

Pulp Google Hacking

The Next Generation Search Engine Hacking Arsenal 08 May 2012 - TakeDownCon 2012 - Dallas, TX



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
 - NEW Diggity Alert RSS Feed Client Tools
- Future Directions



Introduction/ Background

GETTING UP TO SPEED





Open Source Intelligence

SEARCHING PUBLIC SOURCES

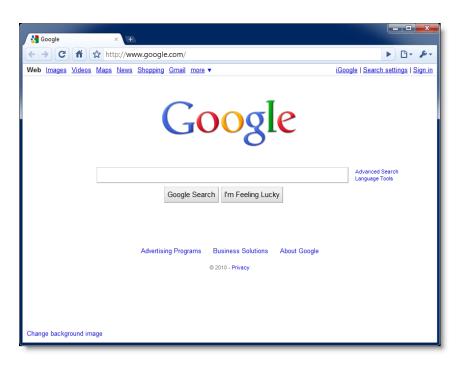
OSINT – is a form of intelligence collection management that involves finding, selecting, and acquiring information from *publicly available* sources and analyzing it to *produce actionable intelligence*.





Google/Bing Hacking

SEARCH ENGINE ATTACKS









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

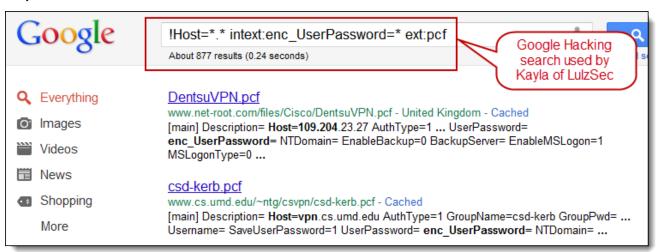
22:14 <@kayla> Sooooo...using the link above and the google hack string. !Host= *. * intext:enc_UserPassword= * ext:pcf Take your pick of VPNs you want access too. Ugghh.. Aaron Barr CEO HBGary Federal Inc.

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

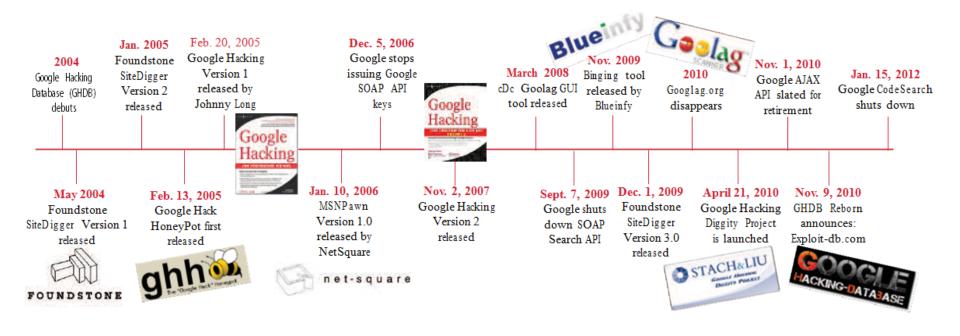






Quick History

GOOGLE HACKING RECAP







Quick History

GOOGLE HACKING RECAP







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

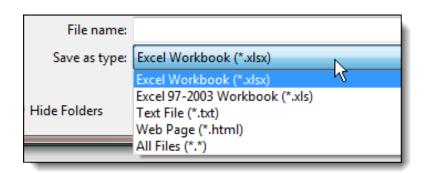
Google Diggity - New API

- 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\



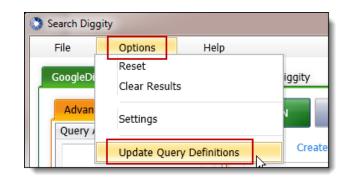
- Used by other tools for file download/analysis:
 - FlashDiggity, DLP Diggity, MalwareDiggity,...





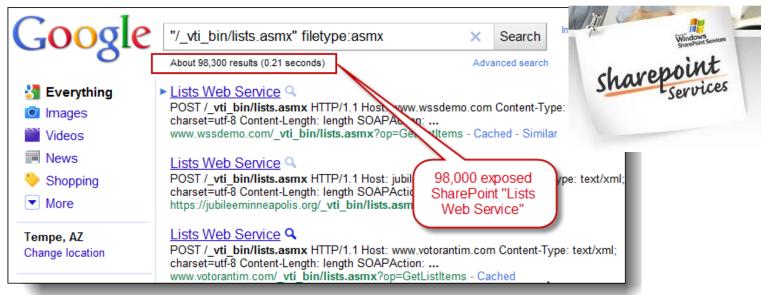


AUTO-UPDATES



SLDB Updates in Progress

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

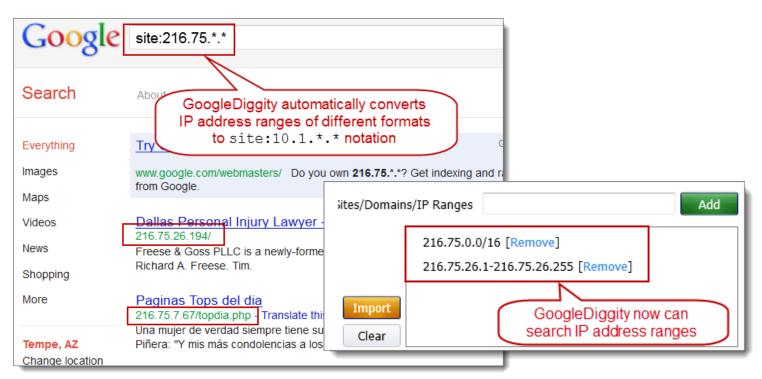






IP ADDRESS RANGES

GoogleDiggity can now search for IP Address Ranges

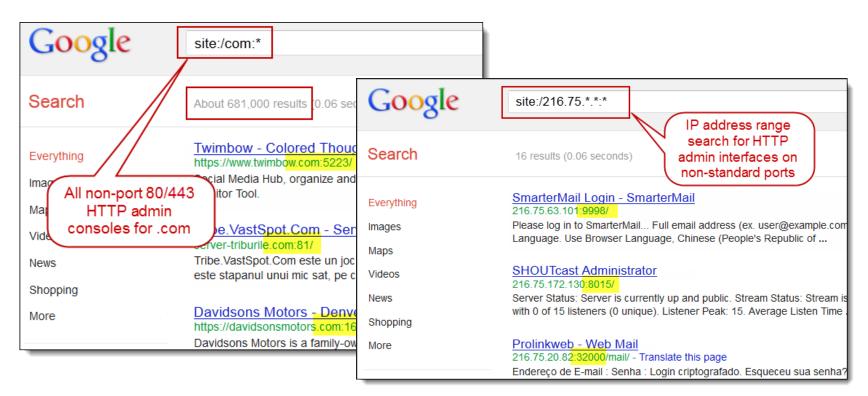






TARGETING HTTP ADMIN CONSOLES

Searching for web admin interfaces on non-standard HTTP ports

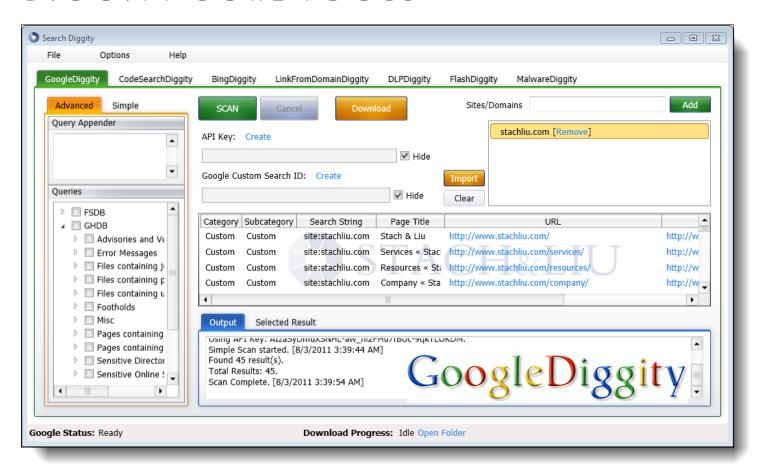






Google Diggity

DIGGITY CORE TOOLS

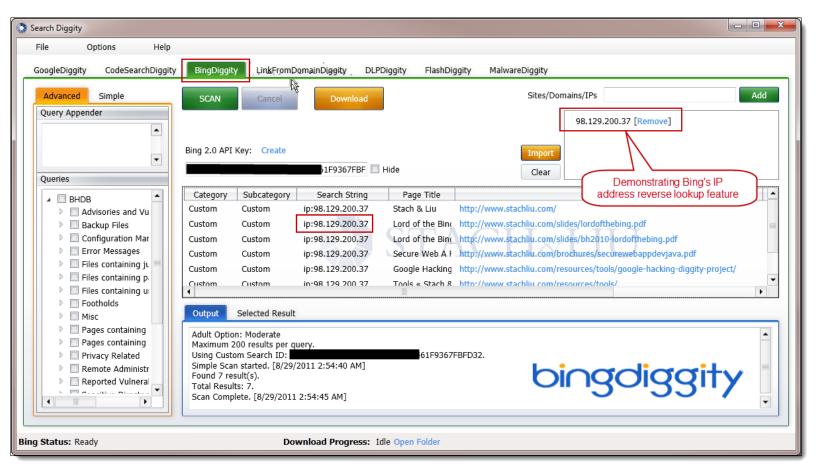






Bing Diggity

DIGGITY CORE TOOLS







Bing Hacking Database

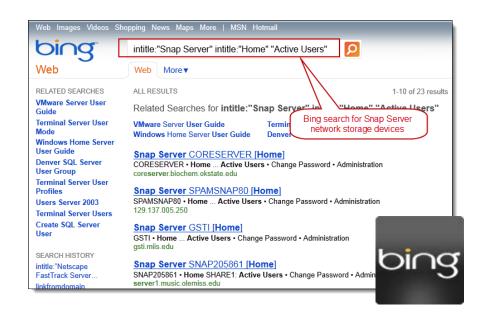
STACH & LIU TOOLS

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

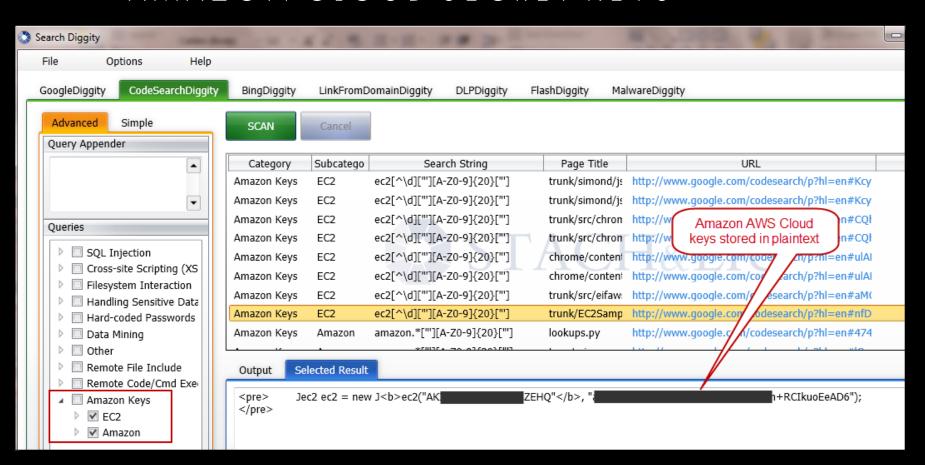






CodeSearch Diggity

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

THE SERVICE OFFERINGS ARE PROVIDED "AS IS." WE AND OUR AFFILIATES AND LICENSORS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE ARDING THE SERVICE OFFERINGS OR THE THIRD PARTY CONTENT, INCLUDING ANY WARRANTY THAT THE SERVICE OFFERINGS OR THIRD PARTY CONTENT WILL BE UNINTERRUPTED, ERROR FREE OR FREE OF HARMFUL COMPONENTS, OR THAT ANY CONTENT, INCLUDING YOUR CONTENT OR THE THIRD PARTY CONTENT, WILL BE SECURE OR NOT OTHERWISE LOST OR DAMAGED. EXCEPT TO THE EXTENT PROHIBITED BY LAW, WE AND OUR AFFILIATES AND LICENSORS DISCLAIM ALL WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR QUIET ENJOYMENT, AND ANY WARRANTIES ARISING OUT OF ANY COURSE OF DEALING OR USAGE OF TRADE.



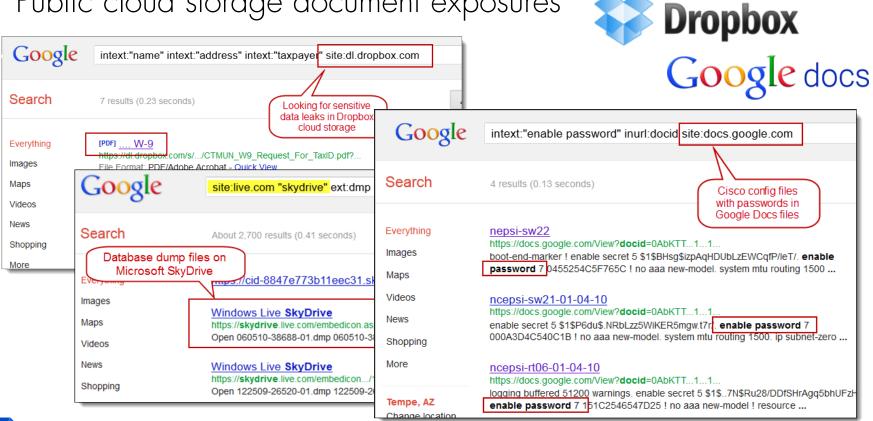


Cloud Docs Exposures

PUBLIC CLOUD SEARCHING



Public cloud storage document exposures









NEW GOOGLE HACKING TOOLS

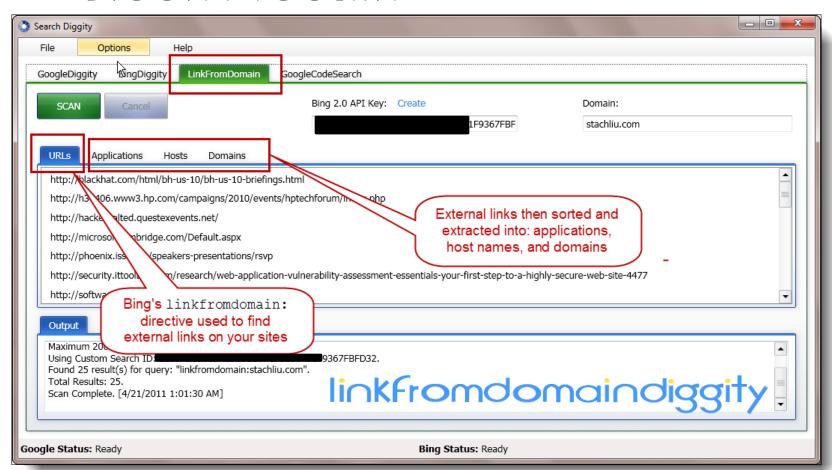
Bing LinkFromDomainDiggity





Bing LinkFromDomain

DIGGITY TOOLKIT



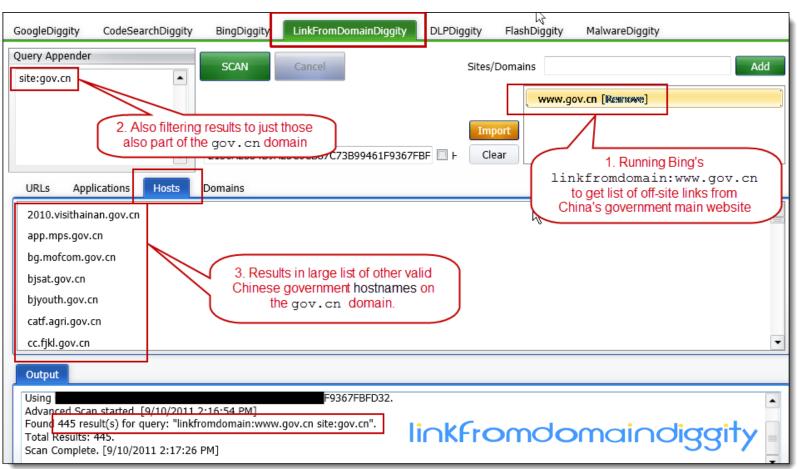






Bing LinkFromDomain

FOOTPRINTING LARGE ORGANIZATIONS







NEW GOOGLE HACKING TOOLS

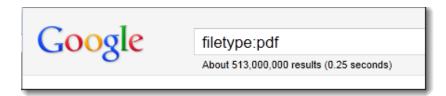
DLP Diggity





DLP Diggity

LOTS OF FILES TO DATA MINE







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



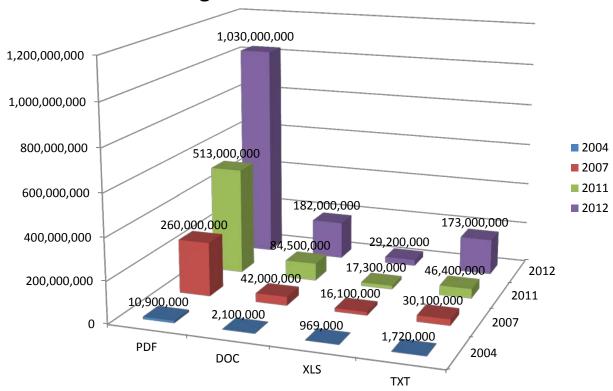




DLP Diggity

MORE DATA SEARCHABLE EVERY YEAR

Google Results for Common Docs



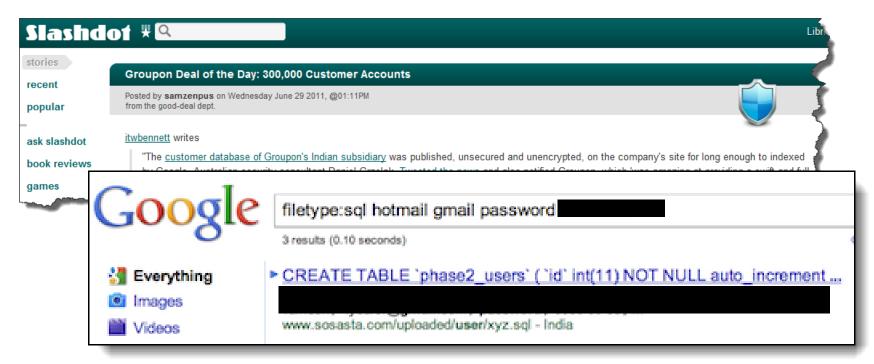




Data Loss In The News

MAJOR DATA LEAKS

- Groupon.com Leaks 300,000 users emails and passwords
 - filetype:sql hotmail gmail password







Data Loss In The News

MAJOR DATA LEAKS

Yale Alumni 43,000 SSNs Exposed in Excel Spreadsheet

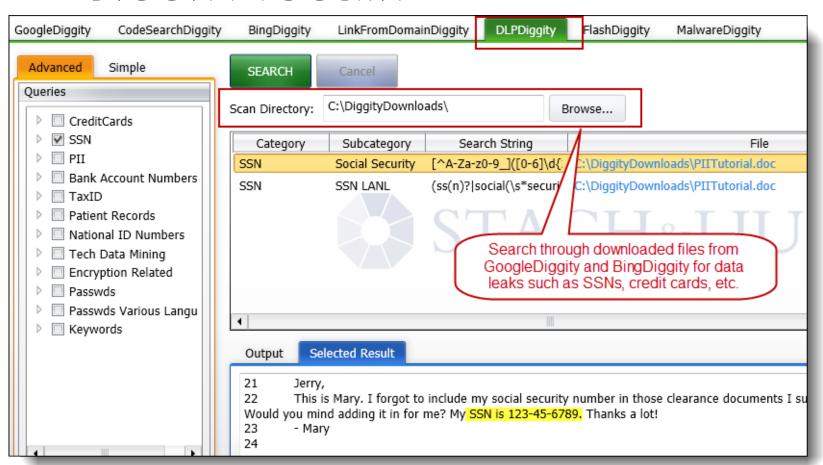






DLP Diggity

DIGGITY TOOLKIT





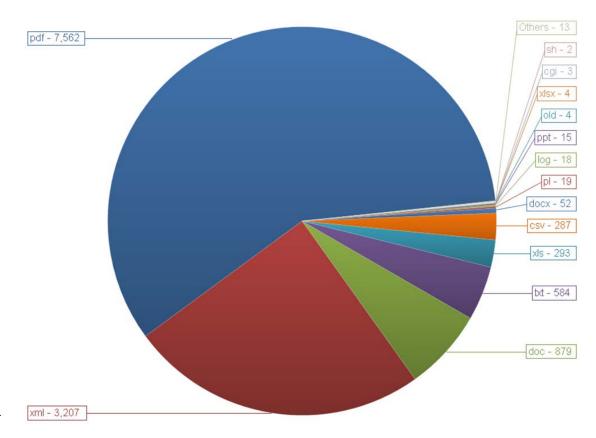


DLP Reporting

PRACTICAL EXAMPLES

DLPDiggity - # of Files Analyzed per File Extension

Total = 12,943 files







DLP Reporting

PRACTICAL EXAMPLES

Automagic Removal Process, DORK, GHDB, XSS.CX, Vulnerability Management, Best Practices

Updated October 8, 2011

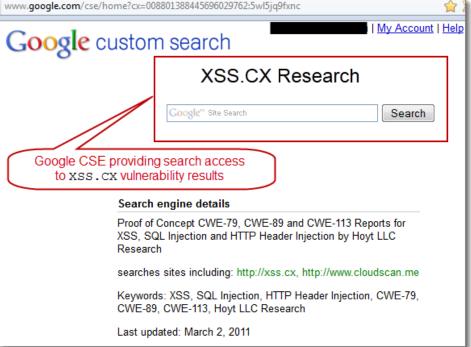
Executive Summary

XSS.CX is an automated Anti-Phishing Execution Robot defined as a SCAP Expert System performing Vulnerabil Execution, Risk Analysis and Reporting into the Publi Domain for the public convenience and necessity of securing personally identifying information.

General Information

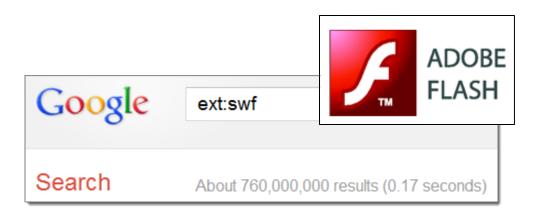
The Anti-Phishing Web Crawler publishes Vulnerable Ho reports into the Public Domain which are then indexed Search Engines.

Companies with external facing Vulnerability Manageme Programs then identify the XSS.CX Report, resolving t vulnerability in the normal course of business.









NEW GOOGLE HACKING TOOLS

FlashDiggity





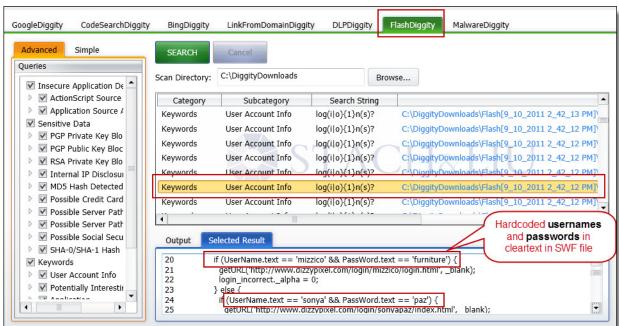
FlashDiggity

DIGGITY TOOLKIT

Google/Bing 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







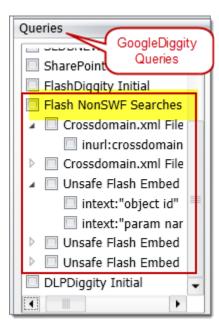
Flash Non-SWF Hacking

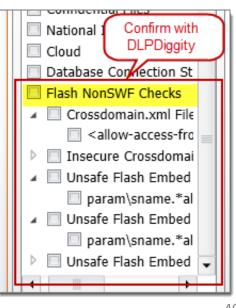
OTHER FLASH HACKING

- Google/Bing for Non-SWF files on target domains, but related to Flash. Example queries:
 - inurl:crossdomain.xml ext:xml intext:"secure" intext:"false"
 - intext: "swf" intext: "param name" intext: "allowNetworking * all"
- Download Non-SWF files to C:\DiggityDownloads\
- Use DLPDiggity to analyze for non-SWF Flash vulnerabilities, such as:
 - Crossdomain.xml Insecure Settings
 - Secure flag set to false
 - Open * wildcard used
 - Unsafe Flash HTML Embed Settings:
 - AllowScriptAccess always
 - AllowNetworking all
 - AllowFullScreen true











NEW GOOGLE HACKING TOOLS

Malware Diggity





Rise of Malware

NO SITES ARE SAFE

SOPHOS - Security Threat Report 2012

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

Online threats

Cybercriminals constantly launch attacks designed to penetrate your digital defenses and steal sensitive data. And almost no online portal is immune to threat or harm.

According to SophosLabs more than 30,000 websites are infected every day and 80% of those infected sites are legitimate. Eighty-five percent of all malware, including viruses, worms, spyware, adware and Trojans, comes from the web.¹¹ Today, drive-by downloads have become the top web threat. And in 2011, we saw one drive-by malware rise to number one, known as Blackhole





Malware SaaS Services

CRIMINAL THIRD-PARTY SOLUTIONS

KrebsonSecurity

In-depth security news and investigation

Service Automates Boobytrapping of Hacked Sites



Hardly a week goes by without news of some widespread compromise in which thousands of Web sites that share a common vulnerability are hacked and seeded with malware. Media coverage of these mass hacks usually centers on the security

flaw that allowed the intrusions, but one aspect of these crimes that's seldom examined is the method by which attackers automate the booby-trapping and maintenance of their hijacked sites.

Regular readers of this blog may be unsurprised to learn that this is another aspect of the cybercriminal economy that can be outsourced to third-party services. Often known as "iFramers," such services can simplify the task of managing large numbers of hacked sites that are used to drive traffic to sites that serve up malware and browser exploits.

At the very least, a decent iFramer service will all a customer service write large lists of







MalwareDiggity

DIGGITY TOOLKIT

1. Leverages Bing's linkfromdomain: search operator 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





Mass Injection Attacks

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



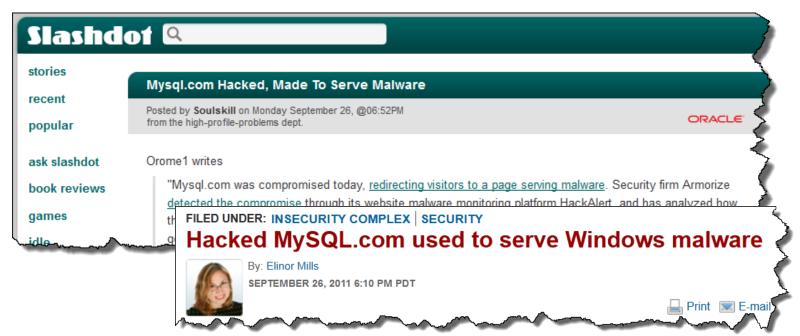


Mass Injection Attacks

MALWARE GONE WILD

Malware Distribution Woes – mysql.com - Sept2011

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

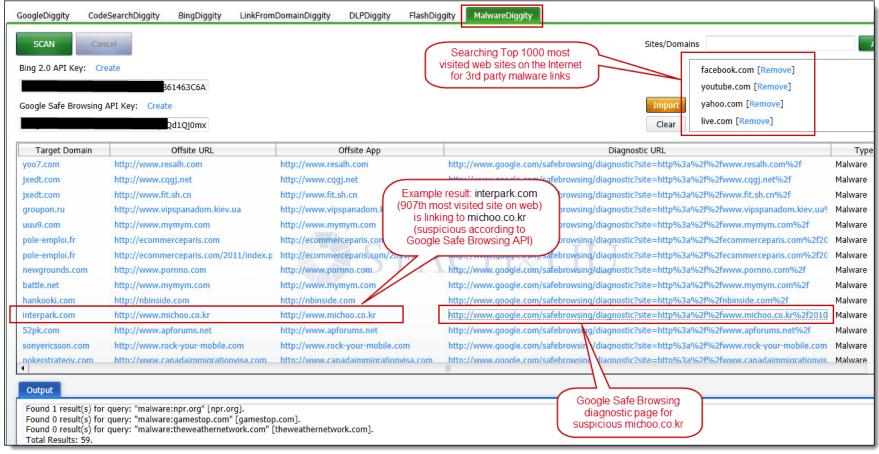






Malware Diggity

DIGGITY TOOLKIT

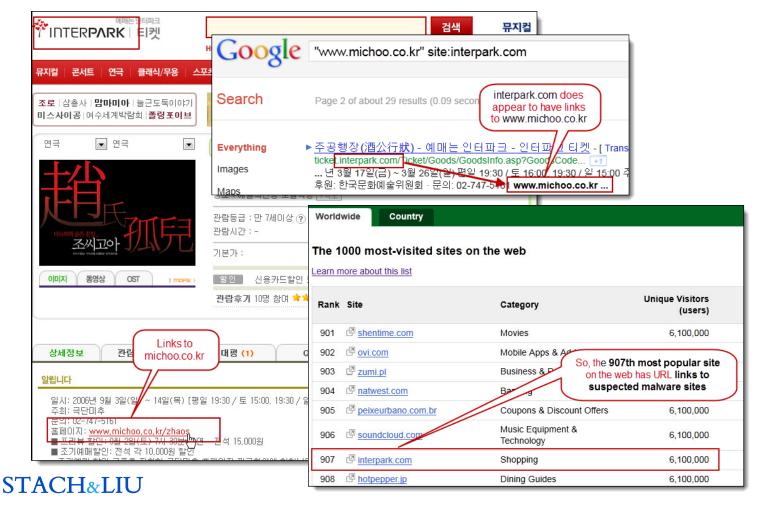






Malware Diggity

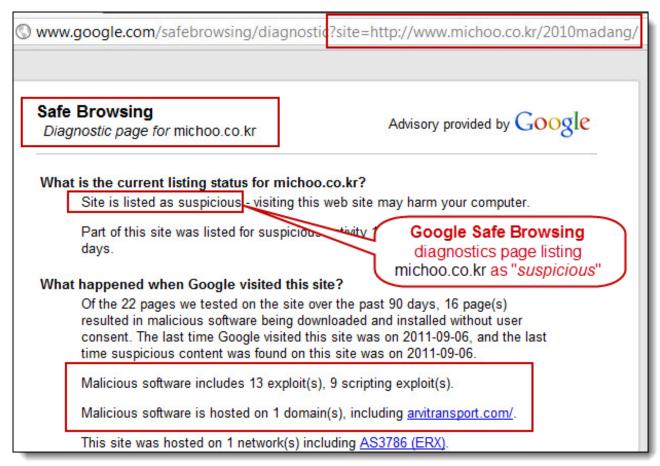
DIGGITY TOOLKIT





Malware Diggity

DIAGNOSTICS IN RESULTS







Malware Defenses

BLACKHAT SEO DEFENSES

- Malware Warning Filters
 - Google Safe Browsing
 - Microsoft SmartScreen Filter
 - Yahoo Search Scan
- Sandbox Software
 - Sandboxie (sandboxie.com)
 - Dell KACE Secure Browser
 - Office 2010 (Protected Mode)
 - Adobe Reader Sandbox (Protected Mode)
 - Adobe Flash Sandbox (Protected Mode) NEW May 2012
- No-script and Ad-block browser plugins



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
 - http://www.google.com/remove.html
- 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





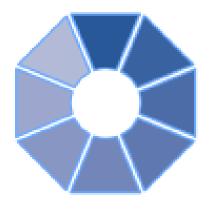


Advanced Defenses

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





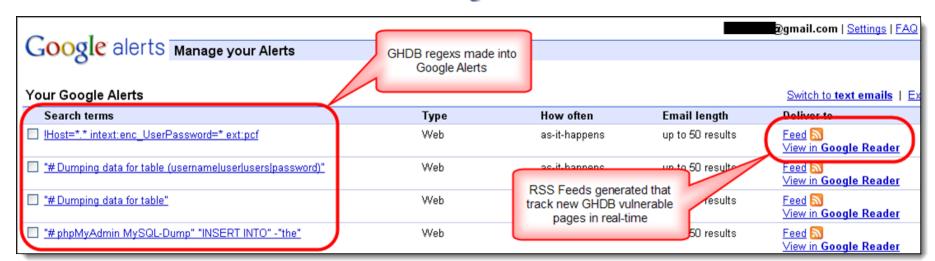


Google Hacking Alerts

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





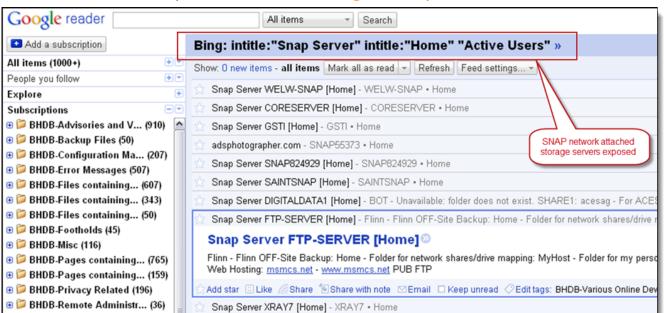


Bing Hacking Alerts

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

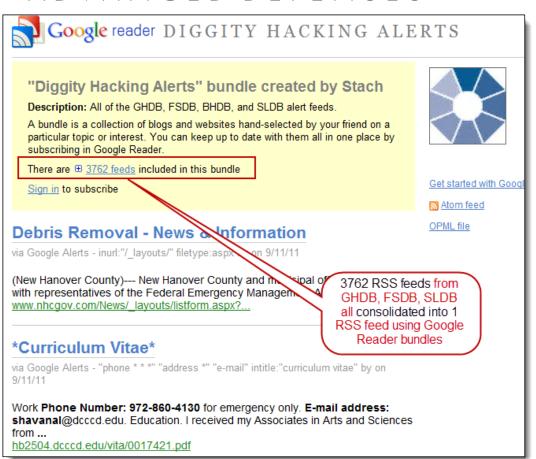




FUNdle Bundle

DIGGITY BLERTS

ADVANCED DEFENSES



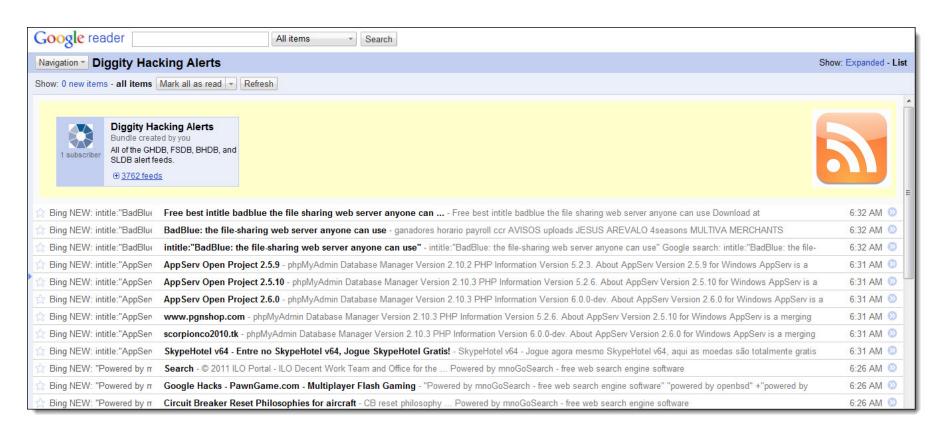






FUNdle Bundle

ADVANCED DEFENSES

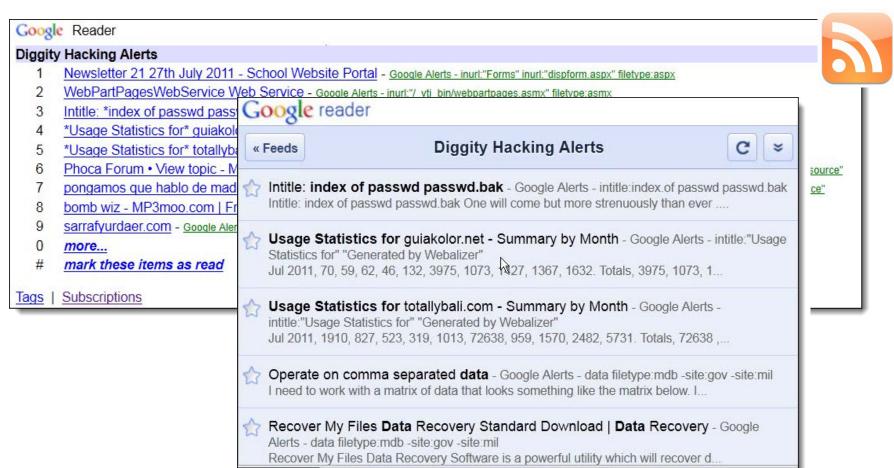






FUNdle Bundle

MOBILE FRIENDLY









ADVANCED DEFENSE TOOLS

SHODAN Alerts

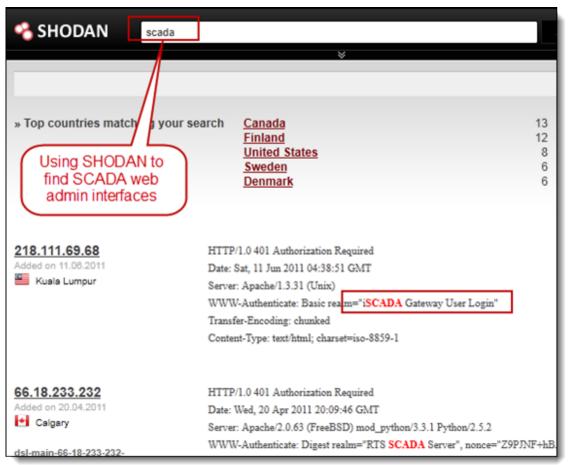




SHODAN Alerts



FINDING SCADA SYSTEMS







SHODAN Alerts



FINDING SCADA SYSTEMS



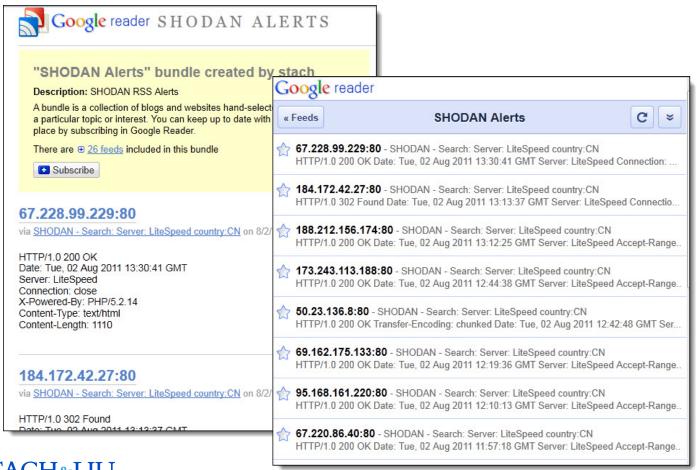




SHODAN Alerts



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

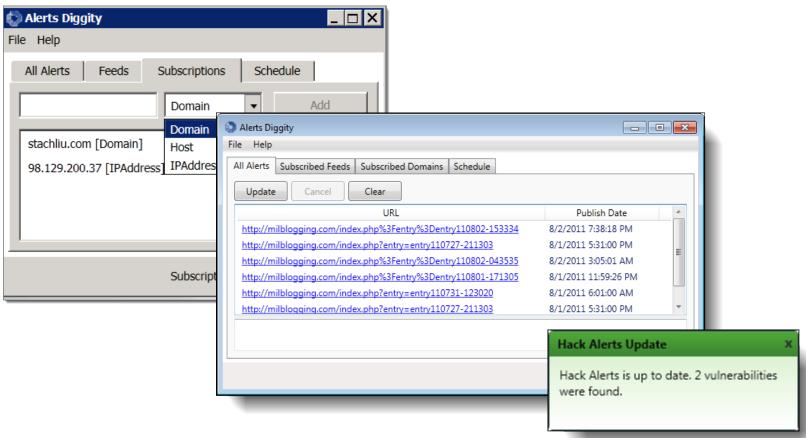
Alert Diggity





Alerts Diggity

ADVANCED DEFENSES









ADVANCED DEFENSE TOOLS

iDiggity Alerts

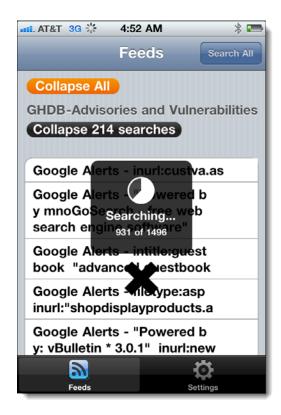


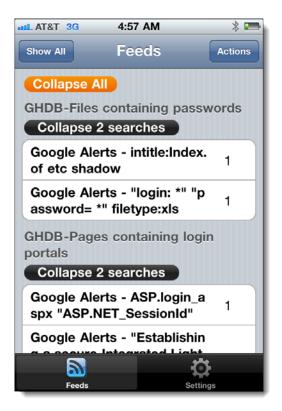


iDiggity Alerts

ADVANCED DEFENSES









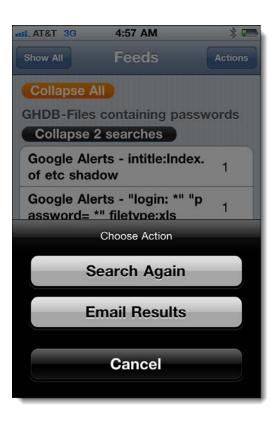


iDiggity Alerts

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

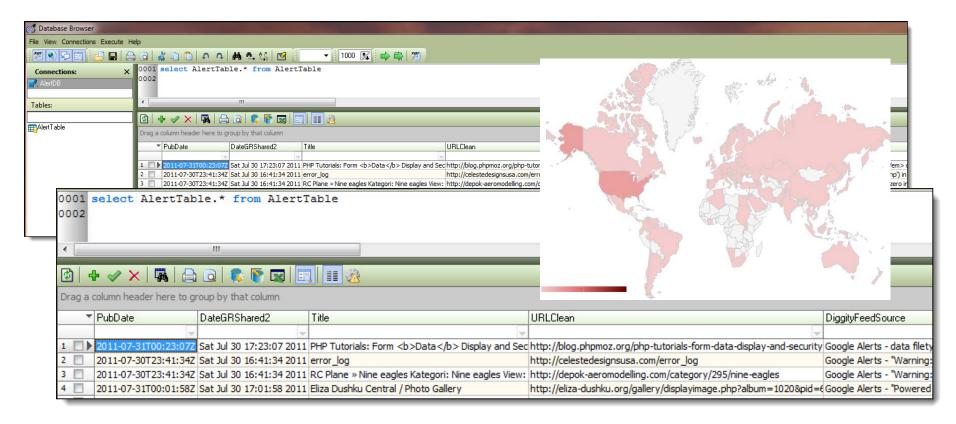




Diggity Alert DB

DATA MINING VULNS









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

For more info:

Fran Brown
Rob Ragan (@sweepthatleg)
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/

