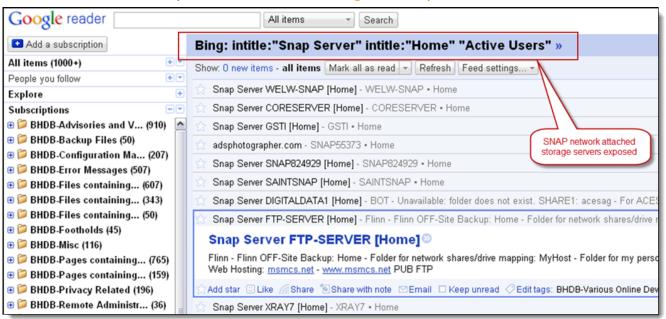


Bing Hacking Alerts

ADVANCED DEFENSES

Bing Hacking Alerts

- Bing searches with regexs from BHDB
- Leverages http://api.bing.com/rss.aspx
- Real-time vuln updates to >900 Bing hack queries via RSS





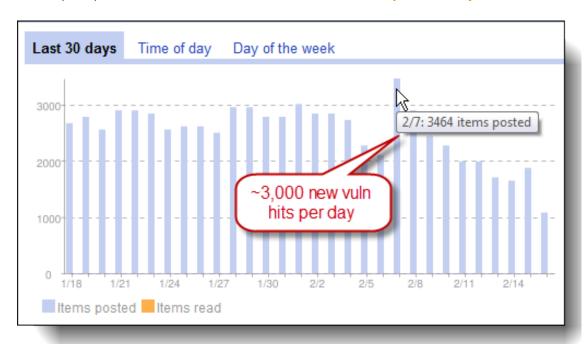


Bing/Google Alerts

LIVE VULNERABILITY FEEDS

World's Largest Live Vulnerability Repository

Daily updates of ~3000 new hits per day









ADVANCED DEFENSE TOOLS

Diggity Alert Fundle Bundle

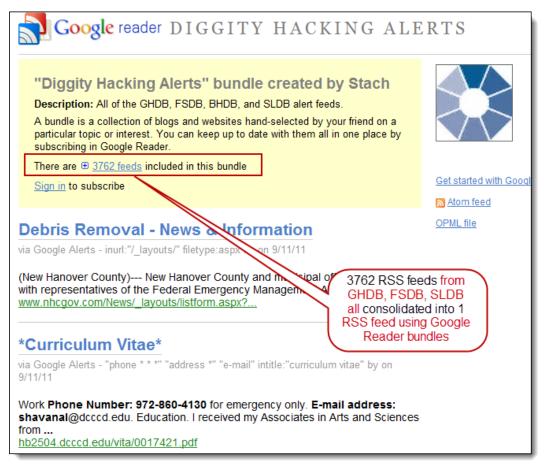




FUNdle Bundle



ADVANCED DEFENSES

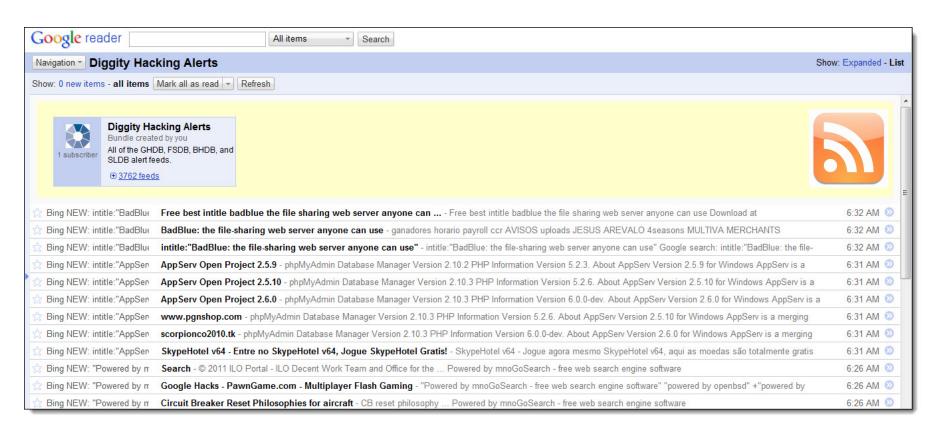






FUNdle Bundle

ADVANCED DEFENSES

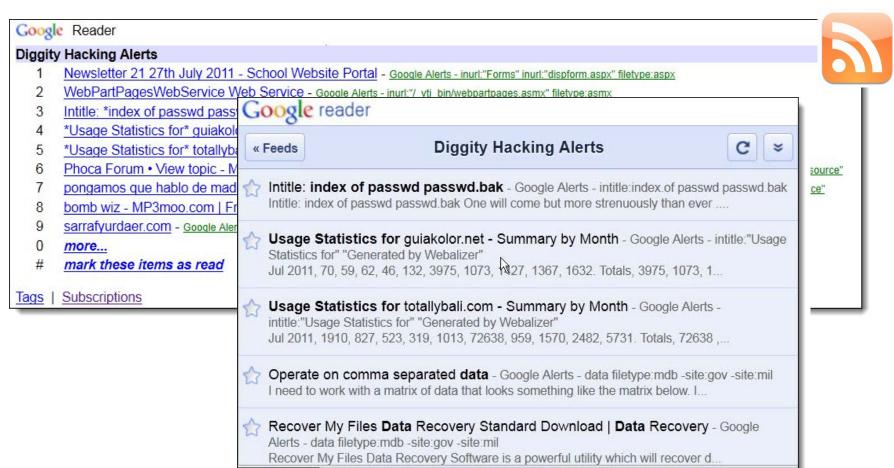






FUNdle Bundle

MOBILE FRIENDLY









ADVANCED DEFENSE TOOLS

SHODAN Alerts

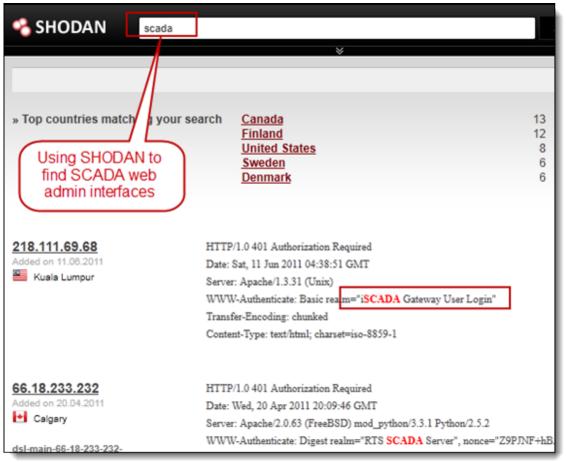




SHODAN Alerts



FINDING SCADA SYSTEMS



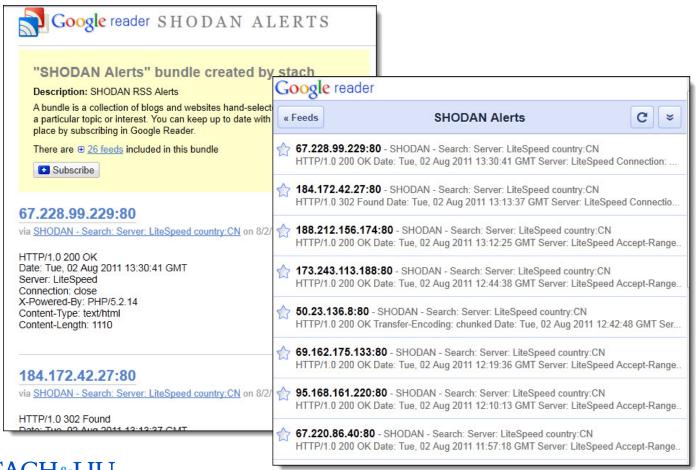




SHODAN Alerts



SHODAN RSS FEEDS







Bing/Google Alerts

THICK CLIENTS TOOLS

Google/Bing Hacking Alert Thick Clients

- Google/Bing Alerts RSS feeds as input
- Allow user to set one or more filters
 - e.g. "yourcompany.com" in the URL
- Several thick clients being released:
 - Windows Systray App
 - Droid app (coming soon)
 - iPhone app











ADVANCED DEFENSE TOOLS

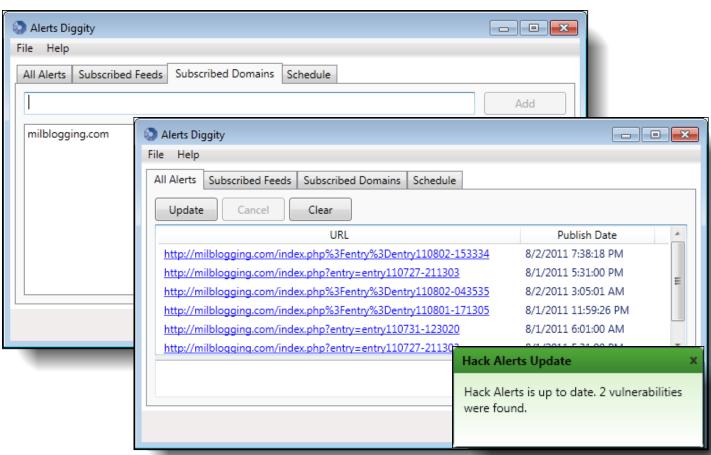
Alert Diggity





Alerts Diggity

ADVANCED DEFENSES









ADVANCED DEFENSE TOOLS

iDiggity Alerts

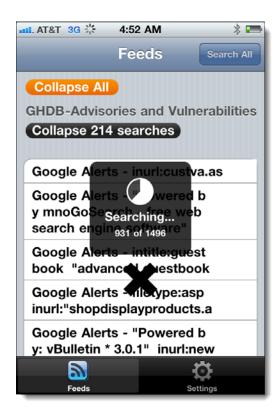


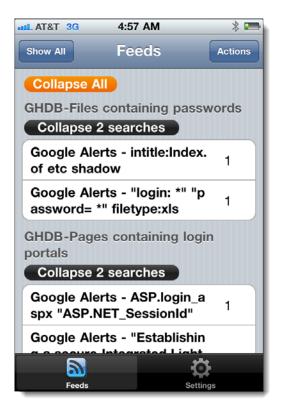


iDiggity Alerts

ADVANCED DEFENSES





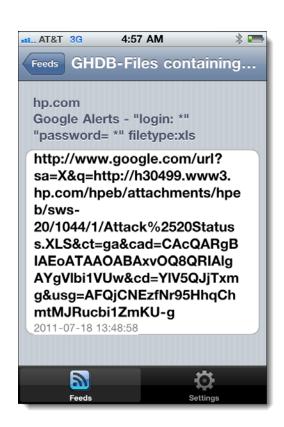




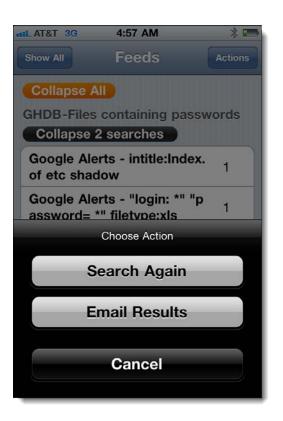


iDiggity Alerts

ADVANCED DEFENSES









New Defenses

"GOOGLE/BING HACK ALERTS"

- ✓ Tools exist
- ✓ Convenient
- ✓ Real-time updates
- ✓ Multi-engine results
- ✓ Historical archived data
- ✓ Multi-domain searching



Future Direction

ISNOW

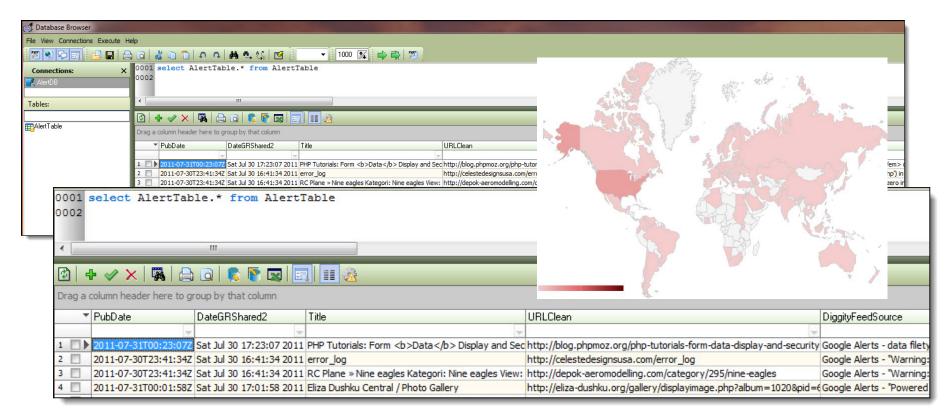




Diggity Alert DB

DATA MINING VULNS









Questions? Ask us something We'll try to answer it.

For more info:

Email: contact@stachliu.com Project: diggity@stachliu.com

Stach & Liu, LLC www.stachliu.com





Thank You

Stach & Liu Google Hacking Diggity Project info: http://www.stachliu.com/index.php/resources/tools/google-hacking-diggity-project/

