# Legal And Efficient Web App Testing Without Permission

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# Agenda

- Intro
  - Why + How without permission
  - OWTF basics
- Practical Cheating:
  - OWASP + OWTF Walk-through
- Conclusion
- Q&A

# About me

- Spanish dude
- Uni: Degree, InfoSec research + honour mark
- IT: Since 2000, defensive sec as netadmin / developer
- (Offensive) InfoSec: Since 2007
- OSCP, CISSP, GWEB, CEH, MCSE, etc.
- Web App Sec and Dev/Architect
- Infosec consultant, blogger, OWTF, GIAC, BeEF

# The pen testing problem

http://scottthong.wordpress.com

# Attacker Tactics

From "Open Source Information Gathering" by Chris Gates, Brucon 2009


http://carnal0wnage.attackresearch.com/

# Pentester disadvantage

Pentesters vs Bad guys

- Pentesters have time/scope constraints != Bad guys
- Pentesters have to write a report != Bad guys

Complexity is increasing

More complexity = more time needed to test properly

Customers are rarely willing to:

"Pay for enough / reasonable testing time"

A call for efficiency:

- We must find vulns **faster**
- We must be **more efficient**
- .. or **bad guys** will find the vulns, not us

# Can we learn from history?

Has this

Huge disadvantage

problem been solved before?

# Ancient "Top Attackers"

**Individually outstanding due to:**

- Artificial selection: Babies killed if "defective" (!)
- Military training ("Agoge"): Ages 7-18
- Final test: Survive in the countryside with only a knife
- Spartan Law: No retreat, No surrender (i.e. victory or death)

**Globally outstanding due to solid tactic: "Hoplite phalanx"**

- Shield wall + Spear points
- Frontally very strong + used successfully for centuries

http://scottthong.wordpress.com / http://en.wikipedia.org/wiki/Sparta

# How would <u>you</u> beat them?

**How could a room full of (sedentary? ☺) Geeks beat a room full of Spartans?**

**Ok, more realistic scenario ☺:**

- Your troops must fight the Spartans
- You have the **same number** of soldiers
- Your soldiers are **not that great**
- How can you WIN?

# Ancient "Pentest Cheating"

**<u>Battle of Lechaeum</u>: Spartans defeated by "lamers"!**

**Tactic "Cheating":**

- Don't fight, thow things!: Javelins + bows = Athenians WON
- Phalanx weak against: "**shooters**", cavalry, flank/back attacks

http://www.ancientgreekbattles.net / http://en.wikipedia.org/wiki/Phalanx_formation / http://en.wikipedia.org/wiki/Battle_of_Lechaeum

# Why not take this to the next level?

Why not legitimately?

- Shoot "before the battle" without permission
- Shoot while we analyse information in parallel
- Prepare more shootings without being noticed

# OWTF Chess-like approach


**Runs Tools**

- theHarvester
- Nikto
- Arachni
- w3af, etc.

**Runs Tests directly**

- Header searches
- HTML body searches
- Crafted requests, etc.

**Knowledge Repository**

- PoC links
- Resource links
- OWASP mapping

**Helps Human analysis**

- Flag importance
- Tool output manager
- Screenshot manager
- Notes manager
- Report assistant

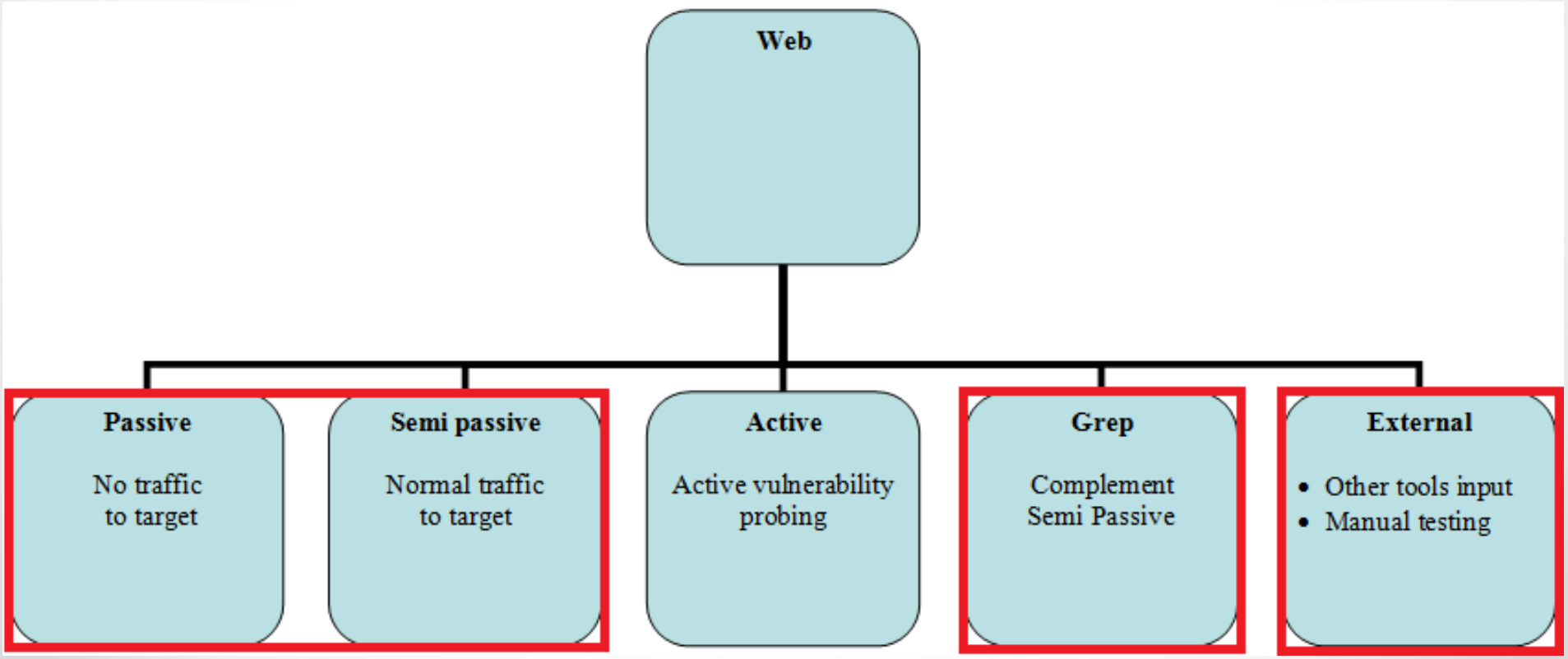
Kasparov against Deep Blue - http://www.robotikka.com

# Demos

# OWTF "Cheating": Talk Scope

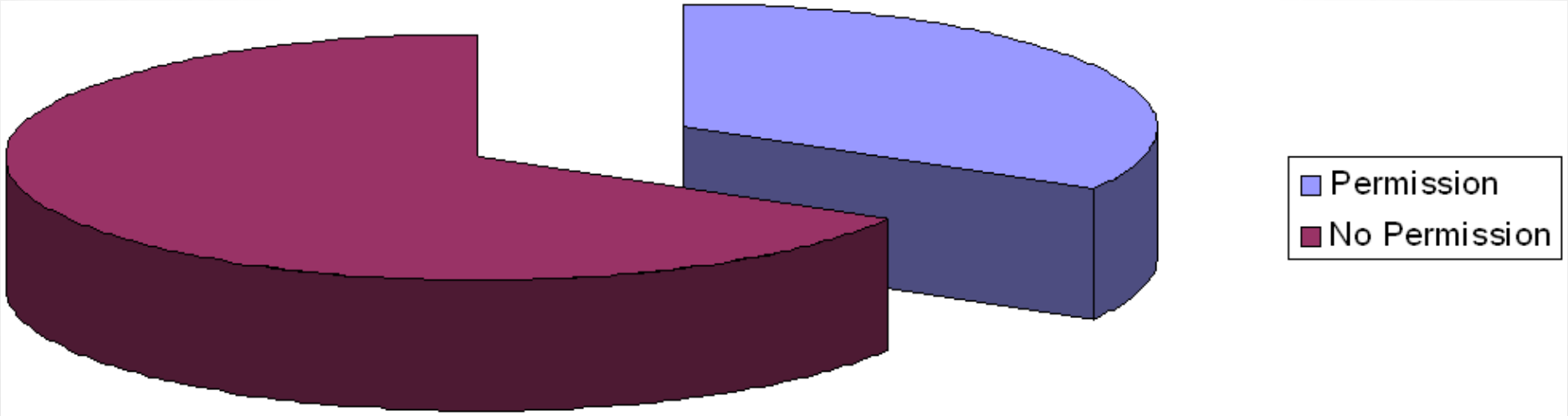
At least 48.5% (32 out of 66) of the tests in the OWASP Testing guide can be legally* performed <u>at least partially</u> **without** permission

* Except in Spain, where visiting a page can be illegal ☺
* This is only my interpretation and not that of my employer + might not apply to **your** country!



# Classic Pentest Stages

1. **Pre-engagement**: **No permission** → "OWTF Cheat tactics" = Start here
2. **Engagement**: **Permission** → Official test start = Active Testing here



# Spiders, Robots, and Crawlers (OWASP-IG-001)

Context consideration:

**Case 1** → robots.txt Not Found

…should Google index a site like this?


Or should robots.txt exist and be like this?

**User-agent: ***

**Disallow: /**

# Spiders, Robots, and Crawlers (OWASP-IG-001)

**Case 1** → robots.txt Not Found - **Semi passive**

- **Direct** request for robots.txt
- Without visiting entries

Spiders, Robots, and Crawlers (OWASP-IG-001) robots.txt Analysis

Results: passive **semi_passive**

**Spiders Robots And Crawlers** - ***SEMI PASSIVE***

| PLUGIN | START | END | RUNTIME | OUTPUT FIL |
|---|---|---|---|---|
| semi_passive/Spiders_Robots_and_Crawlers@OWASP-IG-001.py | 08/02/2012-13:44 | 08/02/2012-13:44 | 0s, 869ms | Browse |

NOTES

Edit

http://demo.testfire.net/robots.txt was NOT found

HTTP TRANSACTIONS

REQUEST

See Transaction 3 (0s, 863ms) Site F R H B

```
GET /robots.txt HTTP/1.1
Accept-Encoding: identity
Host: demo.testfire.net
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20100101 Firefo
```

RESPONSE

```
404 Not Found
Content-Length: 1635
Content-Type: text/html
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Date: Wed, 08 Feb 2012 14:26:06 GMT
Connection: close

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR
<HTML><HEAD><TITLE>The page cannot be found</TITLE>
<META HTTP-EQUIV= Content-Type  Content= text/html; charset=Windows-125
<STYLE type="text/css">
  BODY { font: 8pt/12pt verdana }
```

# Spiders, Robots, and Crawlers (OWASP-IG-001)

**Case 2** → robots.txt Found – **Passive**

- **Indirect** Stats, Downloaded txt file for review, "Open All in Tabs"

**Spiders Robots And Crawlers** - ***PASSIVE***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| passive/Spiders_Robots_and_Crawlers@OWASP-IG-001.py | 08/02/2012-13:37 | 08/02/2012-13:37 | 2s, 384ms | Browse |

NOTES

Edit

Passive Analysis Results:

Analysis via tool.motoricerca.info

Online Resources:

Analysis via tool.motoricerca.info

robots.txt via anonymouse.org

Raw regexp processing:

robots.txt was found. 16 lines: 0 Allowed, 14 Disallowed, 0 Sitemap.

Saved to: owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Spiders_Robots_And_Crawlers/passive/robots1.txt

Disallowed Entries: Open All In Tabs

- /administrator/
- /cache/
- /components/

# Spiders, Robots, and Crawlers (OWASP-IG-001)

**OWTF HTML Filter challenge:** Embedding of untrusted third party HTML

**Defence layers:**

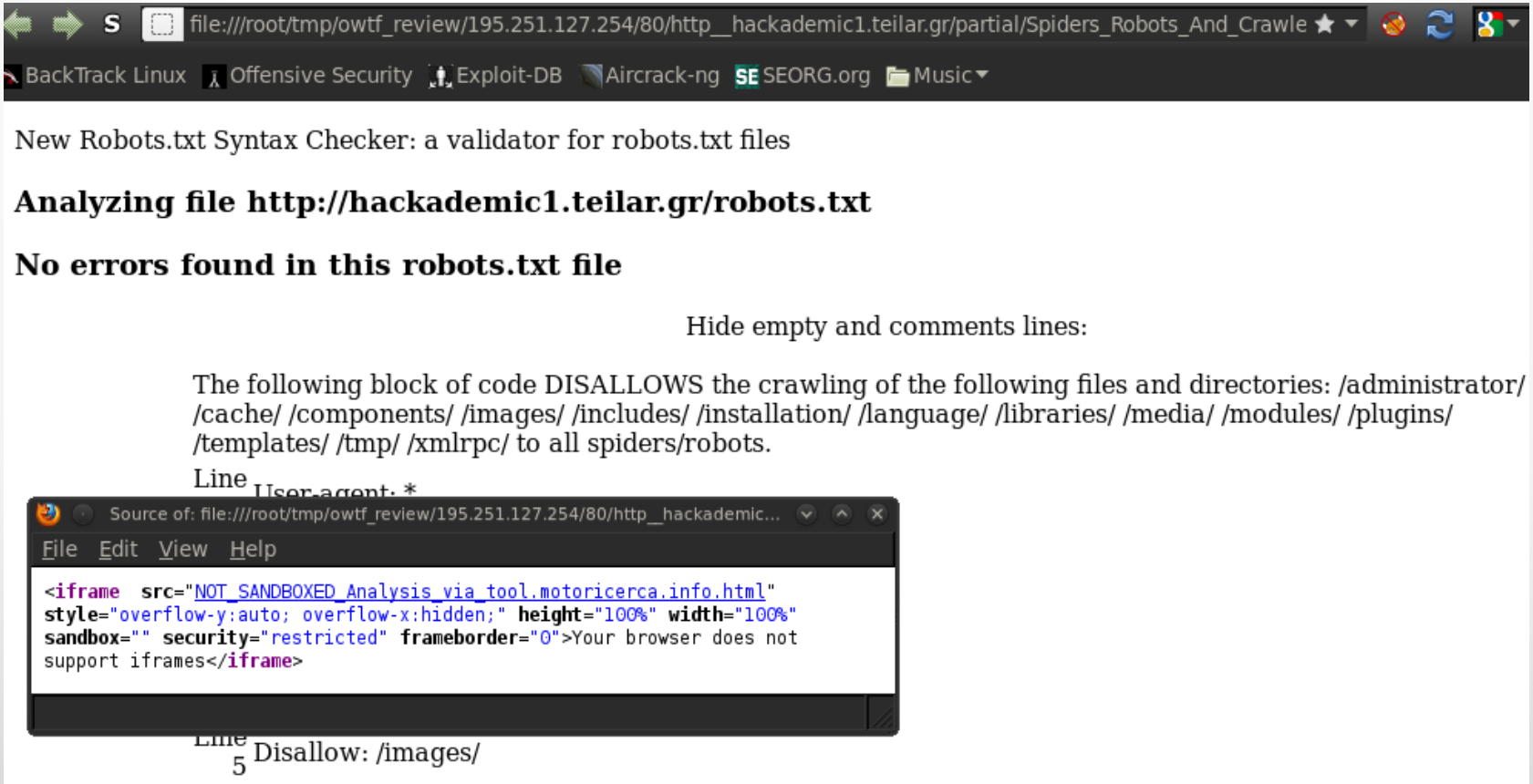
1) HTML Filter: Open source challenge

Filter 6 unchallenged since 04/02/2012, Can you hack it? ☺

http://blog.7-a.org/2012/01/embedding-untrusted-html-xss-challenge.html

2) HTML 5 sanboxed iframe

3) Storage in another directory = cannot access OWTF Review in localStorage



# Spiders, Robots, and Crawlers (OWASP-IG-001)

Start reporting!: Take your notes with fancy formatting

Step 1 – Click the "Edit" link

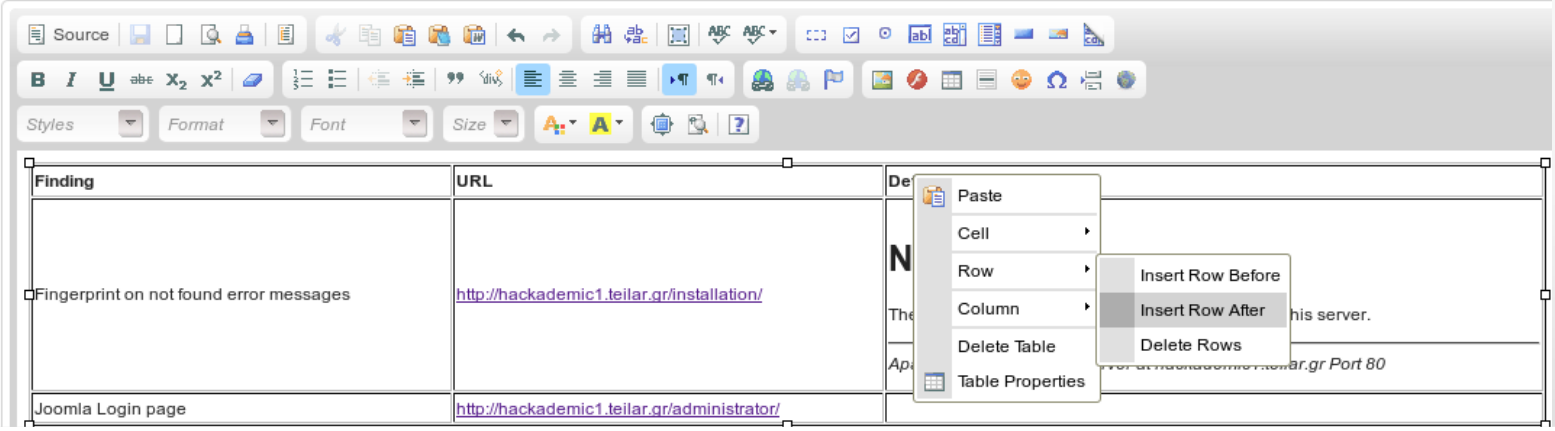
NOTES

Edit

Step 2 – Start documenting findings + Ensure preview is ok

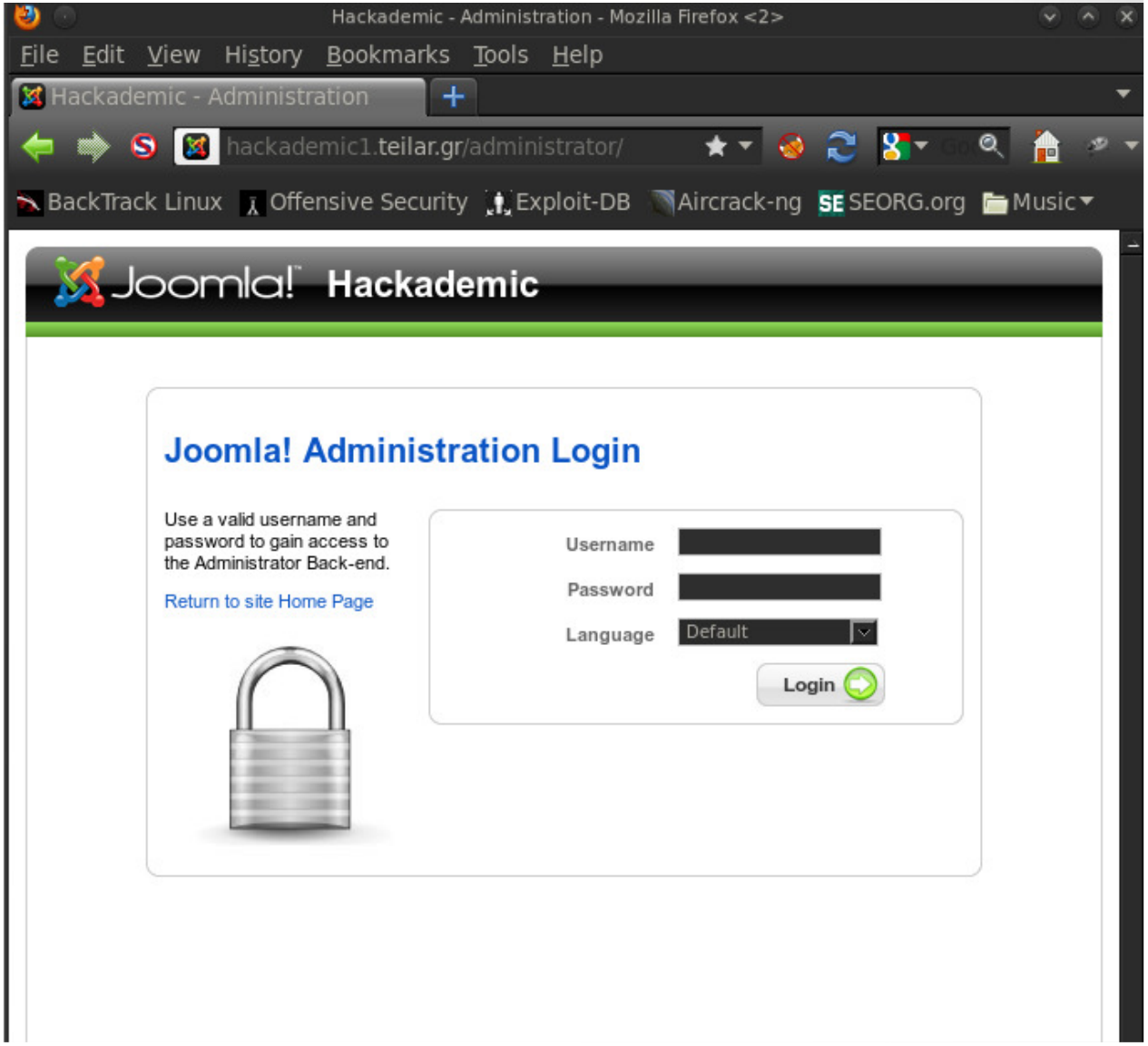
NOTES

| Finding | URL | Detail |
|---|---|---|
| Fingerprint on not found error messages | http://hackademic1.teilar.gr /installation/ | **Not Found**<br>The requested URL /installation/ was not found on this server.<br>*Apache/2.2.17 (Fedora) Server at hackademic1.teilar.gr Port 80* |
| Joomla Login page | http://hackademic1.teilar.gr /administrator/ | |



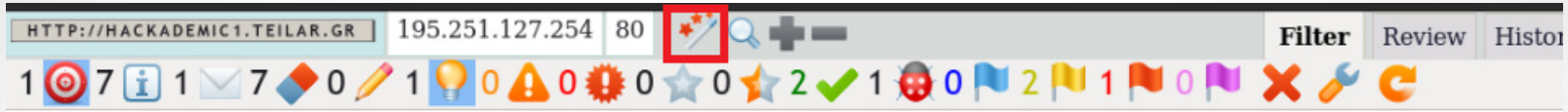
# Spiders, Robots, and Crawlers (OWASP-IG-001)

Start reporting!: Paste PoC screenshots

| | | |
|---|---|---|
| Joomla Login page | http://hackademic1.teilar.gr/administrator/ |  |

# Spiders, Robots, and Crawlers (OWASP-IG-001)

**The magic bar ;)** – Useful to generate the **human** report later




## Report for target: http://hackademic1.teilar.gr

Statistics | Passed Tests | **Findings** | Not Rated

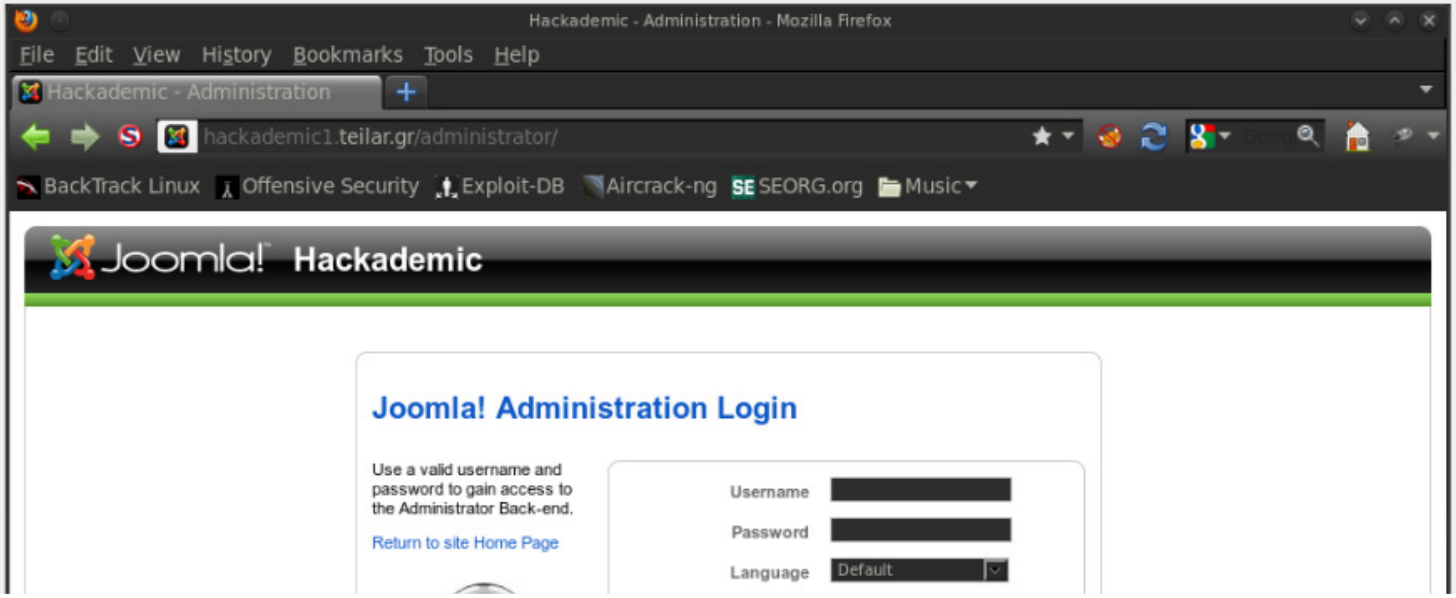
### Findings

1. **High Severity**
   - ***Cross Site Flashing (OWASP-DV-004) - High Severity***

     No notes found for any plugin under this category

2. **Medium Severity**
   - ***Spiders, Robots, and Crawlers (OWASP-IG-001) - Medium Severity***

     A Joomla administrator login URL was found at: http://hackademic1.teilar.gr/administrator/



# Search engine discovery/reconnaissance (OWASP-IG-002)

**Passive Plugin**

Step 1- Browse output files to review the full raw tool output:

| START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|
| 08/02/2012-13:37 | 08/02/2012-13:37 | 2s, 384ms | Browse |

Step 2 – Review tools run by the passive Search engine discovery plugin:

| | | | |
|---|---|---|---|
| MetaSploit_search_email_collector.txt | 4 KB | 08/02/2012 | 13:40:02 |
| TheHarvester.txt | 6 KB | 08/02/2012 | 13:39:04 |
| goohost_Google_search_Email.txt | | 08/02/2012 | 13:40:07 |
| goohost_Google_search_Host.txt | | 08/02/2012 | 13:40:05 |
| goohost_Google_search_IP.txt | 1 KB | 08/02/2012 | 13:40:06 |
| goohost_email_check.txt | | 08/02/2012 | 13:40:06 |
| goohost_host_check.txt | | 08/02/2012 | 13:40:03 |
| metasploit_emails.txt | 1 KB | 08/02/2012 | 13:40:02 |

Was your favourite tool not run?
Tell OWTF to run your tools on: **owtf_dir/profiles/resources/default.cfg** (backup first!)

# Search engine discovery/reconnaissance (OWASP-IG-002)

Tool output can also be reviewed via clicking through the OWTF report directly:

**TEST COMMAND**

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Search_Engine_Discovery_Reconnaissance/passive/; cd
/pentest/enumeration/theharvester ; python theHarvester.py -d teilar.gr -b all -v -f -h -l 1500
```

**THEHARVESTER OUTPUT (EXECUTION TIME: 1M, 20S, 906MS)**

```
*************************************
*TheHarvester Ver. 2.0 (reborn)     *
*Coded by Christian Martorella      *
*Edge-Security Research             *
*cmartorella@edge-security.com      *
*************************************


Full harvest..
[-] Searching in Google..
        Searching 0 results...
        Searching 100 results...
        Searching 200 results...
        Searching 300 results...
        Searching 400 results...
        Searching 500 results...
        Searching 600 results...
        Searching 700 results...
        Searching 800 results...
        Searching 900 results...
        Searching 1000 results...
        Searching 1100 results...
        Searching 1200 results...
        Searching 1300 results...
```

**NOTE: Output longer than 25 lines,** Click here to see all output!

# Search engine discovery/reconnaissance (OWASP-IG-002)

```
*************************************
*TheHarvester Ver. 2.0 (reborn)     *
*Coded by Christian Martorella      *
*Edge-Security Research             *
*cmartorella@edge-security.com      *
*************************************

 [+] Emails found:
 ------------------
 jfrost@webappsecurity.com
 [+] Hosts found in search engines:
 ------------------------------------
 15.216.12.12:zero.webappsecurity.com
 [+] Proposed SET
 ---------------
 []
 [+] Virtual hosts:
 ==================
 15.216.12.12:zero.webappsecurity.com
```

The Harvester:

- Emails
- Employee Names
- Subdomains
- Hostnames

http://www.edge-security.com/theHarvester.php

# Search engine discovery/reconnaissance (OWASP-IG-002)

**Metadata analysis**:

- TODO: Integration with FOCA when CLI callable via wine (/cc @chemaalonso ☺)
- Implemented: Integration with Metagoofil

**Search Engine Discovery Reconnaissance** - ***SEMI PASSIVE***

| PLUGIN | START | END | R |
|---|---|---|---|
| semi_passive/Search_engine_discovery_reconnaissance@OWASP-IG-002.py | 08/02/2012-13:44 | 08/02/2012-13:47 | 2 |

NOTES

Edit

TEST COMMAND

cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Search_Engine_Discovery_Reconnaissance/semi_passive/; cd /pentest/enumeration/google/metagoofil ; python ./metagoofil.py -d hackademic1.teilar.gr -t pdf,doc,xls,ppt,odp,ods,docx,xlsx,pptx -l 1500 -n 1500 -o /root/tmp/owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Search_Engine_Discovery_Reconnaissance/semi_passive/ -f metagoofil_report.html

METAGOOFIL OUTPUT (EXECUTION TIME: 2M, 49S, 581MS)

```
*************************************
* Metagoofil Ver 2.1 -              *
* Christian Martorella              *
* Edge-Security.com                 *
* cmartorella_at_edge-security.com  *
* Blackhat Arsenal Edition          *
*************************************

[-] Starting online search...

[-] Searching for pdf files, with a limit of 1500
```

http://www.edge-security.com/metagoofil.php

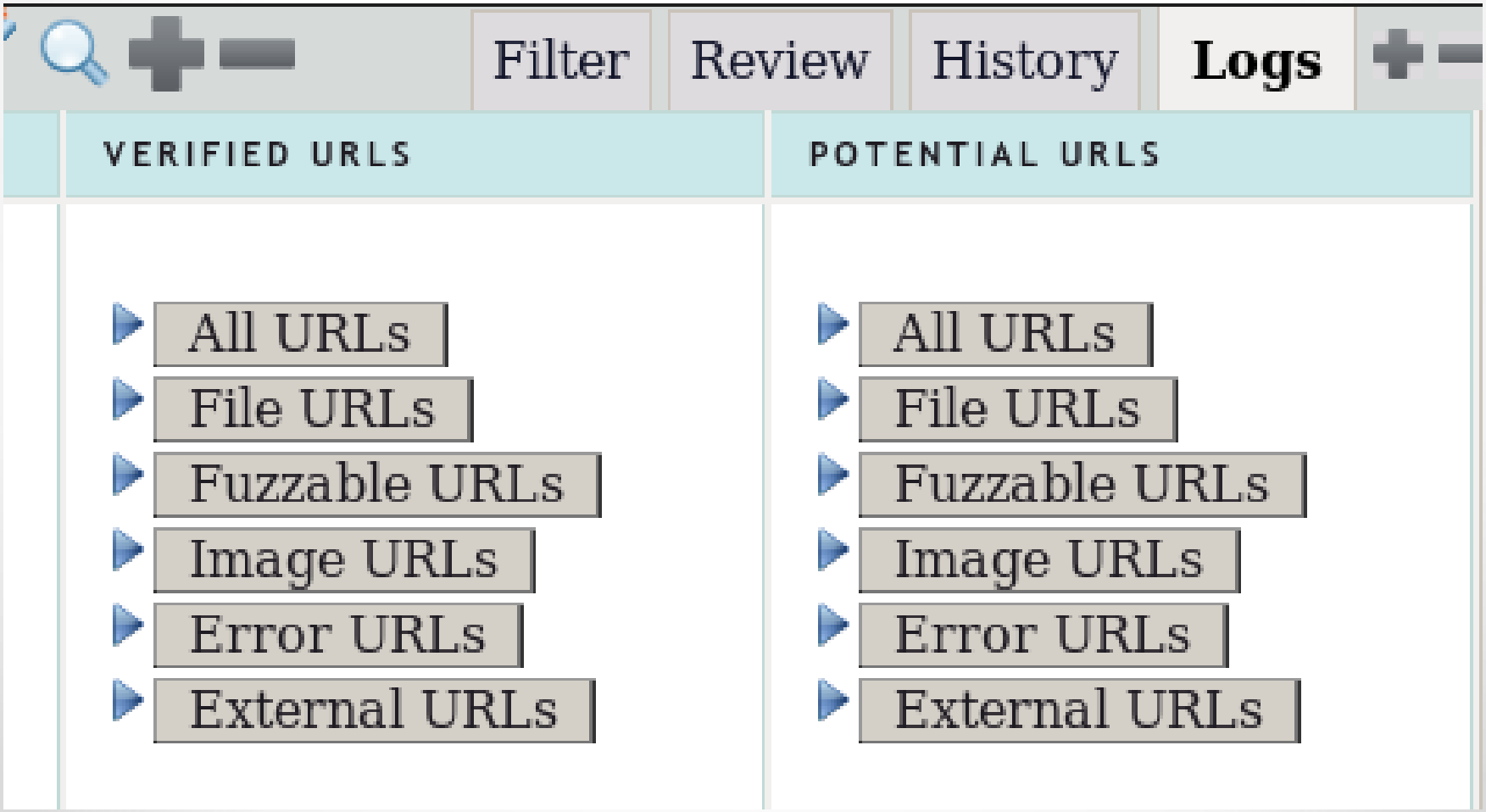
# Identify application entry points (OWASP-IG-003)

Inbound proxy not stable yet but all this happens automatically:

- robots.txt entries added to “Potential URLs”
- URLs found by tools are scraped + added to “Potential URLs”

During Active testing (later):

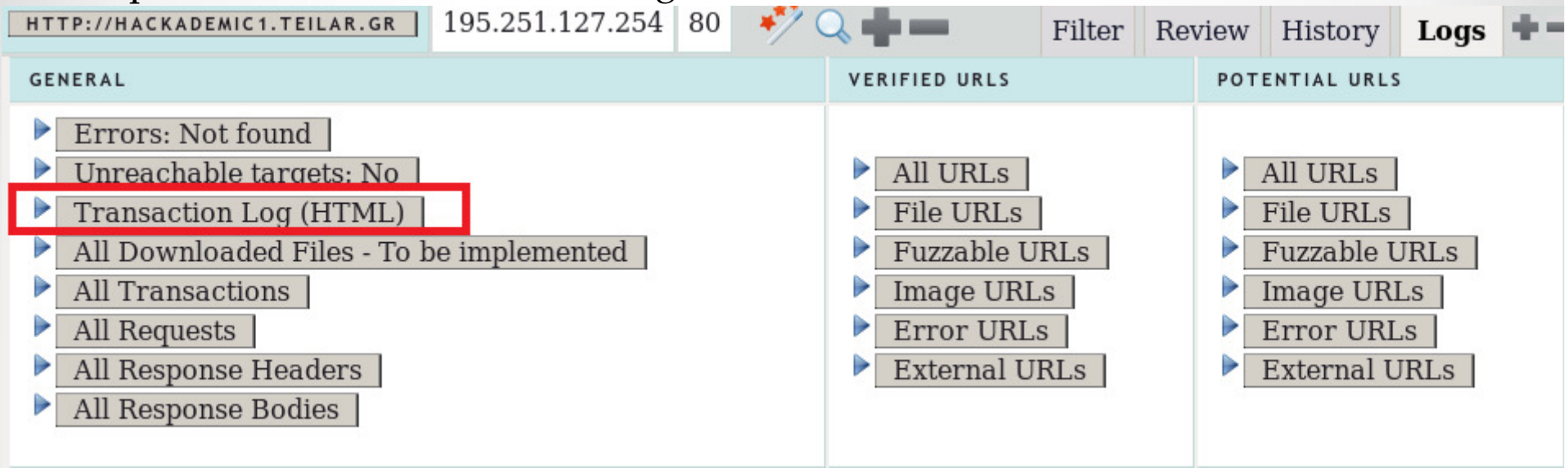
- “Potential URLs” visited + added to “Verified URLs” + Transaction log



# Identify application entry points (OWASP-IG-003)

**All HTTP transactions logged by target in transaction log**

Step 1 – Click on "Transaction Log"




Step 2 – Review transaction entries

| SCOPE | LINKS | ID | SECONDS | TIME | STATUS | METHOD | URL |
|---|---|---|---|---|---|---|---|
| T | Site F R H B | 3 | 0.4128510952 | 0s, 412ms | 200 OK | GET | http://hackademic1.teilar.gr/robots.txt |
| T | Site F R H B | 4 | 0.542858839035 | 0s, 542ms | 200 OK | OPTIONS | http://hackademic1.teilar.gr |

# Identify application entry points (OWASP-IG-003)

Step 3 – Review raw transaction information (if desired)

```
================================================== HTTP URL ==============================
http://hackademic1.teilar.gr/robots.txt
================================================== HTTP Request ==========================
GET /robots.txt HTTP/1.1
Accept-Encoding: identity
Host: hackademic1.teilar.gr
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20100101 Firefox/6.0

================================================== HTTP Response Headers =================
200 OK
Date: Wed, 08 Feb 2012 12:45:07 GMT
Server: Apache/2.2.17 (Fedora)
Last-Modified: Fri, 11 Mar 2011 22:29:48 GMT
ETag: "2610a3-130-49e3c7fe84f00"
Accept-Ranges: bytes
Content-Length: 304
Connection: close
Content-Type: text/plain; charset=UTF-8
================================================== HTTP Response Body ====================
User-agent: *
Disallow: /administrator/
Disallow: /cache/
Disallow: /components/
Disallow: /images/
Disallow: /includes/
```

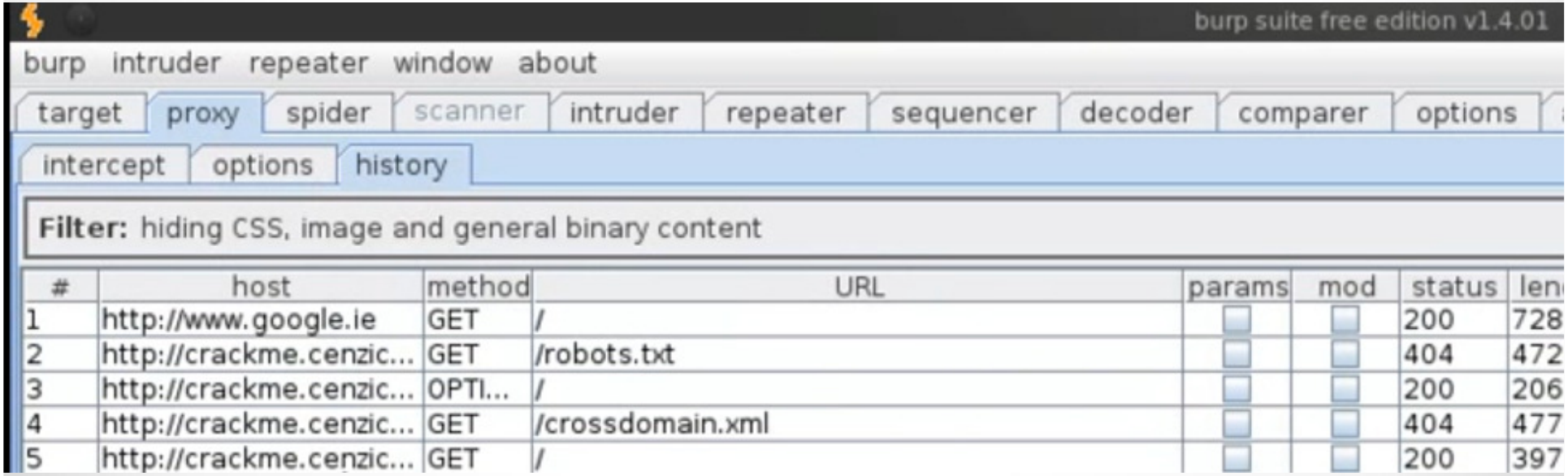
# Identify application entry points (OWASP-IG-003)

Step 1 - Make all direct OWTF requests go through Outbound Proxy:

**Passes all entry points to the tactical fuzzer for analysis later**

```
root@bt:/tmp# /root/owtf/owtf.py -f -x 127.0.0.1:8080 -t semi_passive http
://crackme.cenzic.com
```

Step 2 - Entry points can then also be analysed via tactical fuzzer:



# Web Application Fingerprint (OWASP-IG-004)

## Goal: What is that server running?

Manually verify request for fingerprint:

HTTP TRANSACTIONS

REQUEST

See Transaction 7 (0s, 446ms) Site F R H B

```
GET / HTTP/1.1
Accept-Encoding: identity
Host: hackademic1.teilar.gr
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20100101 F
```

RESPONSE

```
200 OK
Date: Wed, 08 Feb 2012 12:45:15 GMT
Server: Apache/2.2.17 (Fedora)
X-Powered-By: PHP/5.3.8
Set-Cookie: 26238b056396bb02ea2977b17de46c4c=pcar7hv2fejn92v14nfo
P3P: CP="NOI ADM DEV PSAi COM NAV OUR OTRo STP IND DEM"
Expires: Mon, 1 Jan 2001 00:00:00 GMT
Last-Modified: Wed, 08 Feb 2012 12:45:15 GMT
Cache-Control: no-store, no-cache, must-revalidate, post-check=0,
Pragma: no-cache
Content-Length: 7490
Connection: close
Content-Type: text/html; charset=utf-8
```

# Web Application Fingerprint (OWASP-IG-004)

**Whatweb** integration with non-aggresive parameter (**semi passive detection**):

TEST COMMAND

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint
/semi_passive/; . /root/owtf_dev/scripts/setrubyenv.sh 1.8; /root/owtf_dev/tools/whatweb/whatweb-0.4.7/whatweb
--user-agent 'Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20100101 Firefox/6.0' --color=never --aggression 1
http://hackademic1.teilar.gr | sed "s/],/]\n/g"
```

WHATWEB SEMIPASSIVE CHECK (1 REQUEST) | OUTPUT (EXECUTION TIME: 6S, 749MS)

```
1.8
There are 2 choices for the alternative ruby (providing /usr/bin/ruby).

  Selection    Path                Priority   Status
-----------------------------------------------------------
  0            /usr/bin/ruby1.8     500       auto mode
* 1            /usr/bin/ruby1.8     500       manual mode
  2            /usr/bin/ruby1.9.2   400       manual mode

Press enter to keep the current choice[*], or type selection number: http://hackademic1.teilar.gr [200] PasswordField[passwd]
MetaGenerator[Joomla! 1.5 - Open Source Content Management]
HTTPServer[Fedora Linux][Apache/2.2.17 (Fedora)]
Apache[2.2.17]
IP[195.251.127.254]
PHP[5.3.8]
X-Powered-By[PHP/5.3.8]
Joomla[1.5][com_content,com_user]
Cookies[26238b056396bb02ea2977b17de46c4c]
Title[Hackademic]
probably Mambo[com_content,com_user]
Country[GREECE][GR]
```

https://github.com/urbanadventurer/WhatWeb

# Web Application Fingerprint (OWASP-IG-004)

Fingerprint header analysis: Match stats

**Web Application Fingerprint** - ***SEMI PASSIVE***

| PLUGIN | START | END | RUNTIME | OU |
|---|---|---|---|---|
| semi_passive/Web_Application_Fingerprint@OWASP-IG-004.py | 08/02/2012-13:44 | 08/02/2012-13:44 | 7s, 679ms | E |

| NOTES |
|---|
| Edit |

## Header Analysis Summary

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 5 out of 5 (100.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(Server\|X-Powered-By\|X-AspNet-Version\|X-Runtime\|X-Version\|MicrosoftSharePointTeamServices): " owtf_review/195.251.127.254 /80/http__hackademic1.teilar.gr /transactions/response_headers/scope_* \| sed -e 's\|owtf_review/195.251.127.254\|\|g' -e 's\|/response_headers/\|/\|g' |

# Web Application Fingerprint (OWASP-IG-004)

Convenient vulnerability search box (1 box per header found ☺):

**Search All → Open all site searches in tabs**

## Header Value Analysis

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| Server | Apache/2.2.17 (Fedora) |
| X-Powered-By | PHP/5.3.8 |
| X-AspNet-Version | Not Found |
| X-Runtime | Not Found |
| X-Version | Not Found |
| MicrosoftSharePointTeamServices | Not Found |

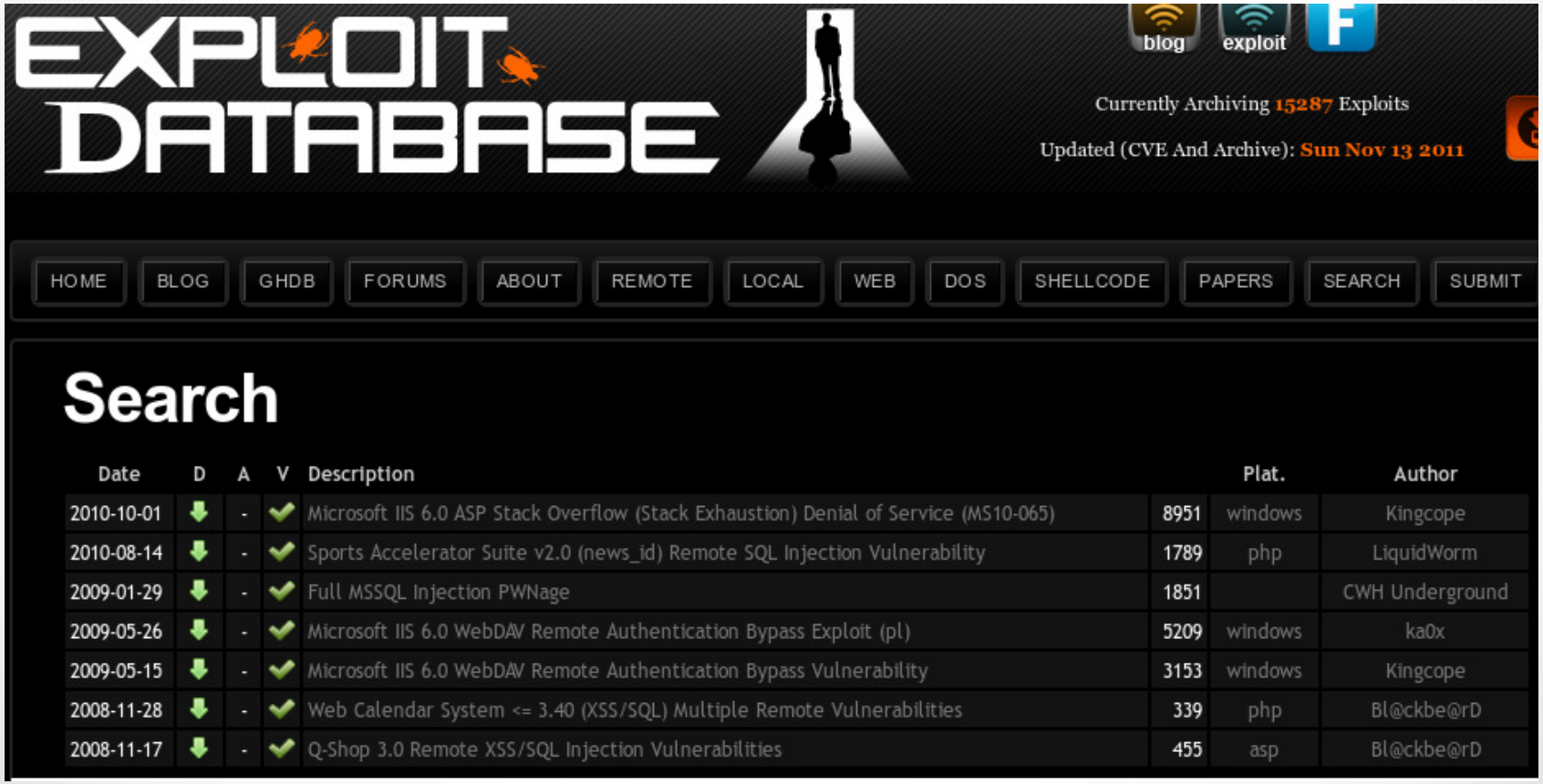
SEARCH FOR VULNERABILITIES: Apache/2.2.17 (Fedora) SEARCH ALL

NVD (High) | OSVDB (High) | BugTraq | ExploitDB | ExploitSearch (Exploits Only) | ExploitSearch (All) | NVD (All) | OSVDB (All)

SEARCH FOR VULNERABILITIES: PHP/5.3.8 SEARCH ALL

NVD (High) | OSVDB (High) | BugTraq | ExploitDB | ExploitSearch (Exploits Only) | ExploitSearch (All) | NVD (All) | OSVDB (All)

# Web Application Fingerprint (OWASP-IG-004)




Exploit DB - http://www.exploit-db.com

# Web Application Fingerprint (OWASP-IG-004)

National Vulnerability Database
automating vulnerability management, security measurement, and compliance checking

Vulnerabilities | Checklists | 800-53 Controls | Product Dictionary | Impact Metrics | Data Feeds | Statistics

Home | SCAP | SCAP Validated Tools | SCAP Events | About | Contact | Vendor Comments

**Mission and Overview**

NVD is the U.S. government repository of standards based vulnerability management data. This data enables automation of vulnerability management, security measurement, and compliance (e.g. FISMA).

**Resource Status**

**NVD contains:**

48602 CVE Vulnerabilities
207 Checklists
221 US-CERT Alerts
2547 US-CERT Vuln Notes
6908 OVAL Queries
36734 CPE Names

**Last updated:** Thu Nov 17 23:23:21 EST 2011

**CVE Publication rate:**

Search Results (Refine Search)

There are **8** matching records. Displaying matches **1** through **8**.

**CVE-2010-1256**

TA10-159B

***Summary:*** Unspecified vulnerability in Microsoft IIS 6.0, 7.0, and 7.5, when Extended Protection for Authentication is enabled, allows remote authenticated users to execute arbitrary code via unknown vectors related to "token checking" that trigger memory corruption, aka "IIS Authentication Memory Corruption Vulnerability."

***Published:*** 06/08/2010

***CVSS Severity:*** 8.5 (HIGH)

**CVE-2009-3023**

TA09-286A VU#276653

***Summary:*** Buffer overflow in the FTP Service in Microsoft Internet Information Services (IIS) 5.0 through 6.0 allows remote authenticated users to execute arbitrary code via a crafted NLST (NAME LIST) command that uses wildcards, leading to memory corruption, aka "IIS FTP Service RCE and DoS Vulnerability."

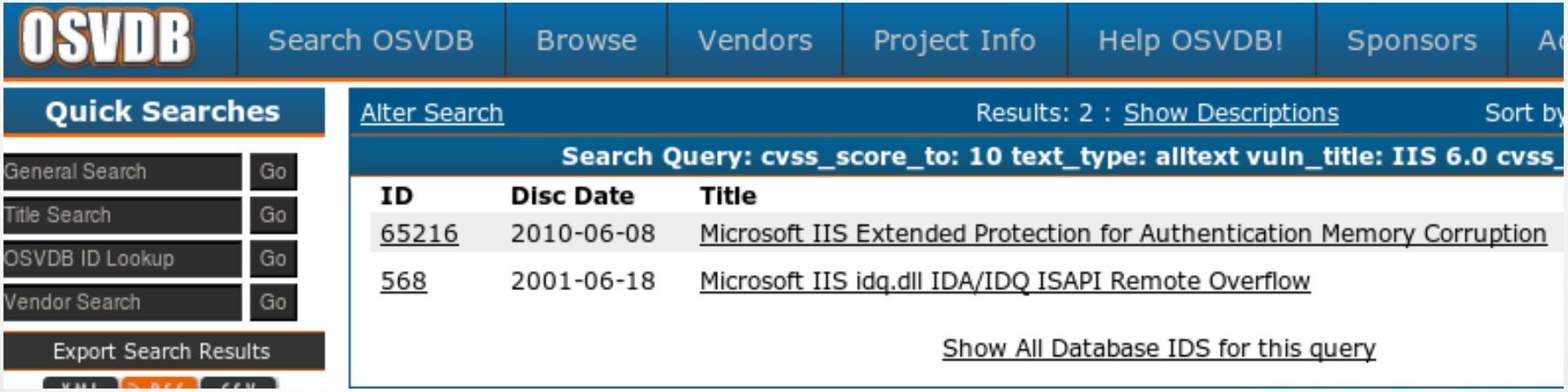
***Published:*** 08/31/2009

***CVSS Severity:*** 9.3 (HIGH)

**CVE-2009-1535**

NVD - http://web.nvd.nist.gov - CVSS Score = High

# Web Application Fingerprint (OWASP-IG-004)




OSVDB - http://osvdb.org - CVSS Score = High

# Web Application Fingerprint (OWASP-IG-004)

Microsoft-IIS/6.0 inurl:bid site:securityfocus.com

About 34 results (0.14 seconds)

Microsoft IIS Unicode Requests to WebDAV Multiple Authentication ...
www.securityfocus.com/**bid**/34993
15 May 2009 – Vulnerable: **Microsoft IIS 6.0** + Microsoft Windows Server 2003 Datacenter Edition + Microsoft Windows Server 2003 Datacenter Edition ...

Microsoft IIS ASP Remote Code Execution Vulnerability
www.securityfocus.com/**bid**/18858
11 Jul 2006 – Microsoft Windows 2000 Advanced Server SP1 Microsoft Windows 2000 Advanced Server **Microsoft IIS 6.0** + Microsoft Windows Server 2003 ...

http://www.securityfocus.com - Better on Google

# Web Application Fingerprint (OWASP-IG-004)

EXPLOITSEARCH.NET

SEARCH TARGETED SEARCH STATS NAUGHTY LIST DONATIONS

BLOG ABOUT F.A.Q.

Search

Search Exploits Only

+1 152 Tweet 0 Share 2

View JSON results.

( **6.638** seconds)

**ENTRY [METASPLOIT modules/exploits/windows/iis/ms01_026_dbldecode.rb] match rank: 100%**

http://www.metasploit.com/modules/exploit/windows/iis/ms01_026_dbldecode

Microsoft IIS/PWS CGI Filename Double Decode Command Execution

This module will execute an arbitrary payload on a Microsoft IIS installation that is vulnerable to the CGI double-decode vulnerability of 2001. NOTE: This module will leave a metasploit payload in the IIS scripts directory.

Exploits

- METASPLOIT modules/exploits/windows/iis/ms01_026_dbldecode.rb - [Search]

References

- BID 2708 - [Search]
- CVE-2001-0333 - [Search]
- MS01-026 - [Search]
- OSVDB 556 - [Search]

*Initial Date Seen [2011-07-15 15:33:35]*
*Last Date Updated [2011-07-15 15:33:35]*

http://www.exploitsearch.net - All in one

# Web Application Fingerprint (OWASP-IG-004)

Passive Fingerprint analysis

**Web Application Fingerprint** - ***PASSIVE***

| PLUGIN | START | END | RUNTIME | OUTPUT FI |
|---|---|---|---|---|
| passive/Web_Application_Fingerprint@OWASP-IG-004.py | 08/02/2012-13:37 | 08/02/2012-13:37 | 0s, 19ms | Browse |

NOTES

Edit

SEARCH FOR VULNERABILITIES: SEARCH ALL

NVD (High) | OSVDB (High) | BugTraq | ExploitDB | ExploitSearch (Exploits Only) | ExploitSearch (All) | NVD (All) | OSVDB (All)

Online Resources: Open All In Tabs

- centralops.net TCP Query
- netcraft.com General
- netcraft.com Uptime
- whois.webhosting.info Banner
- www.shodanhq.com
- builtwith.com

# Web Application Fingerprint (OWASP-IG-004)

## Site report for zero.webappsecurity.com

| | | | |
|---|---|---|---|
| **Site** | http://zero.webappsecurity.com | **Last reboot** | unknown Uptime graph |
| **Domain** | webappsecurity.com | **Netblock owner** | Hewlett-Packard Company |
| **IP address** | 15.216.12.12 | **Site rank** | 143078 |
| **Country** | US | **Nameserver** | ns1.inflow.net |
| **Date first seen** | April 2004 | **DNS admin** | dnsadmin@inflow.net |
| **Domain Registrar** | markmonitor.com | **Reverse DNS** | zero-g1w2555g.austin.hp.com |
| **Organisation** | Hewlett-Packard Company, 3000 Hanover St., United States | **Nameserver Organisation** | SunGard Data Systems Inc., PO Box 459ATTN INFLOW.NET, care of Network Solutions, Drums, Panama |
| **Check another site:** | [redacted] | **Netcraft Site Report Gadget** | Google [More Netcraft Gadgets] |

### Hosting History

| Netblock Owner | IP address | OS | Web Server | Last changed |
|---|---|---|---|---|
| 3000 Hanover Street Palo Alto CA US 94304 | 15.216.12.12 | Windows Server 2003 | Microsoft-IIS/6.0 | 23-Jun-2011 |
| 3000 Hanover Street Palo Alto CA US 94304 | 15.216.12.12 | Windows Server 2003 | Microsoft-IIS/6.0 | 21-May-2011 |
| 3000 Hanover Street Palo Alto CA US 94304 | 15.216.12.12 | Windows Server 2003 | Microsoft-IIS/6.0 | 14-Feb-2011 |

http://toolbar.netcraft.com - Passive banner grab,etc.

# Web Application Fingerprint (OWASP-IG-004)

http://builtwith.com/7-a.org

## Content Management Systems

**Blogger**
Blogger Usage Statistics - Websites using Blogger
Google Blogger Software.

## JavaScript Libraries

**Google JS Api**
Google JS Api Usage Statistics - Websites using Google JS Api
Google Mashup Editor (GME) includes a JavaScript API that gives you direct access to the document object model (DOM) via JavaScript. This API lets you use JavaScript to perform operations that duplicate and go beyond the features available in the GME tags. The API is useful when you want to access an object in the application from a JavaScript expression. You can also use the API to perform CRUD operations (create, read, update, delete) on entries in a data feed.

## Widgets

**Google Plus One**
Google Plus One Usage Statistics - Websites using Google Plus One
Google's answer to Facebook Like.

**Lightbox**
Lightbox Usage Statistics - Websites using Lightbox
Lightbox JS is a simple, unobtrusive script used to overlay images on the current page. It's a snap to setup and works on all modern browsers.

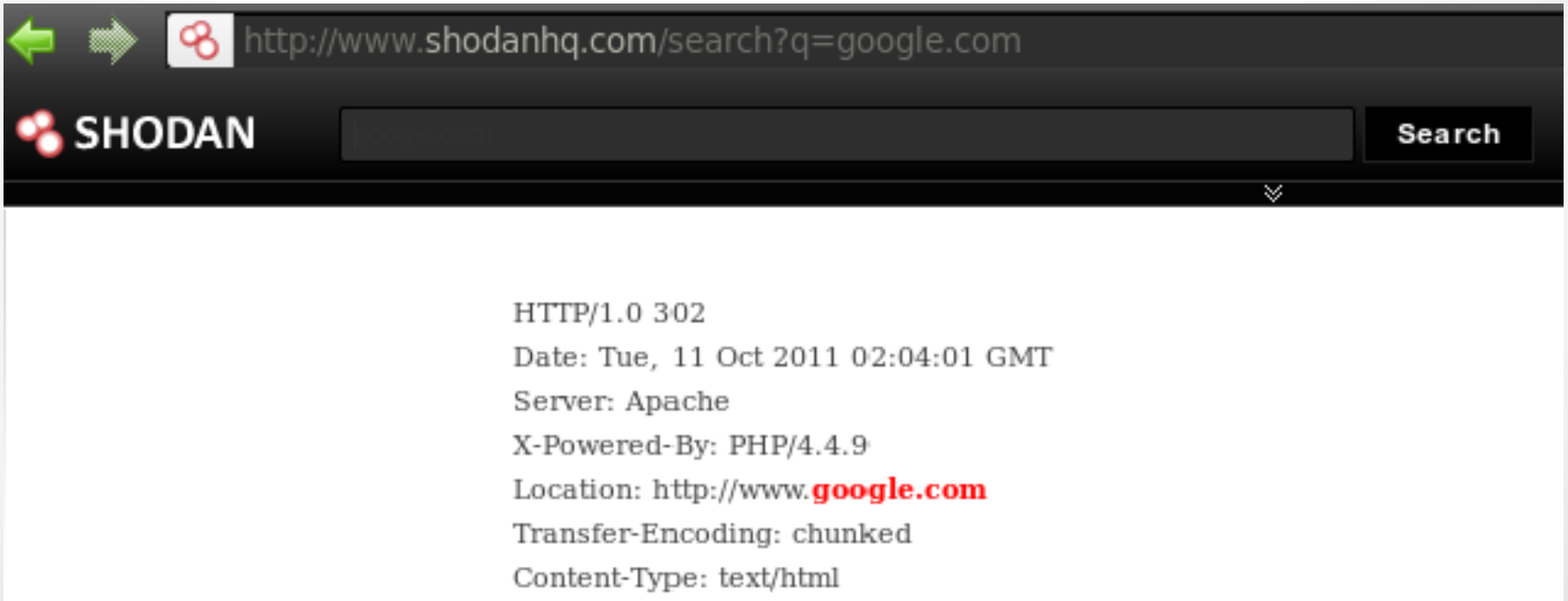
builtwith

- CMS
- Widgets
- Libraries
- etc

http://builtwith.com

# Web Application Fingerprint (OWASP-IG-004)

Search in the headers without touching the site:




http://www.shodanhq.com/

# Web Application Fingerprint (OWASP-IG-004)

**Passive suggestions**

- Prepare your test in a terminal window to hit “Enter” on “permission minute 1”

**CMS Fingerprint - Potentially useful commands**

All | **WordPress** | Joomla | Drupal | Mambo

WPSCAN PLUGIN ENUMERATION (WORDPRESS)

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/; ruby
/root/owtf_dev/tools/wpscan/wpscan-1.1/wpscan.rb --url http://hackademic1.teilar.gr --enumerate p --threads 20
```

CMS EXPLORER PLUGIN ENUMERATION (WORDPRESS)

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/; cd
/pentest/enumeration/web/cms-explorer; perl cms-explorer.pl -v 1 -url http://hackademic1.teilar.gr -type Wordpress
```

DIRBUSTER WORDPRESS ALL

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/; cd
/pentest/web/dirbuster ; java -jar DirBuster-0.12.jar -u http://hackademic1.teilar.gr -t 20 -R -r '/root/tmp/owtf_review
/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/dirbuster_report.txt'
-l /root/owtf_dev/dictionaries/wp/dir_buster.all.wp.txt | grep -v "^java." | tr "\t" " " | grep -v "^ at" # Remove java
exception garbage at the end
```

DIRBUSTER WORDPRESS PLUGINS

```
cd owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/; cd
/pentest/web/dirbuster ; java -jar DirBuster-0.12.jar -u http://hackademic1.teilar.gr -t 20 -R -r '/root/tmp/owtf_review
/195.251.127.254/80/http__hackademic1.teilar.gr/partial/Web_Application_Fingerprint/passive/dirbuster_report.txt'
-l /root/owtf_dev/dictionaries/wp/dir_buster.wp_plugins.txt | grep -v "^java." | tr "\t" " " | grep -v "^ at" # Remove
java exception garbage at the end
```

DIRBUSTER WORDPRESS THEMES

# Web Application Fingerprint (OWASP-IG-004)

What else can be done with a fingerprint?

# Web Application Fingerprint (OWASP-IG-004)

**Environment replication**

Download it .. Sometimes from project page ☺

drupal.org/node/3060/release?page=1

## drupal 6.16

Posted by Gábor Hojtsy on *March 4, 2010 at 12:17am*

| Download | Size | md5 hash |
|---|---|---|
| drupal-6.16.tar.gz | 1.04 MB | bb27c1f90680b86df2c535b2d52e8021 |
| drupal-6.16.zip | 1.22 MB | 0ce2cd42371625d69642f043525c1cb7 |

Official release from tag: 6.16
Last updated: December 24, 2010 - 22:08
View usage statistics for this release
The sixteenth maintenance and security release of the Drupal 6 series. Only fixes for security vulr
committed. New features are only being added to the forthcoming Drupal 7.0 release.

This release fixes **security vulnerabilities**. Sites are **urged to upgrade immediately** after reac

- SA-CORE-2010-001 - Drupal Core - Multiple vulnerabilities

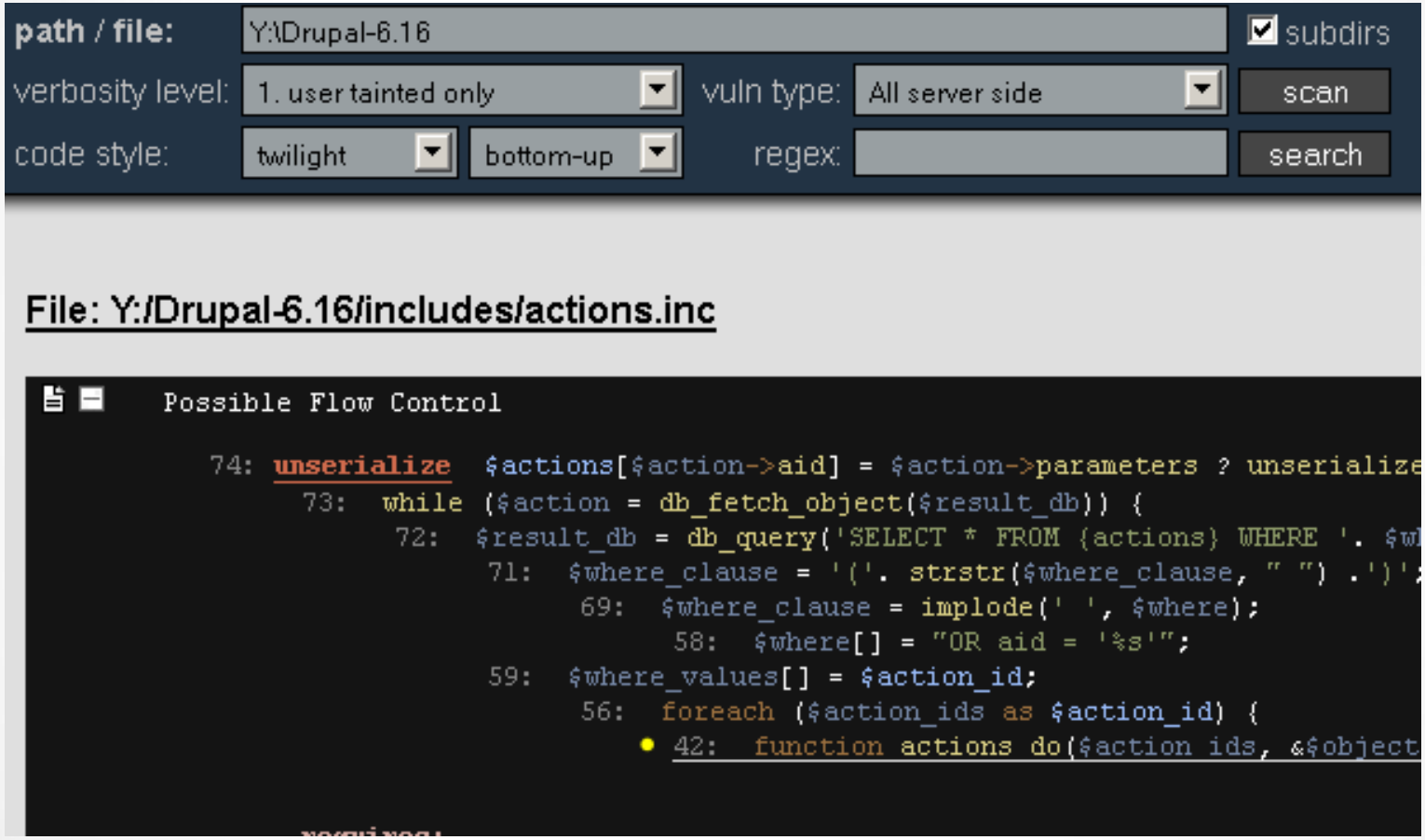
In addition to this security vulnerability, the following bugs have been fixed since the 6.15 release

- #673974 by sun: PHP notice when mass-unpublishing or deleting comments, and wrong form
- #424372 by mr.baileys, bombatower, Arancaytar: :: in .info files caused fatal error, use list of
- #370958 by Rob Loach, drewish, c960657, neilnz: some Adobe Flash MIME types were missing

Also check http://www.oldapps.com/, Google, etc.

# Web Application Fingerprint (OWASP-IG-004)

Static Analyis, Fuzz, Try exploits, ..




RIPS for PHP: http://rips-scanner.sourceforge.net/

Yasca for most other (also PHP): http://www.scovetta.com/yasca.html

# Application Discovery (OWASP-IG-005)

**Application Discovery** - ***PASSIVE***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| passive/Application_Discovery@OWASP-IG-005.py | 08/02/2012-13:37 | 08/02/2012-13:37 | 0s, 15ms | Browse |

NOTES

Edit

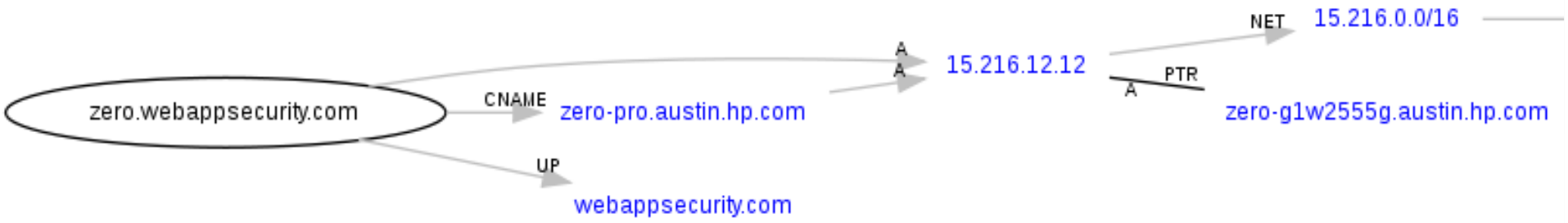
Online Resources: Open All In Tabs

- Hurricane Electric TOP Domain DNS records
- Hurricane Electric Host Name DNS records
- whois.webhosting.info (Virtual Hosts)
- intodns.com
- www.robtext.com
- centralops.net TCP Query
- centralops.net Domain Dossier
- centralops.net AutoWhois
- centralops.net Ping
- centralops.net NsLookup
- dnsgoodies.com SMTP Open Relay
- dnsgoodies.com Spam DB Check
- dnsgoodies.com Abuse Lookup

# Application Discovery (OWASP-IG-005)

http://www.robtex.com/dns/zero.webappsecurity.com.html

BackTrack Linux | Offensive Security | Exploit-DB | Aircrack-ng | SEORG.org | Music




| IP numbers of host (1 item) | PTRs of IP numbers (1 item) | Host names sharing IP with A records (2 items) | CNAME (1 item) |
|---|---|---|---|
| 15.216.12.12 | zero-g1w2555g.austin.hp.com | zero-g1w2555g.austin.hp.com<br>zero-pro.austin.hp.com | zero-pro.austin.hp.com |

http://www.robtex.com - Passive DNS Discovery

# Application Discovery (OWASP-IG-005)

http://whois.domaintools.com/webapps

**Whois Record** | Site Profile | Registration | Server Stats | My Whois

Reverse Whois: "Domain Administrator" owns about 416,674 other domains

Email Search: hp.domains@hp.com is associated with about **3,108 domains**

hostmaster@hp.com is associated with about **1,414 domains**

Registrar History: 2 registrars

NS History: 5 changes on **2** unique name servers over **9** years.

IP History: 5 changes on **4** unique IP addresses over **7** years.

Whois History: 45 records have been archived **since 2004-04-01** .

Log In or Create a FREE account to start monitoring this domain name

```
Registrant:
        Domain Administrator
        Hewlett-Packard Company
        3000 Hanover St.
         Palo Alto CA 94304
        US
        hp.domains@hp.com  +1.8005247638 Fax: +1.6508522936
```

http://whois.domaintools.com

# Application Discovery (OWASP-IG-005)


http://centralops.net

# Application Discovery (OWASP-IG-005)

AutoWhois
TcpQuery
AnalyzePath

## Service scan

**FTP - 21**

```
Error: TimedOut
```

**SMTP - 25**

```
Error: TimedOut
```

**HTTP - 80**

```
HTTP/1.1 302 Object moved
Connection: close
Date: Tue, 15 Nov 2011 08:57:10 GMT
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Location: banklogin.asp?serviceName=FreebankCaastA
AD_REFERRING_URL=http://www.Freebank.com
Content-Length: 263
Content-Type: text/html
Set-Cookie: ASPSESSIONIDAATCACCS=LMEKDKIAEPKAGOFAM
Cache-control: private
```

**POP3 - 110**

```
Error: TimedOut
```

**IMAP - 143**

```
Error: TimedOut
```

http://centralops.net

# Testing for Error Code (OWASP-IG-006)

Has Google found error messages for you?

**Testing For Error Code** - ***PASSIVE***

| PLUGIN | START |
| --- | --- |
| passive/Testing_for_Error_Code@OWASP-IG-006.py | 08/02/2012 |

| NOTES |
| --- |
| |

Online Resources: Open All In Tabs

- hexillion.com For Passive Verification Queries
- Google Search (Errors in title)
- Google Search (Errors in body)

# Testing for Error Code (OWASP-IG-006)

"not found" OR denied OR error OR incorrect OR invalid OR unexpected C

**Invalid** Data Please try again.
zero.webappsecurity.com/rootlogin.asp
**Invalid** Data Please try again.

**Invalid** Data >'>"> Please try again.
zero.webappsecurity.com/rootlogin.asp?txtPassPhrase...
**Invalid** Data >'>"> Please try again.

The Test Page
zero.webappsecurity.com/test/test.html
LOGIC CHECKS WORKED. The welcome page · **Error** logs.

Check errors via Google Cache

# Testing for SSL-TLS (OWASP-CM-001)

**Testing for SSL-TLS (OWASP-CM-001)** SSL Testing

Results: **passive** grep

**Testing For Ssl-Tls** - ***PASSIVE***

| PLUGIN | START | END |
|---|---|---|
| passive/Testing_for_SSL-TLS@OWASP-CM-001.py | 08/02/2012-13:37 | 08/( |

| NOTES |
|---|
| |

Online Resources:

www.ssllabs.com

# Testing for SSL-TLS (OWASP-CM-001)

The link is generated with OWTF with that box ticked: Important!

QUALYS® SSL LABS

Home Qualys.com

You are here: Home > Projects > SSL Server Test

## SSL Server Test

This free online service performs a deep analysis of the configuration of any SSL web server on the public In
**that the information you submit here is used only to provide you the service. We don't use the don**
**test results, and we never will.**

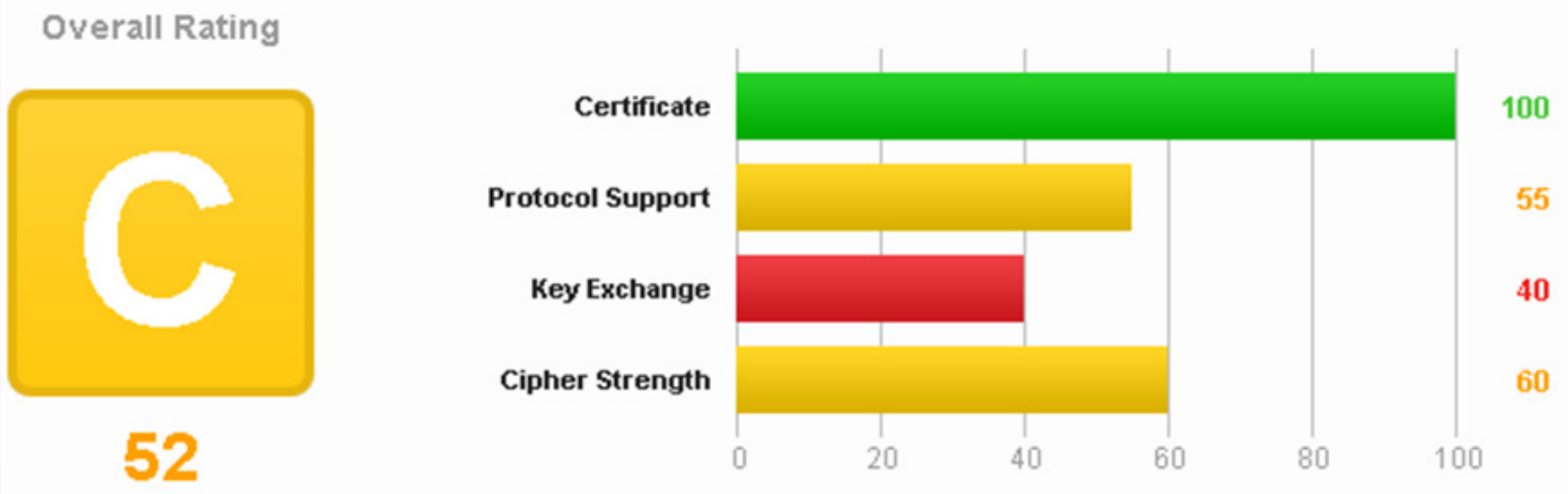
Domain name: Submit

☑ Do not show the results on the boards

https://www.ssllabs.com/ssldb/analyze.html

# Testing for SSL-TLS (OWASP-CM-001)

Pretty graphs to copy-paste to your OWTF report ☺




https://www.ssllabs.com/ssldb/analyze.html

# Testing for SSL-TLS (OWASP-CM-001)

Do not forget about Strict-Transport-Security!

sslstrip chances decrease dramatically:

**Only 1st time user visits the site!**

**Testing For Ssl-Tls** - ***GREP***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| grep/Testing_for_SSL-TLS@OWASP-CM-001.py | 09/02/2012-08:32 | 09/02/2012-08:32 | 0s, 35ms | Browse |

| NOTES |
|---|
| Edit |

This plugin looks for server-side protection headers to enforce SSL

**Header Analysis Summary**

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 0 out of 197 (0.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(Strict-Transport-Security): " owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_headers/scope_* \| sed -e 's\|owtf_review/195.251.127.254\|\|g' -e 's\|/response_headers/\|/\|g' |

# Testing for SSL-TLS (OWASP-CM-001)

Not found example:

**Header Value Analysis**

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| Strict-Transport-Security | Not Found |

Found example:

**Header Analysis Summary**

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 2 out of 5 (40.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(Strict-Transport-Security): " owtf_review/173.194.65.84/443/https__accounts.google.com/transactions/response_headers/scope_* \| sed -e 's\|owtf_review/173.194.65.84\|\|g' -e 's\|/response_headers/\|/\|g' |

**Header Value Analysis**

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| Strict-Transport-Security | max-age=2592000; includeSubDomains |

# Application Configuration Management (OWASP-CM-004)

**HTML content analysis**: HTML Comments

| PLUGIN | START | END | RUNTIME |
|---|---|---|---|
| grep/Application_Configuration_Management@OWASP-CM-004.py | 02/03/2012-08:24 | 02/03/2012-08:24 | 0s, 874ms |

NOTES

Edit

## HTML Comments

| | |
|---|---|
| STATS | • 17 Unique HTML Comments found<br>• 52 out of 197 (26.0%) transactions matched |
| HTML COMMENTS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "<!--" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Application Configuration Management (OWASP-CM-004)

**Efficient HTML content matches analysis**

Step 1 - Click Unique as TEXT

Step 2 – Human Review of Unique matches

```
<!-- Start of StatCounter Code -->
<!-- End of StatCounter Code -->
<!--
 var prefix = 'm&#97;&#105;lt&#111;:';
 var suffix = '';
 var attribs = '';
 var path = 'hr' + 'ef' + '=';
 var addy55072 = '&#97;lp&#97;p&#97;n&#105;k' + '&#64;';
 addy55072 = addy55072 + '&#111;w&#97;sp' + '&#46;' + 'gr';
 document.write( '<a ' + path + '\'' + prefix + addy55072 + suffix + '\'' + attribs + '>' );
 document.write( addy55072 );
 document.write( '<\/a>' );
 //-->
<!--
 document.write( '<span style=\'display: none;\'>' );
 //-->
<!--
 document.write( '</' );
 document.write( 'span>' );
 //-->
```

# Application Configuration Management (OWASP-CM-004)

**Efficient HTML content matches analysis**

Step 1 - Click Unique as HTML

Step 2 –Review Unique matches (click on links for sample match info)

## Unique Matches

| ID | Links | Match |
|---|---|---|
| 10 | Site F R H B | <!--[if lt IE 7.]> <link href="/templates/blackbearpro/css/ie6.css" rel="styleshe |
| 10 | Site F R H B | <!-- #content { padding-left:0px; width: 600px; } #container { background-ima /images/body.png); } --> |
| 186 | Site F R H B | <!--[if IE 7]> <link href="templates/khepri/css/ie7.css" rel="stylesheet" type="t |
| 186 | Site F R H B | <!--[if lte IE 6]> <link href="templates/khepri/css/ie6.css" rel="stylesheet" type |
| 192 | Site F R H B | <!--[if lt IE 7.]> <link href="/gr/templates/blackbearpro/css/ie6.css" rel="styles <![endif]--> |
| 192 | Site F R H B | <!-- #content { padding-left:0px; width: 600px; } #container { background-ima /images/body.png); } --> |

Want to see all? then click All as HTML

# Application Configuration Management (OWASP-CM-004)

**HTML content analysis**: CSS and JavaScript Comments (/* */)

## CSS/JS Comments

| | |
|---|---|
| STATS | • 12 Unique CSS/JS Comments found<br>• 3 out of 197 (1.0%) transactions matched |
| CSS/JS COMMENTS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "/*" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Application Configuration Management (OWASP-CM-004)

**HTML content analysis**: Single line JavaScript Comments (//)

## Single Line JS Comments

| | |
|---|---|
| STATS | • 0 Unique Single Line JS Comments found<br>• 0 out of 197 (0.0%) transactions matched |
| SINGLE LINE JS COMMENTS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "[^-:]//" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Application Configuration Management (OWASP-CM-004)

**HTML content analysis**: PHP source code

## Potential PHP source code

| | |
|---|---|
| STATS | • 0 Unique Potential PHP source code found<br>• 0 out of 197 (0.0%) transactions matched |
| POTENTIAL PHP SOURCE CODE | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "<?" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Application Configuration Management (OWASP-CM-004)

**HTML content analysis**: ASP source code

## Potential ASP source code

| | |
|---|---|
| STATS | • 0 Unique Potential ASP source code found<br>• 0 out of 197 (0.0%) transactions matched |
| POTENTIAL ASP SOURCE CODE | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "<%" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Old, Backup and Unreferenced Files (OWASP-CM-006)

## Old Backup And Unreferenced Files - *PASSIVE*

| PLUGIN | START |
| --- | --- |
| passive/Old_Backup_and_Unreferenced_Files@OWASP-CM-006.py | 08/02 |

| NOTES |
| --- |
| |

Online Resources: Open All In Tabs

- Google Search (Logs,Passwords,Juicy stuff)
- Google Search (Email files)
- Google Search (Source code, DB Dumps, Other)
- Google Search (Obscure extensions)
- Google Search (Directory Indexing)

# Old, Backup and Unreferenced Files (OWASP-CM-006)

**Old Backup And Unreferenced Files** - ***GREP***

| PLUGIN | START | END |
| --- | --- | --- |
| grep/Old_Backup_and_Unreferenced_Files@OWASP-CM-006.py | 09/02/2012-08:32 | 09/0 |

| NOTES |
| --- |
| |

This plugin shows all URLs classified as 'Files' for review, there could be cool stuff here :)

All known File URLs in Scope: Open All In Tabs

- http://demo.testfire.net/admin/clients.xls
- http://demo.testfire.net/pr/communityannualreport.pdf

# Testing for Admin Interfaces (OWASP-CM-007)

**Testing For Admin Interfaces** - ***PASSIVE***

| PLUGIN | START |
| --- | --- |
| passive/Testing_for_Admin_Interfaces@OWASP-CM-007.py | 08/02/2012-13:3 |

| NOTES |
| --- |
| |

Online Resources: Open All In Tabs

- Google Search (phpmyadmin,admin,backend,private,secret,login,logon)
- Google Search (username,login,password)

# Testing for Admin Interfaces (OWASP-CM-007)

If you find an admin interface don't forget to ..

Google for default passwords:

sitefinity "by default" password

About 5,770 results (0.20 seconds)

Advanced sea

**Sitefinity** Watch > How to secure **Sitefinity's** Administrative UI

www.**sitefinity**watch.com/.../How_to_secure_**Sitefinity**_rsquo_s_... - Cached

4 Mar 2010 – Users are then required to provide a valid username & **password** to gain entry to **Sitefinity**. **By default**, **Sitefinity's** administrative username ...

## How to secure Sitefinity's Administrative UI

Thursday, March 04, 2010

Sitefinity's Administrative Web Interface is accessed by adding **/Sitefinity** to the web site's URL. Users are then required to provide a valid username & password to gain entry to Sitefinity. By default, Sitefinity's administrative username is set to **admin**.

A few customers have expressed concern that this does not offer enough protection from malicious users or bots. If an attacker knows a web site is using Sitefinity then they also know the login URL and the **admin** username. The only thing that remains is the admin password.

# Testing for Admin Interfaces (OWASP-CM-007)

**Disclaimer**: Permission is required for this

File Edit View History Bookmarks Tools Help

http:/[redacted]/Sitefinity/Admin/CmsAdmin/Users.aspx

Black Hat BackTrack Linux Offensive-Security Tiger Security Exploit Databa

sitefinity Project: [redacted]

Dashboard Pages Modules Files Administration Live Site

Services Users Permissions Tools

Browse users:

All Users

Users

Create a user

Users by role:

administrators(6)

[redacted]

administrators

Select user(s) and: Unassign from 'administrators' | Delete or Assign to role...

Username Email

# HTTP Methods and XST (OWASP-CM-008)

**Http Methods And Xst** - ***SEMI PASSIVE***

| PLUGIN | START | END | RUNTIME | OUTPU |
|---|---|---|---|---|
| semi_passive/HTTP_Methods_and_XST@OWASP-CM-008.py | 08/02/2012-13:44 | 08/02/2012-13:44 | 1s, 230ms | Bro |

NOTES

Edit

HTTP TRANSACTIONS

REQUEST

See Transaction 4 (0s, 403ms) Site F R H B

```
OPTIONS / HTTP/1.1
Accept-Encoding: identity
Host: demo.testfire.net
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20100101 F
```

RESPONSE

```
200 OK
Allow: OPTIONS, TRACE, GET, HEAD
Content-Length: 0
Server: Microsoft-IIS/6.0
Public: OPTIONS, TRACE, GET, HEAD, POST
X-Powered-By: ASP.NET
Date: Wed, 08 Feb 2012 14:26:09 GMT
Connection: close
```

# HTTP Methods and XST (OWASP-CM-008)

**Http Methods And Xst** - ***PASSIVE***

| PLUGIN | START |
| --- | --- |
| passive/HTTP_Methods_and_XST@OWASP-CM-008.py | 08/02/201 |

| NOTES |
| --- |
| |

Online Resources: Open All In Tabs

- hexillion.com OPTIONS check
- hexillion.com TRACE check

# HTTP Methods and XST (OWASP-CM-008)

AnalyzePath

Querying **zero.webappsecurity.com [15.216.12.12]**...

**[begin response]**

```
HTTP/1.1 200 OK
Content-Length: 111
Content-Type: message/http
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Date: Tue, 15 Nov 2011 08:36:26 GMT
Connection: close

TRACE / HTTP/1.0
Host: zero.webappsecurity.com
User-Agent: AspTcpQuery sample (http://www.hexillion.com/)
```

**[end response]**

http://centralops.net

# Testing for Credentials Transport (OWASP-AT-001)

Is the login page on “http” instead of “https”?

**Credentials Transport Over An Encrypted Channel** - ***GREP***

| PLUGIN | START |
|---|---|
| grep/Credentials_transport_over_an_encrypted_channel@OWASP-AT-001.py | 02/03/2 |

| NOTES |
|---|
| |

This plugin looks for password fields and then checks the URL (i.e. http vs. https)
Uniqueness in this case is performed via URL + password field
Total insecure matches: 53

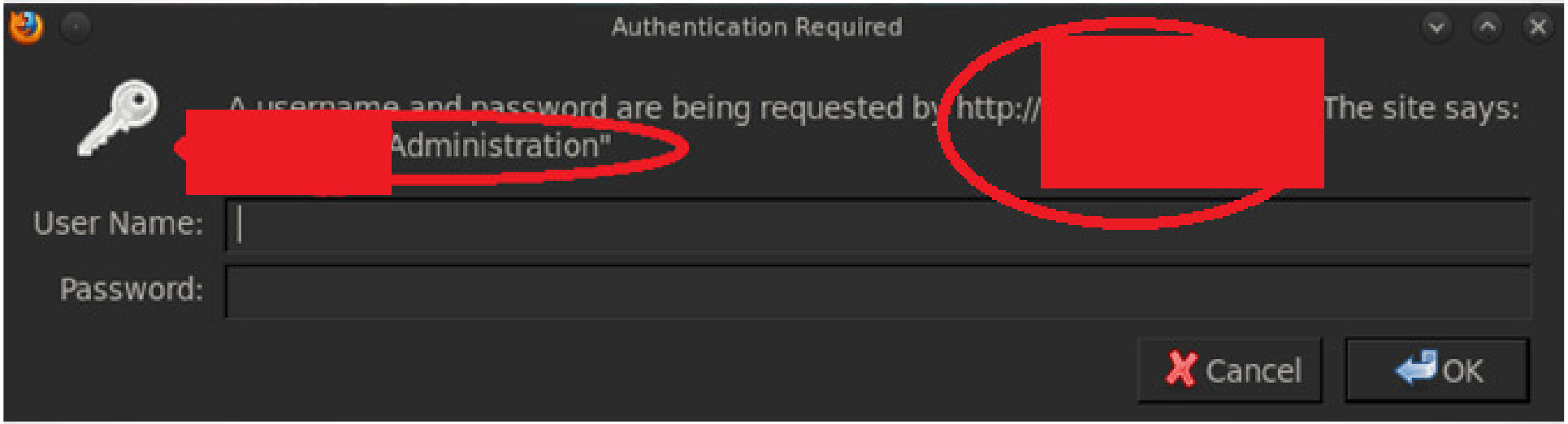
## Password fields

| | |
|---|---|
| STATS | • 47 Unique Password fields found<br>• 52 out of 197 (26.0%) transactions matched |
| PASSWORD FIELDS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |

# Testing for Credentials Transport (OWASP-AT-001)

Pro Tip: When browsing the site manually ..

… **<u>look</u>** carefully at pop-ups like this:




Consider (i.e. **prep the attack**):

Firesheep: http://codebutler.github.com/firesheep/
SSLStrip: https://github.com/moxie0/sslstrip

# Testing for User Enumeration (OWASP-AT-002)

Mario was going to report a bug to Mozilla and found another!

**elements allow key-logging w/o JavaScript** (edit)

**Reported:** 2011-11-22 07:29 PST by Mario Heiderich

**Modified:** 2011-11-24 03:54 PST (History)

**CC List:** Add me to CC list

7 users

**Add**

gaz

(artur.c
Ahmad
Robert
Aleksa
Ben B
Tommy
Bill Ga
Benois
peter a
Carlos
chandr
(chope

**Flags:**

dholbert: in-testsuite ?

in-litmus

**See Also:**

# Testing for User Enumeration (OWASP-AT-002)

Abuse user/member public search functions:

- Search for “” (nothing) or “a”, then “b”, ..
- Download all the data using 1) + pagination (if any)
- Merge the results into a CSV-like format
- Import + save as a spreadsheet
- Show the spreadsheet to your customer

| | | | | | |
|---|---|---|---|---|---|
| 2 | TCGA-A6-2670 | | 45 | Sigmoid Colon | NO |
| 3 | TCGA-A6-2671 | | 85 | Sigmoid Colon | NO |
| 4 | TCGA-A6-2672 | | 82 | Transverse Colon | NO |
| 5 | TCGA-A6-2674 | | 71 | Sigmoid Colon | NO |
| 6 | TCGA-A6-2676 | | 75 | Cecum | NO |
| 7 | TCGA-A6-2677 | | 68 | Cecum | NO |
| 8 | TCGA-A6-2678 | | 43 | Transverse Colon | NO |
| 9 | TCGA-A6-2679 | | 73 | Ascending Colon | NO |
| 10 | TCGA-A6-2680 | | 72 | Hepatic Flexure | NO |
| 11 | TCGA-A6-2681 | | 73 | Cecum | NO |
| 12 | TCGA-A6-2682 | | 70 | Cecum | NO |
| 13 | TCGA-A6-2683 | | 57 | Ascending Colon | NO |
| 14 | TCGA-A6-2684 | | 75 | Cecum | NO |
| 15 | TCGA-A6-2685 | | 48 | Sigmoid Colon | NO |
| 16 | TCGA-A6-2686 | | 81 | Cecum | NO |
| 17 | TCGA-A6-3807 | null | | null | null |
| 18 | TCGA-A6-3808 | | 73 | Cecum | NO |
| 19 | TCGA-A6-3809 | | 71 | Transverse Colon | NO |
| 20 | TCGA-A6-3810 | | 62 | Sigmoid Colon | NO |
| 21 | TCGA-A6-4107 | | 57 | Ascending Colon | NO |
| 22 | TCGA-AA-3488 | | 59 | Sigmoid Colon | NO |
| 23 | TCGA-AA-3492 | | 90 | Ascending Colon | NO |
| 24 | TCGA-AA-3494 | | 55 | Sigmoid Colon | NO |
| 25 | TCGA-AA-3495 | | 79 | Hepatic Flexure | NO |
| 26 | TCGA-AA-3502 | | 74 | Transverse Colon | NO |

# Default or Guessable User Account (OWASP-AT-003)

Analyse the username(s) they gave you to test:

- Username based on numbers?

*USER12345*

- Username based on public info? (i.e. names, surnames, ..)

*name.surname*

- Default CMS user/pass?

# Vulnerable Remember Password and Pwd Reset (OWASP-AT-006)

## Part 1 – Remember Password: Autocomplete

| Good | Bad |
|---|---|
| Via 1) <form … autocomplete="off"><br>Or Via 2) <input … autocomplete="off"> | <form action="/user/login" method="post"><br><input type="password" name="pass" /> |

**Vulnerable Remember Password And Pwd Reset** - ***GREP***

| PLUGIN | START |
|---|---|
| grep/Vulnerable_Remember_Password_and_Pwd_Reset@OWASP-AT-006.py | 02/03/2012-10:46 |

NOTES

This plugin looks for password and form tags to review the autocomplete attribute

**Autocomplete fields**

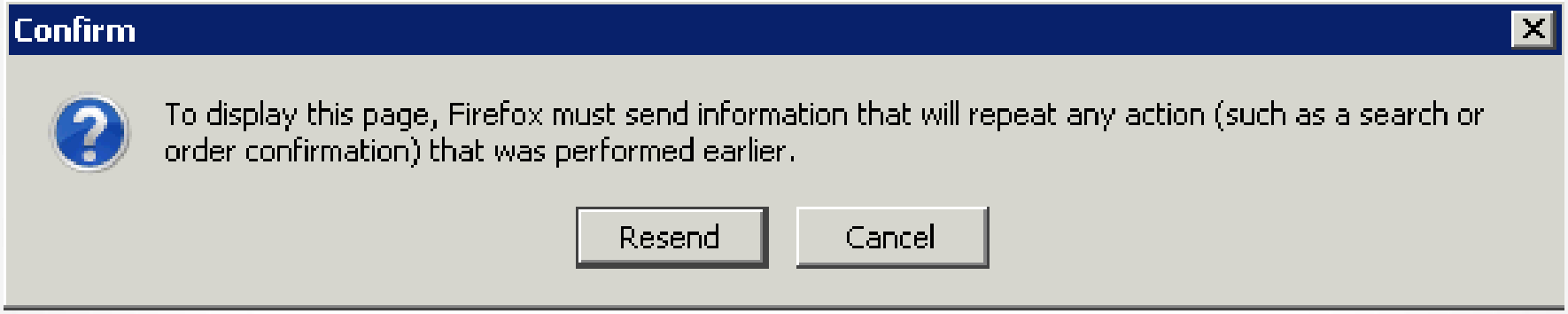
| | |
|---|---|
| STATS | • 12 Unique Autocomplete fields found<br>• 52 out of 197 (26.0%) transactions matched |
| AUTOCOMPLETE FIELDS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| | grep -IHiE "type=.password" owtf review/195.251.127.254 |

# Vulnerable Remember Password and Pwd Reset (OWASP-AT-006)

**Manual verification for password autocomplete** (i.e. for the customer)

Easy "your grandma can do it" test:

1. Login
2. Logout
3. Click the browser Back button twice*
4. Can you login again –without typing the login or password- by re-sending the login form?




Can the user re-submit the login form via the back button?

* Until the login form submission

**Other sensitive fields: Pentester manual verification**

- Credit card fields
- Password hint fields
- Other

# Vulnerable Remember Password and Pwd Reset (OWASP-AT-006)

**Part 2 - Password Reset forms**

**Manually** look at the questions / fields in the password reset form

- Does it let you specify your email address?
- Is it based on public info? (name, surname, etc)
- Does it send an email to a potentially dead email address you can register? (i.e. hotmail.com)

# Logout and Browser Cache Management (OWASP-AT-007)

**Goal: Is Caching of sensitive info allowed?**

**Manual verification steps**: "your grandma can do it" ☺ (need login):

1. Login
2. Logout
3. Click the browser Back button
4. Do you see logged in content or a this page has expired error / the login page?

**Manual analysis tools**:

- Commands: curl –i http://target.com
- Proxy: Burp, ZAP, WebScarab, etc
- Browser Plugins:

https://addons.mozilla.org/en-US/firefox/addon/live-http-headers/

https://addons.mozilla.org/en-US/firefox/addon/firebug/

# Logout and Browser Cache Management (OWASP-AT-007)

**HTTP/1.1 headers**

| Good | Bad |
|---|---|
| Cache-Control: no-cache | Cache-control: private |

**HTTP/1.0 headers**

| Good | Bad |
|---|---|
| Pragma: no-cache<br>Expires: <past date or illegal (e.g. 0)> | Pragma: private<br>Expires: <way too far in the future> |

**The world**

| Good | Bad |
|---|---|
| https://accounts.google.com | No caching headers = caching allowed |
| Cache-control: no-cache, no-store<br>Pragma: no-cache<br>Expires: Mon, 01-Jan-1990 00:00:00 GMT | HTTP/1.1 200 OK<br>Date: Tue, 09 Aug 2011 13:38:43 GMT<br>Server: ….<br>X-Powered-By: ….<br>Connection: close<br>Content-Type: text/html; charset=UTF-8 |

# Logout and Browser Cache Management (OWASP-AT-007)

**Logout And Browser Cache Management** - ***GREP***

| PLUGIN | START | END | RUNTIME |
|---|---|---|---|
| grep/Logout_and_Browser_Cache_Management@OWASP-AT-007.py | 02/03/2012-10:46 | 02/03/2012-10:46 | 0s, 323m |

| NOTES |
|---|
| Edit |

This plugin looks for server-side protection headers and tags against cache snooping

## Header Analysis Summary

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 53 out of 197 (26.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(Cache-Control\|Pragma\|Expires): " owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_headers/scope_* \| sed -e 's\|owtf_review/195.251.127.254\|\|g' -e 's\|/response_headers/\|/\|g' |

## Header Value Analysis

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| Cache-Control | no-store, no-cache, must-revalidate, post-check=0, pre-check=0 |
| Pragma | no-cache |
| Expires | Mon, 1 Jan 2001 00:00:00 GMT |

# Logout and Browser Cache Management (OWASP-AT-007)

**Repeat for Meta tags**

| Good | Bad |
|---|---|
| <META HTTP-EQUIV="Cache-Control" CONTENT="no-cache"> | <META HTTP-EQUIV="Cache-Control" CONTENT="private"> |

## Cache Control Meta Tags

| | |
|---|---|
| STATS | • 0 Unique Cache Control Meta Tags found<br>• 0 out of 197 (0.0%) transactions matched |
| CACHE CONTROL META TAGS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "<META.*?HTTP-EQUIV" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# Testing for Captcha (OWASP-AT-008)

Step 1 – Find CAPTCHAs: Passive search

**Testing For Captcha** - ***PASSIVE***

| PLUGIN | START | END |
|---|---|---|
| passive/Testing_for_Captcha@OWASP-AT-008.py | 08/02/2012-13:37 | 08/02/ |

| NOTES |
|---|
| |

Online Resources:

- Google Search (captcha, security code)

# Testing for Captcha (OWASP-AT-008)

**Offline Manual analysis**:

- Download image and try to break it
- Are CAPTCHAs reused?
- Is a hash or token passed? (Good algorithm? Predictable?)
- Look for vulns on CAPTCHA version

**CAPTCHA breaking tools**

PWNtcha - captcha decoder - http://caca.zoy.org/wiki/PWNtcha

Captcha Breaker - http://churchturing.org/captcha-dist/

**Testing For Captcha** - ***EXTERNAL***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| external/Testing_for_Captcha@OWASP-AT-008.py | 03/03/2012-04:54 | 03/03/2012-04:54 | 0s, 79ms | Browse |

NOTES

Edit

SEARCH FOR VULNERABILITIES: SEARCH ALL

NVD (High) | OSVDB (High) | BugTraq | ExploitDB | ExploitSearch (Exploits Only) | ExploitSearch (All) | NVD (All) | OSVDB (All)

Tools: Open All In Tabs

- PWNtcha - captcha decoder
- Captcha Breaker

# Session Management Schema (OWASP-SM-001)

**Manually** Examine cookies for weaknesses offline

| **Base64 Encoding** (!= Encryption ☺) | **Decoded value** |
|---|---|
| MTkyLjE2OC4xMDAuMTpvd2FzcHVzZXI6cGFzc3dvcmQ6MTU6NTg= | owaspuser:192.168.100.1:a7656fafe94dae72b1e1487670148412 |

**Session Management Schema** - ***EXTERNAL***

| PLUGIN | START | END | RU |
|---|---|---|---|
| external/Session_Management_Schema@OWASP-SM-001.py | 03/03/2012-07:15 | 03/03/2012-07:15 | 0s |

NOTES

Edit

Online Resources: Open All In Tabs

- Gareth Hayes' HackVertor
- Raul Siles' (Taddong) F5 BIG IP Cookie Decoder

# Session Management Schema (OWASP-SM-001)

Charsets | Decode | Encode | Encrypt | Exec | Hacker | Hash | Math | SQLi | Str

## Natural language conversion

Convert this to hex then octal

Convert

You are not logged in. You can still view everyone's public tags but you need to re

**Input** 100 100


```
<@auto_decode_repeat_0>MTkyLjE2OC4xMDAuMTpvd2FzcHVzZXI6c
GFzc3dvcmQ6MTU6NTg=<@/auto_decode_repeat_0>
```


http://hackvertor.co.uk/public

# Session Management Schema (OWASP-SM-001)

Decode | Encode | Enc

- auto_decode
- auto_decode_repeat
- d_base64
- d_binary
- d_dec
- d_disassemble
- d_hex
- d_hexstr
- d_htmlentities
- d_ipv6
- d_jjencode
- d_lzw_decode
- d_octal
- d_unicode

Lots of decode options, including:

- auto_decode
- auto_decode_repeat
- d_base64
- etc.

Output 39 39

```
192.168.100.1:owaspuser:password:15:58
```

http://hackvertor.co.uk/public

# Session Management Schema (OWASP-SM-001)

F5 BIG-IP Cookie decoder:

```
root@bt: ~
File  Edit  View  Terminal  Help
root@bt:~# ./BIG-IP_cookie_decoder.py 1677787402.36895.0000

[*] String to decode: 1677787402.36895.0000

[*] Decoded IP:   10.1.1.100
[*] Decoded port: 8080

root@bt:~#
```

http://blog.taddong.com/2011/12/cookie-decoder-f5-big-ip.html

# Cookies Attributes (OWASP-SM-002)

- **Secure**: not set= session cookie leaked= pwned
- **HttpOnly**: not set = cookies stealable via JS
- **Domain**: set properly
- **Expires**: set reasonably
- **Path**: set to the right /sub-application
- 1 session cookie that works is enough ..

| Name | Expires | HttpOnly | Security |
|---|---|---|---|
| SPRING_SECURITY_REMEMBER_ME_COOKIE | Thu 15 S | | |
| JSESSIONID | Session | HttpOnly | Secure |

**Cookies Attributes** - *GREP*

| PLUGIN | START | END | RUNTIME | OUTPUT |
|---|---|---|---|---|
| grep/Cookies_attributes@OWASP-SM-002.py | 02/03/2012-10:46 | 02/03/2012-10:46 | 0s, 52ms | Brows |

NOTES

Edit

This plugin looks for cookie setting headers (TODO: Check vuln scanners' output!)

**Header Analysis Summary**

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 58 out of 197 (29.0%) matched |

# Cookies Attributes (OWASP-SM-002)

## Header Value Analysis

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| | 7bf9911fab0c9735a81838a8466b569d=nao2mmgho6p9jisslen9v3t6o5; path=/ |
| | 26238b056396bb02ea2977b17de46c4c=3h20bvblbinnmrfti751kgmf94; path=/ |
| | 26238b056396bb02ea2977b17de46c4c=e5to3mpc56qdgfj61o9rlghfg3; path=/ |
| | 26238b056396bb02ea2977b17de46c4c=i4t79up0lp1kl4oihpa0n3uf20; path=/ |
| | 74d4eed8cbb936df5ee62291facacd8c=4k03b9r77mdrvhp7ukr23s0td5; path=/ |
| | 26238b056396bb02ea2977b17de46c4c=p9hf1fu9069pq9j56dcj465ra2; path=/ |

## Cookie Attribute Analysis

COOKIE: 7BF9911FAB0C9735A81838A8466B569D

| ATTRIBUTE | VALUE |
|---|---|
| Value | nao2mmgho6p9jisslen9v3t6o5 |
| secure | **Not Found** |
| HttpOnly | **Not Found** |
| domain | **Not Found** |
| path | path=/ |
| expires | **Not Found** |

# Session Fixation (OWASP-SM-003)

**Manually check when verifying credentials during pre-engagement:**
Login and analyse the Session ID cookie (i.e. PHPSESSID)

| Good | Bad (normal + by default) |
|---|---|
| Before: 10a966616e8ed63f7a9b741f80e65e3c<br>After: Nao2mxgho6p9jisslen9v3t6o5f943h | Before: 10a966616e8ed63f7a9b741f80e65e3c<br>After: 10a966616e8ed63f7a9b741f80e65e3c |

IMPORTANT: **You can also set the session ID via JavaScript (i.e. XSS)**

## Exposed Session Variables (OWASP-SM-004)

Session ID:

- In URL
- In POST
- In HTML

Example from the field:
http://target.com/xxx/xyz.function?session_num=7785

## Bypassing Authorization Schema (OWASP-AZ-002)

Look at unauthenticated cross-site requests:

http://other-site.com/user=3&report=4
Referer: site.com

Change ids in application: (ids you have permission for!)
http://site.com/view_doc=4

# Reflected Cross Site Scripting (OWASP-DV-001)

Headers Enabling/Disabling Client-Side XSS filters:

- **X-XSS-Protection** (IE-Only)
- **X-Content-Security-Policy** (FF >= 4.0 + Chrome >= 13)

**Header Analysis Summary**

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 0 out of 197 (0.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(X-Content-Security-Policy\|X-XSS-Protection): " owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_headers/scope_* \| sed -e 's\|owtf_review/195.251.127.254\|\|g' -e 's\|/response_headers/\|/\|g' |

**Header Value Analysis**

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| X-Content-Security-Policy | Not Found |
| X-XSS-Protection | Not Found |

# DOM-based Cross Site Scripting (OWASP-DV-003)

Review JavaScript code on the page:

```
<script>
document.write("Site is at: " + document.location.href + ".");
</script>
```

Sometimes active testing possible in your browser
(no trip to server = not an attack = not logged):
http://target.com/...#vulnerable_param=xss

http://blog.mindedsecurity.com/2010/09/twitter-domxss-wrong-fix-and-something.html

# SQL Injection (OWASP-DV-005)

**Testing For Sql Injection** - ***PASSIVE***

| PLUGIN | START | END | RUNTIME |
|---|---|---|---|
| passive/Testing_for_SQL_Injection@OWASP-DV-005.py | 08/02/2012-13:37 | 08/02/2012-13:37 | 0s, 5ms |

NOTES

Edit

Online Resources:

Google Search (sql, error, syntax)

Did Google find SQLi for you?

sql OR syntax OR error site:zero.webappsecurity.com

7 results (0.11 seconds)

LSWEB General Access **Error** Log
zero.webappsecurity.com/**errors**/**errors**.log
File Format: Unrecognized - View as HTML
... Feb 21 11:10:58 2001] [**error**] [client 192.107.108.150] Premature end of script headers: /www/htdocs/depts/anth/discus/scripts/show.cgi [Wed Feb 21 11:10:58 ...

My **ERROR** - zero.webappsecurity.com (HP)
zero.webappsecurity.com/**error**.html
**Error** Diagnostic Information The welcome page.

# SSI Injection (OWASP-DV-009)

<!--#exec cmd="/bin/ls /" -->
<!--#INCLUDE VIRTUAL="/web.config"-->

**Testing For Ssi Injection** - ***GREP***

| PLUGIN | START | END | RUNTIME |
|---|---|---|---|
| grep/Testing_for_SSI_Injection@OWASP-DV-009.py | 02/03/2012-10:46 | 02/03/2012-10:46 | 0s, 81ms |

NOTES

Edit

## Server Side Includes

| | |
|---|---|
| STATS | • 0 Unique Server Side Includes found<br>• 0 out of 197 (0.0%) transactions matched |
| SERVER SIDE INCLUDES | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |
| COMMAND | grep -IHiE "<!--#" owtf_review/195.251.127.254/80/http__hackademic1.teilar.gr/transactions/response_bodies/scope_* \| cut -f1 -d:\|sort -u |
| LOG | See log |

# DoS Failure to Release Resources (OWASP-DS-007)

1. Browse Site
2. Time requests
3. Get top X slowest requests
4. Slowest = Best DoS target

**Dos Failure To Release Resources** - ***GREP***

| PLUGIN | START | END | R |
|---|---|---|---|
| grep/DoS_Failure_to_Release_Resources@OWASP-DS-007.py | 02/03/2012-10:46 | 02/03/2012-10:46 | 0 |

NOTES

Edit

Top 10 slowest transactions

Hint: You can also sort by time in descending order on the Transaction log

HTTP TRANSACTIONS

REQUEST

See Transaction 9 (0s, 435ms) Site F R H B

```
DEBUG / HTTP/1.1
Accept-Encoding: identity
Host: hackademic1.teilar.gr
Command: start-debug
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20
```

RESPONSE

```
200 OK
Date: Wed, 08 Feb 2012 13:08:51 GMT
Server: Apache/2.2.17 (Fedora)
X-Powered-By: PHP/5.3.8
Set-Cookie: 26238b056396bb02ea2977b17de46c4c=t2neuqkhoihdl
P3P: CP="NOI ADM DEV PSAi COM NAV OUR OTRo STP IND DEM"
Expires: Mon, 1 Jan 2001 00:00:00 GMT
Last-Modified: Wed, 08 Feb 2012 13:08:52 GMT
Cache-Control: no-store, no-cache, must-revalidate, post-c
Pragma: no-cache
Content-Length: 7490
Connection: close
Content-Type: text/html; charset=utf-8
```

# WS Information Gathering (OWASP-WS-001)

**Google searches: inurl:wsdl site:example.com**

Public services search:
http://seekda.com/
http://www.wsindex.org/
http://www.soapclient.com/

**Ws Information Gathering** - ***PASSIVE***

| PLUGIN | START | END |
|---|---|---|
| passive/WS_Information_Gathering@OWASP-WS-001.py | 08/02/2012-13:37 | 08/02/201 |

NOTES

Edit

Online Resources: Open All In Tabs

- Google Search (Web Services)
- wsindex.org
- www.soapclient.com
- www.xmethods.net

# Testing WSDL (OWASP-WS-002)

**WSDL analysis**

Sensitive methods in WSDL?

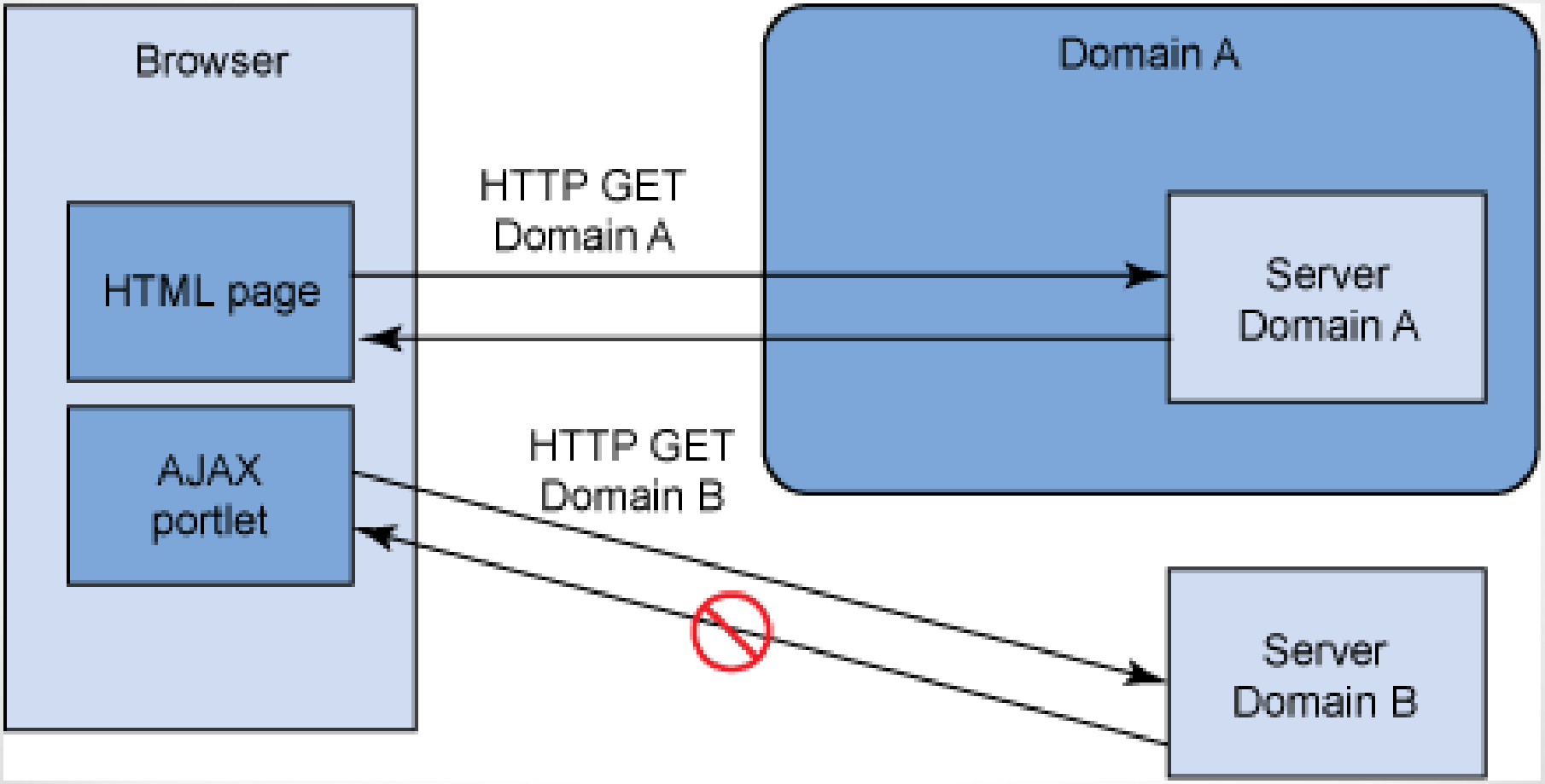
i.e. Download DB, Test DB, Get CC, etc.

http://www.example.com/ws/FindIP.asmx?WSDL

```
<wsdl:operation name="getCreditCard" parameterOrder="id">
    <wsdl:input message="impl:getCreditCardRequest" name="getCreditCardRequest"/>
    <wsdl:output message="impl:getCreditCardResponse" name="getCreditCardResponse"/>
</wsdl:operation>
```

# Same Origin Policy (SOP) 101

1. Domain A's page **can send a request to** Domain B's page from Browser
2. BUT Domain A's page **cannot read** Domain B's page from Browser




http://www.ibm.com/developerworks/rational/library/09/rationalapplicationdeveloperportaltoolkit3/

# Testing for CSRF (OWASP-SM-005)

- Request == Predictable → Pwned → "..**can send a request to** Domain B" (SOP)

**CSRF Protection 101**:

- Require long random token (99% hidden anti-CSRF token) → Not predictable
- Attacker cannot **read** the token from Domain B (SOP) → Domain B ignores **request**

| Potentially Good | Bad |
|---|---|
| Anti-CSRF token present: Verify **with permission** | No anti-CSRF token |

**Testing For Csrf** - ***GREP***

| PLUGIN | START | END | RUNTIME | OUTPUT |
|---|---|---|---|---|
| grep/Testing_for_CSRF@OWASP-SM-005.py | 02/03/2012-10:46 | 02/03/2012-10:46 | 0s, 397ms | Brow |

NOTES

Edit

**Hidden fields**

| | |
|---|---|
| STATS | • 99 Unique Hidden fields found<br>• 52 out of 197 (26.0%) transactions matched |
| HIDDEN FIELDS | • Unique as TEXT<br>• Unique as HTML<br>• All as HTML |

# Testing for WS Replay (OWASP-WS-007)

Similar to CSRF:
Is there an anti-replay token in the request?

| Potentially Good | Bad |
|---|---|
| Anti-CSRF token present: Verify **with permission** | No anti-CSRF token |

# Cross Site Flashing (OWASP-DV-004)

1) Passive search for Flash/Silverlight files + policies:

**Testing For Cross Site Flashing** - ***PASSIVE***

| PLUGIN | START | END | RU |
|---|---|---|---|
| passive/Testing_for_Cross_site_flashing@OWASP-DV-004.py | 08/02/2012-13:37 | 08/02/2012-13:37 | 0s |

NOTES

Edit

Online Resources: Open All In Tabs

- Google Search (SWF Files)
- Google Search (Silverlight Files)
- Google Search (crossdomain.xml,clientaccesspolicy.xml Files)

| Flash file search: | Silverlight file search: |
|---|---|
| filetype:swf site:adobe.com | filetype:xap OR filetype:scr site:microsoft.com |
| About 12,300 results (0.13 seconds) | 2 results (0.19 seconds) |
| [FLASH] Visual Components Print Controls Validators and Effects ...<br>examples.adobe.com/flex3/componentexplorer/explorer.swf<br>File Format: Shockwave Flash<br>Visual Components. Print Controls. Validators and Formatters. Eff | Communications: Standby Continuous Replication in Exchange ...<br>lab.technet.microsoft.com/en-us/magazine/2007.12.scr<br>One of the most exciting features offered by Service Pack 1 is Standby Continuous Replication. Find out how this can help you improve uptime, limit data loss, ... |

# Cross Site Flashing (OWASP-DV-004)

**Static analysis: Download + decompile Flash files**

$ flare hello.swf

```
onClipEvent (enterFrame) {
  if (this._y > -254) {
    this._y += -3;
  }
  if (this._y > -254 and this._y < -175.3) {
    this._yscale -= 0;
    this._xscale -= 0;
  } else {
    if (this._y <= -157.7) {
      this._yscale -= 2;
```

Flare: http://www.nowrap.de/flare.html

Flasm (timelines, etc): http://www.nowrap.de/flasm.html

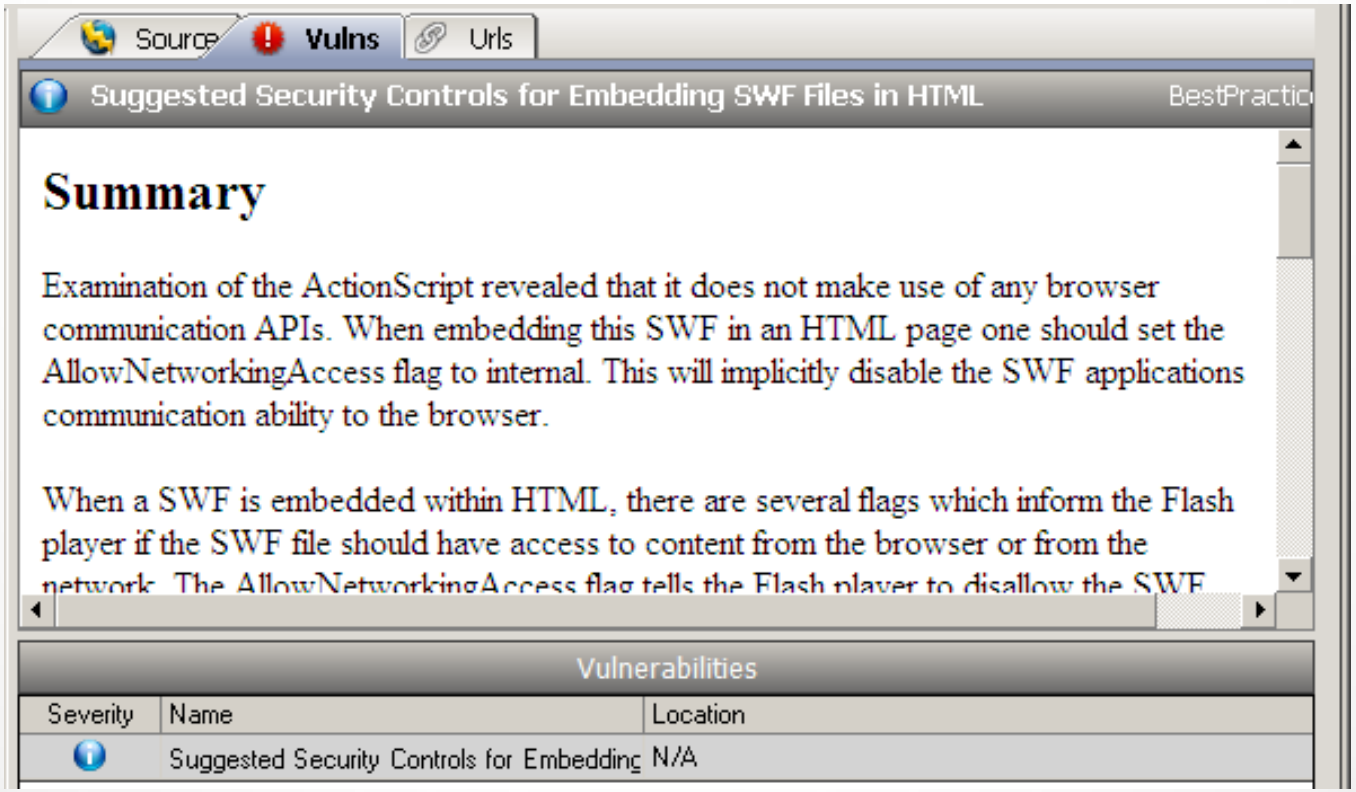
# Cross Site Flashing (OWASP-DV-004)

## Static analysis tools

**Adobe SWF Investigator**

http://labs.adobe.com/technologies/swfinvestigator/

**SWFScan**




SWFScan: http://www.brothersoft.com/hp-swfscan-download-253747.html

# Cross Site Flashing (OWASP-DV-004)

**Active testing** ☺

1) Trip to server = need permission

http://target.com/test.swf?xss=foo&xss2=bar

2) But … <u>your browser is yours</u>:

No trip to server = no permission needed

http://target.com/test.swf#?xss=foo&xss2=bar

Good news: Unlike DOM XSS, the # trick will always work for Flash Files

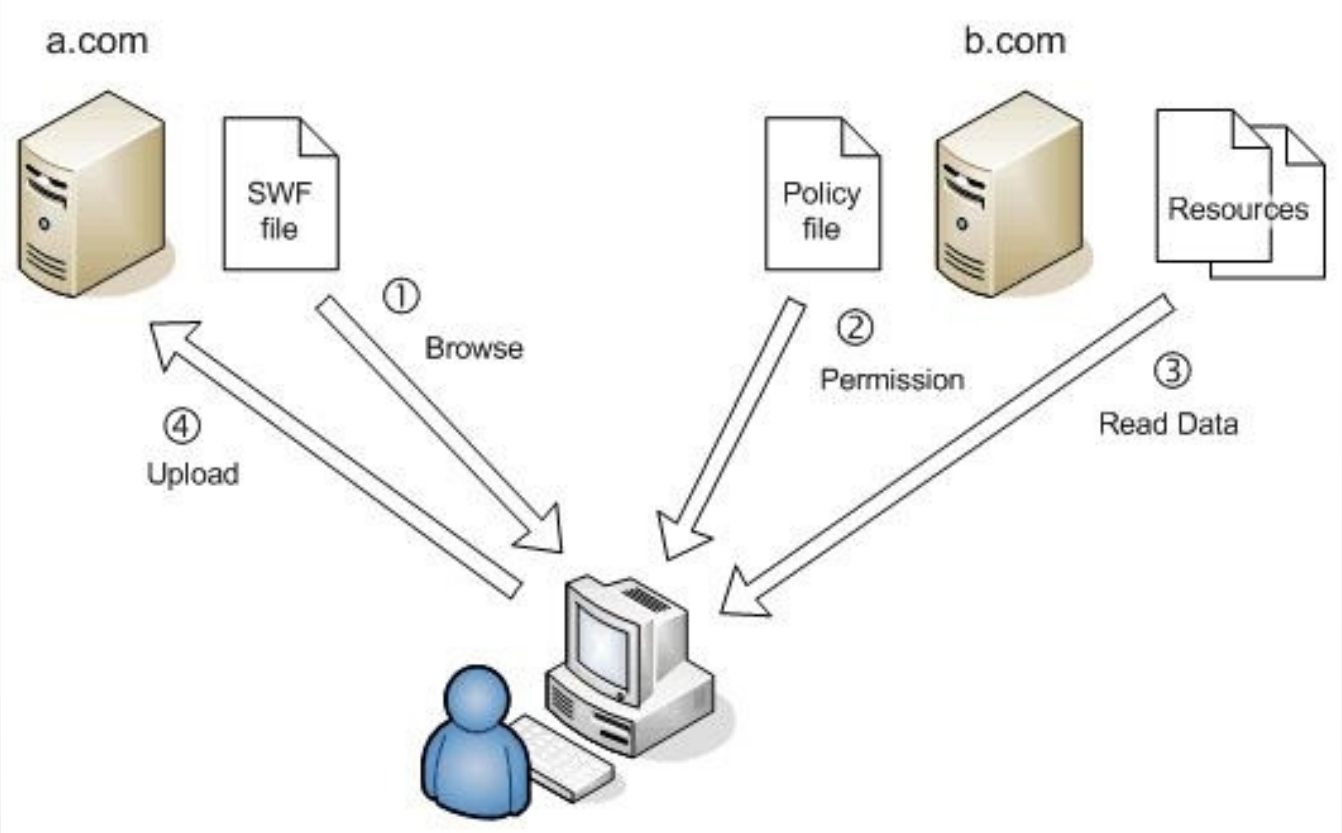
# Cross Site Flashing (OWASP-DV-004)

## Cross Origin Resource Sharing (CORS) (OWTF-WGP-002)

Some technologies allow settings that relax SOP:

- Adobe Flash (via policy file)
- Microsoft Silverlight (via policy file)
- HTML 5 Cross Origin Resource Sharing (via HTTP headers)

**Cheating: Reading the policy file or HTTP headers != attack**




http://www.adobe.com/devnet/flashplayer/articles/fplayer9_security.html

# Cross Site Flashing (OWASP-DV-004)

Policy file retrieval for analysis

**Testing For Cross Site Flashing** - ***SEMI PASSIVE***

| PLUGIN | START | END |
|---|---|---|
| semi_passive/Testing_for_Cross_site_flashing@OWASP-DV-004.py | 08/02/2012-13:44 | 08/02/2012-13:4 |

NOTES

Edit

HTTP://HACKADEMIC1.TEILAR.GR/CROSSDOMAIN.XML

Not Found

HTTP://HACKADEMIC1.TEILAR.GR/CLIENTACCESSPOLICY.XML

Not Found

HTTP TRANSACTIONS

REQUEST

See Transaction 5 (0s, 245ms) Site F R H B

```
GET /crossdomain.xml HTTP/1.1
Accept-Encoding: identity
Host: hackademic1.teilar.gr
Connection: close
User-Agent: Mozilla/5.0 (X11; Linux i686; rv:6.0) Gecko/20
```

RESPONSE

```
404 Not Found
Date: Wed, 08 Feb 2012 12:45:13 GMT
Server: Apache/2.2.17 (Fedora)
Content-Length: 300
Connection: close
Content-Type: text/html; charset=iso-8859-1


<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>404 Not Found</title>
</head><body>
```

# Cross Site Flashing (OWASP-DV-004)

**CSRF by design → read tokens = attacker WIN**

**Flash / Silverlight - crossdomain.xml**

```
<cross-domain-policy>
<allow-access-from domain="*"/>
</cross-domain-policy>
```

Bad defence example: restrict pushing headers accepted by Flash:
All headers from any domain accepted

```
<allow-http-request-headers-from domain="*" headers="*" />
```

Flash: http://kb2.adobe.com/cps/403/kb403185.html

# Cross Site Flashing (OWASP-DV-004)

**CSRF by design → read tokens = attacker WIN**

## Silverlight - clientaccesspolicy.xml

```
<?xml version="1.0" encoding="utf-8"?><access-policy><cross-domain-access><policy>
    <allow-from http-request-headers="SOAPAction">
        <domain uri="*"/>
    </allow-from>
    <grant-to><resource path="/" include-subpaths="true"/></grant-to>
  </policy></cross-domain-access></access-policy>
```

Silverlight: http://msdn.microsoft.com/en-us/library/cc197955%28v=vs.95%29.aspx

# Cross Site Flashing (OWASP-DV-004)

Need help?

**Testing For Cross Site Flashing** - ***EXTERNAL***

| PLUGIN | START | E |
|---|---|---|
| external/Testing_for_Cross_site_flashing@OWASP-DV-004.py | 08/02/2012-13:37 | 0 |

| NOTES |
|---|
| |

Online Resources: Open All In Tabs

- Krzysztof Kotowicz's CORS proxy browser
- Erlend Oftedal's MalaRIA proxy for crossdomain.xml + clientaccesspolicy.xml
- Julien Couvreur's PoC via URL
- Craft Flash file for Free via Haxe
- Mario Heiderich's sample Haxe file
- Silverlight's clientaccesspolicy.xml info
- crossdomain.xml explained
- fscommand to call JavaScript from Flash

# Cross Origin Resource Sharing (CORS) (OWTF-WGP-002)

**Cors** - ***GREP***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| grep/CORS@OWTF-WGP-002.py | 09/02/2012-08:32 | 09/02/2012-08:32 | 0s, 47ms | Browse |

| NOTES |
|---|
| |

This plugin looks for HTML 5 Cross Origin Resource Sharing (CORS) headers

## Header Analysis Summary

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 0 out of 74 (0.0%) matched |
| ANALYSIS COMMAND | grep -IHiE "(Access-Control-Allow-Origin\|Access-Control-Allow-Credentials): " owtf_review/65.61.137.117/80/http__demo.testfire.net/transactions/response_headers/scope_* \| sed -e 's\|owtf_review/65.61.137.117\|\|g' -e 's\|/response_headers/\|/\|g' |

## Header Value Analysis

NOTE: Only unique values per header are shown with a link to an example transaction

| HEADER | VALUES |
|---|---|
| Access-Control-Allow-Origin | Not Found |
| Access-Control-Allow-Credentials | Not Found |

# ClickJacking (OWTF-WGP-001)

UI Redressing protections:

- **X-Frame-Options** (best)
- **X-Content-Security-Policy** (FF >= 4.0 + Chrome >= 13)
- **JavaScript Frame busting** (bypassable sometimes)

| Good | Bad |
|---|---|
| X-Frame-Options: Deny | |

**Clickjacking** - ***GREP***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| grep/Clickjacking@OWTF-WGP-001.py | 04/03/2012-07:36 | 04/03/2012-07:36 | 0s, 24ms | Browse |

NOTES

Edit

This plugin looks for server-side protection headers against Clickjacking (TODO: Add rudimentary searcl for frame busting)

**Header Analysis Summary**

| | |
|---|---|
| LOG | See log |
| HTTP TRANSACTION STATS | 0 out of 74 (0.0%) matched |

# ClickJacking (OWTF-WGP-001)

Andrew Horton's "Clickjacking for Shells":
http://www.morningstarsecurity.com/research/clickjacking-wordpress

Krzysztof Kotowicz's "Something Wicked this way comes":
http://www.slideshare.net/kkotowicz/html5-something-wicked-this-way-comes-hackpra
https://connect.ruhr-uni-bochum.de/p3g2butmrt4/

Marcus Niemietz's "UI Redressing and Clickjacking":
http://www.slideshare.net/DefconRussia/marcus-niemietz-ui-redressing-and-clickjacking-about-click-fraud-and-data-theft

**Clickjacking** - ***EXTERNAL***

| PLUGIN | START | END | RUNTIME | OUTPUT FILES |
|---|---|---|---|---|
| external/Clickjacking@OWTF-WGP-001.py | 04/03/2012-08:43 | 04/03/2012-08:43 | 0s, 2ms | Browse |

NOTES

Edit

Online Resources: Open All In Tabs

- Info: Andrew Horton's "Clickjacking for Shells"
- Info: Krzysztof Kotowicz's "HTML 5 Something wicked this way comes"
- Info: Marcus Niemietz's "UI Redressing and Clickjacking: About click fraud and data theft"

# Too much info?

Use the filter to drill to what you care about:

Summary Report

file:///root/tmp/owtf_review/index.html#

BackTrack Linux | Offensive Security | Exploit-DB | Aircrack-ng | SEORG.org | Music

## Summary Report

| SEED | REVIEW SIZE | TOTAL SIZE | VERSION | SITE |
|---|---|---|---|---|
| lZ44SFNIbn | 106 KB | 122 KB | 0.12 "Wicky" | owtf.org |

Filter | Review | History | Logs | Miscelaneous: | Exploitation | Methodology | Calculators | Test/Learn

2 21 15 21 0 2 0 0 0 0 2 1 0 2 1 0

### Filter Options

Tip: Hold the Ctrl key while selecting or unselecting for multiple choices.
NOTE: Clicking on any filter will apply these options from now on. Options will survive a screen refresh

| PLUGIN GROUPS | WEB PLUGIN TYPES | AUX PLUGIN TYPES |
|---|---|---|
| aux<br>web | active<br>external<br>grep<br>passive<br>semi_passive | bruteforce<br>dos<br>exploit<br>se<br>selenium |

WEB TEST GROUPS

OWASP-IG-001 - Spiders, Robots, and Crawlers - robots.txt Analysis
OWASP-IG-002 - Search engine discovery/reconnaissance - Google Hacking, Metadata
OWASP-IG-003 - Identify application entry points - Crawling
OWASP-IG-004 - Web Application Fingerprint - What is that site running?
OWASP-IG-005 - Application Discovery - Port Scanning, Whois
OWASP-IG-006 - Testing for Error Code - Error Messages
OWASP-CM-001 - Testing for SSL-TLS - SSL Testing
OWASP-CM-002 - Testing for DB Listener - DB Service Testing
OWASP-CM-003 - Infrastructure Configuration Management - WAF, Load Balancer, Rev Proxy, User Agent
OWASP-CM-004 - Application Configuration Management - Comments, Source code disclosure

195.251.127.254
- 80

# Business Conclusion

- Web app security > Input validation
- We see no traffic != we are not targeted
- No IDS alerts != we are safe
- Your site can be tested without you noticing
- Test your security before others do

# Pen tester Conclusion

- No permission != cannot start
- A lot of work can be done in advance

This work in advance helps with:

- Increased efficiency
- Deal better with tight deadlines
- Better pre-engagement
- Better test quality
- Best chance to get in

# Bottom line

Do not wait for "Tool X" or Permission


Phil Stevens - http://www.strengthguild.com/ http://www.ironradio.org/

# Bottom line

## Try harder!


Benedikt Magnusson - 1015lbs / 461kg World Record Deadlift
2nd April 2011

# Special thanks to

Adi Mutu (@am06), Krzysztof Kotowicz (@kkotowicz), Marc Wickenden (@marcwickenden), Marcus Niemietz (@mniemietz), Mario Heiderich (@0x6D6172696F), Michael Kohl (@citizen428), Nicolas Grégoire (@Agarri_FR), Sandro Gauci (@sandrogauci)

OWASP Testing Guide contributors

Finux Tech Weekly – Episode 17 – mins 31-49
http://www.finux.co.uk/episodes/mp3/FTW-EP17.mp3
Finux Tech Weekly – Episode 12 – mins 33-38
http://www.finux.co.uk/episodes/mp3/FTW-EP12.mp3
http://www.finux.co.uk/episodes/ogg/FTW-EP12.ogg
Exotic Liability – Episode 83 – mins 49-53
http://exoticliability.libsyn.com/exotic-liability-83-oh-yeah

# Q&A

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**Project Site (links to everything): http://owtf.org**

- Try OWTF: https://github.com/7a/owtf/tree/master/releases
- Try a demo report: https://github.com/7a/owtf/tree/master/demos
- Documentation: https://github.com/7a/owtf/tree/master/readme
- Contribute: https://github.com/7a/owtf