#### Recon Like A Boss



**Author: Dirty Coder(@dirtycoder0124)** 

## More Targets- More Options-More Opportunities



#### **AGENDA**

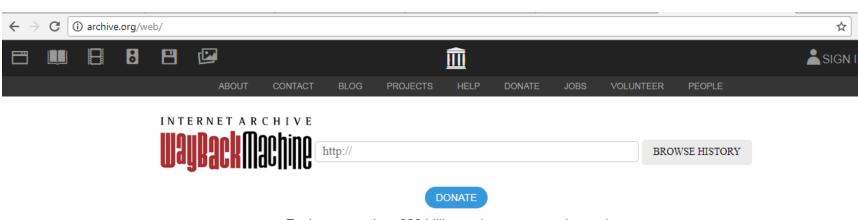
- Increase Your Attack Area
- Determine Technologies used by Website.
- Amazon Web Service (AWS) Recon & Hacking
- Github Recon
- Content Discovery

# 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
                        host
                                api.hackerone.com
                                                                 cloudflare-nginx
104.16.100.52
                                api.hackerone.com
                                                                 cloudflare-nginx
                        host
162.159.1.31
                                b.ns.hackerone.com
                        host
104.16.12.26
                        host
                                support.hackerone.com
                                                                 cloudflare-nginx
104.16.13.26
                                                                 cloudflare-nginx
                        host
                                support.hackerone.com
104.16.99.52
                301
                                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
-1 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:
  - <a href="https://dnsdumpster.com/">https://dnsdumpster.com/</a>
  - <a href="https://searchdns.netcraft.com/">https://searchdns.netcraft.com/</a>
  - 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** 

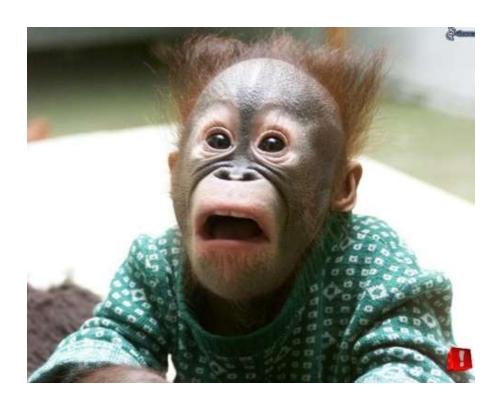
## Don't Stop Here



#### 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 (<a href="https://github.com/infosec-au/altdns">https://github.com/infosec-au/altdns</a>)

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
```

#### Find Subdomains of Subdomain

Tool: SubBrute

#### Usage:

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

#### Then

./subbrute.py —t subdomains.txt

#### Now We Have

WaybackURls

+

**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

#### Check Remote Address facebook.com 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.facebook.org free.fb.me

#### Now We Have

WaybackURls

+

**Subdomains** 

+

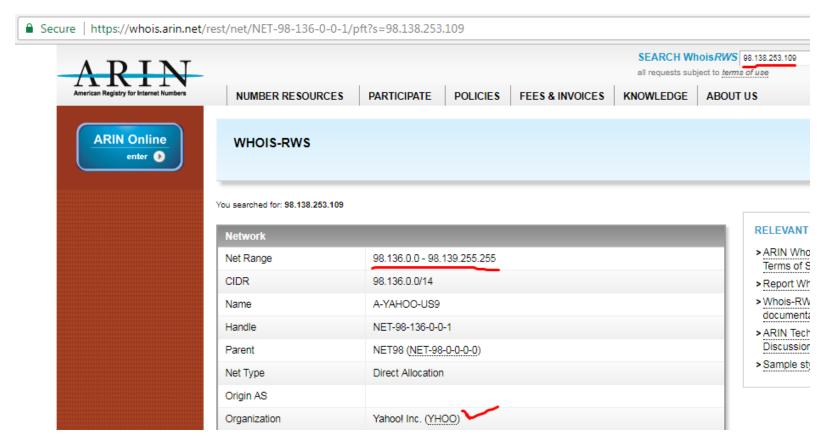
**Subdomains of Subdomains** 

+

Other Sites on the same Domain

### Target IP Range

- Url: <a href="https://whois.arin.net">https://whois.arin.net</a>
- 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-curlssl/ 'with-curlwrappers' 'with-freetype-dir=/usr' 'with-gdt 'with-gettext' 'with-imap=/opt/php_with_imap_client/ 'with-imap-ssl=/usr' 'with-jpeg-dir=/usr' 'with-kerberos' 'with-libdir=lib64' 'with-libxpat-dir=/usr' 'with-libxml-dir=/opt/xml2' 'with-libxml-dir=/opt/ml2' '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-pspell' 'with-sqlite=shared' 'with-tldy=/opt/tldy/ 'with-tlf' 'with-xmlrpc' 'with-xpm-dir=/usr' 'with-xsl=/opt/xslt/ '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

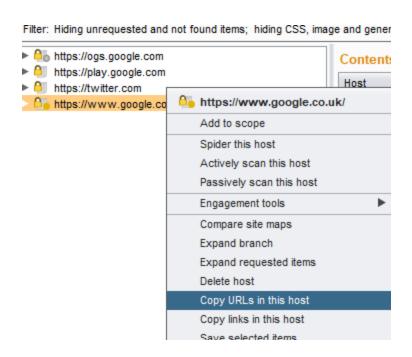
 JS-Scan: A tool designed to scrape a list of .js files and extract urls

# 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, POSTHostoutput.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.

\*\*Notation\*\*

\*\*

# 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:"/
»» url:"/
»» url:"/
»» url:"/
»» url:"/
»» 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)



#### **Amazon Web Services**

AWS or S3 Buckets

#### **Amazon Web Services**

- 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

#### **Amazon Web Services**

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

# <u>Amazon Web Services</u>

#### 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: <a href="https://digi.ninja/projects/bucket\_finder.php">https://digi.ninja/projects/bucket\_finder.php</a>)

./bucket\_finder.rb my\_words

#### Find S3 Buckets

Burp Suite can also Help

C	Comparer	Extender	Options	Alerts	Logger	Logger Heartbleed		JSBeautifier Settings			xssValidator	
- 1	Target	Proxy	Spider	Scanner	Intruder Repea		eater	iter S			Decoder	
Inter	cept HTTP	history WebSo	ockets history C	ptions		_				li r		
Filter:	Hiding spec	ific extensions										
# #	Host			Method	URL		Params	Edited	Status	Length	MIME t	Ext
3490	https://hackerone.com			POST	/preview		V		200	2584	JSON	
3491	https://hackerone.com			POST	/attachmer	nts	V		200	2573	JSON	
3492	https://hackerone.com			GET	/notificatio	ns?after=0	V		200	2589	JSON	
3493	https://hackerone.com			POST	/reports/bu	lk	V		200	3539	JSON	
3494	https://hackerone.com			GET	/reports/12	18366.json			200	8432	<b>JSON</b>	jsor
3496	https://hackerone.com				/yaworsk				200	3110	JSON	
3497	https://hackerone.com				/test22/co	mmon_responses.jsor			200	9078	JSON	jsor
3498	https://mail.google.com				/mail/u/0/c	hannel/bind?VER=8&	V		200	473	JSON	
3499	https://hackerone.com				/notificatio	ns?after=0	J		200	2589	JSON	
3500	https://hac	kerone-attachmen	ts.s3.amazonaws	.com GET	/production	1/000/083/629/bb520b	f <b>V</b>		200	467	text	txt
1	_			- 12								7.

# AWS HACKING

#### **AWS HACKING**

Install awscli in kali

```
Terminal
10:89:15 -$ 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
```

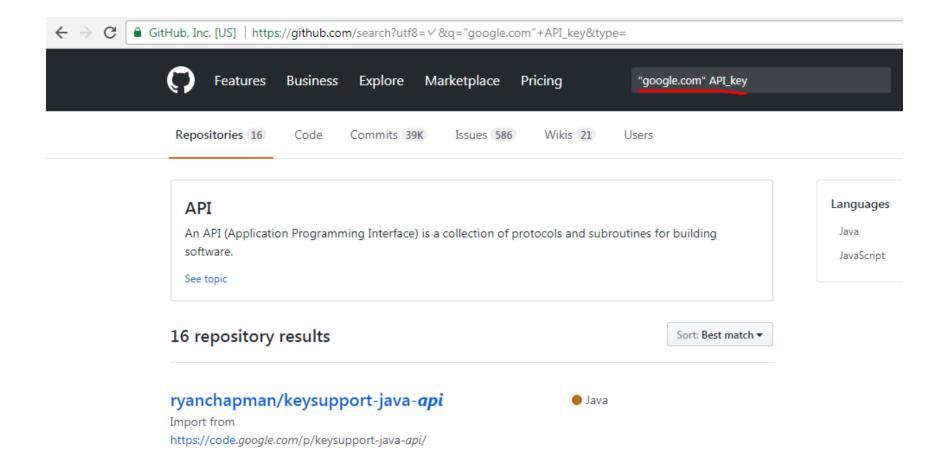
#### Now We Have

```
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"

Google Search

I'm Feeling Lucky

#### 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 <a href="https://github.com/dxa4481/truffleHog.git">https://github.com/dxa4481/truffleHog.git</a>

```
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("
                                        awsAccessId", "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 modifie</u>	<u>ed</u>	<u>Size</u>	<u>Description</u>
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&gt;</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

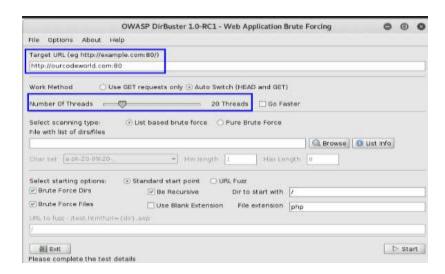
I found code in txt file which includes FTP credentials, SMTP credentials

```
Secure https://ex
using System;
using System.Collections.Generic;
using System.Configuration;
using System.Globalization;
using System. IO;
using System.Linq;
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;
        3
```

Even some big names in IT Field.

```
netgear.e
<?
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