Recon Like A Boss



More Targets- More Options-More Opportunities



AGENDA

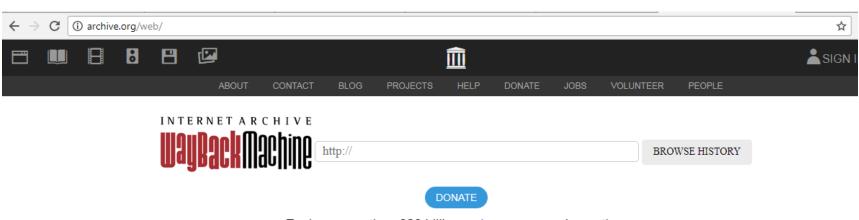
- Increase Your Attack Area
- Determine Technologies used by Website.
- Amazon Web Service (AWS) Recon & Hacking
- Github Recon
- Content Discovery

Increase Your Attack Area



Recon- Go Back in Time

 Wayback Machine to view old files like robots.txt and URLs



Explore more than 308 billion web pages saved over time

Recon- Go Back in Time

- Tools are out to automate this
- waybackurls.py

Download:

https://gist.github.com/mhmdiaa/adf6bff70142e5091792841d4b3720 50

waybackrobots.py

Download:

https://gist.github.com/mhmdiaa/2742c5e147d49a804b408bfed3d32d07

Now We Have

Waybackurls



Sub-domains Discovery

- Brute force on main domain
- Some scripts to automate this task
 - Knockpy:https://github.com/guelfoweb/knock
 - Sublist3r:https://github.com/aboul3la/Sublist3r
 - SubBrute

https://github.com/TheRook/subbrute

Sub-domains Discovery Knockpy

Usage: ./knockpy target.com

```
checking for virustotal subdomains: YES
    "a.ns.hackerone.com".
    "b.ns.hackerone.com",
    "api.hackerone.com",
    "links.hackerone.com",
    "support.hackerone.com",
    "info.hackerone.com",
    "www.hackerone.com"
  checking for wildcard: NO
  checking for zonetransfer: NO
  resolving target: YES
 scaning for subdomain...
Ip Address
                                Domain Name
                                                                 Server
162.159.0.31
                        host
                                a.ns.hackerone.com
104.16.99.52
                301
                        host
                                api.hackerone.com
                                                                 cloudflare-nginx
                                                                 cloudflare-nginx
104.16.100.52
                                api.hackerone.com
                        host
162.159.1.31
                        host
                                b.ns.hackerone.com
104.16.12.26
                        host
                                support.hackerone.com
                                                                 cloudflare-nginx
104.16.13.26
                                support.hackerone.com
                                                                 cloudflare-nginx
                        host
104.16.99.52
                                www.hackerone.com
                                                                 cloudflare-nginx
                        host
                                www.hackerone.com
                                                                  cloudflare-nginx
                        host
```

Sub-domains Discovery Sublist3r

Usage: python sublist3r.py -d target.com

```
[ahmed@secgeek ~/Sublist3r]$ python sublist3r.py -d yahoo.com
                 # Coded By Ahmed Aboul-Ela - @aboul3la
[-] Enumerating subdomains now for yahoo.com
[-] Searching now in Baidu...
 -] Searching now in Yahoo...
 -] Searching now in Google..
 -] Searching now in Bing..
 -] Searching now in Ask..
   Searching now in Netcraft..
   Searching now in DNSdumpster...
[-] Searching now in Virustotal..
[-] Searching now in SSL Certificates..
[-] Searching now in PassiveDNS...
[-] Starting bruteforce module now using subbrute..
    Total Unique Subdomains Found: 14015
```

Sub-domains Discovery Sublist3r Cont.

- Find sub-domains with specific open ports
- Usage: python sublist3r.py -d target.com -p 80,443

```
File Edit View Bookmarks Settings Help
[ahmed@secgeek ~/Sublist3r]$ python sublist3r.py -d yahoo.com -b -t 50 -p 80,443
                 # Coded By Ahmed Aboul-Ela - @aboul3la
 -] Enumerating subdomains now for yahoo.com
 -] Searching now in Baidu..
 -] Searching now in Yahoo..
  ] Searching now in Google..
 -] Searching now in Bing..
 -] Searching now in Ask..
 -] Searching now in Netcraft..
 -] Searching now in DNSdumpster..
-] Searching now in Virustotal..
 -] Searching now in SSL Certificates...
[-] Searching now in PassiveDNS...
[-] Starting bruteforce module now using subbrute..
[-] Total Unique Subdomains Found: 14015
[-] Start port scan now for the following ports: 80,443,21,22
1d.yahoo.com - Found open ports: 80
2010.yearinreview.yahoo.com - Found open ports: 80
```

Sub-domains Discovery SubBrute.

Usage: ./subbrute.py google.com

 You can give list of domains like this Usage: ./subbrute.py -t list.txt

Sub-domains Discovery Cont.

- Google Dork site:target.com –site www.target.com
- Online Resource:
 - https://dnsdumpster.com/
 - https://searchdns.netcraft.com/
 - https://www.virustotal.com (Go to search and type target.com)
 - https://crt.sh/?q=%25paypal.com(Use "%target.com".)

Now We Have

WaybackURls

+

Subdomains

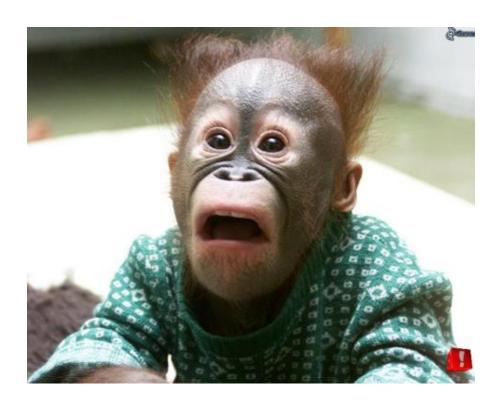
Don't Stop Here



Find Sub-domains of Sub-domain

http://bf1-adxdb-001.data.bf1.yahoo.com/about.php

Some website have 5th and 6th level sub-domain



Find Subdomains of Subdomain

Tool: altdns (https://github.com/infosec-au/altdns)

Input: sub-domain list

Usage: ./altdns.py -i subdomains.txt -o

data_output -w words.txt -r -s output.txt

```
~/altdns ./altdns.py -i data/subdomains.txt -o april_output -w wordstest.txt -r -s resolved_results
[*] 500/48972 completed
[*] 1000/48972 completed
```

```
com:ec2-
spollo.
enigma.
com:internal-
com/altdns cat resolved_results
.us-west-2.elb.amazonaws.com.
.us-west-2.elb.amazonaws.com.
.us-west-2.elb.amazonaws.com.
.us-west-2.elb.amazonaws.com.
```

Find Subdomains of Subdomain

Tool: SubBrute

Usage:

./subbrute.py target.com > sudomains.txt

Then

./subbrute.py -t subdomains.txt

Now We Have

WaybackURIs

+

Subdomains

+

Subdomains of Subdomains

Sub-domain Validation

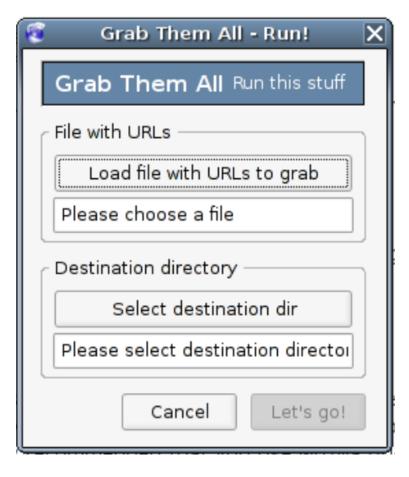
Tool: EyeWitness (https://github.com/ChrisTruncer/EyeWitness)

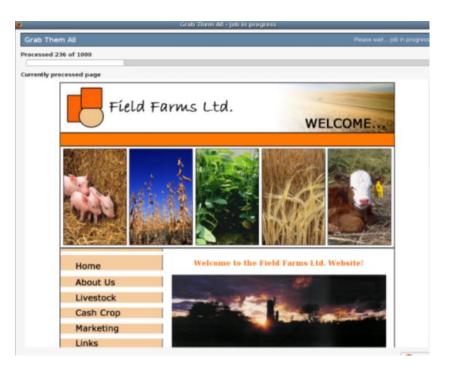
Provide list of sub-domains and it will give you report with screenshots of sub-domain

Usage: ./EyeWitness.py -f subdomains.txt

Sub-domain Validation

Tool: Grab Them All (Mozilla addon)





Other sites on the same domain

www.yougetsignal.com

Reverse IP Domain Check

Remote Address facebook.com Check 0.faceboo.com 0.facebook.co 0.facebook.co.id 0.facebook.de 0.facebook.it 4g.fb.me ads.facebook.com api.fb.me ar-ar.fb.me as fb me autos.fb.com az-az.connect.facbook.com basicdomain.co.uk baiiee.tw bn-in.fb.me bingoblitz.fb.me cafethu7.com cdn.fb.me chat.fb.me claroideiastv.com.br.facebookproxy.com connect.facebook.com connect.fb.me covey.facebook.co cvber.fb.me cyber.me.fb.me developers.cdn.fb.me dl.fb.me edge-star-mini-shv-01-lax3.facebook.com en-gb.lt-lt.m.fb.me en-ud fb.me eu-es ar-ar fb me evelopers.cdn.fb.me facebook com facebook.com. facebook fb me facebook.zxc.pm fb.com fb.me fb.me. fbcdn.net feedback.facebook.com fbsbx.com fma.fb.me free facebok com free.facebook.co.za free.facebook.co free.fb.me free.facebook.org

Now We Have

WaybackURls

+

Subdomains

+

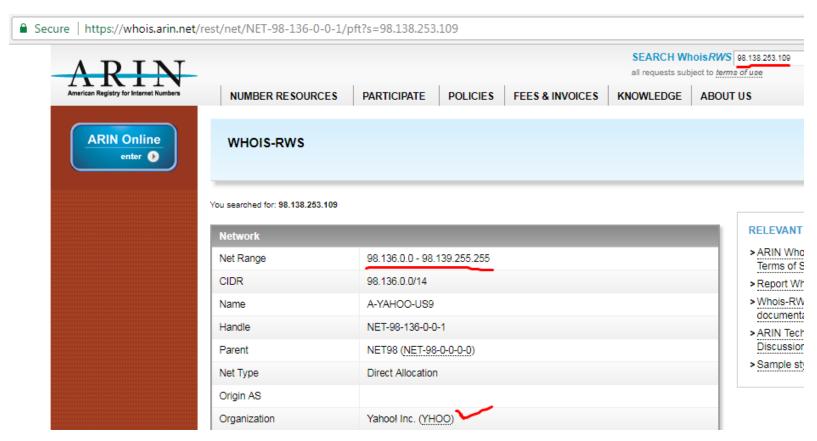
Subdomains of Subdomains

+

Other Sites on the same Domain

Target IP Range

- Url: https://whois.arin.net
- Search by Target IP



IP Range of Target Cont.

Yahoo! owns a massive block of IP addresses

• From 98.136.0.0 - 98.139.255.255

Which is 260,000 unique IP addresses

Got Huge IP Range



Real Case Study

Patrik Fehrenbach (@ITSecurityguard)

Wrote a Bash script to download **phpinfo.php** file (if found) from Yahoo! IP range

(98.136.0.0 - 98.139.255.255)

Real Case Study

And Finally

http://nc10.n9323.mail.ne1.yahoo.com/phpinfo.php

PHP Version 5.2.17		

System	2.6.18-274.7.1.el5 #1 SMP Thu Oct 20 16:21:01 EDT 2011 x86 64		
Build Date	Nov 8 2011 22:58:16		
Configure Command	'./configure' 'enable-bcmath' 'enable-calendar' 'enable-dbase' 'enable-exif' 'enable-ftp' 'enable-gd-native-ttf' 'enable-libxml' 'enable-magic-quotes' 'enable-mbstring' 'enable- pdo=shared' 'enable-soap' 'enable-sockets' 'enable-sqlite-utf8' 'enable-zend-multibyte' 'enable-zip' 'prefix=/usr' 'with-bz2' 'with-curl=/opt/curlssl/ 'with-curlwrappers' 'with- freetype-dir=/usr' 'with-gd' 'with-gettext' 'with-imap=/opt/php_with_imap_client/ 'with- imap-ssl=/usr' 'with-jpeg-dir=/usr' 'with-kerberos' 'with-libdir=lib64' 'with-libexpat- dir=/usr' 'with-libxml-dir=/opt/xml2' 'with-libxml-dir=/opt/xml2/ 'with-mcrypt=/opt/libmcrypt/ 'with-mhash=/opt/mhash/ 'with-mime-magic' 'with-mm=/opt/mm/ 'with-mysql=/usr' 'with-mysql-sock=/var/lib/mysql/mysql.sock' 'with-mysqli=/usr/bin/mysql_config' 'with- openssl=/usr' 'with-openssl-dir=/usr' 'with-pcre-regex=/opt/pcre' 'with- pdo-mysql=shared' 'with-pdo-sqlite=shared' 'with-pic' 'with-png-dir=/usr' 'with- ysql:eshared' 'with-tidy=/opt/tidy/ 'with-ttf' 'with-xmlrpc' 'with-xpm-dir=/usr' 'with- xsl=/opt/xsltf' 'with-zlib' 'with-zlib-dir=/usr'		
Server API	CGI		
Virtual Directory	disabled		

Bash Script

```
#!/bin/bash

for ipa in 98.13{6..9}.{0..255}.{0..255}; do

wget -t 1 -T 5 http://${ipa}/phpinfo.php; done&
```

Only 3 lines of code

Takeaways

- When hacking, consider a company's entire infrastructure. I know that Patrik has employed similar techniques to find some more.
 (Eg. Many people keep Backup.rar)
- Additionally, you'll notice there was 260,000 potential addresses here, which would have been impossible to scan manually.
- When performing this type of testing, automation is hugely important.

Now We Have

WaybackURIs

+

Subdomains

+

Subdomains of Subdomains

+

Other Sites on the same Domain

+

IP Range

Find New Endpoints from JS Files

Tools used

- 1. Burp Suite
- 2. InputScanner (Zscanner)
- 3. JS-Scan

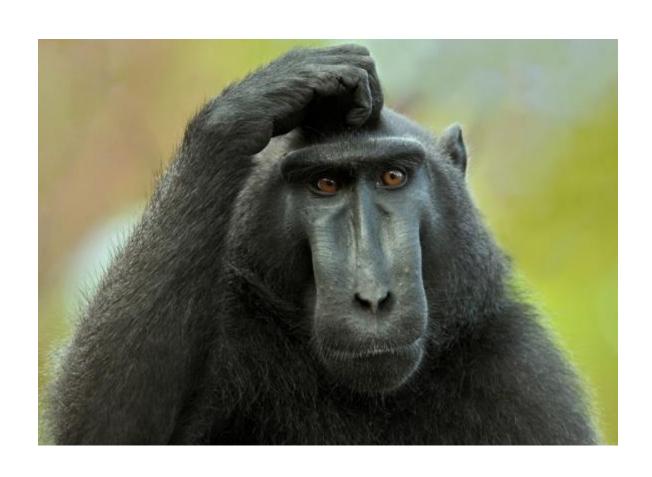
Find New Endpoints from JS Files (Tools Intro.)

Burp Suite: Proxy

 Zscanner: A tool designed to scrape a list of URLs. This tool will also scrape .js urls found on each page

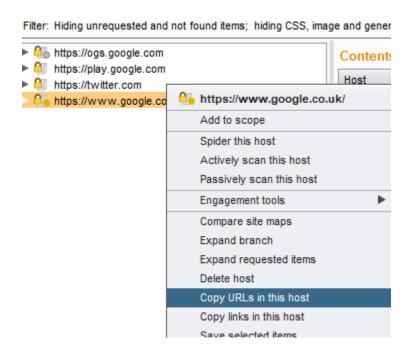
 JS-Scan: A tool designed to scrape a list of .js files and extract urls

How to use these tools together??



Find New Endpoints from JS Files (Burp Suite)

- Run Spider tool on your target in Burp Suite
- Once the spider has finished right click on the host and click "Copy Urls in this host"



Find New Endpoints from JS Files (Zscanner)

- Once copied, paste them into urls.txt
- Put urls.txt file in the root of Zscanner
 Eg. c/xampp/htdocs/zscanner/urls.txt
- Now open zscanner in browser

zScanner v1.0 by zseano

A tool designed to scrape a list of urls and extract all input names. Once extracted, payloads you define in payloads.txt will be appended to each parameter, then outputted for you to import into BURP. This scanner will also extract all .js files found.

Find New Endpoints from JS Files (Zscanner.)

- Click on "Begin Scanner"
- 4 files are outputted in the /outputs/ folder: JS-output.txt, GET-output.txt, POSTHost-output.txt, POSTData-output.txt
- Copy JS-output.txt file and put it in the root of JS-Scan root folder
 - Eg. c/xampp/js-scan/JS-output.txt

Find New Endpoints from JS Files (JS-Scan)

Open JS-Scan in browser

A tool designed to scrape a list of .js urls and extract all urls found. You can modify the regex in the processUrls() function, which is located in this file. At the moment it just includes url: "string" and url: 'string'.

Data is loaded from JS-output.txt in the root directory. You can use zScanner to scrape .js urls.

»» Loaded 36 .js urls from JS-output.txt!

Currently this script does not output anything, hence the visual view of urls found. You are free to modify this code to output how you want.

Run scanner

Find New Endpoints from JS Files (JS-Scan)

 Click on Run Scanner and you will see something similar to this. That's it.

```
»» Loaded 36 .js urls from JS-output.txt!
                                                                .js (seen on https://
https://s
                                                                    .js (seen on https://v
https://s
                                                                     .js (seen on https://v
https://s
»» url:"/
```

Takeaways

 Endpoints extracted from JS files are more vulnerable then Endpoints defined in WebPages.

 Automated Scanners generally don't scan Endpoints defined in JS files.

Developers & Testers don't care about them.

Now We Have

WaybackURIs

+

Subdomains

+

Subdomains of Subdomains

+

Other Sites on the same Domain

+

IP Range

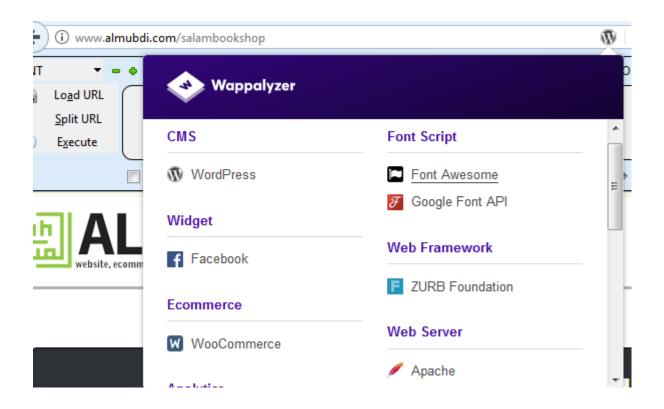
+

New Endpoints From JS Flles

Technologies Used by Web

Technologies Used by Web

Wappalizer (Mozilla Addon)



AWS or S3 Buckets

- AWS Simple Storage Service (often shortened to S3) is used by companies that don't want to build and maintain their own storage repositories
- By using Amazon Simple Storage Service, they can store objects and files on a virtual server instead of on physical racks

 After the user has created their bucket, they can start storing their source code, certificates, passwords, content, databases and other data.

What if target is vulnerable

You can get full access to S3 bucket

You can download, upload and overwrite files.

How to find S3 Buckets?

Find S3 Buckets

Google Dork

site: amazonaws.com inurl: yahoo

Tool: S3 bucket finder

(Download: https://digi.ninja/projects/bucket_finder.php)

./bucket_finder.rb my_words

Find S3 Buckets

Burp Suite can also Help

Comparer		Extender	Options	Alerts	Logger Heartbleed		JSBe	JSBeautifier Settings				xssValidator Decoder	
1	Target Proxy Spide		Spider	er Scanner		Intruder Repea		iter S		equencer			
Interd	cept HTTP	history WebSo	ockets history O	ptions						- lui			
Filter:	Hiding spec	ific extensions											
# 4	Host			Metho	URL		Params	Edited	Status	Length	MIME t	Ext	
3490	https://hacl	kerone.com		POST	/preview		V		200	2584	JSON		
3491	https://hackerone.com			POST	/attachme	nts	V		200	2573	JSON		
3492	https://hackerone.com			GET	/notificatio	ns?after=0	V		200	2589	JSON		
3493	https://hackerone.com			POST	/reports/bi	ulk	V		200	3539	JSON		
3494	https://hackerone.com			GET	/reports/12	28366.json			200	8432	JSON	jsor	
3496	https://hackerone.com			GET	/yaworsk				200	3110	JSON		
3497	https://hackerone.com				/test22/co	mmon_responses.	json 🔲		200	9078	JSON	jsor	
3498	https://mail.google.com			GET	/mail/u/0/e	channel/bind?VER=	-88		200	473	JSON		
3499	https://hackerone.com				/notificatio	ns?after=0	V		200	2589	JSON		
3500	https://hack	kerone-attachmen	ts.s3.amazonaws	.com GET	/productio	n/000/083/629/bb52	20bf 🔽		200	467	text	txt	
1	-											7.0	

AWS HACKING

AWS HACKING

Install awscli in kali

```
Terminal
10:09:15 -$ sudo apt-get install awscli
```

Interact with Bucket

```
10:10:18 -$ aws s3 ls s3://hackerone-attachments
A client error (AccessDenied) occurred when calling the ListObjects
10:11:19 -$
```

Find World Writable Directory.

```
18:11:52 -$ aws s3 mv test.txt s3://hackerone-attachments
```

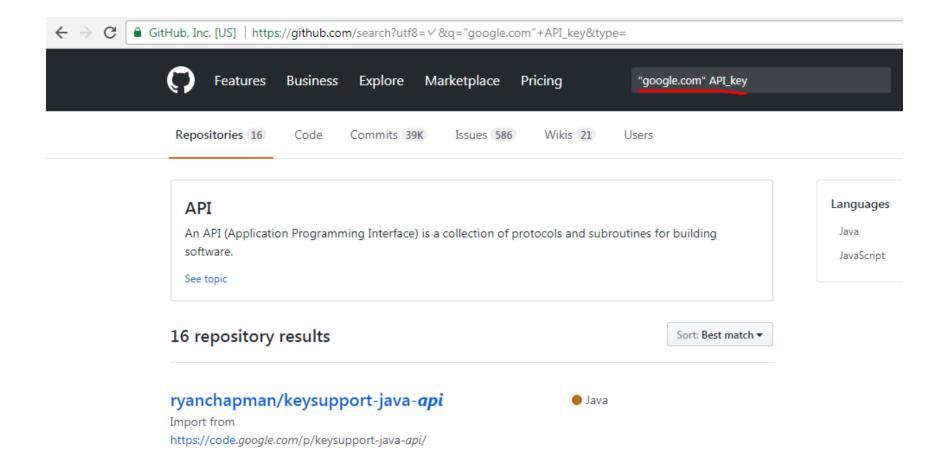
Now We Have

WaybackURIs **Subdomains** + **Subdomains of Subdomains** + Other Sites on the same Domain **IP** Range + New Endpoints From JS Files + S3 Buckets

What you can find on Github

- FTP Credentials
- Secret Keys [API_key, Aws_secret key, etc.]
- Internal credentials [Employee credentials]
- API Endpoints
- Domain Patterns

- Go to github and search
 Eg.
 - "target.com" "dev"
 - "dev.target.com"
 - "target.com" API_key
 - "target.com" password
 - "api.target.com"



Google can also help

Dork:

site: "github.com" + "Target" + password



site: "github.com"+"google"+"password"

I'm Feeling Lucky

Google Search

Tools are out to automate this

- Gitrob
- Git-all-secrets
- truffleHog
- Git-secrets
- Repo-supervisor
- Do it manually [Best way]
 - All tools are available on github

Tool-truffleHog

Usage:

truffleHog --regex --entropy=False https://github.com/dxa4481/truffleHog.git

```
Date: 2014-04-21 18:46:21
Branch: master
Commit: Removing aws keys
@@ -57,8 +57,8 @@ public class EurekaEVCacheTest extends AbstractEVCacheTest {
             props.setProperty("
                                        datacenter", "cloud");
                                        awsAccessId", "<aws access id>");
             props.setProperty("
                                        awsSecretKey", "<aws secret key>");
             props.setProperty("
                                        wsAccessId", "AKIAJCK2WUHJ2653GNBQ");
             props.setProperty("
                                        wsSecretKey", "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");
             props.setProperty("
             props.setProperty("
                                        .appinfo.validateInstanceId", "false");
             props.setProperty("
                                        .discovery.us-east-1.availabilityZones", "us-east-1c,us-east-1d
```

- Google is your friend
- Use Google Dork to find:-
 - File Extensions
 - Parameters
 - Login Page
 - Sometimes Directory Structure
 - Important Stuff

- I often use Google Dork to find files with specific extension which also reveal technology used by Target.
- Google Dork:
 - -site:target.com filetype:php
 - site:target.com filetype:aspx
 - site:target.com filetype:swf (Shockwave Flash)
 - site:target.com filetype:wsdl

- Find Parameter
- Google Dork:
 - site: target.com inurl:.php?id=
 - site: target.com inurl:.php?user=
 - site: target.com inurl:.php?book=

- Find Login Page
- Google Dork
 - site: target.com inurl:login.php
 - site: target.com intext: "login"
 - site: target.com inurl:portal.php
 - site: target.com inurl:register.php

(Note: if site has register page, there are chances that site also have login page)

- Find Directory Structure
- Google Dork:
 - -site: target.com intext: "index of /"



Index of /test/php

<u>Name</u>	<u>Last modified</u>		<u>Size</u>	Description
Parent Directory			_	
date.php	29-Jan-2006	21:10	908	
file-upload.php	29-Jan-2006	21:10	1.0K	
file-upload.xhtml.php	29-Jan-2006	21:10	1.1K	
<pre>get_html_translation></pre>	29-Jan-2006	21:10	1.5K	
gettimeofday.php	29-Jan-2006	21:10	684	
host.php	06-Jun-2006	07:42	1.4K	
htmlentities.php	29-Jan-2006	21:10	1.1K	
htmlspecialchars.php	01-Apr-2006	16:40	1.8K	
optgroup.php	21-Jun-2006	04:33	1.8K	
prefixes-multiples-b>	27-May-2006	03:57	13K	
test.php	10-Feb-2006	21:51	1.0K	
url-codec.php	20-Jan-2007	13:12	2.2K	

- Find important Stuff
- Google Dork:
 - -site: target.com filetype:txt
 - site: target.com inurl:.php.txt
 - -site: target.com ext:txt

In most cases you will find robot.txt

But sometimes you will find really juicy stuff

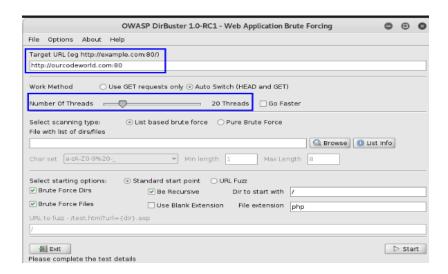
I found code in txt file which includes FTP credentials, SMTP credentials

```
using System;
using System.Collections.Generic;
using System.Configuration;
using System.Globalization;
using System.IO;
using System.Ling;
using System.Net;
using System.Windows.Forms;
using CTCT:
using CTCT.Components;
using CTCT.Components.Contacts;
using EASendMail;
using PostmarkDotNet;
using Telerik.WinControls;
using Telerik.WinControls.UI;
using FilterCustomerList.com.securefreedom.api;
namespace FilterCustomerList
    public partial class Filtered : RadForm
        private readonly string _apiKey = string.Empty;
private readonly string tempFile = Path.GetTempFileName();
        private readonly string tempFileError = Path.GetTempFileName();
        private string _accessToken = string.Empty;
        private ConstantContact constantContact;
        private long currentPosition;
        public string errorPath;
        public Filtered()
            InitializeComponent();
            _apiKey = ConfigurationManager.AppSettings["APIKey"];
        public void authenticateUser()
            adminLoginToolStripMenuItem.Visibility = ElementVisibility.Hidden;
            logOffAdminToolStripMenuItem.Visibility = ElementVisibility.Visible;
            chkConsultant.Enabled = true;
            chkCustomer.Enabled = true;
```

Even some big names in IT Field.

```
<?
function directoryToArray($directory, $recursive) {
   $array items = array();
  if ($handle = opendir($directory)) {
      while (false !== ($file = readdir($handle))) {
         if ($file != "." && $file != "..") {
            if (is_dir($directory. "/" . $file)) {
               if($recursive) {
                  $array_items = array_merge($array_items, directoryToArray($directory. "/
               $file = $directory . "/" . $file;
               if (is file($file)) {
                 $array_items[] = preg_replace("/\///si", "/", $file);
            } else {
                 $file = $directory . "/" . $file;
                 if (is_file($file)) {
                    $array items[] = preg replace("/\//si", "/", $file);
     closedir($handle);
  return $array_items;
require ("settings.php");
$docroot = $_SERVER['DOCUMENT_ROOT'];
$sku = $ REQUEST['sku'];
$dev = $_REQUEST['dev'];
$build = $ REQUEST['build'];
$model = $_REQUEST['model'];
$debug = $ REQUEST['debug'];
$type = $_REQUEST['type'];
$dir = $ REQUEST['dir'];
$referer=$ SERVER['HTTP REFERER'];
```

- Tools:
 - GoBuster [https://github.com/OJ/gobuster]Use:
 - gobuster -w wordlist.txt -u http://trgt.com
 - Dirbuster



Thank You