

# Pulp Google Hacking

The Next Generation Search Engine Hacking Arsenal

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Presented by:
Francis Brown
Rob Ragan
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*.

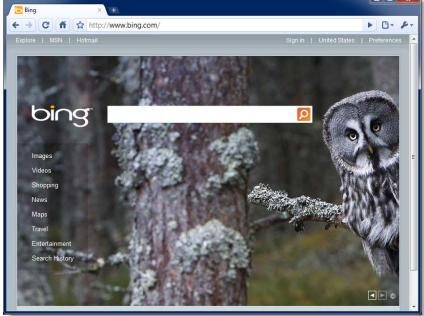




## Google/Bing Hacking

SEARCH ENGINE ATTACKS









# 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



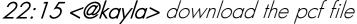




# Google Hacking = Lulz

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.



22:16 <@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 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	<b>Google Hacking Diggity Project initial releases</b>	
Nov 1, 2010	Google AJAX API slated for retirement	
Nov 9, 2010	GHDB Reborn Announced – Exploit-db.com	
July 2011	Bing ceases '&format=rss' support	





## Advanced Attacks

WHAT YOU SHOULD KNOW







## Diggity Core Tools

STACH & LIU TOOLS



### Google Diggity



- 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









## New Features



DIGGITY CORE TOOLS

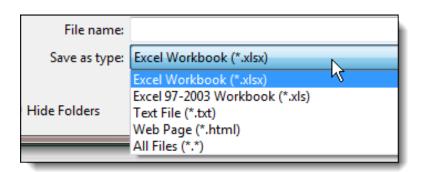
### Google Diggity - New API

- 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







## New Features

#### DOWNLOAD 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,...

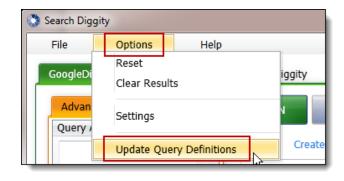






## New Features

AUTO-UPDATES



### SLDB Updates in Progress

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



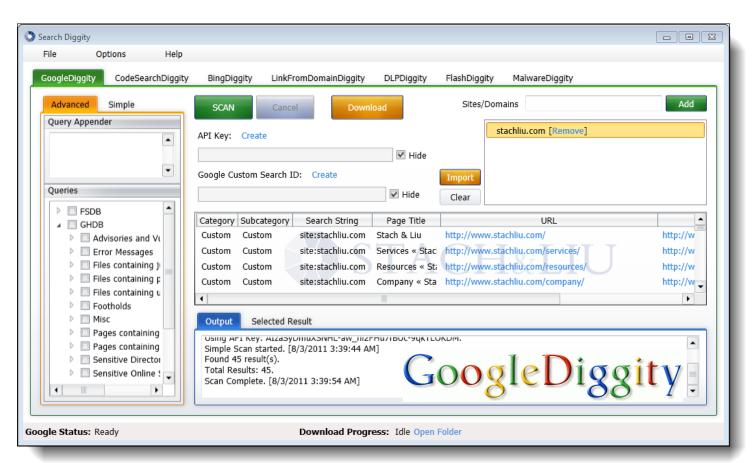




## Google Diggity



DIGGITY CORE TOOLS



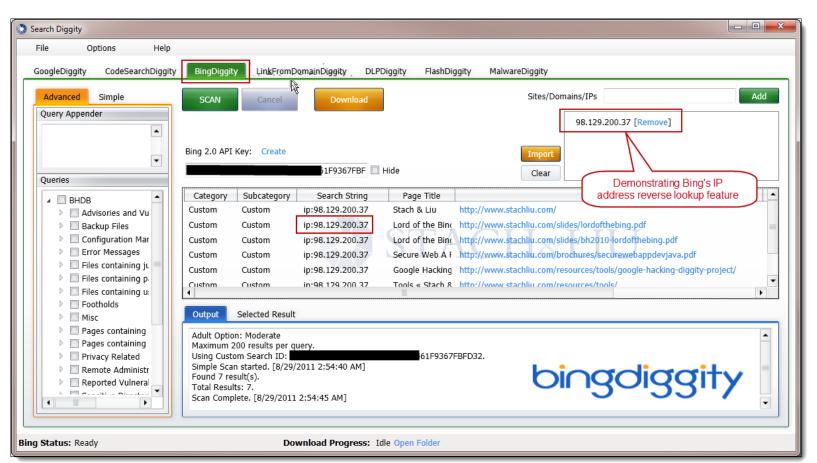




## Bing Diggity



DIGGITY CORE TOOLS







# Bing Hacking Database



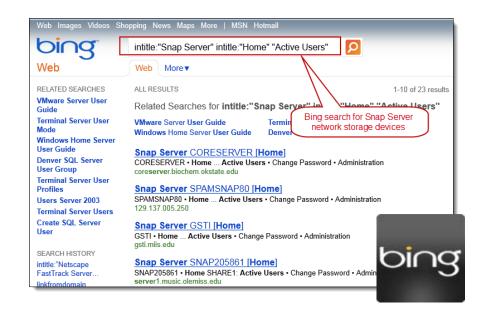
STACH & LIU TOOLS

### 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 GoogleD	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/*	
Last updated: July 21, 2011	
Add this search engine to your Google homepage:  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 |
```

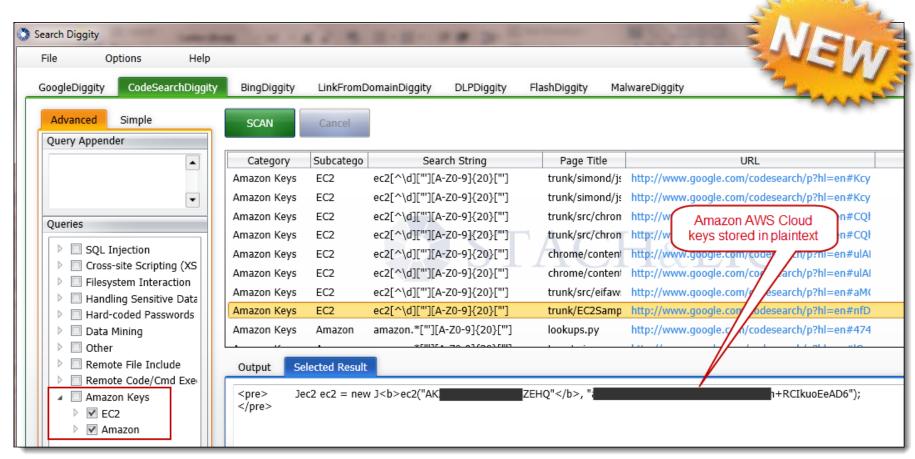




## CodeSearch Diggity



AMAZON CLOUD SECRET KEYS







### NEW GOOGLE HACKING TOOLS

## Bing LinkFromDomainDiggity

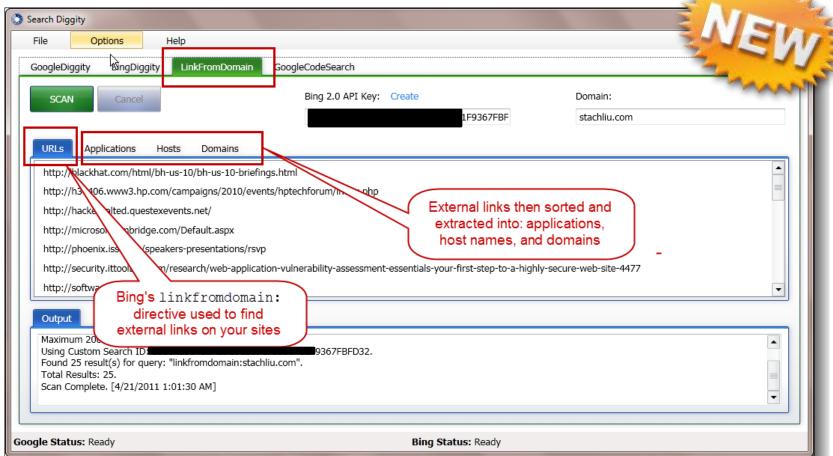




## Bing LinkFromDomain



DIGGITY TOOLKIT



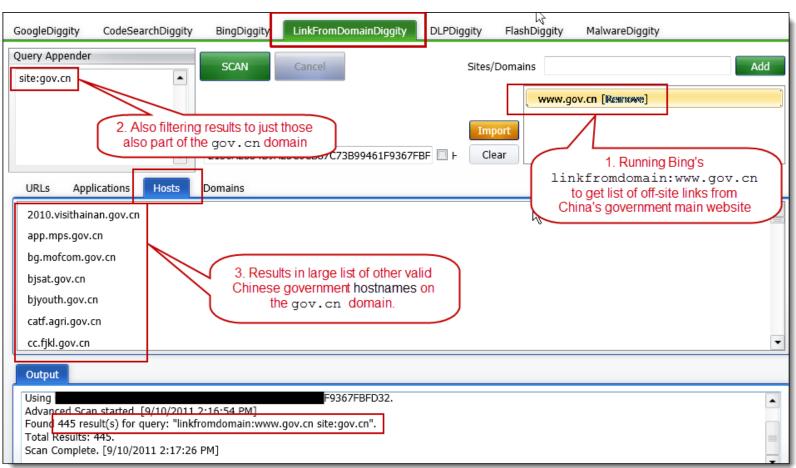




## Bing LinkFromDomain



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





## Mass Injection Attacks



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/stor<del>u/chow&rtiala.ibtml?ortialaID=225</del>

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

Sure enough, the Web sites of the *Jet* 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.







## Mass Injection Attacks



MALWARE GONE WILD

## Malware Distribution Woes – LizaMoon – April2011

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







## 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

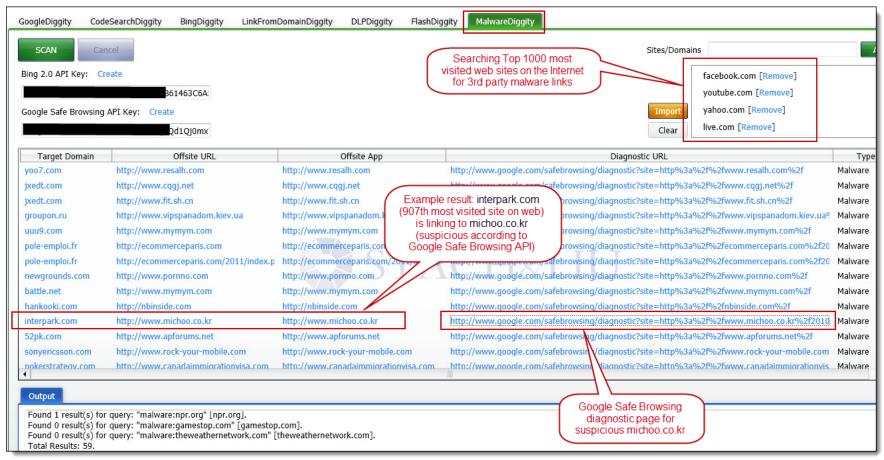




## Malware Diggity



DIGGITY TOOLKIT



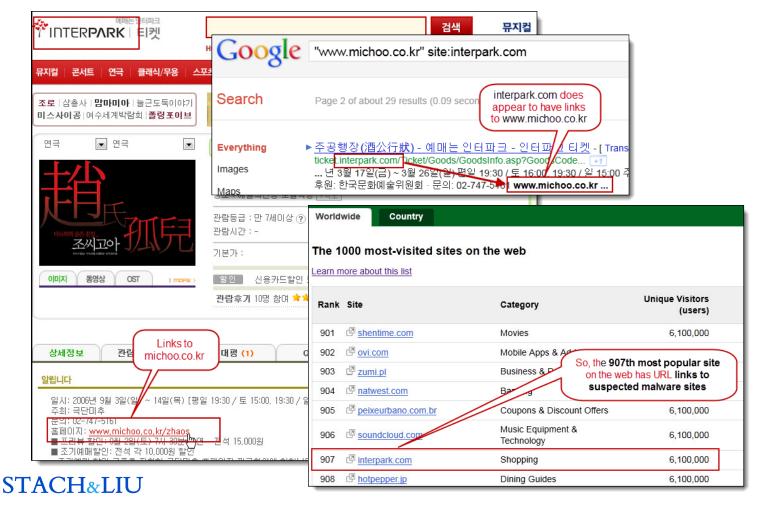




# Malware Diggity



DIGGITY TOOLKIT







## Malware Diggity



### DIAGNOSTICS IN RESULTS

www.google.com/safebrowsing/diagnostid?site=http://www.michoo.co.kr/2010madang/ Safe Browsing Advisory provided by Google Diagnostic page for michoo.co.kr What is the current listing status for michoo.co.kr? Site is listed as suspicious - visiting this web site may harm your computer. Part of this site was listed for suspicious Google Safe Browsing days. diagnostics page listing michoo.co.kr as "suspicious" What happened when Google visited this site? Of the 22 pages we tested on the site over the past 90 days, 16 page(s) resulted in malicious software being downloaded and installed without user consent. The last time Google visited this site was on 2011-09-06, and the last time suspicious content was found on this site was on 2011-09-06. Malicious software includes 13 exploit(s), 9 scripting exploit(s). Malicious software is hosted on 1 domain(s), including arvitransport.com/. This site was hosted on 1 network(s) including AS3786 (ERX).







### NEW GOOGLE HACKING TOOLS

## DLP Diggity





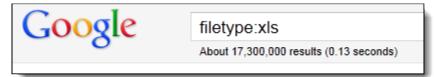
## DLP Diggity

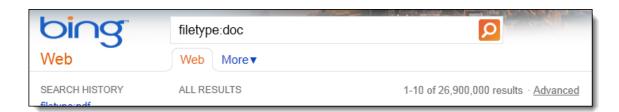


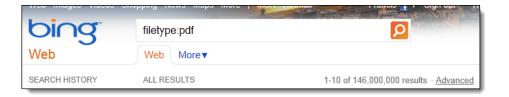
### LOTS OF FILES TO DATA MINE













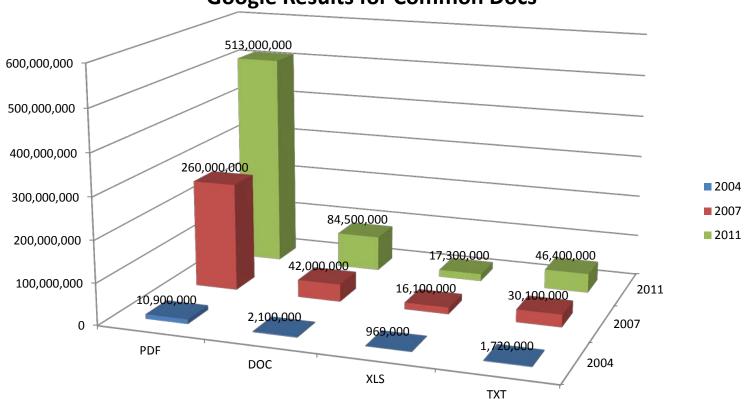




# DLP Diggity

## MORE DATA SEARCHABLE EVERY YEAR

#### **Google Results for Common Docs**



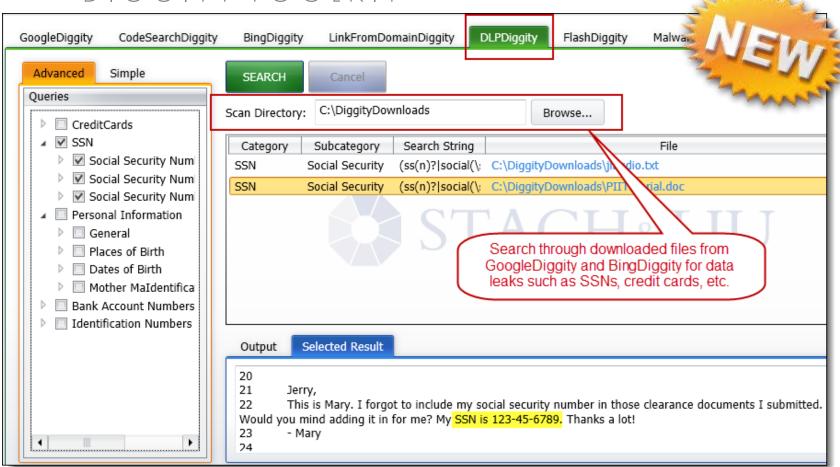




# DLP Diggity



DIGGITY TOOLKIT









NEW GOOGLE HACKING TOOLS

# FlashDiggity

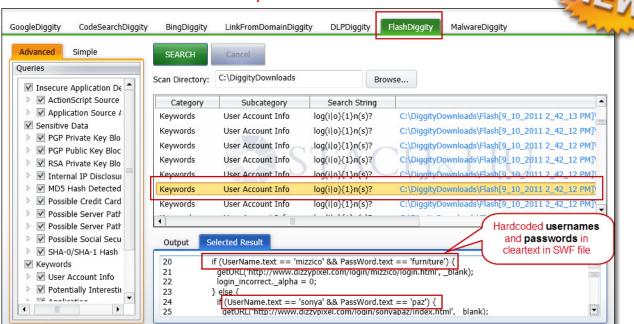




# Flash Diggity

#### 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

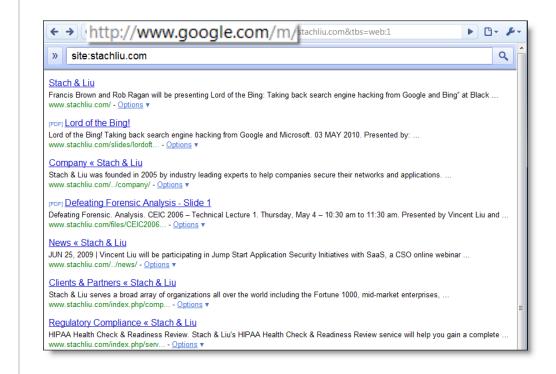


DIGGITY TOOLKIT

## 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





## 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







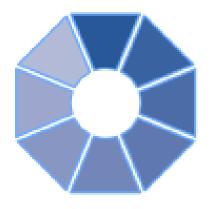
## Advanced Defenses

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







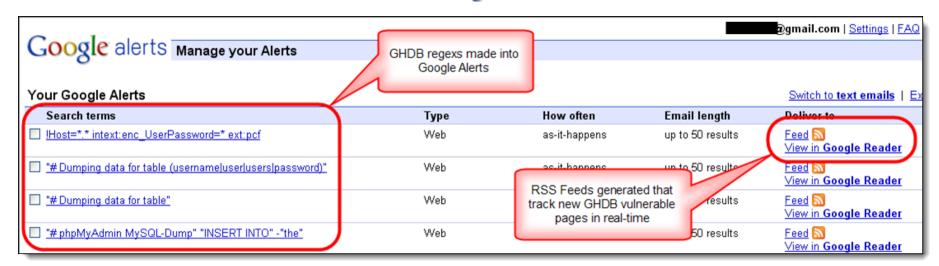
# Google Hacking Alerts



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







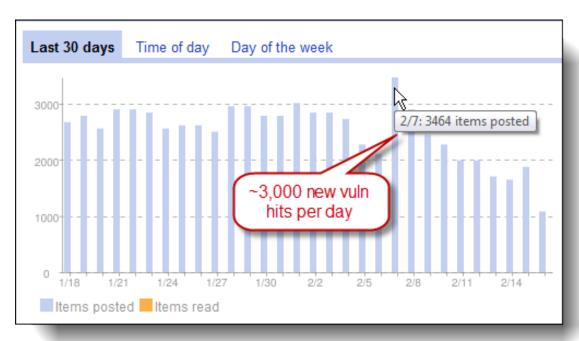
# Bing/Google Alerts



LIVE VULNERABILITY FEEDS

World's Largest Live Vulnerability Repository

Daily updates of ~3000 new hits per day









#### ADVANCED DEFENSE TOOLS

## Diggity Alert Fundle Bundle

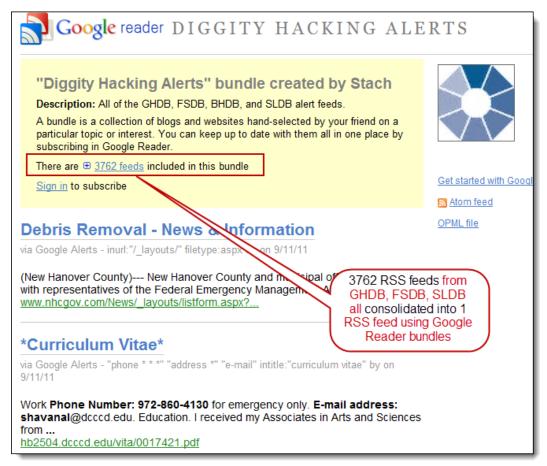




## FUNdle Bundle



## ADVANCED DEFENSES



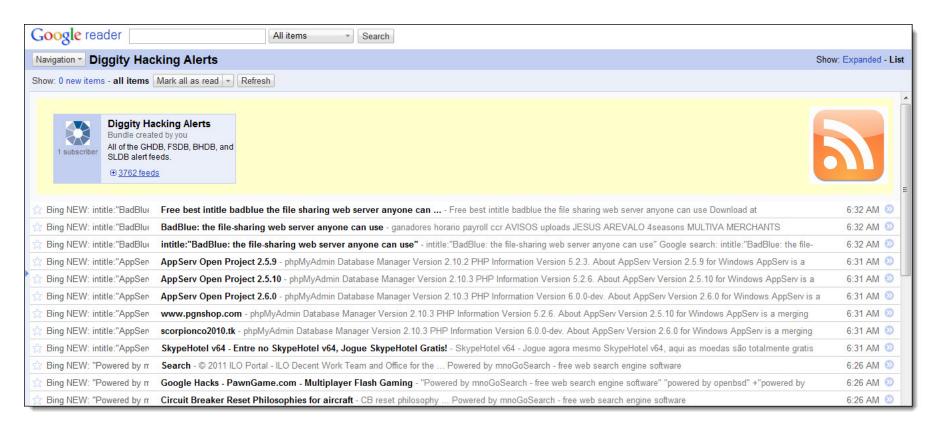




## FUNdle Bundle



#### ADVANCED DEFENSES



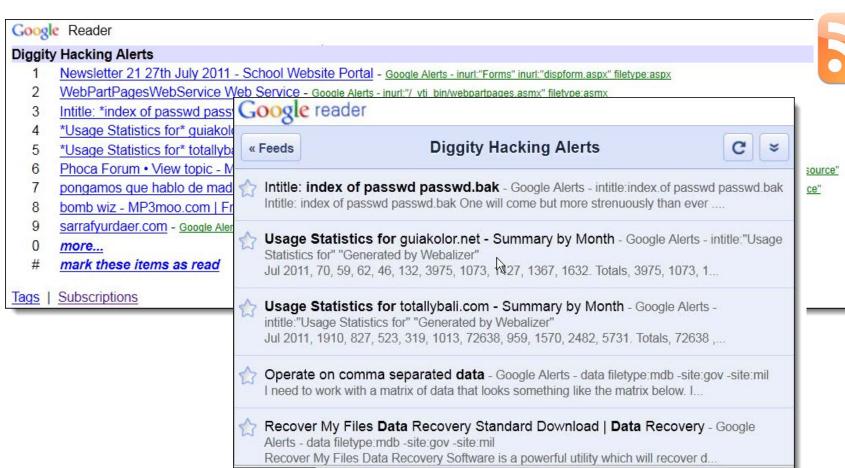




## FUNdle Bundle



#### MOBILE FRIENDLY









#### ADVANCED DEFENSE TOOLS

## **SHODAN Alerts**

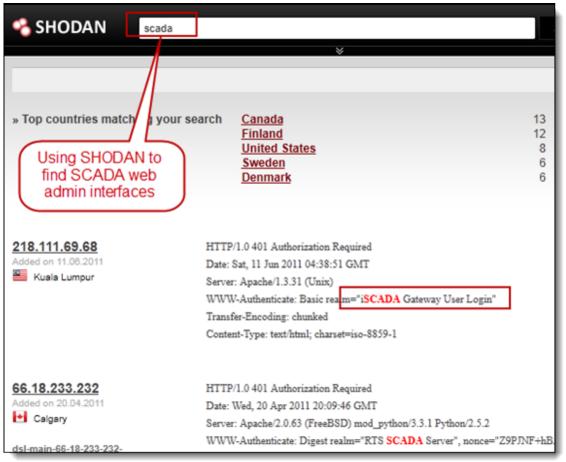




## SHODAN Alerts



FINDING SCADA SYSTEMS



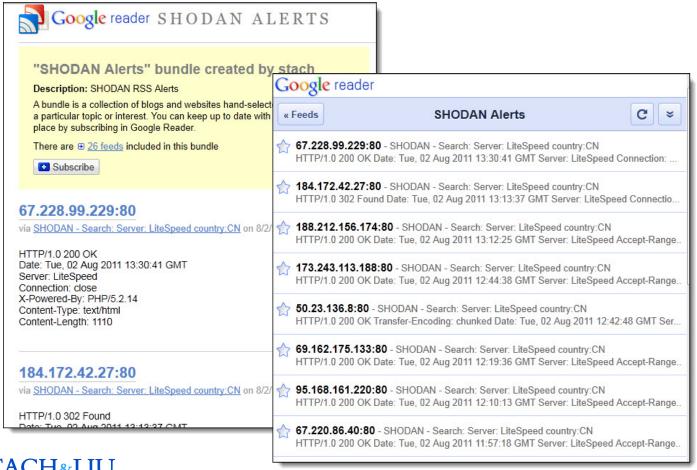




## SHODAN Alerts



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

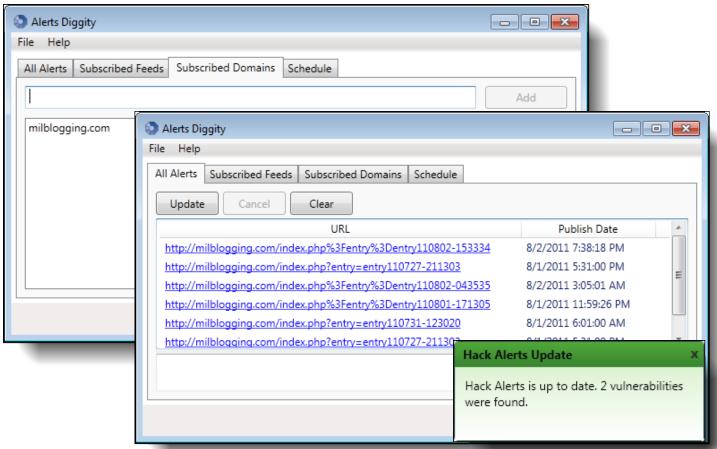




# Alerts Diggity



ADVANCED DEFENSES









ADVANCED DEFENSE TOOLS

# iDiggity Alerts



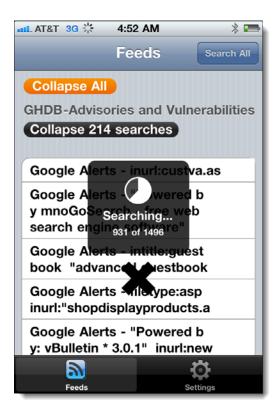


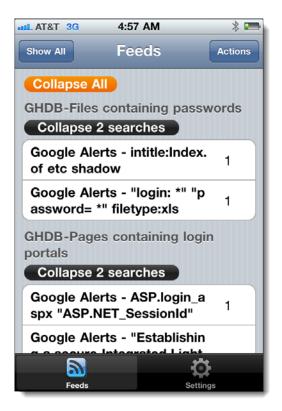
# iDiggity Alerts

## ADVANCED DEFENSES









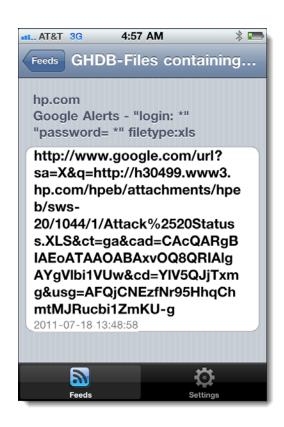




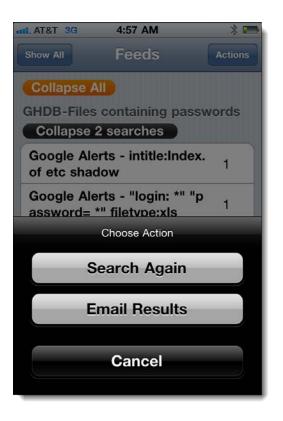
# iDiggity Alerts

#### ADVANCED DEFENSES











## New Defenses

"GOOGLE/BING HACK ALERTS"

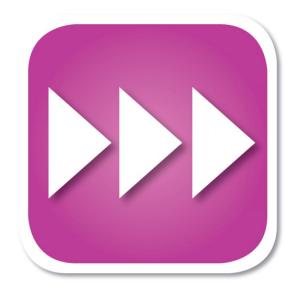


- ✓ Tools exist
- ✓ Convenient
- ✓ Real-time updates
- ✓ Multi-engine results
- ✓ Historical archived data
- ✓ Multi-domain searching





# Future Direction IS NOW





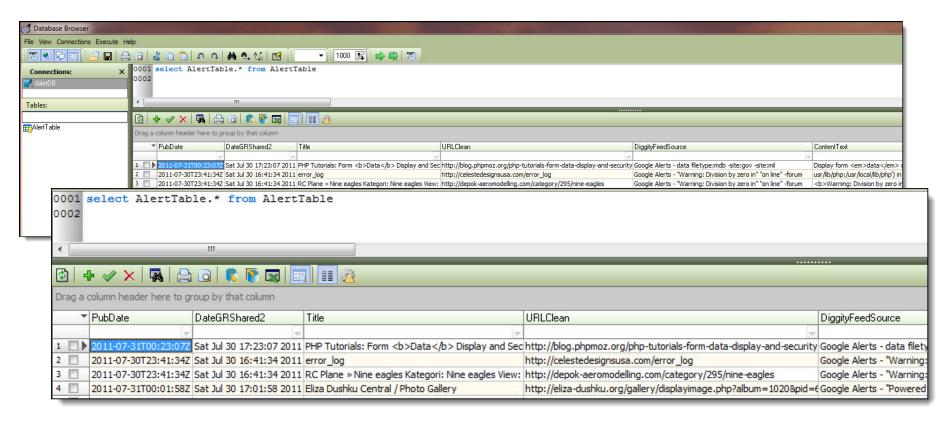




# Diggity Alert DB

DATA MINING VULNS









# Dictionary Updates



3rd 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.



# Special Thanks

Oscar "The Bull" Salazar
Brad "BeSickVVittlt" Sickles
Nick "King Luscious" Harbin
Prajakta "The Flasher" Jagdale
Ruihai "Ninja" Fang
Jason "Blk-majik" Lash





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

#### For more info:

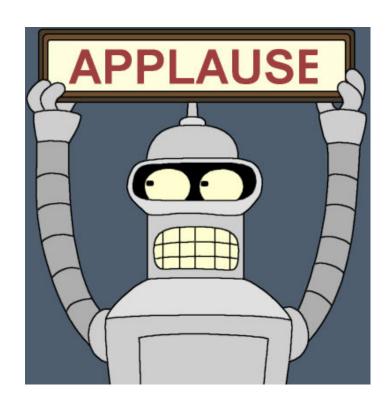
Email: contact@stachliu.com Project: diggity@stachliu.com

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/

